

Lucent Technologies
Bell Labs Innovations



The *NetMinder*® System's Network Trouble Patterning (NTP) Feature Set

System Administration Guide

Lucent Technologies — Proprietary

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E Quick Reference Card

About This Document

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Overview

Purpose and audience

The book is written for both system administrators and O&M (operations and maintenance) personnel who work on NTP (Network Trouble Patterning) once the application is installed on the NTP platform. Administration and O&M may be performed by the same individual, or the functions may be separate areas of responsibility.

- **System administration.** This book tells system administrators how to do such common tasks as start and stop NTP, update the reference data tables, add and delete NTP and BB-GUI users, set thresholding and alerting parameters, archive and retrieve surveillance data, and monitor error and other logs.
- **Operations and maintenance.** [Chapter D, "Application Backup and Recovery"](#) provides procedures to back up and recover the NTP application and the Oracle databases. O&M personnel may also refer to [Chapter 3, "Start and Stop"](#), which includes procedures to stop and start NTP.

Tasks and procedures

For a complete list procedures covered in this book, see the "Procedure" listings in the Contents section at the front of this book.

Note

What is not included. This book covers NTP-specific tasks only and is not intended to describe administration, operations, and maintenance tasks covered in vendor documents for the computer on which the NTP application runs (also see ["List of documents" on page 1-4](#) and ["Prerequisites" on page 1-5](#)).

Documents

List of documents The documents are as follows:

Document	Audience	Explains how to...
<i>BB-GUI User's Guide</i> 190-405-505	Network or revenue analysts	Use the browser-based graphical user interface (BB-GUI).
<i>System Administration Guide</i> , 190-405-503	System administrator and O&M persons	Administer users and databases; perform application backup and recovery; start and stop the application.
<i>CP Administration and O&M</i> , 190-405-550	CP administrator and CP O&M persons	(Applicable only if your system has CP sources., which collect data from 4ESS switches.) Manage CPs.

About documents

- **Comments.** If you have comments or suggestions about the NTP documents, contact your NTP support organization.
- **Ordering.** Follow your company's procedures to order additional copies of documents.
- **Reproduction.** You can reproduce these documents. Please do not release copies outside your company.
- **Media.** Documents are available in .pdf on CD-ROM. Also, the BB-GUI offers all documents in .pdf format, and the *BB-GUI User's Guide* in HTML format. You can print from .pdf.
- **Legacy interfaces.** AUI and X-GUI guides are frozen at the G8, Aug 1999. If you need these, contact your NTP support organization. These documents are:
 - *X-GUI User's Guide*, 190-405-501
 - *AUI User's Guide*, 190-405-502. (**sui** commands from this guide are now in the *System Administration Guide*, Appendix B.)
- **O&M.** The *Operations and Maintenance* book (190-405-504) has been replaced as follows:
 - **Backup and restore.** See Appendix D in the *System Administration Guide*.
 - **Other.** See vendor documents for vendor-specific information, including Sun hardware, HP hardware, TCP/IP and Datakit.

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Prerequisites

System administration

To administer the NTP host, system administrators need prior experience in routine tasks such as (but not limited to) the following:

- Common file manipulation for your operating system, such as editing (through **vi** or another ASCII text editor), moving and removing files
- Routine system and user administration, such adding, deleting, and administering users; adding and configuring printers; using **cron** and other operating system utilities; shutting down and restarting applications and utilities

Operations and maintenance

Before performing maintenance on the NTP host, you need experience in routine tasks such as (but not limited to) the following:

- Halting and booting the applicaton host machine
- Recovering file systems to a disk from its mirror
- Recovering individual files from a **tar**-compatible backup tape

We assume the following:

- Maintenance on the computer platform on which the NTP software runs is the customer's responsibility, either through a maintenance contract or through other means. Procedures for operation and maintenance of the platform hardware and software are NOT described in the NTP documents. Instead, see the vendor documents for your system.
- The NTP host hardware and software will be installed by the NTP support organization. The NTP documents do not describe installation procedures except those required to install the BB-GUI client software.
- The NTP administrator should have access to:
 - Reference documents for the NTP host and Oracle database
 - All NTP user manuals

CP system administration and O&M

For administration of Lucent Technologies Communications Processors (CPs), the same assumptions apply as for NTP system administration.

For CP O&M, the same assumptions apply as for NTP operations and maintenance (O&M) in regard to the CP computer hardware and software installation, NTP documentation, and vendor documentation.

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Format, Typography, and Conventions

Shell users

Keyboard

Commands you type or enter at the keyboard appear in **bold** print. For example, the instruction to “enter **cd \$SNASDIR**” means to enter the exact characters in bold-faced print. Variables are shown in *italic* print regardless of where they appear, for example:

```
Enter sui find so=acode delim='";' > /tmp/acode  
where /tmp/acode is a temporary file.
```

References to keyboard keys appear in bold print. For example, **Delete** means the Delete key, **Escape** means the Escape key, and so forth.

The word “enter” means to type input and then press **Return**. The word “type” means to type input without pressing **Return**.

In special cases further information is provided for keys. For example, the instruction to press **Control d** means to press and hold the **Control** key while simultaneously pressing the letter **d** key.

Prompts and output

System prompts are shown in the standard print for the documents. System output and messages are shown in `constant width` (“typewriter”) print.

Environment variables

Throughout the user documentation, environment variables are used in pathnames and command lines. This is because the application home may be installed at a location different from the default.

- In almost all cases where input is required, you can enter either the actual path or the appropriate environment variable.
- Examples of output throughout the user documentation assume that the application home is `/lucent/ntp/snas`.

See ["Application Directory Structure" on page 2-30](#) for more information about the NTP directory structure and environmental variables.

File, directory, table, and field names

File, directory, table, and field names appear in the standard print for the document.

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Overview

Purpose

This chapter provides a high-level view of the NTP system.

Topics covered include:

- ["Users" on page 2-4](#)
 - ["Hardware and Software, and Connectivity" on page 2-7](#)
 - ["Files and Databases" on page 2-28](#)
 - ["Administrative Tools and Routine Tasks" on page 2-38](#)
-

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Users

Logins

Logins and permissions

The NTP administrator assigns logins to users, which they use to access NTP. This table shows the administrator's responsibility.

Login, ID, or permission	You administer?	Purpose	Reference
root login	No	The operating system root login on the NTP host.	None. These logins are configured when NTP is installed.
ntp login	No	The NTP administrator login on the NTP host. Can execute NTP commands that other administrative logins cannot. (including ntpstart and ntpstop)	
NTP administrative logins (typically a different login for each administrator)	Yes	Allows administrative users to manage NTP with: <ul style="list-style-type: none"> ■ System tools (such as SAM), and shell/ksh commands such as vi ■ NTP administrative commands, such as linkalert ■ The NTP SUI (shell user interface) 	See Chapter 6, "Add or Delete Users" . User permissions and restrictions depend on standard user administration for the operating system, including shell assignment. Users may also be restricted by command group. See CMDROUP in " Attributes for add_ntpuser " on page 6-15 and " Assign Users to Command Groups " on page 7-13.
NTP user logins (typically a different login for each user)	Yes	Required for all users to access NTP.	
BB-GUI IDs	Yes	Required to access the BB-GUI and execute its pages.	" Add a BB-GUI user " on page 6-43. Select the checkbox in the Permission field to give a user administration permission.
BB-GUI web user administration permission	Yes	Required for web administrators to: <ul style="list-style-type: none"> ■ Assign BB-GUI user IDs ■ Set default BB-GUI user preferences ■ Create, modify, and delete preferences (table layouts and saved searches) for all BB-GUI users 	

Logins (Continued)

Permission for other systems

An NTP administrative login does NOT enable a user to administer OTHER systems or networks which NTP may be integrated, such as:

- The Lucent CSL (Communications Software Launcher) (see "[CSL User Administration](#)" on page 6-73)
 - Datakit or TCP/IP networks
 - Sources that forward CIMs to NTP (see [Chapter 14, "CIM Source Administration"](#))
 - Entities from which NTP receives data
-

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User Interfaces

Description

This table describes the interfaces to NTP. NTP administrators require the SUI and shell, and may use the GUI. Analysts require only the GUI, but may be given access to other interfaces.

Interface	Users	Description	Method
BB-GUI	Network and revenue analysts	Browser-based graphical user interface accessed via a web browser	Point and click
SUI	NTP administrators	Shell user interface used to execute a special set of NTP commands, which are prefixed with sui . Reference See Appendix B, "SUI Commands" .	Keyboard in operating system shell
Shell		Used for running operating system commands and NTP commands that do not require the sui prefix.	Keyboard in operating system shell
X-GUI	Network analysts	Legacy X-windows graphical user interface, supported in G8.1 on HP platforms only (not Sun).	Point and click
AUI	Network analysts	Legacy ASCII user interface, supported in G8.1 on HP platforms only (not Sun).	Keyboard entry

Note

- The legacy X-GUI and AUI interfaces will not be supported in beyond G8.1
- For G8.1, some legacy interface users access NTP through the communications software launcher (CSL). NTP supports this for HP platforms only, not Sun.

Hardware and Software, and Connectivity

Overview

Purpose

This section discusses the hardware NTP runs on, and two levels of software running on the hardware, as follows:

- **Operating system software.** Runs the shell interface.
- **Application software.** Runs NTP. You can run this only if the operating system software is running.

It also includes a section on TCP/IP and Datakit connectivity.

Note

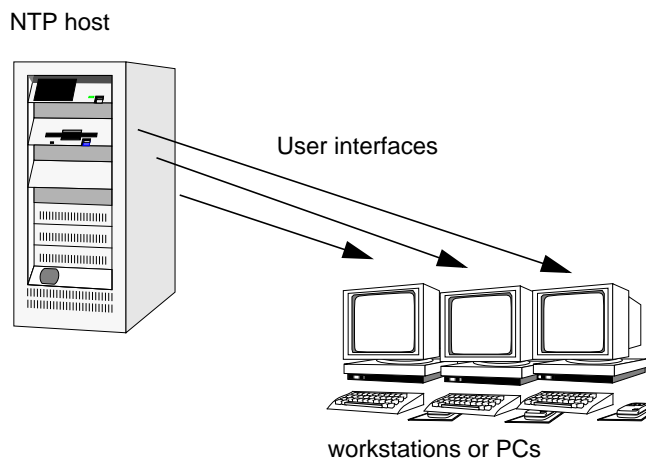
Other. Not mentioned here are several third-party software applications included with NTP software, such as the Oracle database software.

Configuration illustration

This illustration shows that NTP software runs on the NTP host, regardless of where output is displayed or what interface is used.

Note

BB-GUI client software. Client software is necessary to run the BB-GUI. See ["Hardware and Software" on page 2-8](#).



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Hardware and Software

Overview The NTP software runs on the following hardware and operating systems:

Element	Hardware	Software
NTP host computer	Hewlett Packard (HP): <ul style="list-style-type: none"> ■ K460 (discontinued in G9) ■ J5000 ■ N4000 	HP-UX 11.0 operating system
	Sun Solaris: <ul style="list-style-type: none"> ■ UE6500 ■ UE220 (2 CPU) 	Solaris 8 operating system
PCs or workstations for the BB-GUI Note Other configurations may be supported. Contact your NTP support organization.	<ul style="list-style-type: none"> ■ PCs — Minimum Pentium III 450-MHz processor, 128 MB of memory, 4-GB hard disk with 1 GB free space, 8-MB 32-bit video card, and SVGA monitor ■ Workstations — Minimum of 128 MB memory, 4-GB hard disk with 1 GB free space, 24-bit graphic display: <ul style="list-style-type: none"> — Sun Ultra2 SparcStation — HP B1000 <p>Note Pattern Painter requires:</p> <ul style="list-style-type: none"> ■ A PC display set to “high” or “true” colors ■ An SVGA monitor set at 1024x768 resolution 	<p>Operating system:</p> <ul style="list-style-type: none"> ■ PCs — Windows 98, 2000, or NT 4.0 with Y2K upgrades ■ Workstations — Solaris 2.6.1 or higher or HP-UX 11.0 <p>Browsers:</p> <ul style="list-style-type: none"> ■ Netscape Navigator browser, version 4.61. ■ Microsoft Internet Explorer browser, version 5.0. <p>Note IE is NOT supported to run NTP on workstations. It is supported on PCs ONLY.</p> <p>Client software:</p> <ul style="list-style-type: none"> ■ Web GUI CLIENT software (one CD)
PCs or workstations for the X-GUI	Any supporting X-windows displays.	
Printers	<p>Configuration of printers to print from BB-GUI clients is the customer's responsibility and is not covered in this book.</p> <p>For printing from the legacy AUI and X-GUI, see Chapter 12, "Printer Configuration".</p>	

Hardware and Software, and Connectivity (Continued)

Customer-installed client software

BB-GUI client software

Users running the BB-GUI must have BB-GUI client software installed on their PCs or workstations. The NTP support organization installs this software during initial system installation. However, thereafter, the NTP administrator is responsible for installing it when new BB-GUI users are added. The BB-GUI client software includes:

- Java 1.2.2 plug-in
- Java provisioning software

Pattern Painter software

Pattern Painter runs in association with the BB-GUI to display graphical depictions of data. Pattern Painter runs on PCs only, not on workstations. Users running Pattern Painter must have Pattern Painter client software installed on their PCs. The NTP support organization installs this software during initial system installation. However, thereafter, the NTP administrator is responsible for installing it when new Pattern Painter users are added. The Pattern Painter software includes the following components:

- Oracle client software must be installed and configured on each client so the client can connect to the NTP host database. Connections for multiple hosts can be configured.
- Pattern Painter client software includes:
 - Pattern Painter executables
 - Visual Insights components

Reference

For more detailed information, see ["Install and Uninstall Client Software for the BB-GUI" on page 6-45](#).

Other customer-installed software

The BB-GUI offers user document files in Portable Document Format (.pdf suffix). The Adobe Acrobat Reader software (free software in the public domain) is necessary to read such files.

Reference

For more information about when it is necessary to install this software, see ["Install Acrobat Reader" on page 6-66](#). For information on assisting BB-GUI users install this software, see Chapter 2 of the *BB-GUI User's Guide*.

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Hardware and Software, and Connectivity (Continued)

CP on host and standalone

Sources collect data from switches and other entities and send the data to NTP. Sources are typically separate computers, but Lucent CP (communications processor) sources can run separately OR on the NTP host.

Reference

- **CP overview, hardware and software.** See Chapter 2 in *CP Administration and O&M*.
 - **Illustration and references.** See "[Data flow illustration](#)" on page 2-12.
 - **I/O.** For setting up a CP source, see [Chapter 14, "CIM Source Administration"](#).
-

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TCP/IP and Datakit Connectivity

Purpose

Various hardware elements in NTP systems are connected by either TCP/IP or Datakit.

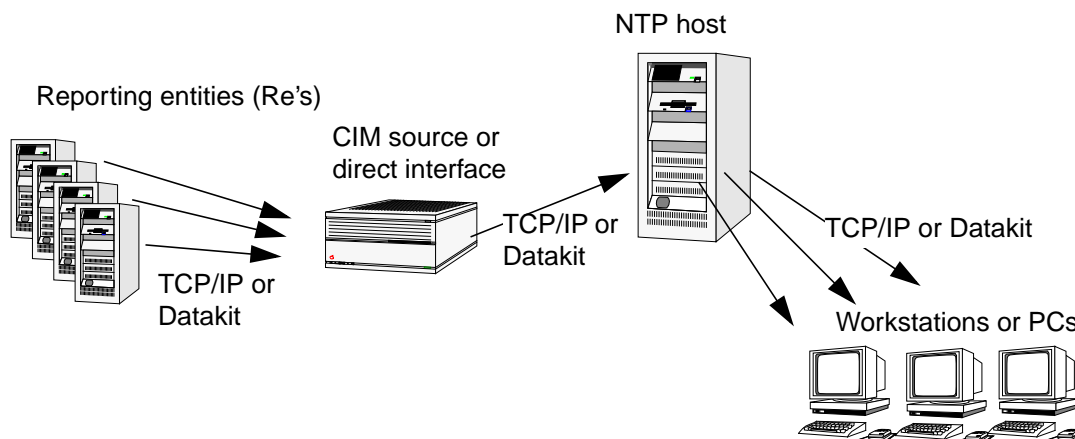
Note

Datakit-to-TCP/IP-conversion. Datakit links can NOT be used with NTP hosts running on HP J and N series processors. For some installations, Datakit-to-TCP/IP conversion may be required. Conversion is typically done through customer-provided hardware and software that allows mapping of Datakit dialstrings to TCP/IP ports and addresses. Consult with your NTP support organization.

User interface connections

This illustration shows where TCP/IP and/or Datakit connections are used.

- Reporting entities send CIM (call information message) data to a collector, which is known in NTP as a “source”, over TCP/IP or Datakit links.
- The source forwards the CIMs to NTP over TCP/IP or Datakit links. The CIMs may be in a data stream or in file-based format.



Note

Some configurations may require a customer-supplied Datakit-to-TCP/IP interface between Re's and NTP. In some configurations, the CIM source may be a module on the Re or a direct interface. In some for direct interfaces, a SEPARATE source is required for EACH Re must be defined.

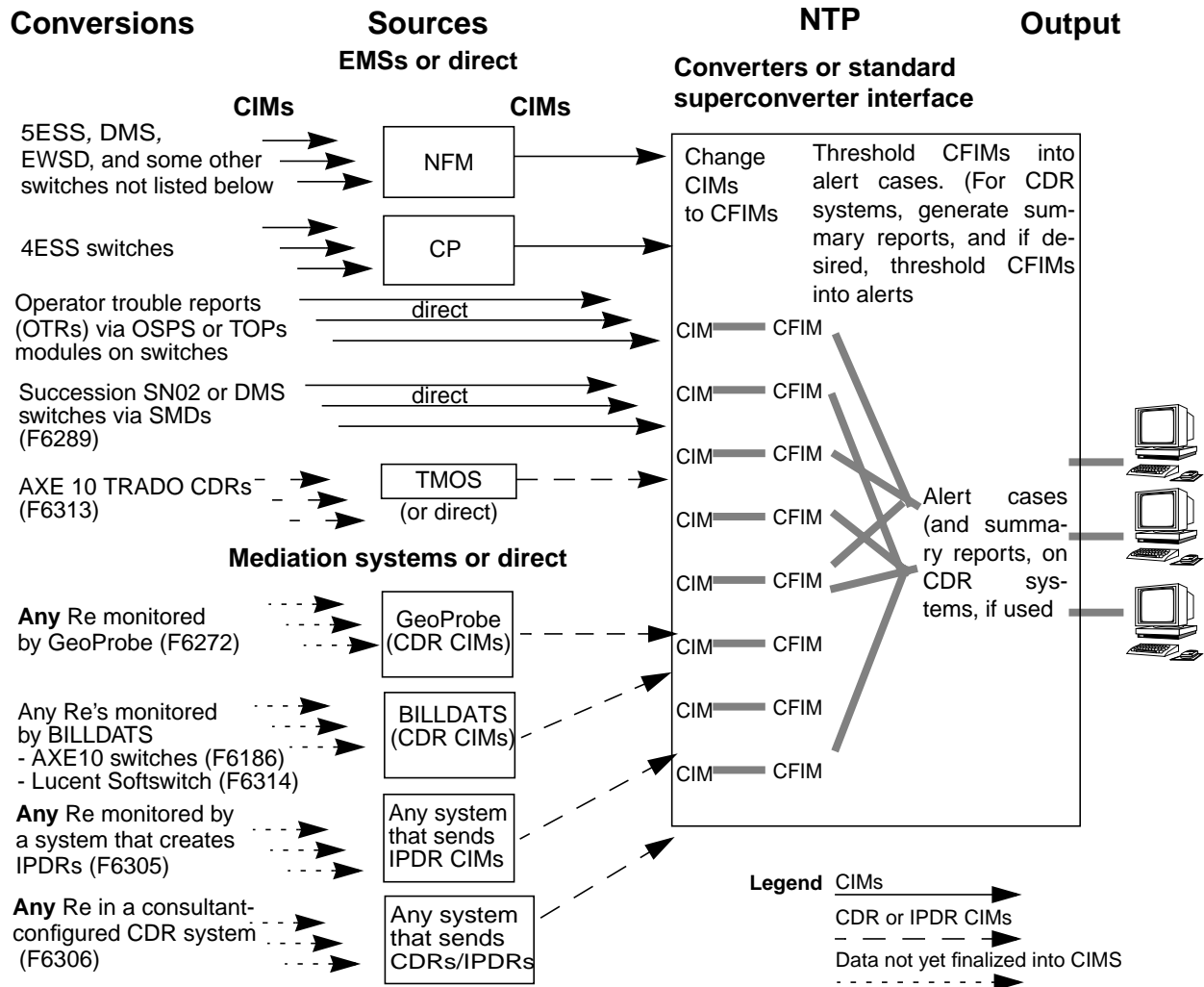
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Data Flow

Overview

Purpose Knowing where output comes from is important for network troubleshooting or analysis.

Data flow illustration This illustration shows how surveillance data flows to output.



Note Summary reports are available only if additional traffic analysis is implemented for your system.

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Overview (Continued)

Data flow terms

Terms used in the data illustration are:

- **Reporting entities (Re's).** An element in your network that reports to NTP. Each customer has only some types of Re's.
- **Sources.** Gather CIMs from Re's and forward them to NTP. See ["Sources" on page 2-16.](#)
- **CIM.** Call information message. See ["CIMs" on page 2-15.](#)
- **CFIM.** Common format call information message. NTP takes CIMs in various formats and puts them into a standard format.
- **Alert case.** If a problem's CFIM count is above threshold, those CIMs are tallied into an alert case.
- **Output.** You see alert cases, CFIMs, CIMs (though some CDR CIMs are discarded), summary reports (if additional traffic analysis is implemented on your system), and other outputs.

Data flow stage table

This table explains the flow of data to and through NTP. See other information in this section for a more complete understanding.

Stage	Traditional CIMs	CDR CIMs
1	Re's send CIMs to a source. Re's (usually switches) create traditional CIMs and send them to an EMS source (or directly to NTP)	Re's send data to a source. Re's send data to a mediation system source, so the source can create the CDR CIMs (or the Re may send CDR's directly)
2	Source sends CIMs. The source forwards CIMs to NTP.	
3	Convert CIMs to CFIMs. NTP translates CIMs to CFIMs (common format information messages), making them easier for you to read.	
4	Summarize data. NTP summarizes CFIMs into summary tables used for summary reports (if additional traffic analysis is implemented on your system).	
5	Count. NTP groups CFIMs into sets and counts the problems in each set.	
6	<p>Threshold. If the count in a set exceeds a threshold, the problem is handled as an alert case. Then, periodically:</p> <ul style="list-style-type: none"> ■ New. If a count crosses threshold for the first time, a new alert case is added to Ascreen. ■ Existing. If a count crosses threshold for an alert case already on Ascreen, the alert case's tallies (such as the Cnt5 field) are incremented. <p>Reference See "Thresholding overview" on page 2-17.</p>	

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Stage	Traditional CIMs	CDR CIMs
7	<p>Close alert cases. An alert case automatically closes, and drops of Ascreen Output, if its CFIM count has been below threshold for 2 hours (if its total CFIM count is less than 50) or 4 hours (if its total CFIM count is more than 50).</p> <p>Note</p> <ul style="list-style-type: none"> ■ These are default times—your system administrator can change them. ■ Below-threshold intervals are counted in the Cai5 and Caih fields. ■ Users can manually close alert cases. 	
8	<p>Purge data. Active alert cases stay on Ascreen potentially forever. But CIMs, CFIMs, and closed alert cases are eventually purged. How long they are retained depends on your traffic and your data storage capacity. Ten days is a typical minimum retention period.</p>	
Done		

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CIMs

Description

Traditional CIMs. Traditional systems process mostly CIMs (call information messages). Traditional CIMs:

- Report lost calls (almost always)
- Are generated by the Re and typically forwarded to an EMS (element management system), which forwards them to NTP. They may instead be forwarded directly to NTP from a module associated with an Re.

CDR CIMs. CDR systems process CIMs related to call completions, including CDRs (call detail records) and IPDRs (internet protocol detail records). Collectively these are referred to as CDRs. CDR CIMs:

- Report session data, such as billing information, typically NOT lost calls.

Exceptions: Some CDR's may represent lost calls. For example GeoProbe (F6272) collects CDR CIMs that are mostly for lost calls.

- Are typically generated by a mediation system, but may be forwarded directly to NTP from a module associated with an Re.
-

Sources

Description

The ultimate source for CIMs is reporting entities Re's (see ["CIMs" on page 2-15](#)). What NTP calls a "source" is really an element that collects or forwards data from Re's to NTP. (see ["Data flow illustration" on page 2-12](#)). Even a direct interface can be a "source" for NTP administrative purposes. Each source is defined in the NTP reference database, and physical and logical links must be established between the source and NTP. This table summarizes source types.

Reference

For more detail on sources and interfaces, see [Chapter 14, "CIM Source Administration"](#).

Source type	Description	Retype
Mediation system	Typically forward CDR CIMs (success or usage messages). Examples: <ul style="list-style-type: none"> ■ Billing system that create CDRs, such as BILLDATS ■ IP network monitoring systems that create IPDRs 	Many — CFIMs from one mediation system can have different Retypes (a different Retype for each entity type the system monitors). The CFIM's Source field (NOT its Retype field) hints at which CIM-to-CFIM converter was used.
EMS (element management system)	Typically forward traditional CIM's (typically (failure messages). Examples: <ul style="list-style-type: none"> ■ Lucent CP (Communications Processor) ■ Lucent NFM (OneVision Network Fault Management) system or NOC1 ■ Ericsson TMOS (Telecommunications Management and Operations Support) system 	Typically one per source — Typically, CFIMs from one EMS all have the same Retype (such as 4ESS, or 5ESS). The CFIM's Retype field (AND its Source field) hint at which CIM-to-CFIM converter was used.
Direct interface	An interface is established between NTP and the Re (or associated Re module). Examples: <ul style="list-style-type: none"> ■ Nortel SDM (Supernode Data Manager) ■ OTR DMS TOPS or 5ESS OSPS modules 	Retype — one per source. Typically the Re cannot be identified UNLESS it is associated with a source. Typically one source is administered per Re.
Note Theoretically, you may see two CFIMs with the same Re, but the Source field on one holds an EMS (such as an NFM), and on the other holds a mediation system (such as a GeoProbe).		

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Thresholds

Thresholding overview

NTP thresholds on a set of CFIM fields known as an FQ (fundamental quantity). You can threshold on any FQ set up for you by Lucent Technology consultants.

The default FQ is:

- **FDC.**
- **RE or DE.**
- **LSP.** Load set period. The week is divided into LSPs (traditionally, 15 LSPs).

For each FQ, there are two sets of thresholds for two types of intervals:

- **5-minute.** Detects bursty problems.
- **Hourly.** Detects chronic problems.

Example

With 400 FDCs, 20 Re's, 200 De's, two intervals (5-minute and hourly), and 15 LSPs, you would have 48,000,000 thresholds.

Note

- **Threshold updates.** Thresholds are automatically created after an initial 2-week "soak". After that, they are automatically adjusted at every LSP, so that routine and seasonal changes to calling patterns are not misinterpreted as problems.
- **Manual thresholds.** The system administrator can assign thresholds manually. For example, for an FDC indicating 911 problems, you may want a manual threshold of 1.

Reference

For how to administer thresholding, see "[Thresholding and Alerting](#)" on page 8-1.

Conversions

Which entities can be Re's

Virtually any type of network element can be an Re, depending on conversion. A conversion translates CIM's to CFIMs. By "conversion" we mean not just the software module used (such as the superconverter), but the set of tables and fields the NTP support organization or the NTP system administrator populates to convert a specific type of CIMs to CFIMs.

For many interfaces, the standard NTP interface (superconverter) can be used.

Reference

For conversions, see ["Recognize a CFIM's conversion by Retype on CFIM" on page 5-9.](#)

CIMs

CIM types

You may need to ask the administrator of an Re to ensure the Re is creating the CIMs you need. This table lists CIMs by conversion (retype field in CFIM output).

Reference

For more information on conversions, see the GUI User's Guide.

Conversion (CFIM retype)	CIMs
1ess	Lucent 1A ESS messages: <ul style="list-style-type: none"> ■ TN08 ■ CCS7 RTN. CCS7 Return messages. ■ CCS7 UPC. CCS7 Unknown Point Codes. ■ SCP ALERT.
4ess	Lucent 4ESS traps: <ul style="list-style-type: none"> ■ FHC, IMA. Final Handling Code of IMA (Ineffective Machine Attempt). ■ FHC, INA. Final Handling Code of INA (Ineffective Network Attempt).
5ess	Lucent 5ESS MDII. Machine Detected Interoffice Irregularity.
osps (5ESS)	OTR from an OSPS (Operator Services Position Systems) module on a 5ESS switch (F6011). F6132 adds OSPS LNP 5ESS messages: <ul style="list-style-type: none"> ■ OTR operator trouble reports ■ OKTR operator K trouble reports
tops (DMS)	From a DMS OTR TOPS (Traffic Operator Position Systems) module on a DMS (F6011). DMS logs (xxx means three digits): <ul style="list-style-type: none"> ■ SNAC100. With OTR. (F6178.) ■ TOPSxxx. (F6223) Reports on TOPS LNP^a, validation (credit card, coin call, and so on), and operator assisted calls. TOPS100-101, 103-107, 111, 113, 117-118, 121, 125-127, 129, 140, 301, 600-601.

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Conversion (CFIM retype)	CIMs
7re_pds	<p>Lucent 7R/E MDII. Machine Detected Interoffice Irregularity (resembling 5ESS CIMs).</p> <ul style="list-style-type: none"> ■ Existing circuit-side 5ESS MDIIs based on ISUP signaling. ■ A subset of existing 5ESS MDIIs based on BICC signaling. ■ Three new MDIIs for packet-side failures of the 7R/E PLS 3.0. <p>— ATMRJ — The Terminating Packet switch (TPS) encounters an IPDC signaling failure with the Interworking Gateway (IWG — formally PVG) for one these reasons.</p> <ul style="list-style-type: none"> ■ RELEASE COMPLETE message received ■ Timeout waiting for UNI message <p>— AEVENT — The Originating Packet Switch (OPS) or TPS gets an EVENT message for one of the following reasons.</p> <ul style="list-style-type: none"> ■ Timeout waiting for STATUS message ■ Call state mismatch on STATUS ENQUIRY procedure ■ UNI timer expired <p>— AOMRJ — The OPS receives a failure from an IWG that found a timeout during UNI signaling or other unexpected events.</p>
autoplex or 5ess (for MSC)	<p>AUTOPLEX MSC (Mobile Switching Center) 5ESS messages, F6234:</p> <ul style="list-style-type: none"> ■ MDII. Machine Detected Interoffice Irregularity. Reports interoffice irregularities that occur on trunks during a call setup ■ AUTH FAILURE. Authentication failure. This can be multiple reasons. Of particular interest for wireless providers is an increase in the number of these messages, which suggests there is a cell border problem. ■ CELL CP FAILURE. Cell call processing failure. This can result from 29 unique reasons (for which we assign 29 different FDCs), such as radio failures, encoder failures, vocoder mismatch, T-1 problems, TDM bus problems, glare (a mobile tried to originate a call when it was still marked as busy), and failed hand-offs. ■ DCS CP FAILURE. Digital cellular switch call processing failure. This message reports call processing timeouts at the executive cellular processor (ECP) while waiting for a tone or announcement acknowledgment from the DCS. ■ GENERAL SYSTEM CP FAILURE. General systems call processing failure. This message can be generated for 12 reasons (for which we assign 12 different FDCs), such as no inter-MSC response, no VCA response, or database failure. <p>Reference To interpret AUTOPLEX CIMs, see the <i>AUTOPLEX Output Messages Manual</i>.</p>

Conversion (CFIM retype)	CIMs
dms-mtx	<p>Nortel DMS MTX (Mobile Switching Exchange) MSC (Mobile Switching Center)(F6276) The same Nortel DMS logs listed below, MINUS LINExxx, PLUS the following:</p> <ul style="list-style-type: none"> ■ CELLxxx. Information about cellular systems and calls. (CELL1XX are for failed cell calls. CELL2XX are for testing cell calls. CELL3XX are for manual cell calls). ■ CLFLxxx. Call failures or events involving mobile units. ■ DROPxxx. Dropped cellular calls.
dms	<p>DMS logs for DMS 100, 200, 250, and 500. (xxx means three digits)</p> <ul style="list-style-type: none"> ■ C7UPxxx. CCS7 User Part messages. ■ LINExxx. In-band call setup failures on an incoming line. ■ TRKxxx. Trunk messages about in-band call setup failures. ■ TCAPxxx. Transaction Capabilities Application Part - database query problems to an SCP. (Feature 6109.) ■ LNP300 to LNP303 and TCAP100. Five log messages for DMS local number portability (LNP), F6130.
ewsd	<p>Siemens EWSD trapped output masks (F6171):</p> <ul style="list-style-type: none"> ■ 03832, trapped machine interoffice irregularity status (non-toll interoffice failure alarm levels). ■ 03833, trapped machine interoffice irregularity status (non-toll interoffice failures). ■ 02047, irregularity trap (for equal access toll call alarm levels). ■ 04393, irregularity trap (for equal access toll calls).
succ	<p>DMS Logs. Nortel Succession NS02 (F6272), same as dms, but enhanced to include ATM data.</p>
(any from GeoProbe)	<p>Geoprobe CDRs. Call detail records (mostly about SS7 problems) from any switch monitored by a GeoProbe mediation system (F6272).</p>
axe 10	<p>BILLDATS CDRs. Ericsson AXE 10 CDRs from a BILLDATS (not including TRADO messages), F6186.</p>
axe10	<p>AXE TRADO messages. Ericsson AXE 10 switches, not from BILLDATS, F6313.</p> <p>Note The system does NOT keep these CIMs.</p>
softsw	<p>BILLDATS CDRs. Call detail records from a BILLDATS (F6314).</p> <p>Note The system does NOT keep these CIMs.</p>

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Conversion (CFIM retype)	CIMs
ip	<p>IPDR (CDRs). Call detail records from possibly ANY mediation system that creates IPDRs (F6305).</p> <p>Note The system does NOT keep these CIMs.</p>
ccc (consultant added CDR conversion)	<p>CDRs. Probably CDRs from BILLDATs.</p> <p>Note The system does NOT keep these CIMs.</p>

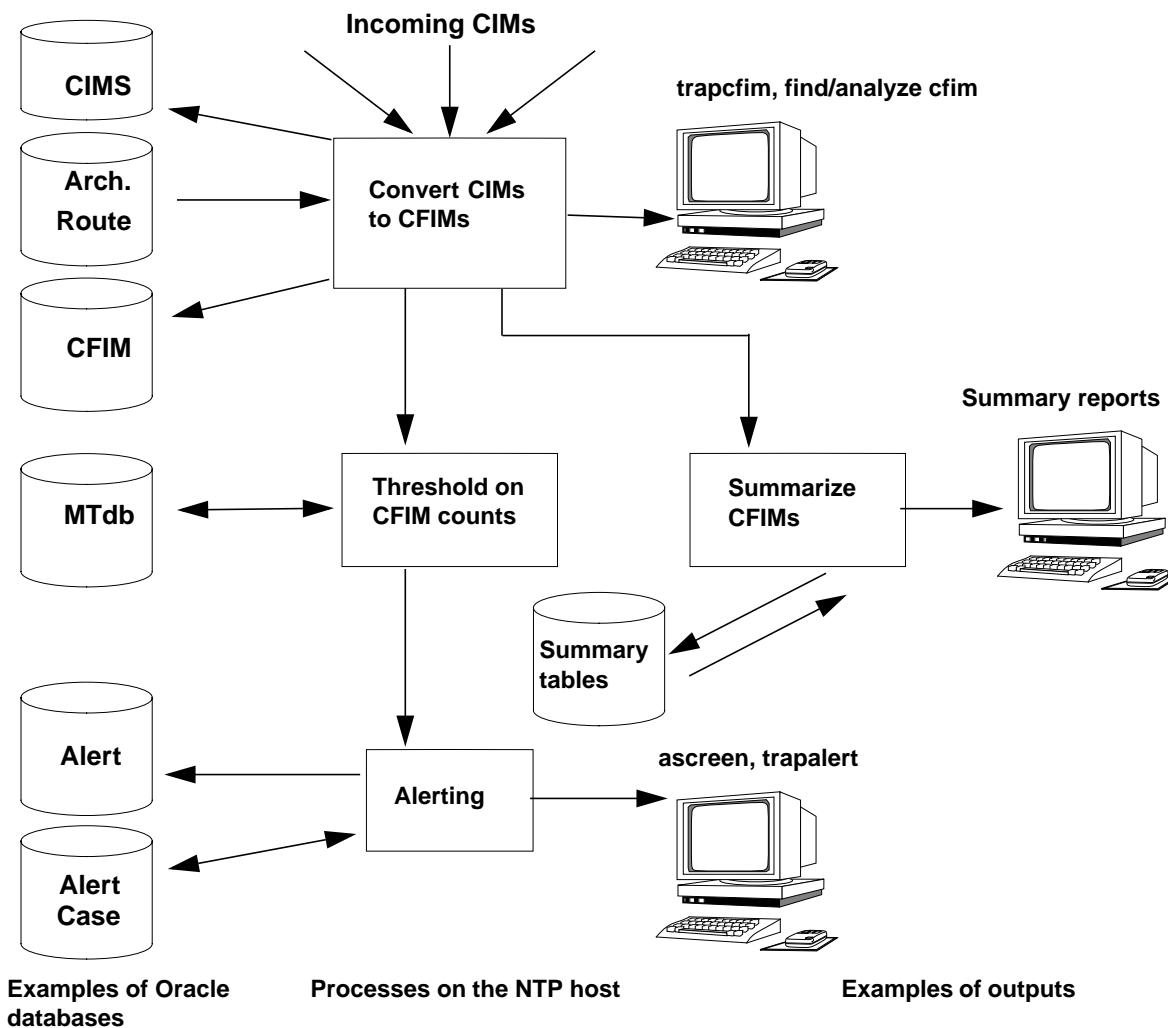
a. OTR TOPS LNP F6223 is not to be confused with the regular DMS LNPO, F6130, which collects logs: LNP300-LNP303, and TCAP100.

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System Backbone and Processes

System backbone

This flow diagram shows major NTP functions in the center. Some Oracle databases are shown on the left and some system outputs are shown on the right.



Note

Summary reports are available only if additional traffic analysis is implemented for your system.

(Continued on next page)

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System Backbone and Processes (Continued)

Summary of system backbone processes

These points summarize the processes illustrated in "[System Backbone and Processes](#)" on page 2-23.

■ Converting

- The CFIM conversion and storage subsystem collects CIMs from the Re's of the network under analysis.
- The CIMs are converted into CFIMs by application of the conversion algorithms against fields in the CIM and by use of the reference data in the database.
- The CFIMs are stored in the database.

■ Thresholding and alerting

- Counts of Re and FDC (final disposition code) combinations, or other combinations, are forwarded to the thresholding and alerting subsystem (if you use basic alerting). Call volume counts per Re are forwarded to the thresholding and alerting subsystem (if additional traffic analysis is implemented for your system).
- The thresholding and alerting subsystem and compares the counts against thresholds.
- Periodically, the threshold crossings are fed into the alert algorithm in order to generate alerts, to correlate into the trouble-tracking Alert CASE (ACASE) records.

■ Reporting

- CFIMs are summarized, typically by call volume per Re, and can be viewed as summary reports (if additional traffic analysis is implemented for your system).
-

Entity Roles

Roles and architecture

As system administrator, you deal with network “architecture” as seen by NTP. You need to understand how various entities may play different roles as:

- Reporting entity (Re)
- Distant entity (De)
- Reporting STP
- Distant STP
- Related entity

Point of view

To understand these terms, you must use the Re’s point of view.

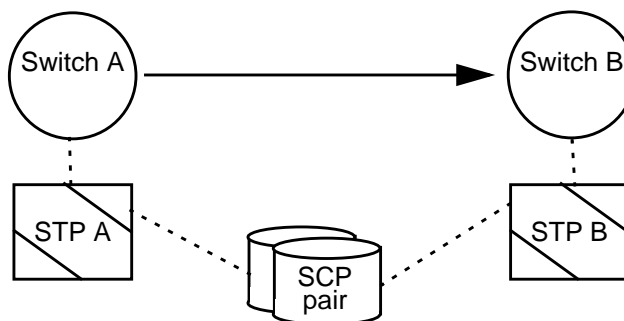
Often the Re is the call originating entity, and the De is the call destination entity, but that is not always the case.

Examples

See the following two diagrams and the accompanying scenarios.

Diagram 1

Use this diagram with the next Scenarios 1 through 3.



(Continued on next page)

Entity Roles (Continued)

Scenario 1

Switch A attempts to reach switch B and encounters an NCA (no circuit available) condition. Find/Analyze Cfm output shows the following:

Reporting entity	Home entity's STP	Distant entity's STP	Distant entity	Call direction	Related entity	Related direction
Re	Rs	Ds	De	D	Related	R
Switch A	STP A*	STP B*	Switch B	O	—	—

Scenario 2

Switch A attempts to reach the SCP pair and gets a timeout. Find/Analyze Cfm output shows the following:

Reporting entity	Home entity's STP	Distant entity's STP	Distant entity	Call direction	Related entity	Related direction
Re	Rs	Ds	De	D	Related	R
Switch A	STP A*	STP B*	the SCP pair	O	—	—

Scenario 3

Switch A misrouted information to switch B, and switch B issued a vacant code message. Find/Analyze Cfm output shows the following.

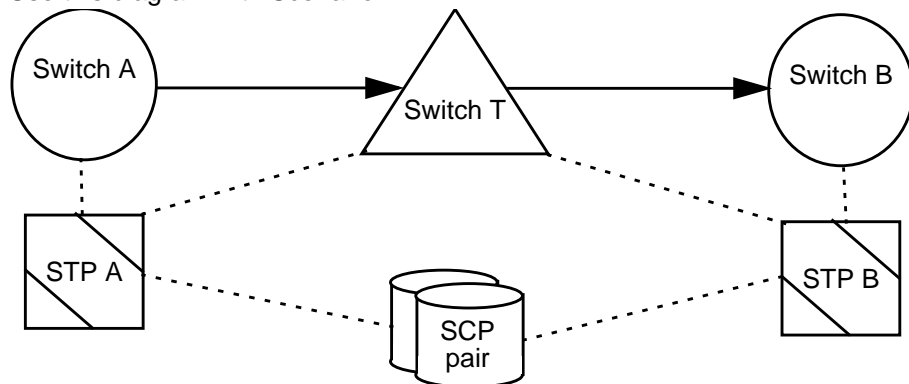
Reporting entity	Home entity's STP	Distant entity's STP	Distant entity	Call direction	Related entity	Related direction
Re	Rs	Ds	De	D	Related	R
Switch B	STP B*	STP A*	Switch A	I	—	—

(Continued on next page)

Entity Roles (Continued)

Diagram 2

Use this diagram with Scenario 4.



Scenario 4

Switch A attempts to reach switch B via tandem switch T. Switch T encounters a no circuit available condition. Find/Analyze Cfm output shows the following:

Reporting entity	Home entity's STP	Distant entity's STP	Distant entity	Call direction	Related entity	Related direction
Re	Rs	Ds	De	D	Related	R
Switch T	STP A*	STP B*	Switch B	o	Switch A	I

Note

STP A*, STP B*. In all four scenarios, STP A* and STP B* mean the STP would be reported IF the FDC indicates a signaling problem.

Files and Databases

Overview

Background

NTP and its data reside as a collection of files in a single file system, the location of which is specified at install time.

Default NTP home directory

The default NTP home directory is `/lucent/ntp`, although other customized locations are possible.

The NTP directory tree includes executable files, ASCII data files, and binary database files:

- Files
 - Hold NTP software and some reference data.
 - Are viewed and manipulated with shell-type commands, such as **vi**, **cat**, **mv**, **cp**, and **del**.
 - Are organized into directories, which you can visit by using the **cd** command.
 - Databases
 - Hold surveillance data and most reference data.
 - Are viewed and manipulated with Oracle database commands and **dbedit**.
 - Are not organized into directories.
-

Oracle Databases

Purpose

Database storage makes possible quick and easy manipulation of data, including:

- Reference data, such as thresholds and network architecture
- Surveillance data, such as CFIMs and alert cases

Note

- **Terms.** In the GUI, you see databases called “system tables” and “user files.” While a database can be thought of as a table, calling a database a file could cause confusion, since files and databases are two different ways to store data.
- **Oracle release.** NTP uses Oracle software release 8i (currently 8.1.6), also called Oracle Enterprise Edition Release.

Reference

Database tables are explained in the following places:

Reference	Explains
Chapter 4, "Reference Data Tables"	How to use tables, including how to: <ul style="list-style-type: none"> ■ Use the describe command to get table explanations. ■ Use the dbedit command to add, modify, or delete records. ■ Audit tables.
Chapter 5, "Add Network Elements"	How to accomplish tasks that require adding, modifying or deleting records, including: <ul style="list-style-type: none"> ■ Adding a switch. ■ Adding an FDC.
Appendix A, "Reference Database Tables"	All reference tables and their fields. These are used primarily by system administrators.
Appendix A, Surveillance Database Tables, in the <i>GUI User's Guide</i> .	All surveillance tables and their fields. These are used primarily by network analysts.

Application Directory Structure

Application environment variables

NTP defines variables for many of the file systems and directories described here. These variables are available in the user environments of some logins (such as **ntp**) created when the system is installed. The tables in this section list the variable names as well as the file system and directory names to which the variables correspond.

Application environment variables in documentation

- **Input.** Throughout the user documentation, NTP environment variables are shown in pathnames and command lines. This is because the NTP home may be installed at a location different from the default (see \$APPLROOT/snas and \$SNASDIR in "[Application directories](#)" on page 2-32).

In almost all cases where input is required, you can enter either the actual path or the appropriate variable. For example, if your installation uses the default of /lucent/ntp/snas for the NTP home, you can change to the /lucent/ntp/snas directory by entering either of the following:

```
cd /lucent/ntp/snas
cd $SNASDIR
```

Regardless of the location of the NTP home for your installation, you can change to the NTP home directory by entering **cd \$SNASDIR**.

- **Output.** Examples of output throughout this documentation assume that the NTP home is /lucent/ntp/snas.

Note

System variables. When NTP is installed, in addition to the environment variables described above, another set of variables, called system variables, is defined. Most of the system variables affect thresholding.

To see a complete list of system variables, see "[System Variable Defaults](#)" on page 8-83 and "[System Variable Definition](#)" on page 8-87. For more information about the variables affecting thresholding, see "[System Variables for Basic Thresholding](#)" on page 8-8.

Application Directory Structure (Continued)

File systems

This table describes the file systems on the NTP host that are unique to NTP and lists their associated environment variables.

Note

Other file systems that are not unique to NTP may contain files and directories necessary to NTP.

File system	Description	Application environment variable
/lucent/ntp	Contains NTP software and database tables. See " Application directories " on page 2-32. Note This file system is created by NTP installation scripts to hold NTP software.	\$APPLROOT
/dump	Contains crash dumps for operating system panics, if configured.	-
/home	Contains the home directories of all NTP user accounts (but not the \$APPLOWNER account).	-
/netapp	The root directory for the Network Appliance disk array. Contains netapp configuration files. Note (Applicable only for systems with the Network Appliance disk array.)	-

(Continued on next page)

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Application Directory Structure (Continued)

Application directories

This table describes the directories under \$APPLROOT (see ["File systems" on page 2-31](#)).

Directory under \$APPLROOT	Description	Environment variable
/snas (default)	Contains subdirectories for NTP programs and shell scripts (see "snas directory" on page 2-33). Also known as the NTP "application home". The directory path for your installation may differ, but the \$SNASDIR environment variable always refers to the application home in \$APPLROOT/snas.	\$SNASDIR (also \$APPLHOME)
/dbf	Contains binary database files that comprise the various tablespaces used by the Oracle database. These files are often as large as 1 GByte each, and up to hundreds of GBytes collectively (depending on the system). Also contains views used for generating custom reports. Reference See Chapter , "Monitor Oracle Database Size" for information on preventing this directory from growing too large.	-
/exsi	Contains any data received from external interfaces.	\$SNASEXSI
/logdat	Contains error and event logging files.	\$LOGDATA
/mtdb	Contains Mean-Threshold record base files used by thresholding and alerting algorithms.	\$MTDB_DIR
/oracle	Contains the installed base of Oracle RDBMS executables and non-application specific files.	\$ORACLE_HOME
/oraexport	Used for importing and exporting Oracle tables.	\$ORAEXPORT
/oralogs	Contains Oracle error log files.	\$ORALOGS
/restore	Contains a list of files backed up with the applbackup utility (see Appendix D, "Application Backup and Recovery"). Also stores data preserved during installation and debugging.	\$RESTORE
/rpt	This directory is allocated for customer use.	-
/TimesTen37	Main memory database used for internal processing.	-
.snapshot	Used by the NetApp device as a replacement for disk mirroring (only for systems with NetApp).	-

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Application Directory Structure (Continued)

snas directory

This table describes the most important directories under the \$SNASDIR directory (see \$SNASDIR in "[Application directories](#)" on page 2-32):

Directory under \$SNASDIR	Description	Environment variable
/appl	Subdirectory for NTP-specific files and executables. Contains data which does not change after an installation (other than patches).	\$APPLDIR
/appl/admetc	Contains imp_db, imp_ws, and refClean scripts.	-
/appl/bin	Contains utilities made public to you via the shell-level interface. These include sui (shell user interface), dbedit , add_ntpuser , del_ntpuser , archive , etc.	\$APPLBIN
/appl/bin/ntpstart	Not a directory, but a command script for starting NTP.	\$STARTUPCMD
/appl/bin/ntpstop	Not a directory, but a command script for stopping NTP.	\$SHUTDOWNCMD
/appl/db	Contains SQL scripts to create, maintain, and rebuild the Oracle database.	-
/appl/db/init /appl/db/init/sql /appl/db/init/params	Contains SQL scripts required to initialize the product after an installation.	-
/appl/db/reports	Contains SQL scripts and wrappers for canned reports (for example, custprt).	-
/appl/db/schema	Contains scripts required during installation to create the database schema and prepopulate tables.	\$SCHEMA_DIR
/appl/db/support	Contains SQL scripts intended for use by your NTP support organization to debug or study the system.	-
/appl/etc	Contains scripts used by the operating system cron utility and scripts intended for use by your NTP support organization.	\$APPLETC
/appl/exsi	Contains files used in external database interfacing.	-
/appl/frames	Contains user interface files.	-
/appl/help	Contains fdc help files	-
/appl/init	Contains non-database related initialization files.	-
/appl/init/conv	Contains converter initialization files.	-
/appl/log	Contains the logger configuration files.	\$LOGROOT

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Directory under \$SNASDIR	Description	Environment variable
/appl/Terminfo	Contains NTP-specific terminal capability configurations.	-
/bin	Contains operating system commands and NTP scripts.	-
/control	Contains Oracle control files.	-
/lib	CSL color map definitions.	-
/model	Contains models or templates of files which you customize. The subdirectory structure closely follows that of the user subdirectories in order to allow NTP to first search a user directory and, if necessary, default to the corresponding model directory.	\$MODELDIR
/model/lsp	Contains MTDB (thresholding) initialization files (MTdbList.*) required for new initializations, and the LSP configuration model file (lsp.config). Both of these can be conditionally installed in /mtdb or \$USERDIR/lsp, respectively.	-
/model/misc	Contains miscellaneous templates not covered by the other subdirectories under the model directory, including cron model files.	-
/model/printer	Contains printer templates for various local printers.	-
/model/fdchelp	Contains the source for the fdchelp RDBMS table (for example, the <i>4ESS FHC Handbook</i>).	-
/model/run	Contains a template of the initialization file.	-
/snas	The home directory for NTP.	\$HOME
/user	Contains user data managed by the NTP system administrator. This is where the restricted shell command set resides.	\$USERDIR
/user/ subdirectories	Replicates the subdirectories under the model directory. For example, user/lsp, where lsp.config is conditionally installed.	-
/user/printer	Contains printer interface scripts, one for each printer set up for your system.	-
/user/uprog	(Legacy interfaces only.) Contains the customer-specific programs accessed by the uprog command	-
/user/reports /user/reports/scripts /user/reports/output	Contains customer created reports. The scripts subdirectory holds scripts necessary to execute a report. The output subdirectory holds output from automatically run reports.	-

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Directory under \$SNASDIR	Description	Environment variable
/user/univ	Contains filter scripts for native CIMS (NCIMS) associated with the universal interface (see "NCIMS And Filters" on page 16-6.)	-
/work	Contains data created and managed by NTP while it is running (including the RDBMS).	\$WORKDIR
/work/misc	Holds miscellaneous NTP output.	-
/work/reports	Contains output from automatic performance and utilization reports.	-
/work/boot /work/run	The boot and autonomous process run directories are created here as needed by the initialization process. Also, initialization output and other created files are created here. Trace output files are placed in subdirectories here. The BOOTLOG and INITLOG files are very useful for watching NTP initialization and basic status.	-
/work/tmp	Temporary files created while NTP is running are created here. This directory is automatically cleaned out as part of NTP startup.	-

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Application Software Files

Purpose

Application software is what runs NTP.

Procedure: Find your software release

If you call your NTP support organization with a problem, they may need you to tell them your NTP release. To get this information, log on the NTP host, enter **cat \$SNASDIR/Release**, and read the text that appears on your screen.

Your screen may also list additional information about the last installation, such as any patch software installed or an operating system upgrade.

HP maintenance releases

If you want to install an HP maintenance release on your NTP host machine, consult your NTP support organization before you install it.

Software loads

When you receive Lucent Technologies software or any other type of software from any vendor, please call your NTP support organization before you install it on the NTP host machine.

Caution

We do not recommend that you load any software unless you first check with your NTP support organization.

CIM Data

Overview

NTP converts raw CIM into CFIMs. CIM data is stored in text fields in the cim database table. CIM data is useful for viewing fields not converted into a CFIM.

Note

In the G7 release and earlier, CIMs were stored in special files. Since the G8 release, CIMs have been stored in database files and handled just like any other chronological data with regard to backup and recovery, performance, access, and administration.

Reference

For information about CIM I/O, see ["Thresholds" on page 2-17](#) and [Chapter 14, "CIM Source Administration"](#).

CIM storage

Because CIM data takes a lot of storage space, by default CIMs are stored for a shorter length of time than CFIMs.

Note

When your system is installed, your NTP support organization will likely customize the length of time CIMs are stored on your system.

Administrative Tools and Routine Tasks

Overview

Purpose

The section is a cross-reference that identifies system administration tools you use and tasks you routinely perform, and tells where they are documented.

- ["Administration Tools" on page 2-39](#) describes the types of NTP commands you use for administrative tasks.
 - The following sections break down tasks by general type:
 - ["System-Level Tasks" on page 2-40](#)
 - ["User-Related Tasks" on page 2-41](#)
 - ["Tasks Affecting Output" on page 2-43](#)
-

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Administration Tools

Overview

System administration tools include two groups of commands.

- Standard operating system shell commands
- NTP commands, which are either:
 - SUI commands
 - Other (non-SUI) commands

SUI commands

Some NTP commands run from the operating system shell must be preceded by **sui**, as in: **sui find source=dbname**

Note

These commands are the same set available through the legacy AUI. The X-GUI, and now BB-GUI functionality supersedes these commands for end users. The BB-GUI functionality supersedes these commands for end users. System administrators may still, as in the past, use the command line for **sui** commands.

Reference

See [Appendix B, "SUI Commands"](#) for information on the various **sui** commands.

Non-SUI commands

Some NTP administrative commands run from the operating system shell, do NOT require **sui**, such as **add_ntpuser** or **dbedit**.

Note

Historically, these commands have never been available through end-user interfaces.

Reference

Non-SUI NTP commands are discussed as needed in procedures in various sections of this book. See the index to find the location of information on a particular command.

System-Level Tasks

Purpose

This table lists tasks that may require touching hardware, installing end-user software, or monitoring NTP.

Task	Use	References
Backup and restore	<ul style="list-style-type: none"> ■ Host computer's backup and restore ■ Daily archive of surveillance data (arcwrite and arcrestore commands) 	<ul style="list-style-type: none"> ■ Appendix D, "Application Backup and Recovery" ■ Chapter 10, "Archive and Retrieve Surveillance Data"
Install client software Install and configure for BB-GUI and Pattern Painter users.	Installation CD-ROMs or web-based installation files	<ul style="list-style-type: none"> ■ "Install Client Software for the BB-GUI" on page 6-48 ■ "Uninstall Client Software for the BB-GUI" on page 6-67
Sources Manage links to sources: <ul style="list-style-type: none"> ■ TSMs (5ESS, 1A ESS, or DMS switches) ■ CPs (4ESS switches) ■ Other sources 	<ul style="list-style-type: none"> ■ TSM menus ■ CP commands 	<ul style="list-style-type: none"> ■ Chapter C, "Set Up OneVision NFM" ■ CP Administration and O&M ■ Chapter 14, "CIM Source Administration"
Monitor the system	System logs	Chapter 11, "Routine Monitoring" (see the table in "Overview" on page 11-3)
Monitor reference data synchronization (only if F6214, refsynch, is used)	Commands, output, and dbedit procedures associated with RDS utilities	"RDS task overview" on page 15-5

User-Related Tasks

Purpose This table lists tasks affecting users (both analysts and administrative users).

Task	Use	Reference
Users, add or remove <ul style="list-style-type: none"> ■ NTP host user logins ■ BB-GUI administrator and user IDs 	<ul style="list-style-type: none"> ■ add_ntpuser and del_ntpuser commands ■ Web User Administration and Web User Information pages 	<ul style="list-style-type: none"> ■ Chapter , "Add and Delete NTP Users" ■ "Add and Delete BB-GUI Users" on page 6-29
Commands available to persons in restricted shell	link or copy commands to \$USERDIR/rbin	"Manage Restricted Shell" on page 7-58
BB-GUI , customize <ul style="list-style-type: none"> ■ Table layouts and saved searches ■ BB-GUI attributes ■ Links to customer-defined information on local practices 	<ul style="list-style-type: none"> ■ BB-GUI interface ■ Assistance from your NTP support organization ■ files in \$APPLROOT/wgui/html/info/en 	<ul style="list-style-type: none"> ■ "Create BB-GUI System Table Layouts and Saved Searches" on page 9-4 ■ "Customize BB-GUI Attributes" on page 9-5 ■ "Maintain Local Support Links" on page 9-7
Pattern Painter, customize displays	dbedit pptemplate, pptempmap_fdc, and pptemp_columns	"Customize Pattern Painter Displays" on page 9-8
X-GUI menus , set which database tables are listed on users' menus	dbedit on menutables	"Set X-GUI Table Name Display" on page 7-55
cron , give restricted cron	shell references	"Restrict user cron access" on page 7-61
Command groups , define, and assign to set which commands appear on a user's AUI and X-GUI	<ul style="list-style-type: none"> ■ dbedit of cmdgroup and cmdgroupmap tables ■ mod_cmdgrp command 	<ul style="list-style-type: none"> ■ "List command groups" on page 7-9 ■ "Define Command Groups" on page 7-10 ■ "Assign Users to Command Groups" on page 7-13
FDC groups , define, assign users to, change user assignment, and give users permission to switch among groups — see "Tasks Affecting Output" on page 2-43 .		

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Task	Use	Reference
FDC help text , add or modify	dbedit on fdchelp table	"Edit FDC Help Text" on page 9-14
Network group or segment , define, assign users to, change user assignment, and give user permission to switch among groups — see "Tasks Affecting Output" on page 2-43.		
Defaults for all users (such as fields on SUI output) that are set by environment variables.	admset command	"Manage User Environment Variables" on page 7-36
CDRs , reprocess	cccmanager utility	"Reprocess CDRs" on page 11-32

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Tasks Affecting Output

Purpose This table lists tasks affecting output, including GUI data, error logs, and system console.

Output affected	Task	Method	Reference
(On error log and system console)	Error log threshold. Threshold for sending message to error log and system console.	setsys to change mtdb_errlog	"Types of Basic Thresholding" on page 8-6
All	<ul style="list-style-type: none"> ■ Databases. Keeping reference databases up to date, including: ■ Owners, entity types, signaling, domains, signaling networks, service types, and so on. ■ Switches and other entities in the architecture tables ■ Digit-based and trunk group routing in the routing tables ■ Call final disposition in the fdc table and fdc translation tables ■ Customers in the customer tables. <p>Also perform database audits to ensure consistency.</p>		<ul style="list-style-type: none"> ■ Chapter 4, "Reference Data Tables" ■ Chapter 5, "Add Network Elements"
Find/ Analyze Cfim	<p>Check Rt field. It may often need updating. For 4ESS only.</p> <p>Note Rt field is always "-" if you have no 4ESS Re's.</p>	dbedit de2route, rarely rtarch too.	"Correct wrong or missing Rt values" on page 5-41
Ascreen	Non-busy alert case expiration. Set when non-busy alert cases expire.	setsys to change AC_CLOSE1	"Types of Basic Thresholding" on page 8-6
	Busy alert case expiration. Set when busy alert cases expire	setsys to change AC_CLOSE2	
	Define busy alert cases. Set CFIM count that determines if NTP calls an alert case busy (for expiration).	setsys to change AC_COUNT11	
	Threshold. Adjust automatic thresholding for alert cases.	setsys to change AUTO1 to AUTO15	
	Link failure.	setsys to change lf1 and lf2	

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Output affected	Task	Method	Reference
	5-minute threshold. 5-minute threshold for each of 15 load set periods. (Classic alerting only.)	setsys to change MIN_5_THR1 to MIN_5_THR15	
	Hourly threshold. Hourly threshold for each of 15 load set periods. (Classic alerting only.)	setsys to change MINH_THR1 to MINH_THR15	
	Threshold sensitivity factor. Adjust how big of “bumps” will move automatic threshold. (Classic alerting only.)	setsys to change SF	
	System day default. Change system day default threshold.	setsys to change SD_DEFAULT	
	System day reset. Select time of day that system day count is reset to 0.	setsys to change SYSTEM_RESET	
	System day expiration. Set when system day alert cases expire	setsys to change AC_COUNT_CD	
	System day threshold. Tune system day threshold	setsys to change ALERT_TOLERANCE	
	Weight factors. Assign values to thresholding weight factors.	setsys to change WF1 to WF15	

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Output affected	Task	Method	Reference
Ascreen, Trapalert	<p>FDC groups. Determine which a user sees.</p> <ul style="list-style-type: none"> ■ Define an FDC group ■ Assign one or some to a user, or grant all 	<ul style="list-style-type: none"> ■ dbedit fdcgroup and fdcgroupmap tables ■ Web User Information page (BB-GUI) ■ mod_fdcgrp command ■ dbedit fdcpermit table 	<ul style="list-style-type: none"> ■ "List FDC groups" on page 7-16 ■ "Define FDC Groups" on page 7-17 ■ "Assign Users to FDC Groups" on page 7-20
	<p>Network groups, segments. Determine which a user sees</p> <ul style="list-style-type: none"> ■ Define a group, segment ■ Assign one or some to a user, or grant all 	<ul style="list-style-type: none"> ■ dbedit netgroup, netgroupmap, netseg, and netsegmap tables ■ Web User Information page (BB-GUI) ■ mod_netgrp command ■ dbedit netpermit table 	<ul style="list-style-type: none"> ■ "List network segments and groups" on page 7-26 ■ "Define Network Groups and Segments" on page 7-27 ■ "Assign Users to Network Groups and Segments" on page 7-32
	Thresholds for alert cases	thresh command	Chapter 8, "Thresholding and Alerting"
Find Linkalert	<p>CP-host last message time. Number of ZM intervals allowed to occur before NTP generates a Link Alert message</p>	setsys to change ZM	Chapter 8, "Thresholding and Alerting"

Output affected	Task	Method	Reference
MCAscreen	Screen FDCs. Eliminate CIMs with specific FDCs from being counted for mass call alerts.	dbedit on Mc field of fdc table	<ul style="list-style-type: none"> ■ Output, see Chapter 5 of the <i>X-GUI User's Guide</i> or <i>BB-GUI User's Guide</i>. ■ Mc field, ""mc" on page A-53
	Threshold. Change the threshold that triggers a mass call alert.	setsys to change mcathresh	<ul style="list-style-type: none"> ■ MCAscreen, see Chapter 5 of the <i>BB-GUI User's Guide</i> or <i>X-GUI User's Guide</i> ■ setsys and mcathresh, see "Types of Basic Thresholding" on page 8-6

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Overview

Purpose

This chapter tells how to:

- Verify whether the NTP application software is running
- Start and stop the NTP application software on the NTP host
- Start and stop the Oracle software on the NTP host
- Verify whether the browser-based GUI (BB-GUI) is running
- Start and stop the BB-GUI

This chapter also discusses two things you must be aware of if you start and stop:

- System time
- Cron

Reference

NOT in this chapter are:

- **Start and stop the host.** For how to start and stop the NTP host computer, see the vendor documentation for your platform.
 - **Monitor starts and stops.** For how to monitor NTP startup and shutdown to see if surveillance data was lost due to unscheduled shutdowns, see "[Monitor NTP Startup and Shutdown](#)" on page 11-11.
-

Verify Run Status

Verify NTP Run Status

Overview The NTP software and the Oracle database must both be running for NTP to function. The **runstat** command verifies the NTP run status.

runstat command

Syntax

runstat

There are no options or arguments for this command.

Procedure: Verify that NTP is running

To verify that the host-based NTP software and Oracle database are running, enter **runstat** and check the output.

- **Oracle and NTP running.** The following output from the **runstat** command shows that the Oracle database and the NTP software are both running (where *application* is NTP):

```
The Oracle RDBMS is running
The application initialization of boot processes is running
The application initialization of autonomous processes is running
The application software is running
```

- **Oracle running but NTP down.** If NTP is not running, **runstat** output includes the following lines:

```
The application initialization of autonomous processes is not
running
The application software is not running
```

- **Oracle and NTP down.** If the Oracle database and NTP are both down, **runstat** output contains the following lines:

```
The system is unavailable. Please see your System Administrator.
```

If runstat fails

NTP has a monthly log files that track manual and automatic system startups and shutdowns. The system also logs more detailed startup and shutdown information for NTP, Oracle, and operating system processesNTP, Oracle, operating system, and CP processes (if your system uses a CP source). If **runstat** fails, these logs can provide system status information. See ["Monitor NTP Startup and Shutdown" on page 11-11](#). We recommend you check these logs before contacting your NTP support organization for software problems.

Verify BB-GUI Run Status

Overview The **wgui_stat** command verifies the run status of the BB-GUI software and associated web server processes

wgui_stat command **Syntax**
wgui_stat

There are no options or arguments for this command.

Procedure: Verify BB-GUI run status Use this procedure to verify the run status of the BB-GUI.

Step	Action
1	Enter wgui_stat
2	<p>Enter the root password at the following prompt: You must be root to run this command. Enter the root passwd when prompted. Password:</p> <p>Response You see output resembling the following. The page server process listing reflects activities of BB-GUI users.</p> <pre>OSagent process is running Gatekeeper process is running Stronghold process is running LDAP server is running BBGUI manager is running BBGUI times is running Page server processes are running: drb FindServer wrb AlertCasesServer henson FindServer NOTE: this is a list of running servers</pre>
Done	

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who and whoall Commands

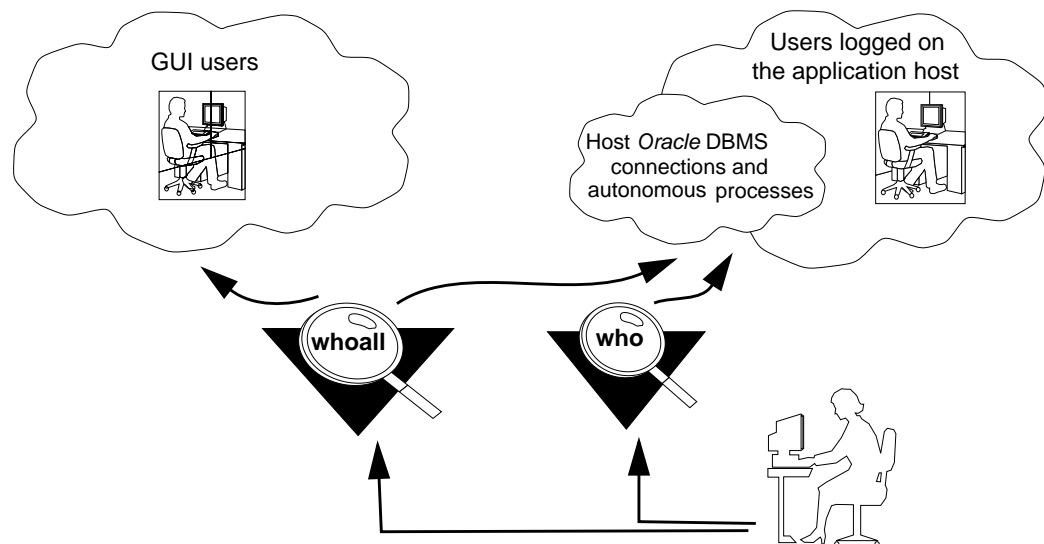
Purpose

Before you stop the NTP system, you need to know who is logged on so they can be warned that the system will be stopped. You can display a list of user accounts that are currently logged on via of the following commands:

- **who** — operating system command, lists by login name users logged on the application host.
- **whoall** — NTP command, lists users on remote workstations connected to NTP via the Oracle DBMS.

Illustration

This illustration shows the difference between **who** and **whoall** commands.



who command

The operating system **who** command lists only users logged directly on the NTP host. It does NOT show users logged into the GUI.

Reference

See the output of the operating system **man who** command for details.

(Continued on next page)

who and whoall Commands (Continued)

whoall command The **whoall** command lists users logged directly on the NTP host computer AND users on remote workstations connected to the NTP host via the Oracle DBMS.

Syntax

whoall [-r -s]

Parameter	Description
-r	Shows only users on remote machines
-s	Displays all accounts, including system logins and autonomous processes

Run the **whoall** command with no options to list all **ntp** login sessions.

Example

The following is an example of **whoall** output:

```

USER          MACHINE                PROCESS STATUS
kmc           antler                  2551 INACTIVE
kmc           antler                  2556 ACTIVE

```

The **USER** column shows the user logins. The **MACHINE** column shows the machine the user session is running on. **PROCESS** is the operating system process ID on the host machine. **STATUS** indicates whether the session is actively performing a database operation, such as a **sui find** command.

Start

Start NTP

Overview

There are several aspects of the system that users may wish to start.

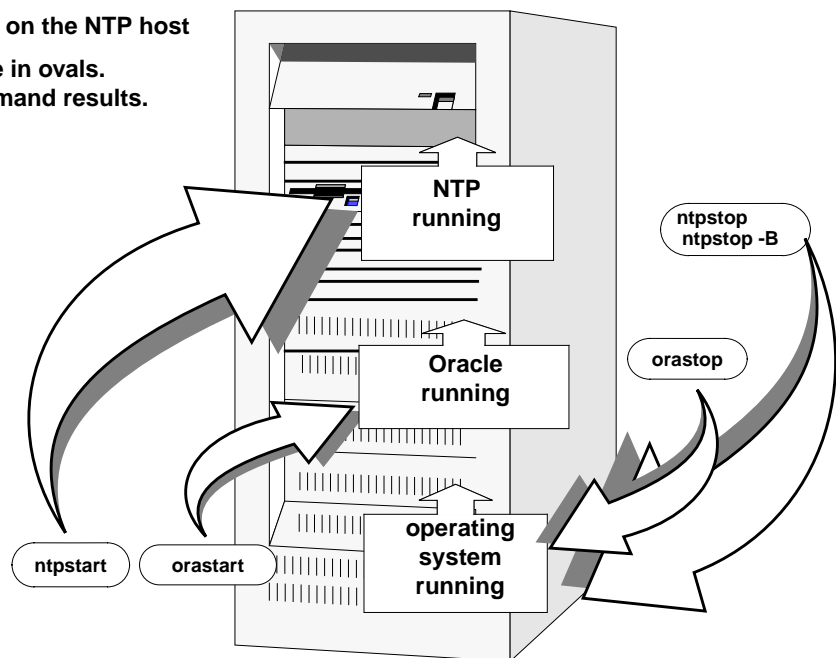
- Host-based NTP application software that resides on the NTP host
- Host-based Oracle software

Illustration

This illustration shows startup and shutdown of the Oracle and NTP application software on the NTP host:

Startup and shutdown on the NTP host

Commands are in ovals.
Arrows show command results.



ntpstart command

The **ntpstart** command starts the NTP software running on the host computer.

Syntax

ntpstart

There are no options or arguments for this command.

Start the Host-Based NTP Software

Procedure: Start host-based NTP software Use this procedure to start the host-based NTP software:

Step	Action
1	Log on the NTP host as ntp . (You must be logged on as ntp to proceed.)
2	Enter ntpstart
3	Enter runstat to verify that the system is running. Reference See " Verify that NTP is running " on page 3-4 for information on runstat .
Done.	

If ntpstart fails

If output from the **runstat** command still shows the software as down within a couple of minutes of running **ntpstart**, look in \$WORKDIR/run/INITLOG to troubleshoot. See "[Monitor NTP Startup and Shutdown](#)" on page 11-11 for more information.

Start the Host-Based Oracle Software

Background

The Oracle software is started by the **ntpstart** command. In the unlikely event that the Oracle software is stopped and the host-based NTP software is still running, the Oracle software can be started with the following procedure.

Procedure: Start host-based Oracle software

Use this procedure to start the host-based Oracle software.

Step	Action
1	Log on the NTP host as ntp . (You must be logged on as ntp to proceed.)
2	Enter ntpstop
3	Enter ntpstart
4	Enter runstat to verify that the system is running. Reference See "Verify that NTP is running" on page 3-4 for information on runstat .
Done.	

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Start the BB-GUI

Background

You can stop and restart the BB-GUI processes while the NTP application software continues to run on the NTP host. The command to start the BB-GUI affects the:

- Web server
- LDAP server
- CORBA processes

wgui_start command

The **wgui_start** command starts the BB-GUI.

Syntax

wgui_start

There are no options or arguments for this command.

Procedure: Start BB-GUI

Use this procedure to start the BB-GUI.

Step	Action
1	Log on the NTP host as ntp . (You must be logged on as ntp to proceed.)
2	Enter wgui_start
3	Enter the root password at the following prompt: You must be root to run this command. Enter the root passwd when prompted. Password:
4	Wait until the system returns the operating system prompt.
5	Enter wgui_stat to verify that the system is running.
	Reference See " Verify BB-GUI Run Status " on page 3-5 for information on wgui_stat .
Done.	

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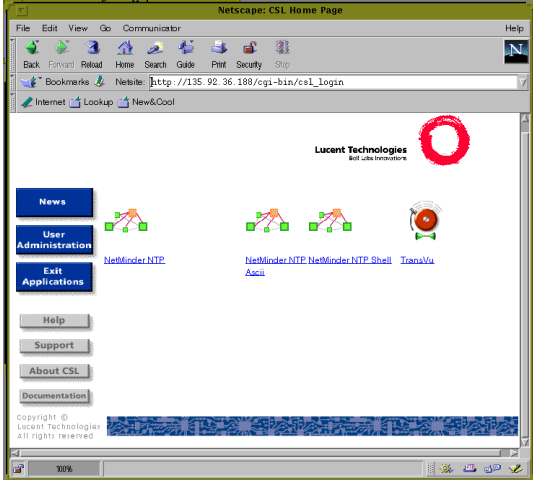
How Users Access the NTP Interface

Access

Users can access NTP by multiple methods. Administration may be necessary depending on the method.

Reference

- For how users start up NTP, see Chapter 3 in the *GUI User's Guide*.
- For how you set up users, so they can start NTP, see [Chapter 6, "Add or Delete Users"](#):

UI	Platform	Method	Note
X-GUI or AUI	Sun or HP workstation running CDE (Common Desktop Environment)	<ul style="list-style-type: none"> ■ Uses menu or icon on workspace. <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; margin: 0;">Workspace Menu</p> <p>Programs</p> <p>Shuffle Up</p> <p>Shuffle Down</p> <p>Refresh</p> <p>Minimize/Restore Front Panel</p> <p>Restart Workspace Manager...</p> <p>Log out...</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; margin: 0;">Programs</p> <p>Go to AUI</p> <p>Go to GUI</p> </div> </div> ■ CSL <div style="text-align: center; margin-top: 10px;">  </div> 	<p>See workstation documents and:</p> <ul style="list-style-type: none"> ■ "Add a workspace item to start the X-GUI" on page 6-75 ■ "CSL User Administration" on page 6-73 <p>Note For G8.1, CSL is supported only on HP platforms.</p>
X-GUI or AUI	From PC	Uses X-term emulation tool (such as Hummingbird Exceed)	See "Set up PC X-emulation tools to start X-GUI" on page 6-76 .

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UI	Platform	Method	Note
AUI on host	From shell on a workstation	Give users a login to shell and tell them to enter au .	-
BB-GUI	From PC, using browser	Administer web server and browser on PC.	Tell the user the URL of the BB-GUI Launch Page.
	From workstation, using browser	Administer web server and browser on workstation.	
SUI	From the operating system command line	Give administrative users a login on the NTP host.	

System administrators

You can start the AUI by logging on directly or remotely to the host and entering **au**.

Or, you can give yourself a separate network analyst GUI login.

Exit

Analysts exit the NTP by using the interface exit feature. See the *GUI User's Guide*.

Reference

For how a network analyst exits the AUI, see the *NTP AUI User's Guide*

Stop

Stop NTP

Purpose

You must stop the NTP application and the Oracle database before you:

- Change system time (see ["Advance system time on the NTP host" on page 3-22](#))
- Install new host hardware, or new host or NTP software
- Reboot the system
- Run diagnostics on host hardware
- Do backups

Before you stop

Before you stop NTP, ask yourself:

- Is anyone logged on? (See ["whoall command" on page 3-7.](#))
- Are you approaching a load-set period (LSP) boundary?
- Are any cron processes running, or about to run? (See ["Cron" on page 3-23.](#))

Side effects

- When NTP stops, all autonomous processes stop and connections to CIM sources (collectors) drop. No users can log on to enter NTP commands.
- Though the Oracle database is an essential part of NTP, you can shut down NTP without shutting down Oracle.
- If the system goes down while users are still logged on, you can expect effects like these:
 - If the database goes down, no commands can be run until it is again available. Commands running when the system goes down immediately terminate.
 - Users cannot run trapcfim or ascreen in update mode.
 - Users cannot run Find/Analyze and get current data, since there is none. If the Oracle database is still running, users can search past data by specifying a time-related field in their search expression.

(Continued on next page)

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Stop NTP (Continued)

Cautions

- Before you stop the Oracle database, stop NTP. Otherwise, NTP will soon fail.
- At a few times in the day, regular system activity takes place, and NTP should not be shut down during these times:

Time	Activity
00:30	File cleanup; administrative report generation
01:00	Remove old news (info) files
23:00-01:00	Processing and generation of nightly performance reports
23:30-02:25	CP sampling rate reports arrive. (The times for these reports to be sent are set on the CP in local time. They may be changed by CP field support.)

- Avoid stopping NTP on a load set period (LSP) boundary (the time when one load set period ends and the next begins) or within an hour after the boundary. Important processing of thresholding and means data takes place just after an LSP completes. Stopping NTP around the change of the LSP can result in damaged processing of the threshold means for that LSP.

To view the LSP settings, enter the following command: **LSP 1 2 3 4 5
6 7 8 9 10 11 12 13 14 15**

Reference

For more information on LSPs and their boundaries, see [Chapter 8, "Thresholding and Alerting"](#).

(Continued on next page)

Stop NTP (Continued)

ntpstop command The **ntpstop** command stops the NTP application software running on the NTP host. When this command is executed, NTP stops for ALL users.

Syntax

ntpstop [-B] [0]

Parameter	Function
-B	(both) Stops both NTP and the Oracle database in 1 minute if both are running. If only the Oracle database is running, stops Oracle in 1 minute.
0	(zero) Stops NTP immediately. With the -B option, stops both NTP and the Oracle database immediately, if both are running, or the Oracle database only, if only Oracle is running.

Example

See the various stop procedures in this section for examples of command usage.

Stop NTP but Not Oracle

Procedure: Stop NTP but NOT the Oracle database Use this procedure to stop the NTP application software only. The host-based Oracle software remains running.

Step	Action
1	Use the whoall command (see " who and whoall Commands " on page 3-6) to see which users are currently logged on the NTP host and to send a broadcast to notify all users that they should log off.
2	Log on the NTP host as ntp . (You must be logged on as ntp to proceed.)
3	<p>Enter ntpstop</p> <p>Response The system displays this message: WARNING: You are about to shut-down the <i>application</i> software!! Continue? [y or n]</p>
4	<p>Enter y</p> <p>Response After the system displays a message similar to this, all autonomous processes are stopped: 08/15 13:48:24 Waiting 60 seconds for SHUT-DOWN completion... 08/15 13:49:24 SHUT-DOWN complete.</p>
Done.	

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Stop NTP and Oracle

Procedure: Stop NTP AND the Oracle database Use this procedure to stop the NTP application software AND the host-based Oracle software:

Step	Action
1	Use the whoall command (see " who and whoall Commands " on page 3-6) to see which users are currently logged on the NTP host and to send a broadcast to notify all users that they should log off.
2	Log on the NTP host as ntp . (You must be logged on as ntp to proceed.)
3	Enter ntpstop -B
Done.	

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Stop Oracle

Procedure: Stop the Oracle database when NTP is stopped Use this procedure to stop the Oracle database when NTP is stopped.

Step	Action
1	Ensure NTP has been stopped. See " Stop " on page 3-14.
2	Log on the NTP host as ntp . (You must be logged on as ntp to proceed.)
3	<p>Enter ntpstop -B</p> <p>Response The Oracle database stops.</p> <p>Note On some occasions, the Oracle database may continue to run because of configuration adjustments, problems encountered normally by Oracle, and so forth.</p>
4	<p>Did the Oracle database stop?</p> <ul style="list-style-type: none"> ■ If YES, you are done. ■ If NO, enter orastop <p>Caution Never run the orastop command while NTP is running. NTP will fail.</p> <p>Response The Oracle database stops.</p>
Done	

Stop Oracle if Shutdown Immediate Hangs

Procedure: If shutdown immediate hangs

Use this procedure if “shutdown immediate” hangs up because Oracle is unable to terminate a user session. (This procedure recovers from an Oracle instance failure.)

Step	Action
1	Shut down NTP and the Oracle database by entering the following command (the -B option stops Oracle): \$APPLBIN/ntpstop -B
2	Restart NTP and the Oracle database by entering \$APPLBIN/ntpstart
3	If this fails, then you must force a halt of the Oracle database with the -a (abort) option by entering \$APPLDIR/etc/orastop -a Restart NTP and the Oracle database by entering \$APPLBIN/ntpstart
Done	

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Stop the BB-GUI

Background

You can stop and restart the BB-GUI processes while NTP continues to run. The command to stop the BB-GUI affects the:

- Web server
- LDAP server
- CORBA processes
- Page servers (for user pages)

wgui_stop command

The **wgui_stop** command stops the BB-GUI.

Syntax

wgui_stop

There are no options or arguments for this command.

Procedure: Stop BB-GUI

Use this procedure to stop the BB-GUI.

Step	Action
1	Log on the NTP host as ntp . (You must be logged on as ntp to proceed.)
2	Enter wgui_stop
3	Enter the root password at the following prompt: You must be root to run this command. Enter the root passwd when prompted. Password:
4	Wait until the system returns the operating system prompt.
5	Enter wgui_stat to verify that the system is stopped.
	Reference See " Verify BB-GUI Run Status " on page 3-5 for information on wgui_stat .
Done.	

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System Time

Overview

Purpose The system time requires special attention when NTP is stopped and started.

Caution You can set the system time forward on the NTP host, but NEVER set the time backward past the time when you stopped NTP. If your system time needs to be set back, contact your NTP support organization for assistance. Changing the system time while NTP is running can impair the way NTP stores time-stamped records, such as CFIMs and alerts. A change of time in either direction while NTP is running may cause damage to the record bases that is repairable only by a complicated procedure. If the time-stamping mechanisms suffer damage, contact your NTP support organization for recovery procedures (if possible, before restarting NTP).

Procedure: Advance system time on the NTP host Use this procedure to reset the system time forward on the NTP host.

Step	Action
1	Stop NTP and the Oracle database by completing the procedure in "Stop NTP and Oracle" on page 3-18 .
2	From the login prompt, log on the NTP host as root (using the su - command).
3	Shut down the operating system to single-user mode. Example Enter shutdown -y -0
4	Set the time forward by using the date command of your host computer's operating system as described by the man date command.
5	Reboot the NTP host. Reference See the documentation for your host operating system.
6	Restart NTP using the steps in "Start host-based NTP software" on page 3-9 .
Done.	

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Cron

Overview

Purpose

The cron utility requires special attention when the NTP software is stopped and started. NTP uses the operating system **cron** utility to invoke periodic cleanup and preparation procedures. You should be aware of the times when NTP-related **cron** jobs run if you plan a system shutdown, add other executables to an NTP-related crontab file, or create a user crontab file.

NTP-related crontab files

Your NTP host was installed with several crontab files. These files are in the /usr/spool/cron/crontabs directory and include:

- ["root crontab File" on page 3-26](#)
- ["ntp crontab File" on page 3-27](#)
- ["Other crontab Files \(adm, oracle, and scp\)" on page 3-31](#)

You will probably never modify the adm, oracle, or scp crontab files.

You must log on the NTP host as **root** to modify the root crontab file and as **ntp** to modify the ntp crontab file. See ["Modify crontab Files" on page 3-25](#).

Reference

- For how to give a user restricted access to **cron**, see ["Restrict User cron Functions" on page 7-61](#).
- See entries on **cron** and crontab in your operating system documentation for information about administering **cron**. Also see the comment lines in the ntp crontab file.

crontab file format

Each crontab file consists of lines of six fields each, separated by spaces or tabs. The first five fields are integer patterns that specify the time of day and the frequency of execution of the entry. An asterisk (*) signifies all legal values. Values can be inclusive ranges (two numbers separated by a hyphen) or comma-separated lists. The sixth field contains the command to be executed.

Reference

See your operating system documentation for specific information on crontab.

(Continued on next page)

Overview (Continued)

Invoking the correct shell

For shell compatibility, begin entries in crontab files with **/bin/ksh -c**, with the entry itself enclosed in double quotes (see the examples in ["NTP-related crontab files"](#) on page 3-23).

cron and your .profile

The **cron** utility does not run your `.profile` by default, so if there is something in a program invoked by **cron** that depends on your environment, you must explicitly run it in the crontab file. For example, add the following line, or set selected variables as required:

```
. $HOME/.profile
```

Managing cron output

The **cron** command sends standard output messages to your login as mail when it runs programs. If you do not wish to receive this output, add the string `>/dev/null 2>&1` at the end of each command executed by cron or have the command redirect all error messages internally.

Example

```
command_in_crontab_file >/dev/null 2>&1
```

cron logs

Every day the operating system logs information on the executables invoked by **cron**. Information from previous days is also stored. You can view the current cron log in `/usr/lib/cron/log` and the log for previous information in `/usr/lib/cron/OLDlog`.

Note

The **cron** logs in `/usr/lib/cron` are the same as those in `/var/adm/cron`.

Modify crontab Files

Caution for upgrade and reinstall

Each crontab file entry created when NTP is installed is flagged with a comment line similar to this:

```
#Added by install_appl (application).
```

Any changes you make to these flagged entries will be lost at the next install. However, any original entries you add to installed crontab files will be preserved at the next install.

Procedure: Modify crontab files

Caution

You can NOT simply edit crontab files with the **vi** or other editor.

In your operating system documentation, note use of the **crontab -e** command necessary to modify crontab files.

root crontab File

Description

The following entries are in the root crontab file.

Note

You must be logged in as **root** to modify the root crontab file. The examples in this section assume NTP is installed in `/lucent/ntp/snass`.

- This entry checks system error status and writes problems into the `/$WORKDIR/reports/err_status` file.

```
2,7,12,17,22,27,32,37,42,47,52,57 * * * * /bin/ksh -c "export SNASDIR=/lucent/ntp/snass
INSTANCE=ntp; /lucent/ntp/snass/appl/etc/err_status" #Added by install_appl (ntp)
```

- When a problem is detected this entry sends a message to users whose logins are listed in the notify database table.

```
3,33 * * * * /bin/ksh -c "export SNASDIR=/lucent/ntp/snass INSTANCE=ntp; /lucent/ntp/
snass/appl/etc/err_notify" #Added by install_appl (ntp)
```

- This entry cleans out the file where console messages are logged.

```
1 0 1 * * /bin/ksh -c "export SNASDIR=/lucent/ntp/snass INSTANCE=ntp LOGDATA=/lucent/
ntp/logdat; mv /lucent/ntp/logdat/console_msgs.old /tp; mv /lucent/ntp/logdat/
console_msgs /lucent/ntp/logdat/console_msgs.old" #Added by install_appl (ntp)
```

- These entries clean up Datakit log files. The second entry is appropriate only if you have a CP that runs on the NTP host.

```
20 0 * * * /bin/ksh -c "export SNASDIR=/lucent/ntp/snass INSTANCE=ntp; /lucent/ntp/
snass/appl/etc/cln_dksrv" #Added by install_appl (ntp)
20 0 * * * /bin/ksh -c "/lucent/ntp/scp/etc/cln_dksrv" #Added by install_appl (scp)
```

applbackup from cron

If you want to run the **applbackup** utility automatically from **cron**, you can add an entry to the root crontab file. See ["applbackup Command" on page D-10](#) for information on the appropriate crontab entry.

ntp crontab File

Description

The ntp crontab file has entries associated with the following:

- ["File system space check" on page 3-27](#)
- ["exp_db execution" on page 3-27](#)
- ["LSP threshold matrices" on page 3-28](#)
- ["Error message collection" on page 3-28](#)
- ["Administrative reports generation" on page 3-28](#)
- ["RDS \(refsynch\) cleanup, check, and synchronization" on page 3-29](#)
- ["Cleanup of working sets" on page 3-29](#)
- ["Cleanup of BB-GUI user files" on page 3-29](#)

Note

You must be logged in as **ntp** to modify the ntp crontab file. The examples in this section assume NTP is installed in /lucent/ntp/snas.

File system space check

This entry executes the NTP **chk_space** utility. This utility checks Oracle tablespaces and their associated data files. If the data file is getting too full, the utility adds a new data file for that tablespace and informs users specified in the notify table. (See ["Monitor Oracle Database Size" on page 11-10](#), ["Set System Event Notification" on page 11-7](#) and ["notify Table" on page A-95](#) for more information.)

```
0 23 * * * /bin/ksh -c "export SNASDIR=/lucent/ntp/snas; . /lucent/ntp/snas/appl/init/snas_env; /lucent/ntp/snas/appl/etc/chk_space" #Added by install_appl (ntp)
```

exp_db execution

This entry executes **exp_db**, an NTP command that converts databases into files and stores the files in \$ORAEXPORT (See ["exp_db Command" on page D-20](#) for more information on **exp_db**.)

```
25 1 * * * /bin/ksh -c "export SNASDIR=/lucent/ntp/snas; . /lucent/ntp/snas/appl/init/snas_env; /lucent/ntp/snas/appl/bin/exp_db > /tmp/exp_db.out 2>&1" #Added by install_appl (ntp)
```

(Continued on next page)

ntp crontab File (Continued)

LSP threshold matrices

The following entries invoke a program that gathers data on thresholding matrix file usage from each LSP for the threshlog report (used your NTP support organization). If the LSP definitions for your system are customized to something other than the standard LSP definitions, it may be necessary to adjust these invocation times in these entries.

```
5 0 * * * /bin/ksh -c "export SNASDIR=/lucent/ntp/snas; /lucent/ntp/snas/appl/etc/
thr_pro -f > /dev/null 2>&1" #Added by install_appl (ntp)
40 8-10,12,13,15,17,19,20,21 * * 5 /bin/ksh -c "export SNASDIR=/lucent/ntp/snas;
/lucent/ntp/snas/appl/etc/thr_peg -f > /dev/null 2>&1" #Added by install_appl (ntp)
40 3,11,14,17,20 * * 6 /bin/ksh -c "export SNASDIR=/lucent/ntp/snas; /lucent/ntp/snas/
appl/etc/thr_peg -f > /dev/null 2>&1" #Added by install_appl (ntp)
40 3 * * 0 /bin/ksh -c "export SNASDIR=/lucent/ntp/snas; /lucent/ntp/snas/appl/etc/
thr_peg -f > /dev/null 2>&1" #Added by install_appl (ntp)
40 4 * * 0 /bin/ksh -c "export SNASDIR=/lucent/ntp/snas; /lucent/ntp/snas/appl/etc/
thr_log -f > /dev/null 2>&1" #Added by install_appl (ntp)
```

Error message collection

This entry collects error messages for use by your NTP support organization and stores them in the \$LOGDATA directory (see ["Application logs" on page 11-16.](#))

```
0 0,12 * * * /bin/ksh -c "export SNASDIR=/lucent/ntp/snas; /lucent/ntp/snas/test/bin/
err_log.sh" #Added by install_appl (ntp)
```

Administrative reports generation

The following entries concern administrative reports:

- This entry invokes the administrative report generation.

```
10 0 * * * /bin/ksh -c "export SNASDIR=/lucent/ntp/snas; /lucent/ntp/snas/appl/etc/
run_rept" #Added by install_appl (ntp)
```

- This entry cleans up unneeded Administrative Report files and the Event Logger files in \$LOGDATA.

```
20 0,12 * * * /bin/ksh -c "export SNASDIR=/lucent/ntp/snas; /lucent/ntp/snas/appl/etc/
cln_cron" #Added by install_appl (ntp)
```

(Continued on next page)

ntp crontab File (Continued)

RDS (refsynch) cleanup, check, and synchronization

If your system will be using the RDS (reference data synchronization) feature (refsynch), during initial installation of your NTP, your NTP support organization will add appropriate entries in the ntp crontab file. Refsynch crontab entries can be the same on both hosts, as shown in the example below.

Reference

See [Chapter 15, "Reference Database Synchronization \(RDS\)"](#) for more information on the refsynch feature that synchronizes reference data between a pair of NTP hosts.

```
30 2 * * * /bin/ksh -c ". /lucent/ntp/snas/appl/init/snas_env; /lucent/ntp/snas/appl/etc/
bdr_cleanup

* * * * * /bin/ksh -c ". /lucent/ntp/snas/appl/init/snas_env; /lucent/ntp/snas/appl/etc/
bdr_linkchk

30 0 * * * /bin/ksh -c ". /lucent/ntp/snas/appl/init/snas_env; /lucent/ntp/snas/appl/bin/
bdr_syncref
```

Cleanup of working sets

This entry invokes a **cln_bbgui** script that cleans up orphaned temporary user files. These are the default files created during execution of **find** and **ascreen** commands such as **ws**, **ws_prev**, **ws_view**, and **ws_view_prev**.

```
15 * * * * /bin/ksh -c "export SNASDIR=/lucent/ntp/snas; /lucent/ntp/snas/appl/etc/
cln_usr > /dev/null 2>&1" #Added by install_appl (ntp)
```

Cleanup of BB-GUI user files

The entry for cleanup of BB-GUI user files:

- Removes saved searches and table layouts that are older than the system default retention interval (see ["Create BB-GUI System Table Layouts and Saved Searches" on page 9-4](#)).
- Prunes BB-GUI user histories stored on the BB-GUI server to a fixed number (see ["User histories" on page 9-6](#) for more information.)
- Creates a log in \$LOGDATA that shows what was removed (see ["Monitor BB-GUI Cleanup" on page 11-30](#)).

```
0 6 * * * /bin/ksh -c "export SNASDIR=/lucent/ntp/snas; /lucent/ntp/snas/appl/init/snas_e
/lucent/ntp/snas/appl/etc/cln_bbgui > /dev/null 2>&1" #Added by install_appl (ntp)
```

(Continued on next page)

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ntp crontab File (Continued)

CDR processing and garbage cleanup

The following entry executes a `cln_bildts` script that removes files every half hour from the garbage and processed directories used in CDR conversions, including:

- IPDR (F6305)
- AXE TRADO (F6313)
- Lucent Softswitch (F6314)
- Consultant-configured (F6306)
- GeoProbe (F6272)
- AXE 10 (F6186)

This script gets the directory names from entries in the `Dir_list` field in the "bildtscoll Table" on page A-16.

```
30 * * * * /bin/ksh -c "export SNASDIR=/lucent/ntp/snas; . /lucent/ntp/snas/appl/i
snas_env; /lucent/ntp/snas/appl/etc/cln_bildts" # Added by install_appl (ntp)
```

Reference

See "Sources for Configurable Conversions" on page 14-37 for more information on these directories.

Other crontab Files (adm, oracle, and scp)

Description You should NOT need to modify the adm, oracle, and scp crontab files.

Note

Examples in this section assume NTP is installed in /lucent/ntp/snas.

adm crontab file The operating system populates the adm crontab file, as follows. .

```
0 4 * * 1-6 /usr/lib/acct/runacct 2> /usr/adm/acct/nite/fd2log
5 * * * * /usr/lib/acct/ckpacct 1000
15 5 1 * * /usr/lib/acct/monacct
5 18 * * 1-5 /usr/lib/sa/sa2 -s 8:00 -e 18:01 -i 3600 -ubcwydaqvm &
0 8-17 * * 1-5 /usr/lib/sa/sa1 300 12 &
0 * * * 0,6 /usr/lib/sa/sa1 300 12 &
0 18-7 * * 1-5 /usr/lib/sa/sa1 300 12&
```

oracle crontab file The following entries are in the oracle crontab file.

- This entry cleans up the Oracle database (\$ORALOGS and Oracle listener).

```
15 0 * * * /bin/ksh -c "export SNASDIR=/lucent/ntp/snas INSTANCE=ntp; /lucent/ntp/snas/appl/etc/cln_ora" #Added by install_appl (dba)
```

- This entry optimizes system performance for current-day find/analyze .

```
17 0-7,9,11,13,15,17,20,23 * * * /bin/ksh -c "export SNASDIR=/lucent/ntp/snas
INSTANCE=ntp; /lucent/ntp/snas/appl/bin/set_stats" #Added by install_appl (dba)
```

scp crontab file The scp crontab file is important in systems with the CP-on-host feature. It contains the following entries.

```
15 1 * * * /bin/ksh -c "export SCPDIR=/lucent/ntp/scp; /lucent/ntp/scp/bin/cp_backup"
#Added by install_appl (scp)
0 3 * * * /bin/ksh -c "export SCPDIR=/lucent/ntp/scp; /lucent/ntp/scp/etc/file_trim"
#Added by install_appl (scp)
20 0 * * * /bin/ksh -c "/lucent/ntp/scp/etc/cln_dksrv" #Added by install_appl (scp)
```

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Introduction

Overview

Purpose of this chapter

Procedures throughout this book update database tables that hold reference data. Those procedures refer you to this chapter for more information on some aspects of database editing, such as **vi** or **dbedit**. You might also use this chapter if you need to do table editing not covered by a procedure.

Reference versus surveillance tables

Reference data tables are distinguished from surveillance data tables as follows:

Each database table holds either	Description	Reference
Reference data	Reference data defines network elements. You use dbedit or other tools to modify these tables so NTP can run correctly.	Appendix A, "Reference Database Tables" .
Surveillance data	Surveillance data appears on outputs. You do NOT dbedit surveillance data tables.	Appendix A of the <i>GUI User's Guide</i> .

Note

Surveillance data. Though you never **dbedit** surveillance data tables, but analysts using the GUI can modify the *acase* table, as explained in Chapter 5 of the *GUI User's Guide*.

Purpose of reference data

Reference data tables tell NTP how to run correctly. You sometimes use **dbedit** or other tools to update reference data tables.

Examples

You update reference data tables so they will accurately do the following:

- Tell NTP what is in the network, including switches, STPs and SCPs.
- Tell NTP how to convert CIMs to CFIMs.
- Assign FDC groups to users.

(Continued on next page)

Overview (Continued)

Modify databases

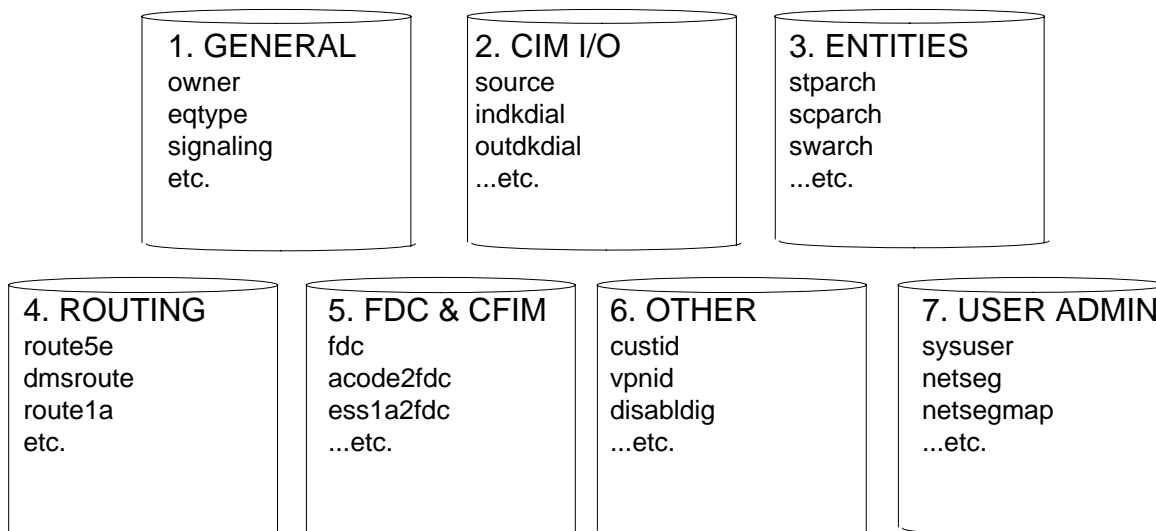
Modifying database tables involves the following steps:

1. To see what tables exist and what fields are in tables, use any of the following:
 - Table or field helps (see ["Table and Field Helps" on page 4-9](#)), such as the **describe** command (see ["describe Command" on page 4-10](#))
 - Information on the various tables in [Chapter A, "Reference Database Tables"](#)
 2. Create an ASCII text input file in the format of the table you want to update. You can use an ASCII text editor (such as **vi** — see ["Edit \(vi\) ASCII Files" on page 4-12](#)) to type the file from scratch. But more often you will do the following:
 - Use **sui find** to retrieve a database into an ASCII file (see ["sui find for dbedit" on page 4-17](#)). To tailor retrievals, you can use the command's **search** parameter (see ["Search Expressions in sui find" on page 4-20](#)).
 - Use an ASCII text editor (such as **vi**) to modify the ASCII file (see ["Edit \(vi\) ASCII Files" on page 4-12](#)).
 3. Use **dbedit** to use the ASCII file to modify the database (see ["Dbedit" on page 4-24](#)).
-

Tables

Groups of reference tables

Reference data tables fall into seven logical groups, illustrated here (regarding this illustration—tables are NOT really on different data storage units).



Reference

Full list. For the full list of tables in each group, and their installation order, see "[Installation order summary](#)" on page 4-48.

Note

- **Not surveillance.** The illustration above does NOT include the surveillance data tables. For those, see the *GUI User's Guide*.
- **Optional.** Some tables (both reference and surveillance) are for optional features. Typically, if you do not have a feature, you still see its tables, but they are ignored.

Records

Definitions

Each database table has:

- **A header.** It shows the field names.
- **Records.** Each line is a separate record, representing, for example, one switch, one FDC, or one user.
- **Fields.** Each record has two or more fields. Each field holds a value. Change values in fields in order to change an FDC, switch, and so on.

Example

In the swarch table, the first few records might resemble this:

Header	Clli	Dpc	Eqtype	Stp	Owner	Hnpa	Ai
Records	sv0prfdms05	-	dms100	sva3	svtst	718	on
	sv0prfdms06	-	dms100	sva3	svtst	212	off
	sv0prfds06	-	dms100	sva3	svtst	718	on

Fields

How to see records

There are two ways to see records in tables.

- **sui find.** Use this command at the operating system shell (see "[sui find](#)" on page 4-16.)
- **GUI Find/Analyze.** You do this from the GUI. For how to do this, see the *GUI User's Guide*.

Fields

Field types

Field helps tell you what type of data each field holds (see ["Table and Field Helps" on page 4-9](#)). Field types are either:

- **String** — alphanumeric.
- **Set** — a predefined set of strings.
- **Numeric** — digits.
- **Date or time** — digits giving date or time (on surveillance data only).

Field type matters in the following two cases:

- **Add**. If you are adding or modifying a field. For example, you cannot put letters in a numeric field.
- **sui find**. If you are using a search expression with the **sui find** command. For example, you cannot search a range for a string or set field. Field limitations on search expressions are in the table in ["Search expressions" on page 4-20](#).

Key fields

A key field or fields identifies each database record, telling what it uniquely refers to. Non-key fields give attributes.

The key field or fields are first in a record.

Each key field (or fields) must hold a unique value (or combination of values) among records in a table. Non-key fields can hold the same values.

Example

- The key field for the swarch table is clii.

Reference

Key fields:

- Are noted in the field helps. For how to get field helps, see ["Table and Field Helps" on page 4-9](#).
- Require special consideration with the **dbedit** command. See information on input file rules in ["Input file rules" on page 4-25](#).

(Continued on next page)

Fields (Continued)

Null characters Fields are never blank, but sometimes hold a null character, listed below.

Character	Seen in	In	Meaning
- (dash)	Any non-key field	Reference and surveillance tables	<p>In surveillance tables, this means “does not apply” (for example, there was no related entity, so Related is “-” on Find/Analyze CFIM) or unknown (for example, something was missing from a CIM).</p> <p>In reference tables, this also means “does not apply”. However, you may also use it when you do not know what to enter in a non-key field. In this case, it may result in a “?” in a field in surveillance data, explained next.</p>
? (question mark)	A few key and non-key fields	Some surveillance tables	The system tried to get a value from a reference table, but found nothing. In other words, you need to put something in some reference table. See "Shared Procedures" on page 5-45 for how to fix these.
~ (tilde)	A few key fields	Some reference tables	<p>Any (or ignore). To see if a field can use this, use a field help listed in "Table and Field Helps" on page 4-9.</p> <p>Example The acode2fdc table has three fields; acode, fname, and FDC. It maps combinations of values in first two fields (from DMS or 5ESS CIMs) to an FDC in the last field. If the first field holds X, and the second holds "~", and the third holds Y, it means X always maps to Y, ignoring the second field.</p>

Note

Semi-colon semi-colon. To input a null field, you use two delimiters, such as “;”. The **dbedit** command then either tells you null is not permitted, or changes it to “-” or “~” in the table. This is explained in ["Use “;” for blank fields" on page 4-26](#).

Table and Field Helps

Helps

The following tells where to find helps for reference tables and their fields.

To get table and field help in...	Use...
User documents	Chapter A, "Reference Database Tables"
Shell	The describe command (see " describe Command " on page 4-10)
GUI	See the <i>GUI User's Guide</i> .

Quick peek

If you just want to know a table's fields and their order, enter the following to list the header and one record.

```
sui find noheader source=table maxsave=1
```

Example

For the swarch table, enter

```
sui find noheader source=swarch maxsave=1
```

Which gives output resembling the following:

```
#Clli          Dpc   Eqtype   Stp  Owner  Hnpa  Ai
sv0prf5es01   -     5ess     -   perf   718   on
```

describe Command

Purpose The **describe** command describes tables and their fields.

Syntax **describe** [-a] [-n] [-c | -u | *tablename* [*field*]] [| pg]

Parameters The **describe** command parameters are as follows:

Parameter	Function
-a	Describes tables and fields alphabetical order. Without this parameter output is in default order, which begins with key fields.
-n	Omits table and field descriptions, and lists only the table and field names. Without this parameter, you get table and field descriptions.
-c	Describes tables and fields for all surveillance tables. (These are the databases you do not dbedit .) Typically, this parameter is used with -n (describe -c -n) to list just table and field names. Otherwise, output is overwhelming. If you enter -c with -u , -u is ignored.
-u	Describes tables and fields for all reference tables. This is the same as default—that is, what you get if you omit -c and -u . Typically -u is used with -n (describe -u -n , which is the same as describe -n) to list just table and field names. Otherwise, output is overwhelming.
<i>tablename</i>	Describes fields for one table This is the most common usage of the describe command.
<i>field</i>	Describes one field in the table specified Can be used only after a table name. If the field is not in the table, you get no output. Omit this parameter to see all fields.
pg	A standard operating system pipe and pg command that enables you to see one page of output at a time. Press Return to go to the next page. Without this option, if the description contains many lines of output, they scroll up your screen and you see only the last page of output.

Note

Stop output. If you use describe to see many tables, it takes a long time for them to scroll on your screen. To abort the command, press **Delete**.

(Continued on next page)

describe Command (Continued)

Example 1

This example requests a description of the eqtype table and its fields.

\$ describe eqtype

EQTYPE TABLE DESCRIPTION:

This table contains a list of switch types known to the system. The table will be populated with the following switch types at installation time.

(4ESS) (5ESS) (Operator Service Position Switch) (1A ESS)
 (1A ESS Tandem) (1 ESS) (1 ESS Tandem) (2B ESS) (2 ESS) (3
 ESS) (5GTE) (Ericson 10) (DMS 10) (DMS 100) (DMS 200) (DMS
 250) (Network Inbound Switch) (Private Branch Exchange)
 (Traffic Operator Position System) (SCP) (NSCX)

The administrator will be able to update the switch types in this table.

FIELDS:

TYPE:

This field defines the switch type (type). This is a key field in the eqtype table. Field Type: String of 8 printable characters.

DESCRIPTION:

This field provides a description of the switch type. "-" is a valid value that indicates the field is not applicable or there is no data available. Field Type: String of 50 mixed case printable characters.

Example 2

This example requests the list of fields in the eqtype table, with no descriptions.

\$ describe -n eqtype

EQTYPE TABLE:

TYPE	DESCRIPTION
------	-------------

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Edit (vi) ASCII Files

Definition

An ASCII file is a file you can list, create, edit or delete in shell —versus databases, which are NOT ASCII files, and can NOT be seen in shell.

Purpose

You need to know how to manipulate and how to use a text editor (such as **vi**) to edit ASCII files, since many procedures in this book ask you to do the following:

- **sui find.** Use **sui find** (see "[sui find](#)" on page 4-16) to copy a database or records from a database into an ASCII file. (Or, you can use a text editor to create the ASCII file from scratch.)
- **Text editor.** Use a text editor to edit records in the ASCII file.
- **dbedit.** Use **dbedit** (see "[Dbedit](#)" on page 4-24) to modify, insert or delete the ASCII file's records back into the database.
- **Remove.** Remove the ASCII file after you are done with it (see **rm** in "[Manipulate files](#)" on page 4-12).

Manipulate files

Use this table for examples of how to manipulate or learn about ASCII files.

To do this (in shell)...	Enter...	Example...
Go to your home directory.	cd \$HOME	There is no screen response, but you can use pwd to verify where you are.
See where you are in shell.	pwd	If your home directory is named djd, you see: /home/djd
List ASCII files.	ls	If the files there are named temp1, temp2, and temp3, you see: temp1 temp2 temp3
See how many lines are in a file (the number of lines in a file equals the number of records retrieved from a database).	wc -l file	To see how many lines are in a file named temp, enter wc -l temp If there are 100 lines in the file, you will see: 100 temp (For an example of when you might use this, see " maxsave= " on page 4-19.)
See what is in a file (without entering the file via vi).	cat file	To scroll to your screen the contents of the file named temp, enter cat temp

To do this (in shell)...	Enter...	Example...
Create an ASCII file from a database.	sui find with > file option	See " > file " on page 4-19.
Create an ASCII file with the vi editor..	vi file Reference For using vi , see "Edit (vi)" on page 4-14.	To create a new file named temp, enter vi temp You are in an empty file with your cursor at the top, resembling this: ~ ~ ~ "temp" [New file]
Edit an existing ASCII file.		To edit an existing file named temp, enter vi temp You enter an existing file with your cursor at the top, resembling this: Here is a line of text in the file. Here is a line of text in the file. ~ ~ "temp" 2 lines, 72 characters
Remove an ASCII file.	rm file	To remove a file named temp, enter rm temp

(Continued on next page)

Edit (vi) ASCII Files (Continued)

Edit (vi)

Use this table for examples of using the **vi** editor once you are in an ASCII file. (To enter an ASCII file, see ["Manipulate files" on page 4-12.](#)) The last two items tell how to get out of an ASCII file.

Note

Other options. There are many other **vi** options. To fully learn **vi**, you may need to take a class or at least use reference material..

To...	Do this...
Move your cursor one space or line at a time.	Press the arrow keys.
Page forward or back.	Hold down the Control key and press f or b (Control-f or Control-b).
Start entering text: <ul style="list-style-type: none"> ■ Before the cursor ■ After your cursor ■ On a new line below the cursor ■ On a new line above the cursor 	Type letter: <ul style="list-style-type: none"> ■ i ■ a ■ o (lowercase letter o) ■ O (uppercase letter O)
Stop entering text (that is, get out of the text editing mode).	Press and release the Escape key. Note If you are not sure which mode you are in, do this, since it does no harm to press Escape when you are already out of the text editing mode.
Start a new line while entering text	Press the Return key.
Jump to the: <ul style="list-style-type: none"> ■ Next word ■ Previous word 	Press and release the Escape key to make sure you are not in the text editing mode, and then: <ul style="list-style-type: none"> ■ Type w ■ Type b (Do not press the Return key.)
Delete a line	Press and release the Escape key to make sure you are not in the text editing mode, move your cursor to the line, and type dd (do not press the Return key).
Delete letters on the right	Press Escape to make sure you are not in the text editing mode, move your cursor to the first letter you want to delete, and repeatedly type x (do not press the Return key).

To...	Do this...
Copy and paste a line	<ol style="list-style-type: none"> 1. Press and release the Escape key to make sure you are not in the text editing mode. 2. Move your cursor to the line you want to copy, and type yy (do not press the Return key). 3. Move your cursor to above where you want to paste the line, and type pp (do not press the Return key).
Make global changes throughout the file	<p>Use the global change option.</p> <p>Example To change the word “off” to “on” throughout the file (where “off” is at the end of each line), press and release the Escape key to make sure you are not in the text editing mode, and then enter g/ off\$/s// on\$/gp</p> <p>Note To use this feature, you may need help from your NTP support organization.</p>
Exit an ASCII file (return to shell), saving your changes	Press and release the Escape key to make sure you are not in the text editing mode, type :wq and then press the Return key.
Exit an ASCII file (return to shell), NOT saving your changes	Press and release the Escape key to make sure you are not in the text editing mode, type :q! and then press the Return key.

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sui find

Overview

sui find purpose

The **sui find** command retrieves data from databases. When you retrieve that data, you can either:

- Save the data into an ASCII file for further use
- View the data on your screen, to check it

ASCII files saved from **sui find** are most often used as input with the **dbedit** command, which modifies NTP database tables (see "[Dbedit](#)" on page 4-24). Many procedures in this book require **dbedit**. You can also print the ASCII files, or email them to someone.

After a **dbedit** operation, **sui find** can help you verify that you have indeed made the changes you want to the NTP reference database.

Basic sui find

The simplest case for using **sui find** is to send the all records from a database to your screen, by entering: **sui find source=database**

Example

To see the contents of the fcause database, enter **sui find source=fcause**

Output goes to your screen, resembling this:

```
Reason      Description
FIND COMPLETED - 5 FCAUSE RECORDS FOUND
install     Installation related
routing     Network routing error
translate   Digits translation error
testing     Network testing related
unknown     Failure reason unknown
FIND COMPLETED - 5 FCAUSE RECORDS FOUND
```


sui find for dbedit

Purpose

The **sui find** in "Basic sui find" on page 4-16 is the simplest case. When using **sui find** for **dbedit**, there are additional parameters to include.

Syntax for dbedit

The syntax of **sui find** when used for **dbedit** is:

```
sui find source=table search=field=value noheader delim=";" findtime=1-120_minutes
maxsave=1-100000_records > file
```

Note

- **Wrap.** Type all the command on one line, without pressing **Return** within the line. If the line is too long for your window, it will wrap, as illustrated above, but it is really on one line.
- **Abbreviate.** You can abbreviate parts of **sui find**, as long as you give enough letters to be unique. For example, instead of the example shown above, you can enter.

```
sui find so=table se=field=value noh delim=";" max =1_to100000_records > file
```

Parameters

This table describes the parameters for **sui find** when used for **dbedit** (not for **sui find** in general).

Parameter	Function
source=table Example sui find source=fcause Output is: Reason Description FIND COMPLETED - 5 FCAUSE RECORDS FOUND install Installation related routing Network routing error translate Digits translation error testing Network testing related unknown Failure reason unknown FIND COMPLETED - 5 FCAUSE RECORDS FOUND	(Required) Selects the database table to retrieve records from. Note The example has two fields: Reason and Description.

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Parameter	Function
<p>search=field=value</p> <p>Example sui find source=fcause search=reason=testing</p> <p>Output is: Reason Description FIND COMPLETED - 5 FCAUSE RECORDS FOUND testing Networktestingrelated FIND COMPLETED - 5 FCAUSE RECORDS FOUND</p>	<p>Recommended. Typically used to get some records from the database table — for example, to delete or modify, or to use as templates for creating new records.</p> <ul style="list-style-type: none"> ■ <i>field</i> is the name of a field in the named database. The ■ <i>value</i> is the value to match for the field and can be anything in records. For example, “related” could have been used instead of “testing”. <p>Note Search expressions can be much more complex. See "Search expressions" on page 4-20.</p>
<p>noheader</p> <p>Example sui find source=fcause search=reason=testing noheader</p> <p>Output is: #Reason Description testing Network testing related</p>	<p>Recommended. Removes “FIND COMPLETE” lines. Also adds # to the header record, to cause it to be ignored later by the dbedit command</p>
<p>delim='";''</p> <p>Example sui find source=fcause search=reason=testing noheader delim='";''</p> <p>Output is: #Reason;Description testing;Network testing related</p>	<p>(Required) Replaces blanks between fields with semi-colons, to avoid confusion when you later dbedit the data. In this example, if you omitted the delim, dbedit would think the record has four fields, “testing”, “network”, “testing” and “related”.</p> <p>Note “;” is single-quote, double-quote, semi-colon, double-quote, single-quote. If a field must contain a semicolon (;), use another character, such as a colon (:), or enter Control-a.</p>
<p>findtime=1-120_minutes</p> <p>Example sui find source=cfim findtime=5</p>	<p>Temporarily overrides the time limit set by the FIND_TIME environmental variable (see "Manage User Environment Variables" on page 7-36), which has a initial system default of 10 minutes.</p> <p>Note Affects sui find on trapalert, alert, cfim, linkalert, mcalert, and otr tables only. In this example, output is limited to CFIMs received in the last 5 minutes.</p>

Parameter	Function
<p>maxsave= 1-100000_records</p> <p>Example sui find source=fcause search=reason=testing noheader delim='";"' maxsave=100000</p> <p>Output is: #Reason;Description testing;Network testing related</p>	<p>Recommended. Without this parameter, sui find stops at 10,000 records. Some databases (such as those with "route in their names) may be bigger than 10,000. So, use maxsave to move the limit to 100,000 (you cannot go beyond 100,000). In this example, since the retrieval was not cut off, maxsave= has no affect (it does no harm to use it anyway).</p> <p>Do NOT use a comma, as in 100,000.</p> <p>Note To see if sui find into a file named temp was cut off at 10,000, enter wc -l temp</p> <p>If output is: "10000 temp", the temp file holds 10,000 lines (10,000 records), so you need a larger maxsave.</p>
<p>> file</p> <p>Example sui find source=fcause search=reason=testing noheader delim='";"' maxsave =100000 > temp</p>	<p>Recommended. Directs output into a file.</p> <p>Note When directed to a file, data does not appear on your screen.</p>

Paging through output

Since the output from **sui find** may be extensive, it will scroll on your screen, stopping only on the last page. To page through the output, direct it to the operating system **pg** command: **sui find source=fcause | pg**

See your operating system manuals for more information on the **pg** command.

Search Expressions in `sui find`

Purpose

In ["Syntax for `dbedit`" on page 4-17](#), the `sui find` syntax to create files for `dbedit` is described as follows:

```
sui find source=table search=field=value noheader delim=";" maxsave=100000 > file
```

The part of the syntax that contains the search expression is:
`search=field=value`

It means retrieve only those records where a specified field equals a specified value. In most cases, this type of search expression is enough. (Sometimes you may even omit a search expression, to retrieve all records.) However, you can also do much more focused searches, as explained in ["Search expressions" on page 4-20](#).

Search expressions

This table shows different ways to form search expressions. As explained in ["Field types" on page 4-7](#), a field can be any of four types. If an expression is limited to certain types, it is noted in the function column of this table. To see a field's type, use field help (see ["Table and Field Helps" on page 4-9](#) or see the field descriptions in [Appendix A, "Reference Database Tables"](#)). In the examples, search expressions are underlined.

Note

Date-time. The following table does NOT give details about search on date and time type fields. Those fields are in surveillance tables, which you do NOT `dbedit`, and which are explained in Date and Time Fields in the *GUI User's Guide*.

Expression	Function
None Example <code>sui find source=fcause noheader delim=";" maxsave=100000 > temp</code> Output in the temp file is: <pre>#Reason;Description install;Installation related routing;Network routing error translate;Digits translation error testing;Network testing related to be done;- unknown;Failure reason unknown</pre>	If you omit the search expression, <code>sui find</code> retrieves all records from the source database.

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Expression	Function
<p>=</p> <p>search=field=value</p> <p>Example sui find source=fcause search=reason=testing noheader delim=";" maxsave=100000 > temp</p> <p>Output in the temp file is: #Reason;Description testing;Network testing related</p>	<p>= means "equals". It means retrieve only records that have the value in the field.</p>
<p>!=</p> <p>search=field!=value</p> <p>Example sui find source=fcause search=reason!=testing noheader delim=";" maxsave=100000 > temp</p> <p>Output in the temp file is: #Reason;Description install;Installation related routing;Network routing error translate;Digits translation error to be done;- unknown;Failure reason unknown</p>	<p>!= means "not equals". It means retrieve records that do NOT have the specified value in the field</p> <p>Note You cannot use != with date-time type fields.</p>
<p>-, ?, or ~</p> <p>search=field=-</p> <p>Example sui find source=fcause search=description="-" noheader delim=";" maxsave=100000 > temp</p> <p>Output in the temp file is: #Reason;Description to be done;-</p>	<p>These are null characters meaning retrieve records where a field is blank. Most often, you use "-". (For when to use three null characters, see "Null characters" on page 4-8.)</p> <p>Note You cannot use null with date-time type fields. If there is one key field, it cannot be null. That is why this example uses the non-key description field.</p>

Expression	Function
<p>Multiples in one field search=field1, field2, field3</p> <p>Example sui find source=fcause search=reason=testing,routing noheader delim=";" maxsave=100000 > temp</p> <p>Output in the temp file is: #Reason;Description routing;Network routing error testing;Network testing related</p>	<p>Match one field to any of several values. The example means, retrieve records where "reason" is either "routing" or "testing".</p> <p>You MUST use commas (not spaces).</p>
<p>and search=field1=value1 and field2=value2</p> <p>Example sui find source=fcause search=reason=testing and description="-" noheader delim=";" maxsave=100000 > temp</p> <p>In this example, no records met both conditions. so there is no output in the temp file.</p>	<p>If you use "and" among two (or more) fields, BOTH (or more) matches must be met. The example means, retrieve records where "reason" is "testing" and "description" is "-". (In the example, no records met both conditions.)</p> <p>You can also use "and not".</p>
<p>or search=field1=value1 or field2=value2</p> <p>Example sui find source=fcause search=reason or description="-" noheader delim=";" maxsave=100000 > temp</p> <p>Output in the temp file is: #Reason;Description testing;Network testing related to be done;-</p>	<p>If you use "or" among two (or more) fields, ANY matches apply. The example means, retrieve records where "reason" is "testing", or "description" is "-".</p> <p>You can also use "or not".</p>
<p>* search=field=string_with_*</p> <p>Example sui find source=fcause search=reason="t*" noheader delim=";" maxsave=100000 > temp</p> <p>Output in the temp file is: #Reason;Description translate;Digits translation error to be done;-</p>	<p>Asterisk (*) is a wild card meaning any number of letters. It can be used before (*abc) in (a*bc) and after (abc*).The example means retrieve records where "reason" is any value starting with letter t.</p> <p>A less used wild card is ampersand (&), meaning any one letter.</p> <p>Note You cannot use wild cards with numeric or date-time type fields.</p>

Expression	Function
<p>Range search=field=number-number</p> <p>Example sui find source=swarch search=hnpa=100-1503 noheader delim=";" maxsave=100000 > temp</p>	<p>This is a range of numbers.</p> <p>Note The field must be numeric or date-time. That is why this example uses the swarch source table, whose hnpa field is numeric.</p>
<p>>, <, >=, search=field\< a_number</p> <p>Example sui find source=swarch search=hnpa\<100 noheader delim=";" maxsave=100000 > temp</p>	<p>This is greater than, less than, less than or equal to, or greater than or equal to.</p> <p>Note The field must be numeric or date-time. That is why this example uses the swarch source table, whose hnpa field is numeric.</p> <p>You must type a backslash(\), in front of >, <, >=, or <= contained in the search expression (but not in front of symbol to redirect the output to the temp file).</p>

Dbedit

Overview

Purpose

As outlined in ["Modify databases" on page 4-4](#), **dbedit** is the final step in the process for updating reference database tables. Run **dbedit** in shell.

Procedure: Back up files for dbedit

Make a backup file of any database table you are going to **dbedit**. To do this, enter:

```
sui find noheader source=table noheader delim='";"' maxsave=1000000 > file
```

Example

To back up the swarch table to a backup file named hold_swarch, enter:

```
sui find noheader source=swarch noheader delim='";"' maxsave=1000000> hold_swarch
```

Procedure: Recover files after dbedit

If a **dbedit** causes system problems, **dbedit** the backup file back into the database.

Tables you do not dbedit

This table explains when NOT to use **dbedit**.

Do not dbedit this table	Instead use	Reference	Notes
gtspec	loadgt command	Chapter 13, "Update the gtspec Table"	Use loadgt to load the gtspec table from a dbedit -compatible input file. (The loadgt command does special checking.)
sysuser (to add or delete users)	add_ntpuser and del_ntpuser commands	Chapter 6, "Add or Delete Users"	These commands add or delete NTP users from the host.

ASCII Files for dbedit

Purpose **dbedit** uses an ASCII input file. The file holds records to either insert, update, or delete.

How to get input files There are three ways to get an ASCII input file:

- **Sui find.** Usually, use **sui find** (see ["sui find for dbedit" on page 4-17](#)) to create the file from a database, and then use a text editor (such as **vi** — see ["Edit \(vi\) ASCII Files" on page 4-12](#)) to edit the file to reflect your changes.
- **Type.** Use a text editor (such as **vi** — see ["Edit \(vi\) ASCII Files" on page 4-12](#)) to create a file from scratch (rarely done).
- **Script.** Sometimes, get a file from another source, and then run it through your own shell script to put the fields in correct order, remove extra fields, add missing fields, and add delimiters.

Input file rules Rules for input files are:

Rule	Explanation
One file per operation	<p>One input file can be used to perform one update operation (on one database table). (You cannot use the same table to delete and update or delete and insert at the same time.) The four operations are:</p> <ul style="list-style-type: none"> ■ Insert ■ Update ■ Both update and Insert ■ Delete <p>Note This means, do not put records for different purposes in the same input file. For example, do not mix records to be inserted with records to be deleted.</p>
One line per record	<p>Each line (each return) is a record. Line wraps are ignored.</p> <p>Note Exceptions are the fdchelp table, which contains records consisting of multiple lines of text for on-context help, and the reports table. See the -r option in "dbedit Command" on page 4-28. A special record separator is required in an input file. See also "Edit FDC Help Text" on page 9-14.</p>

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Rule	Explanation
Blanks and # okay	Blank lines and lines starting with # are ignored by dbedit .
Field order matters	Use default field order. Reference For how to get a list of a table's fields, see "Table and Field Helps" on page 4-9 .
Use delimiters	Use semi-colons between fields (the sui find <code>delim="";"</code> parameter (see "delim="";" on page 4-18) inserts these when creating a file. Note <ul style="list-style-type: none"> ■ If you do not do this, each space and tab is seen as the start of a new field. ■ If a field must contain a semi-colon, you can use another character as a delimiter, such as a colon (:) or Control-a.
Use key fields for deletes	If the records in an input ASCII file are to be deleted from a database, you need only key fields. Other fields are ignored. Example The key field for the swarch table is cli. To delete this record from swarch enter sv0prf01537;-;dms100;svae;svtst;703;off The input file can hold this record (notice that the delimiters can be omitted): sv0prf01537
Use all fields for inserts or updates	If the records in an input ASCII file are to be inserted or updated in a database, you need all fields (but you can use ;; to specify blank fields). Example To add a switch to swarch, enter, for example: sv0prf01537;;dms100;svae;svtst;703;off
Use “;” for blank fields	If you want a field to be blank, use two consecutive delimiters (;;). <ul style="list-style-type: none"> ■ For non-key fields, dbedit changes “;” to “-”. ■ For key fields, IF blank is permitted, dbedit changes “;” to “~” tilde). Reference See null characters “-” and “~” in "Null characters" on page 4-8 .

Rule	Explanation
No update of key fields	<p>You cannot update a key field, since that would mean re-identifying a record. Instead, to change a key field, you must:</p> <ol style="list-style-type: none"><li>1. Delete the record from the table.<li>2. Insert a new record. <p>Note Remember, a key field must hold a unique value. A set of key fields must hold a unique combination of values.</p>

dbedit Command

Purpose

As outlined in ["Modify databases" on page 4-4](#), **dbedit** is the final step in the process for updating reference databases. Run **dbedit** in shell.

Reference

After dbedit. For how to:

- **Errors.** Respond to **dbedit** errors, see ["Correct dbedit Errors" on page 4-33](#).
- **Sui modmat.** See if you need to run **sui modmat** after the **dbedit**, see ["sui modmat after dbedit" on page 4-32](#).

Syntax

```
dbedit operator -t table -f input_file [ -o output_file ] [ -l error_limit ]  
[ -s "delimiter" ] [ -r "record_separator" ]
```

Example

To update the swarch table, using an input ASCII file named temp, and with semi-colon as delimiter, enter

```
dbedit -u -t swarch -f temp -s ";"
```

(Continued on next page)

dbedit Command (Continued)

Parameters and functions

Here are the parameters for the **dbedit** command:

Parameter	Function
<i>operator</i>	<p>(Required) Tells what to do with the input file. Options are:</p> <ul style="list-style-type: none"> ■ -i The insert option reads records (one line = one record) from the input file and inserts them into the specified database table. This option is for adding NEW records into the database table. Records are rejected if they duplicate existing records (determined by matching key fields). ■ -u The update option reads records from the input file and uses them to replace their existing counterpart in the specified database table. This option is for changing information in existing records. Records are rejected if they do not already exist (that is, if a match cannot be found for the key fields in the record). You cannot use -u if all fields in a table are key fields. ■ -iu The insert or update option reads each record from the input file and, if the record's key field values: <ul style="list-style-type: none"> — Are in the database table, updates the matching record — Are NOT in the database table, inserts the record as new This option is for entering batches of records that are either new or modifications of existing data. Records are rejected only when they have invalid data. You cannot use -iu if all fields in a table are key fields. ■ -d The delete option reads records from the input file and deletes any matching records in the database table you specified. Records are rejected if a match cannot be found for the key fields, or if other database records have a dependency on the record being deleted.
-t <i>table_name</i>	(Required) Names the database table being updated.
-f <i>input_file</i>	(Required) Names the ASCII input file. Enter the name of the input file containing the records for updating this database table.

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Parameter	Function
-o <i>output_file</i>	(Optional.) Name the output file in which error messages and rejected records will be written. The name must be different from the name of the input file. If you do not specify an output file name, an output file is created with the name <i>dbtablename.error</i> in the current directory (for example, for “-t swarch”, this would be <i>swarch.error</i>).
-l <i>error_limit</i>	(Optional) Enables you to specify a limit of the number of errors to be found before dbedit stops retrieving records. Default is 1000. The limit is 10,000. All unprocessed records are appended to the end of the output file. For large input files (such as for routing tables), you may want to set this higher than 1,000.
-s “ <i>delimiter</i> ”	<p>(Required) Defines the single character that the database editor is to interpret as the delimiter of fields in an input record line. (Actually, this is optional, but if omitted, the default delimiter is a space or tab character, which can cause problems.) To be consistent with what is suggested for the delim parameter of the find command (see “delim=’;’” on page 4-18), use semi-colon.</p> <p>Note For the <i>fdchelp</i> table, where the description field contains lines of text, the semi-colon may be needed in the text. Use of the character (pipe or bar) is recommended.</p>
-r “ <i>record_separator</i> ”	<p>Required when editing tables with multi-line records, such the <i>fdchelp</i> table and the reports table. Specifies a single character that separates one multi-line record from the next. Select a character that you do not need to use in text. Use of ^A (Control-a) for the record separator is recommended. See “Edit FDC Help Text” on page 9-14 for the most common use of this option. See also “fdchelp Table” on page A-59 for information about the description field for which this option is used.</p> <p>Note If you use the -r “<i>record_separator</i>” option, you must also use the -s “<i>delimiter</i>” option.</p>

During and after dbedit

During dbedit

While **dbedit** is running:

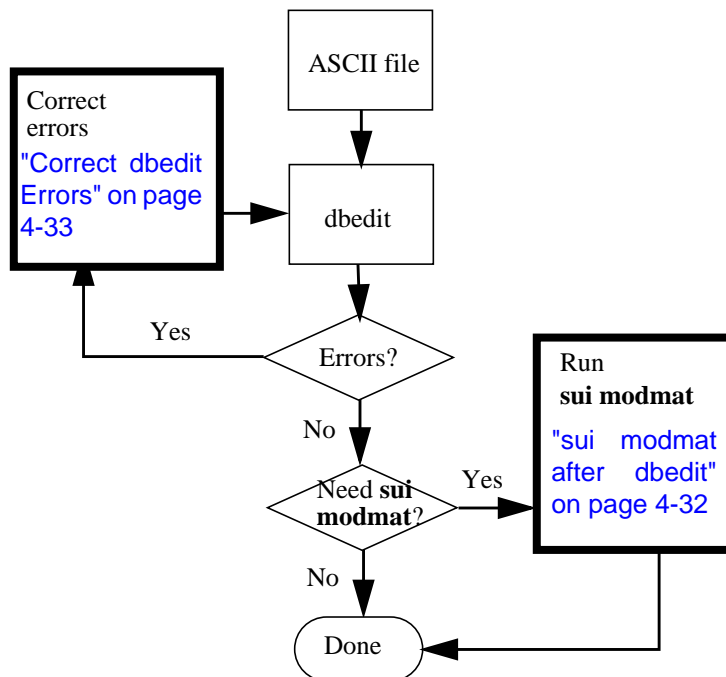
- **No double-dbedits.** If you attempt to **dbedit** a database while a **dbedit** is running on that database, you may cause logical conflicts. (These will be reported as errors in the error file. That file is discussed in ["Correct dbedit Errors" on page 4-33.](#))
- **No stop.** The **Delete** key is disabled during processing.

Note

You can limit the processing time by using smaller input files or by specifying a low error limit parameter (-l) with **dbedit**. Processing continues until the error limit is reached or all records in the file are processed.

Two hurdles

The boxes with dark borders are two hurdles to cross after you enter **dbedit**.



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During and after dbedit (Continued)

sui modmat after dbedit

The **sui modmat** command is for basic (not flexible) alerting only.

Run **sui modmat** to update the threshold matrix if you add or deleted records, or change the Ai field to on or off, in any of the following tables:

- **fdc**
- A table ending with “arch” and that has an Ai field (such as swarch or sparch)

Caution

100-record limit. If you are making several changes, you may want to wait until they are all made before running **sui modmat**. However, it is HIGHLY RECOMMENDED that you run **sui modmat** on no more than 100 records at one time. (This is especially important when deleting records from a table ending with “arch”.)

Reference

sui modmat. This command changes the threshold matrix. For more, see Chapter 8.

sui find after dbedit

Using **sui find** to display records is a good way to verify that the **dbedit** operation you performed did in fact make the changes you want to the NTP reference data. See ["sui find for dbedit" on page 4-17](#).

When changes take affect

Database table edits take affect either:

- **Immediately.** When you run successfully run **dbedit**.
 - **After sui modmat.** If the table requires you to also run **sui modmat** (see below).
 - **Plus 5 minutes.** Tables requiring **sui modmat**, plus other tables used for CIM-to-CFIM conversion (including routing and customer tables) may require an additional 5 minutes before they affect CIM-to-CFIM conversion. This is because conversion changes require the tables to be loaded into shared memory, which happens every five minutes when a **ldlkup** script automatically runs.
-

Correct dbedit Errors

Purpose

When you run **dbedit** with no errors, no error file is created. But, if any records fail to insert, update, or delete, they go into an error file. The file has two purposes:

- It tells you why each record failed **dbedit**.
- It is an input file, to correct using a text editor (such as **vi**), and then to again run with **dbedit**.

Where the error file is

The file is in the directory where you ran **dbedit** (typically your home directory). By default, it is named with the table name plus ".error".

Example

- **Default.** If you entered: **dbedit -u -t swarch -f temp -l 25 -s";**
The error file would be the default swarch.error
- **-o.** If you entered the following, with the -o option:
dbedit -u -t swarch -f temp -o tempout -l 25 -s";
The error file would be tempout.

Note

Rename the file. If you used default, you must rename the error file before **dbedit**. For how and why, see [Step 2](#) in the procedure in "[Rename the error file.](#)" on page 4-36.

What is in the error file

Three things are in the error file:

- **Comments.** Tell how to fix rejected records. You do NOT need to delete these before running **dbedit** on the error file. These start with "#", telling **dbedit** to ignore them.
- **Rejected records.** Use a text editor (such as **vi**) to fix these, according to error messages. Then run **dbedit** on the error file.
- **Records not yet processed.** If you used **dbedit**'s error limit option (-l), then **dbedit** stopped after the number of failed records you specified (default is 100 failed records). After the limit is reached, records not yet run are put into the error file, so you can run them from there.

Although the error file shows errors for multiple lines (up the number of lines specified by **dbedit**'s "-l" parameter (see "[-l error_limit](#)" on page 4-30), the error file shows only the FIRST error for each line.

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Correct dbedit Errors (Continued)

Uncorrected errors

Some of the errors in the output file you may just choose to ignore. For example, you may be using an input file created from another source system (such as NTM) and only a subset of the records in it are valid for NTP.

Error file example

Let us say, to insert three records into the domain table, you made the following ASCII input file named temp:

```
#domi;description;st;vpnbound
new1;This is the first;typex;y
new2;This is the second;typex;y
new3;This is the third;typex;y
```

Then you entered the following (note that it contains "-l 1", which means stop processing if one record fails — you would NOT normally set such a low error limit): **dbedit -i -t domain -f temp -l 1 -s";**

A screen message says:

```
*** 1 line processed ***
      0 records inserted
      1 record rejected due to an error
*** 2 lines not processed ***
dbedit completed with errors.  Errors saved in file domain.error
```

So, the error file, domain.error, contains:

```
#invalid value for field "domi": values for this field should not
be longer than 3 characters
new1;This is the first;typex;y

# *** The following lines have not been processed
new2;This is the second;typex;y
new3;This is the third;typex;y
```

(Continued on next page)

Correct dbedit Errors (Continued)

Why records are rejected

This table shows some reasons why **dbedit** rejects records. Here the domain table is used as an example:

Reason	Example	
	The input file, temp, has header #domi;description;st;vpnbound and this record	And, after you enter dbedit -i -t domain -f temp -s"; the domain.error file says:
Invalid value for a field	<u>new1</u> ;blah blah blah;pots;y	#invalid value for field "domi": values for this field should not be longer than 3 characters
	<u>new</u> ;blah blah blah;pots;y	#invalid value for field "domi": must be a valid whole number
Bad syntax, such as missing delimiters	111 blah blah blah pots y	#Not all of the necessary fields have been specified.
Database dependencies (see "Field Dependencies" on page 4-42).	111;blah blah blah; <u>xxx</u> ;y	#invalid value for field "st": must be a valid entry for the "type" field of the St table

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Correct dbedit Errors (Continued)

Procedure: Correct dbedit errors

Use this procedure to correct errors detected in the input file resulting from **dbedit**.

Step	Action
1	<p>Use a text editor (such as vi) to go into the error file and make corrections according to error messages in the file.</p> <p>Example You previously created a file with: dbedit -i -t domain -f temp -s";" A screen output message says, for example:</p> <pre>*** 3 lines processed *** 0 records inserted 3 record rejected due to an error *** 0 lines not processed *** dbedit completed with errors. Errors saved in file domain.error</pre> <p>The error file in this example is domain.error</p>
2	<p>Rename the error file.</p> <p>Example If the error file is named domain.error, enter mv domain.error domain1 If the error file is named domain1.error, enter mv domain1.error domain2 And so on.</p> <p>Note You must do this if you used the default (instead of -o option) name for the error file. Otherwise, in the next step, if you enter, for example: dbedit -u -t domain -f domain.error -s";" your dbedit will fail, with the message: "The input and output file names must be different."</p>
3	<p>Use dbedit on the corrected and renamed error file.</p> <p>Example Enter dbedit -i -t domain1 -f temp -l 25 -s";"</p>
4	<p>Did you receive a message saying "Errors saved in file..."</p> <ul style="list-style-type: none"> ■ If no, you are done. (But you should remove the unwanted error files and the temp file.) ■ If yes, go back to Step 1 and correct more errors.
Done.	

dbedit Insert or Update Example

Example: Dbedit to insert or update

This is an example of using **dbedit** to insert (add) or update records to a database.

Step	Action
1	<p>Use sui find to make a backup ASCII file of the table you are going to alter.</p> <p>Example If you are altering the domain table, enter sui find source=domain noheader delim=' " ; "' > hold_domain</p>
2	<p>Look up the table to be modified, either in Appendix A, "" or by using the describe command (see "describe Command" on page 4-10).</p>
3	<p>From the table description, make a note of:</p> <ul style="list-style-type: none"> ■ Each field's size and type (string, digit, set value, date-time) ■ Which fields are key fields. ■ Field dependencies. <p>Example</p> <ul style="list-style-type: none"> ■ Domain has four fields: domi (3-digit), description (40-character string), st (5-character string), and vpnbound (set value, y or n). ■ The domi field is key. ■ The st field is dependent (a value used in this field must be in the type field of the st table). <p>Note For records to be inserted, you can now verify that the key field (or fields) for each record you are inserting is NOT already used. For example, if you plan to insert a record with key field (domi) of 91, enter sui find source=domain search=domi=91 If this shows that a record already exists with domi of 91, then do not bother inserting it. If you do attempt to insert it, dbedit will give you an error messages telling you the insert failed (Step 8).</p>
4	<p>Use sui find to copy the header and first record from the database into a temp file.</p> <p>Example For domain, enter sui find source=domain noheader delim=' " ; "' maxsave=1 > temp</p> <p>Note If you are doing updates, you can sui find the records to be updated from the database into the temp file and edit those records, instead of typing them from scratch.</p>

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Step	Action
5	<p>Use a text editor (such as vi) to open the temp file.</p> <p>Example For domain, you would now see a header record and one record, resembling this:</p> <pre>#Domi;Description;St;Vpnbound 81;-;pots;n ~ ~ ~ "temp" 2 lines, 42 characters</pre> <p>Note The header record is harmless, since it starts with "#". The first record after the header is for your reference. Before you finish with the file you must either overwrite it with the new record, delete it, or insert a # as its first character.</p> <p>Reference For how to use vi, see "Edit (vi) ASCII Files" on page 4-12.</p>
6	<p>Enter each new record in the file, and save the file.</p> <p>Note</p> <ul style="list-style-type: none"> ■ Use semi-colons (;) to separate fields. ■ Follow what you noted in Step 3.
7	<p>Use dbedit with the -i (insert only), -u (update only), or -iu (insert or update) option.</p> <p>Example To add records from a file named temp to the domain database, enter dbedit -i -t domain -f temp -s";"</p> <p>Response For large input files, after every 1,000 records, you see: ***1000 lines processed***</p> <p>A successful completion looks like this: ***8 lines processed*** 5 records inserted 3 records updated dbedit completed successfully.</p>
8	<p>Did you receive a messages ending with: "Errors saved in file..."? </p> <ul style="list-style-type: none"> ■ If no, go to the next step. ■ If yes, see "Correct dbedit errors" on page 4-36.

Step	Action
9	Use sui find to check your changes. Reference See " sui find for dbedit " on page 4-17.
10	Remove the temp file. Note Save the backup (from Step 1), for a few days at least, or until you are sure you caused no harm.
11	Do you need to run sui modmat ? <ul style="list-style-type: none">■ If no, you are done.■ If yes, see Chapter 8, "Thresholding and Alerting". Reference For whether you need to run sui modmat , see " sui modmat after dbedit " on page 4-32.
Done.	

dbedit Delete Example

Example: Dbedit to delete This is an example of using **dbedit** to delete records to a database.

Step	Action
1	<p>Make a backup ASCII file of the table you are going to alter.</p> <p>Example If you are altering the domain table, enter sui find source=domain noheader delim=' " ; " ' > hold_domain</p>
2	<p>Look up the to-be-altered table, either in Appendix A, "", or by using the describe command ("describe Command" on page 4-10).</p>
3	<p>From the table description, make a note of which fields are key fields.</p> <p>Example The domi field is the key of the domain table.</p> <p>Note Something else you care about is what fields in OTHER tables are dependent on values in fields in to-be-deleted records. Although you could check this yourself (see "Field Dependency During Updates" on page 4-42), it is easier to let the dbedit command find these dependencies, in which case the delete fails for the depended upon records. (In some cases, such a delete may not fail, requiring later cleanup. See "Verify Reference Database Tables" on page 4-53.)</p>
4	<p>Create a temp file holding a copy of each record to be deleted. To do this you can either:</p> <ul style="list-style-type: none"> ■ Use vi to create such a file (If you do this, remember that you need only the key fields, but include semi-colons for omitted fields. For example, to delete Domain 91, in the temp file enter 91) ■ Use sui find to copy the to-be-deleted records from a database into a temp file.
5	<p>Use dbedit with the -d (delete option).</p> <p>Example To delete records in a file named temp from the domain database, enter dbedit -d -t domain -f temp -s";"</p>
6	<p>If you receive a message ending with:</p> <ul style="list-style-type: none"> ■ "dbedit completed successfully", go the next step. ■ "Errors saved in file...", see "Correct dbedit errors" on page 4-36.
7	<p>Use sui find to check your changes.</p> <p>Reference See "sui find for dbedit" on page 4-17.</p>

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Step	Action
8	Remove the temp file. Enter rm temp Note Save the backup (from Step 1), for a few days at least, or until you are sure you caused no harm.
9	Do you need to run sui modmat ? <ul style="list-style-type: none">■ If no, you are done.■ If yes, see Chapter 8. Reference For whether you need to run sui modmat , see " sui modmat after dbedit " on page 4-32.
Done.	

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Field Dependencies

Field Dependency During Updates

Purpose

In some cases, before you can put a value in a field in one database table, that value must already be defined in a field in another database table. Otherwise, the **dbedit** or other command fails.

Similarly, before you delete a record in one table, you need to insure it is not used in another table.

Alphabetical list

This table is an alphabetical lists of reference database tables, with field dependencies.

Reference

Field dependency is also explained with each table in [Appendix A, "Reference Database Tables"](#) and by the ["describe Command"](#) on page 4-10.

In table...	Before you put a value in field...	That value must be found in field...	In table...
acode2fdc	fdc	fdc	fdc
adjarch	swcli	cli	swarch
	stp	ne	stparch
adjroute	adjcli	adjcli	adjarch
	signet	name	signet
bdrhost	None		
bildtsroll	io_name (whenever used except for Geoprobe)	collector_name	collectors
	io_name (for Geoprobe — F6272)	source	outtcpdial
	collector_name	collector_name	collectors
carrier	None		
cellroute	cli	re	rearch
	De	cli	swarch
city	ccd	ccd	country
cmdgroup	None		

In table...	Before you put a value in field...	That value must be found in field...	In table...
cmdgroupmap	cmdgroup	name	cmdgroup
	command	name	command
collectors	collector_type	name	source
command	None		
cos	st	type	st
country	npt	npt	npt
ctcode2tc	None		
custcode	None		
custid	None		
custip	None		
customer	None		
dcode2d	None		
de2route	rt	rt	rtarch
	de (None, since de2route is for 4ESS only, and 4ESS CIMs give De)		
disabledig	fdc	fdc	fdc
dmsroute	clli	re	rearch
	de	clli	swarch
	sig	type	signaling
domain	st	type	st
	npt	npt	npt
ecosarch	None		
ecosroute	re	re	rearch
	area	area	ecosarch
eqtype	None		
ess1a2fdc	fdc	fdc	fdc
	sig	type	signaling
ewsdroute	clli	re	rearch
	de	clli	swarch
fcause	None		

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In table...	Before you put a value in field...	That value must be found in field...	In table...
fdc	sig	type	signaling
	st	type	st
fdc2tn	fdc1-fdc7	fdc	fdc
fdcgroupp	None		
fdcgrouppmap	fdcgroupp	name	fdcgroupp
	fdc	fdc	fdc
fdchelp	None		
fdcpermit	fdcgroupp	name	fdcgroupp
	sysuser	login	sysuser
gtspec	st	type	st
homedigits	cic	c9c	carrier
id2ne	ne	clli	swarch
indkdial	source	name	source
intcpdial	source	name	source
iparch	None		
ixcarrier	cic	cic	carrier
latacode	None		
lrarch	None		
lrn2ne	ne	clli	swarch
		scpccli	scparch
		ne	stparch
		adjcli	adjarch
lspcalendar	datatype	datatype	lspdays
lspdays	None		
lsphours	datatype	datatype	lspdays
man_thresh_xx	lspid	each unique pairing of values in the datatype and lspid fields, such as b0, b1, b2...w0, w1, w2...	lsphours
	FQ fields	See "FQ fields" on page A-82	

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In table...	Before you put a value in field...	That value must be found in field...	In table...
mean_xx	lspid	each unique pairing of values in the daytype and lspid fields, such as b0, b1, b2...w0, w1, w2...	lsphours
	FQ fields	See "FQ fields" on page A-82	
menutables	None		
netgroup	None		
netgroupmap	netgroup	name	netgroup
	netseg	name	netseg
netpermit	sysuser	login	sysuser
	netseg	name	netseg or netgroup
netseg	None		
netsegmap	netseg	name	netseg
	ne	cli, scparch, ne, adjcli, or area	swarch, scparch, stparch, adjarch, or arch
notify	sysuser	login	sysuser
npt	None		
oline2st	st	type	st
otr2fdc	fdc	fdc	fdc
outkdial	source	name	source
outtcpdial	source	name	source
owner	None		
pc2cli	cli	cli	swarch
potsroute	ne	cli	swarch
pptemplate	None		
pptempmap_fdc	fdc	fdc	fdc
	template_name	template_name	pptemplate
pptemp_columns	template_name	template_name	pptemplate
referral	ne	cli, scpclli, ne, adjcli, or area	swarch, scparch, stparch, adjarch, or ecosarch
	fdc	fdc	fdc

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In table...	Before you put a value in field...	That value must be found in field...	In table...
reports	fdcgrou	name	fdcgrou
rearch	re	cli	swarch
	source	name	source
route1a	cli	re	rearch
	de	cli	swarch
route5e	cli	re	rearch
	de	cli	swarch
rtarch	None		
samplingrate	re	re	rearch
	fdc	fdc	fdc
scode2sig	signaling	type	signaling
scparch	stp	ne	stparch
scproute	scpccli	scpccli	scparch
	signet	name	signet
sdthresh	fdc	fdc	fdc
	ne	cli, scpccli, ne, adjcli, or area	swarch, scparch, stparch, adjarch, or ecosarch
sdttype	None		
searchalias	ne	cli, scpccli, adjcli, or area	swarch, scparch, adjarch, or ecosarch
signaling	None		
signet	None		
source	name	name	bdrhost
st	None		
stcode2st	st	type	st
stparch	owner	id	owner
	signet	name	signet
swarch	cc	cc	country
	eqtype	type	eqtype
	stp	ne	stparch
	owner	id	owner

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In table...	Before you put a value in field...	That value must be found in field...	In table...
sysuser	cmdgroup	name	cmdgroup
	fdgroup	name	fdgroup
tcpdiag	None		
univconfig	source	name	source
univroute	cli	re	rearch
	de	cli	swarch
	sig	type	signaling
vpnid	None		
vpnroute	signet	name	signet
	scpccli	scpccli	scparch

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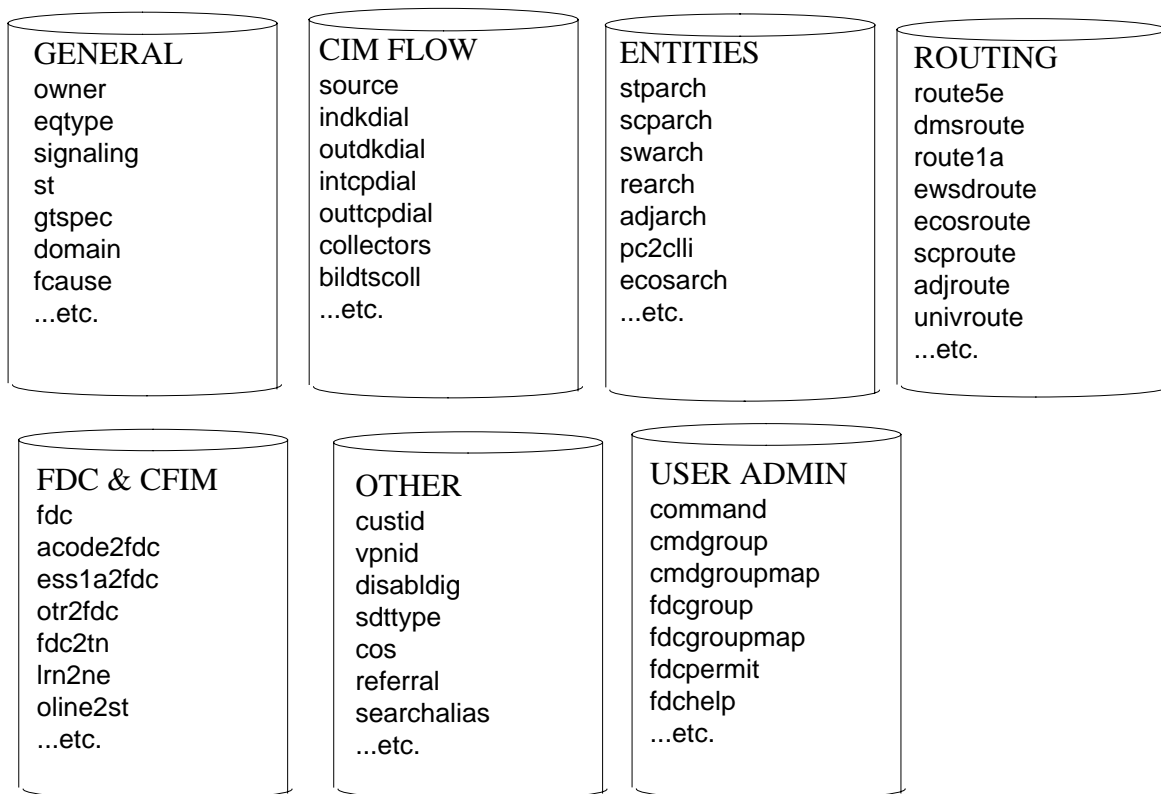
Field Dependency During Installation

Purpose

Often, before you can put a value in a field in one database table, that value must already be defined in a field in another table. Otherwise, the **dbedit** or other command fails. During installation, the best way to avoid field dependency problems is to install tables in a specific order. Most often, you use **dbedit** to install values in a table, or update values preloaded in the table. But some tables use other tools (for example, the **add_ntpuser** command adds a record for an NTP user to the sysuser table).

Installation order summary

This illustration summarizes information in the table at "[Installation order](#)" on page 4-49. For complete information, see that table.



(Continued on next page)

Field Dependency During Installation (Continued)

Installation order notes The list "Installation order" on page 4-49 gives installation order. Columns are as follows:

Column	Description
Group	Install tables in each group before installing the next group.
Install...	Indentations ("—") mean you first install the table indented from (above the indented table). If no indentations are shown the order shown is recommended but not required.
After...	This shows the order of tables.
Pre-populated	During installation, values are either: <ul style="list-style-type: none"> ■ Y —Preinstalled. Your NTP support organization can help you modify them. ■ N — NOT preinstalled. Your NTP support organization can help enter values you provide.

Installation order To avoid failure by **dbedit**, **sysuser**, or other commands affecting databases, install tables in the order given in this table.

Note

Your system may not use all tables listed.

Group	Install ...	After...	Prepopulated
General	owner	None	N
	rqtype	None	Y
	signaling	None	Y
	st	None	Y
	— gtspec	st	Y
	— domain	st, npt	Y
	fcause	None	Y
	menutable	None	Y
	samplingrate		Y
	signet	None	Y
	bdrhost	None	N

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Group	Install ...	After...	Prepopulated
CIM flow	npt	None	Y
	source	bdrhost (only if you use RDS — refsynch)	N
	— indkdial	source	N
	— outkdial	source	N
	— intcpdial	source	N
	— outtcpdial	source	N
	collectors	None	Y
	— bildscoll	collectors	Y
Entities	lrarch	None	N
	stparch	owner, signet	N
	— scparch	stparch	N
	— swarch	rqtype, stparch, owner	N
	— — rearch	source, swarch	N
	— — adjarch	swarch, stparch	N
	— — pc2cli	swarch	N
	ecosarch	None	N
	rtarch	None	N
	route5e	rearch, swarch	N
Routing	dmsroute	rearch, swarch, signaling	N
	scproute	scparch, signet	N
	route1a	rearch, swarch	N
	ewsdroute	rearch, swarch	N
	ecosroute	rearch, swarch	N
	adjroute	adjarch, signet	N
	de2route	rtarch	N
	cellroute	swarch, rearch	N
	hlrroute	lrarch, rearch	N
	potsroute	swarch	N
	vpnroute	scparch, signet	N
	vnivroute	rearch, swarch, signaling	N
FDC & CFIM	fdc	eqtype, signaling, st	Y

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Group	Install ...	After...	Prepopulated
	— acode2fdc	fdc	Y
	— ess1a2fdc	fdc, signaling	Y
	— otr2fdc	fdc	Y
	— fdc2tn	fdc	Y
	lrn2ne	swarch, scparch, stparch, adjarch	N
	oline2st	st	N
	dcode2d	None	Y
	scode2sig	signalling	Y
	stcode2st	st	Y
	id2ne	swarch	Y
Other	carrier	None	Y
	city	country	Y
	custcode	None	N
	custid	None	N
	custip	None	N
	customer	None	N
	vpnid	None	N
	disabledig	fdc	N
	ixcarrier	carrier	N
	latacode	None	N
	lspcalendar	lspdays	N
	lspdays	None	Y
	lsphours	lspdays	Y
	man_thresh_xx	lsphours	Y
	mean_xx	— lsphours — man_thresh_xx	Y
	sdttype	None	?
	cos	st	N
	referral	fdc; swarch, scparch, stparch, adjarch, ecosarch	N
	searchalias	swarch, scparch, adjarch, ecosarch	N
	sdthresh	fdc; swarch, scparch, stparch, adjarch, ecosarch	N

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Group	Install ...	After...	Prepopulated
	country	npt	Y
User admin	command	None	Y
	cmdgroup	None	N
	— cmdgroupmap	command, cmdgroup	N
	fdgroup	None	N
	— fdgroupmap	fdc, fdgroup	N
	— fdpermit	fdgroup	N
	fdchelp	None	Y
	netseg	None	N
	— netsegmap	netseg, (any) swarch, scparch, stparch, adjarch, ecosarch	N
	netgroup	None	N
	— netgroupmap	netgroup	N
	— netpermit	sysuser, (either) netseg or netgroup	N
	— reports	fdgroup	N
	sysuser	cmdgroup, fdgroup, netgroup	N
	notify	sysuser	N
Pattern painter	pptemplate	None	Y
	— pptempmap_fdc	pptemplate, fdc	N
	— pptemp_columns	pptemplate	Y

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Verify Reference Database Tables

Database Schema

Overview

The data in database tables is checked three ways:

- **Dbedit.** During execution of the dbedit command, with errors sent to a file. See ["Correct dbedit Errors" on page 4-33](#).
 - **Audits.** If dbedit failed to prevent a problem, you may need to run an audit. See ["NTP Audits" on page 4-54](#).
 - **Incon logs.** The incon logs record inconsistencies, such as incoming data that cannot be converted due to inconsistencies in database definitions (missing or logically incompatible definitions). See incon logs on ["incon Log" on page 11-22](#).
-

NTP Audits

Purpose

The **audit** command checks for inconsistencies in the following reference database tables.

Note

Not checked. The **audit** command does not check the ecosarch table, or other “arch” tables not listed above.

Audit..	To verify that...
adjarch	Adjunct frames (NSCX and Conversant only) identified in this database table are also identified in the adjroute database table.
dmsroute	Every CLLI code in dmsroute corresponds to an Re in rearch with conv field dms.
fdc	For every FDC with eqtype equal to 4ess there is at least one Sampling Rate record in the sampling rate table.
scparch	<ul style="list-style-type: none"> ■ Each SCP has only one mate. ■ Each SCP pair has a unique “home”. ■ The SCP pair has the same STP pair.
owner	<ul style="list-style-type: none"> ■ Only one ID has its type equal to “owner”.
rearch	<ul style="list-style-type: none"> ■ All switches with conv field 5ess have at least one entry as a CLLI code in route5e. ■ All switches with conv field dms have at least one entry as a CLLI code in dmsroute. ■ All switches with conv field 1aess have at least one entry as a CLLI code in route1a. ■ All switches with conv field of 4ess have at least one sampling rate record. ■ All records with a source field CP do not have “-” as the value of the tag field. (The tag must be a channel number defined by an SCP when detecting links.) ■ All combinations of source and tag are unique for sources with type field CP.
route1a	Every CLLI code in route1a corresponds to an RE in rearch with conv field 1aess.
route5e	Every CLLI code in route5e corresponds to an RE in rearch table with conv field 5ess.
univroute	Every CLLI code in univroute corresponds to an RE in rearch with conv field univ.
netsegmap	<p>Each network entity in the following tables is assigned to at least one netseg in netsegmap.</p> <ul style="list-style-type: none"> ■ swarch ■ scparch ■ adjarch

Audit..	To verify that..
adjarch, swarch, scparch, lrarch	Each DPC (destination point code) occurs only once among these tables.
digits (multi-table)	There are no duplicate digits across the adjroute, scproute, potsroute, and vpnroute tables. (The same digit in two or more tables is a duplicate.)

audit command

The **audit** command checks for inconsistencies in reference database tables. You run it from shell. Output is stored in an ASCII file, which you can print, view, or use as an input file to **dbedit**.

Syntax

```
audit [-t type] [-o output_file]
```

Example

To audit the **fdc** table and send the output to the file **fdcount**, enter
audit -t fdc -o fdcout

(Continued on next page)

NTP Audits (Continued)

Parameters

- **-t type** — The *type* parameter identifies the particular audit to be performed. Valid values are (omit this parameter to default to all):
 - all (audits all of the other items in this list)
 - adjarch
 - digits field (in multiple tables)
 - dpc field (in multiple tables)
 - dmsroute
 - fdc
 - netsegmap
 - owner
 - rearch
 - route1a
 - route5e
 - sdthresh
 - scparch
 - univroute
- **-o output_file** — Names the file where the output is to be stored. If this is omitted, the default file name is audit.out.

Output example

The following is an example of output of an audit of the fdcount file:

```
fdc's not in fdcgroupmap table
444010
444vca
aufdc3a
aufdc3b
```

```
fdc's not in swsampling table
444007
444008
444009
444010
aufdc3b
```

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Introduction

Purpose

This chapter is about administering NTP reference databases so network elements and network topology appear in the following CFIM fields.:

CFIM field	Definition	Reference
Re	Reporting entity. The entity sends CIMs (call information messages) to NTP. These messages may represent either unsuccessful or successful events.	"Re and De description" on page 5-5
De	Distant entity. An element referenced in the CIM, such as a switch an Re failed to reach or successfully connected to.	
Related	Related entity. A related entity is a network element that is part of setting up a call. Among different conversions (see "What is a "conversion"?" on page 5-7), there is much variability about how and whether the Related field is populated.	"Diagram 2" on page 2-27
Rs, Ds	Reporting and distant STPs and the mapping to Re's defined in the swarch table.	"stparch Table" on page A-142
Rt	Appears on CFIM's from the 4ESS conversions only (F6263).	"Rt illustration" on page 5-40

Note

- **Other.** Other CFIM fields are network elements, but are NOT covered in this chapter because they require little administration—either because they are taken directly from CIMs or use a simple code-to-output conversion from pre-filled administration tables.
- **Thresholding.** For basic thresholding, fields above are thresholded as follows:

— Re — RE/FDC

— De — De/FDC

If you implement flexible thresholding, thresholding is on:

— Re only

— Rt — Rt/Ccd/Fdc

(Continued on next page)

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Introduction (Continued)

Add and delete

- **Add.** Various procedures in this chapter tell how to add network elements.
- **Delete.** To delete an element, use its “Add” procedure, but in reverse order. See ["Delete a Network Element" on page 5-72](#) for tips and guidelines.

Dbedit

This chapter uses **dbedit** a lot. Note the following:

- **How to.** For how to use **dbedit** for addition, modification, and deletion of database records, see ["dbedit Insert or Update Example" on page 4-37](#).
- **Field values.** For what values to assign to each field in a table, see each table in, [Appendix A, "Reference Database Tables"](#).
- **Backup.** We urge you to back up each table into an ASCII file before you **dbedit** it. For example, to back up the swarch table, enter **sui find source=swarch noheader delim='";'' > swarch.backup**
- **Templates.** Several procedures ask you to **sui find** a record from a file and use it as a template, or sample file, to modify and use for database modifications. For example to get a template from the rearch table, enter:

```
sui find source=rearch noheader delim='";'' maxsave=1 > temp
```

If you do this, and the temp file is empty, it means there are currently no records in the database. If that happens, you must create the record with a text editor (such as **vi**), without a template.

Re and De

Re and De Overview

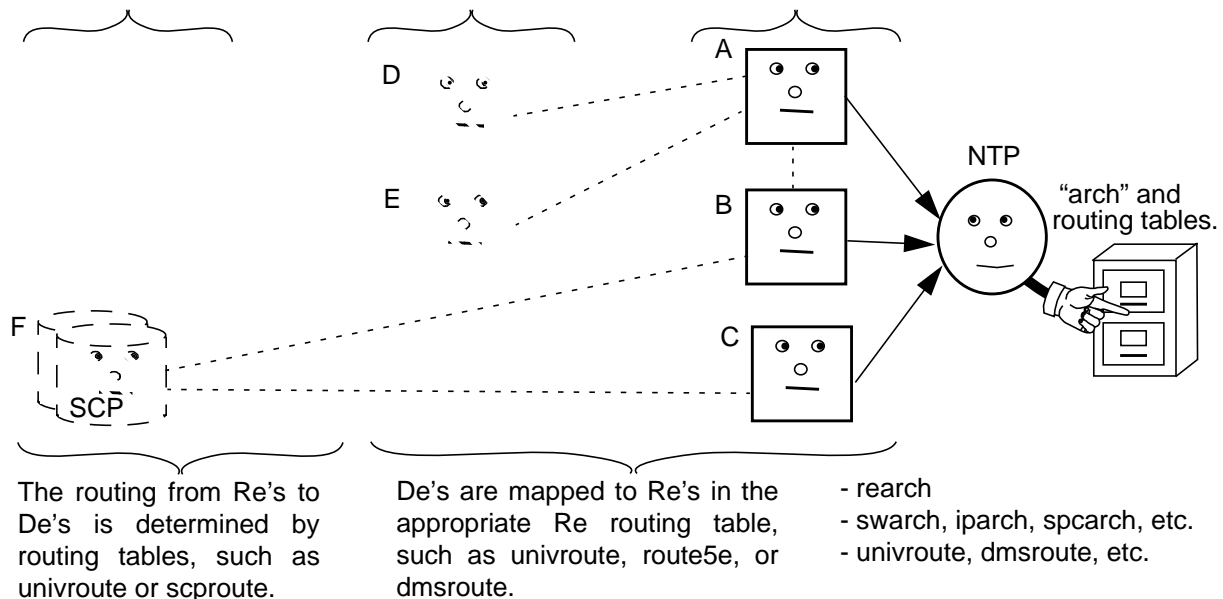
Re and De description

NTP sees Re's and De's according to what you put in NTP's routing and architecture tables.

De's. Defined in non-swarch "arch" table. Can never be Re's. (Example SCPs in spcarch.)

De's. Defined in swarch ONLY. (May be Re's too, if defined in the reach table.)

Re's. Defined in swarch and reach. (May be De's too, if the network has internal trunking between offices (i.e., tandems).)



In this illustration:

- **Re.** A, B, and C are Re's.
- **De.**
 - A sees B, D, and E as De's (per their route tables).
 - B sees A as a De (per its route table).
 - B and C see F as a De (per their scproute table).

(Continued on next page)

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Re and De Overview (Continued)

“Arch” and route tables

This section shows:

- “Arch” tables where Re’s and De’s are defined.
- Routing tables where Re’s are mapped to De’s. (For more info, by conversion, see the table in [Step 3 on page 5-52](#).)

A network element in this CFIM field	Is defined in this “arch” table	Re’s are mapped to De’s in this route table	Reference
Re	swarch, then rearch	^a Each Re’s own routing table (Example: If Re is a 5ESS, use the route5e table)	"Add an Re" on page 5-14
De, where the De could also be an Re	swarch		Step 3 on page 5-52
De, where the De could never be an Re	TO BE PROVIDED.	TO BE PROVIDED.	TO BE PROVIDED.
De, where the De could never be an Re <ul style="list-style-type: none"> ■ SCP ■ Cell base station ■ Location register ■ ^fECOS area ■ Adjunct 	De’s own “arch” table (except cell base stations) <ul style="list-style-type: none"> ■ scparch ■ ^cswarch ■ lrarch ■ ecosarch ■ adjarch 	De’s own routing table (except location registers) <ul style="list-style-type: none"> ■ ^bscproute ■ ^dcellroute ■ ^eTo map to: <ul style="list-style-type: none"> — AUTOPLEX MSC Re’s, use route5e — DMS-MTX MSC Re’s, use dmsroute ■ ecosroute ■ adjroute 	"Add De-Only Elements" on page 5-25 <ul style="list-style-type: none"> ■ "Add an SCP as De" on page 5-27 ■ "Add a cell base station" on page 5-34 ■ "Add a location register as a De" on page 5-30 ■ "Add an ECOS area as De" on page 5-38 ■ "Add an adjunct as De" on page 5-36

a. **Re/De.** Remember, an Re can be De to another Re, if mapped in the other Re’s routing table.

b. **Scproute.** Also defines Rs and Ds fields on CFIMs.

c. **No cellarch.** There is no cellarch. Instead use swarch, with eqtype of base or cell. (Unlike other values in swarch, cell base stations can NOT be put in Rearch to become Re’s.)

d. **Cellroute.** Maps to AUTOPLEX (5ESS) or DMS MTX MSC Re’s to cells.

e. **No hlrroute.** There is no “location register route” table (and hlrroute is gone).

f. **Ecos Area, Adjuncts.** Supported by 4ESS network elements.

Re Conversions

What is a “conversion”?

How you administer network elements depends on how NTP converts CIMs to CFIMs for a specific implementation. A “conversion” means whatever NTP does to an Re’s CIMs to CFIMs.

This term refers not just to the message parser NTP uses in CIM-to-CFIM conversion, but also to the administrative procedures used to set up the interface between the Re and NTP. There are different conversions for different, combination of Re type and sources type.

Reference

Conversions are listed in the second column of the table at ["Recognize a CFIM's conversion by Retype on CFIM" on page 5-9](#)).

Note

F numbers. With some conversions, we give a number (such as F6305). These make clear which conversion we are talking about,.

Why discuss conversion?

You need to be aware of conversions in two cases:

- **Troubleshoot CFIMs.** If something is wrong with a CFIM, you need to know its conversion, to know what tables and fields to check. See ["Find a CFIM's conversion" on page 5-8](#).
- **Add Re's.** Before you can add an Re, you need to know its conversion to know what tables and fields to populate. See ["Figure out what conversion to use" on page 5-13](#).

Conversion examples

For example, adding a 5ESS Re differs according to which of the following conversions NTP will use.

- 5ess conversion — used if Re’s source is an NFM (or other EMS).
- GeoProbe (F6272) conversion — used if the Re’s source is a GeoProbe.
- IPDR (F6305) conversion — used if the Re’s CIMs are IPDRs, regardless of source.
- 7R/E Direct TCP/IP (proposed F6341) conversion — Used if we collect CIMs from a 5ESS ASM (administrative services module).

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Re Conversions (Continued)

Procedure: Find a CFIM's conversion Use this procedure to find out what conversion a CFIM's Re uses, and to then find out what fields and tables to check to fix CFIM problems.

Step	Action
1	<p>Look up a CFIM's Re in Rearch, and then look in the record's Conv field for the conversion. What conversion each Conv value means is explained at "conv" on page A-114.</p> <pre> REARCH (defines Re's, from swarch) Re Source Tag Conv . . . 5ess1111111 nfm1 - 5ess ... axe333333333 tmos1 - axetrado </pre> <p style="text-align: right;">The conversion (conv field).</p> <pre> CFIM Re Retype De Detype Source 5ess1111111 5ess - - nfm1 axe333333333 axe10 - - tmos1 </pre> <p>Note You may also need to see the Source table. See "How Retype can be wrong" on page 5-11 for an example, and see "conv" on page A-114 for details.</p>
2	<p>If the CFIM is from a consultant-added CDR conversion (F6306), see your Lucent Technologies consultant for tables and fields used. Otherwise, for:</p> <ul style="list-style-type: none"> ■ What tables a conversion uses, see "Tables to dbedit to add an Re" on page 5-20. ■ How to fill in those fields for a conversion, see each table in Appendix A, "Reference Database Tables".
Done	

Note

Shortcuts. You may be able to spot a CFIM's conversion by the following:

- ["Recognize a CFIM's conversion by Retype on CFIM" on page 5-9](#).
- ["Recognize a CFIM's conversion by Source on CFIM" on page 5-12](#)

(Continued on next page)

Re Conversions (Continued)

Recognize a CFIM's conversion by Retype on CFIM

If you know you have implemented only some conversions, and they do not overlap (do not put the same values in Retype), you can use this table alone to recognize a CFIM's conversions. (But see, ["How Retype can be wrong" on page 5-11.](#)) If you need to be sure, use the procedure ["Find a CFIM's conversion" on page 5-8.](#)

- These Retypes are what we recommend, but by adding values to the eqtype table, and using them in the Eqtype field of the swarch table, the system administrator can cause virtually anything to appear in a CFIM's Retype (or Detype) field.
- OSPS, TOPS. For messages types collected, and feature numbers, see "osps" and "tops" in the "What CIMs are" table in Appendix B of the *BB-GUI User's Guide*. Also see ["OTR FDCs" on page 5-65.](#)
- The following use the configurable converter (ccc): AXE 10 (F6186), AXE 10 TRADO (F6313), Lucent Softswitch (F6314), IPDRs (F6305), and any from a consultant-added CDR conversion (F6306).

If you see this in a CFIM's Retype field	The CFIM probably came from this conversion
1aess	1AESS
4ess	4ESS
5ess	5ESS
7re_pds	7R/E PLS (F6259)
autoplex (or 5ess)	AUTOPLEX MSC (F6234)
dms-mtx (or dms)	DMS MTX MSC (F6276)
osps tops	OTR (5ESS OSPS module) OTR (DMS TOPS module)
dms100, dms200, dms250, or dms500	DMS
ewsd	EWSD (F6171)
succ	Succession SN02 (F6289)
ANY monitored by a GeoProbe, So look in the Source field for a value (such as inet1) indicating a GeoProbe source.	GeoProbe (F6272)
axe10 in the Retype field. (See the Source field, where F6186 has BILLDATS type sources, and F6313 has an EMS or direct-from-switch source.)	AXE 10 (F6186)
	AXE 10 TRADO (F6313)
softsw	Lucent Softswitch (F6314)

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If you see this in a CFIM's Retype field	The CFIM probably came from this conversion
ANY monitored by a mediation system producing IPDRs. So look in the Source field for a value indicating an IPDR type source (such as navis1).	IPDRs (F6305)
ANY , depending on the feature.	Any from a consultant-added CDR conversion (F6306)

(Continued on next page)

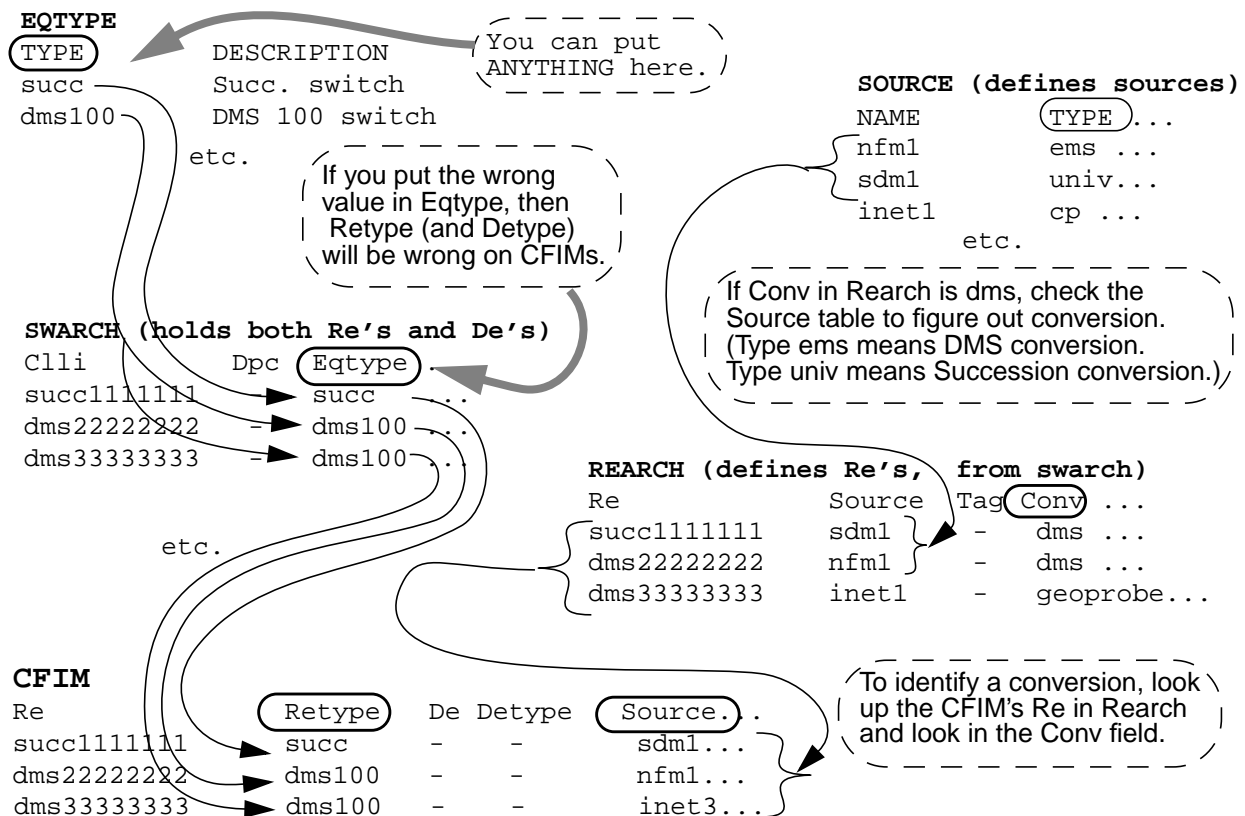
Re Conversions (Continued)

How Retype can be wrong

You cannot be sure the Retype on CFIMs will identify the conversion. This is because the Retype field takes its value from the type field in the Eqtype table, and you can put ANYTHING in that field. If you put the wrong value in Eqtype, then Retype (and Detype) will be wrong in CFIMs.

Note

A conversion is really identified in the Rearch table's Conv field. (You may need to see the source table too — currently, you need do this only when the value in the Conv field is dms.)



Non-example

FDCs. You might think you can take a CFIM's FDC, look it up in the FDC table, and identify the CFIM's Retype in the FDC's Eqtype field. That may work, but a FDC's Eqtype can also be wrong.

(Continued on next page)

Re Conversions (Continued)

Recognize a CFIM's conversion by Source on CFIM

The CFIM's Source field may indicate what conversion the CFIM used, if all three of the following are true.

- The name is meaningful (not just machine1, machine2, etc.)
- The name does NOT indicate an EMS (such as NFM1) or BILLDATS (such as billdats1), since those are not unique to one conversion.
- You know something about sources, as explained in this table.

If this does not help, use ["Find a CFIM's conversion" on page 5-8](#).

If the CFIM's Source field indicates this	The CFIM is probably from this conversion
NA since an EMS that is not unique to one conversion.	1AESS
A CP	4ESS
NA since an EMS is not unique to one conversion.	5ESS
NA (but in the future, possibly OneLine Manager, such as olm1, olm2, etc.)	7R/E PLS (F6259)
NA since an EMS	AUTOPLEX MSC (F6234)
NA since an EMS	DMS MTX MSC (F6276)
An OSPS	OTR (5ESS OSPS module)
A TOPS	OTR (DMS TOPS module)
NA since an EMS is not unique to one conversion.	DMS
NA since an EMS is not unique to one conversion.	EWSD (F6171)
An SDM	Succession SN02 (F6289)
An Inet Geoprobe	GeoProbe (F6272)
NA since a BILLDATS	AXE 10 (F6186)
A TMOS	AXE 10 TRADO (F6313)
NA since a BILLDATS is not unique to one conversion.	Possibly Lucent Softswitch (F6314)
An IPDR-producing system, such as Navis	IPDRs (F6305)
NA since the source could be anything.	Any from a consultant-added CDR conversion (F6306)

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Re Conversions (Continued)

Procedure: Figure out what conversion to use

Before you add an Re, you must determine what conversion it uses. Then you can use the procedure, "[Add an Re](#)" on page 5-14. Note that:

- **Previous Re's.** You may already know the appropriate conversion from adding previous Re's. You can take a CFIM from an equivalent Re, and determine its conversion from "[Find a CFIM's conversion](#)" on page 5-8.
 - **Judge by source type.** The CIM source may indicate the conversion type. For information on sources and conversions, see "[Which source to use for an Re?](#)" on page 14-8.
 - **Ask for help.** You can ask your NTP support organization.
-

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Add an Re

Procedure: Add an Re Use this procedure to add an Re.

Note

STPs and SCPs. You should add STPs and SCPs first before adding other Re's. See [Chapter , "Add and Map SCPs and STPs"](#).

Step	Action
Implement the conversion	
1	Use "Figure out what conversion to use" on page 5-13 .
2	<p>If this is the first Re to be added for a conversion, then you must first implement the conversion. With help from your NTP support organization:</p> <ul style="list-style-type: none"> ■ Have the NTP support organization ensure the conversion is turned on (at installation time). ■ Make sure the source for this Re has been added to NTP. See Chapter 14, "CIM Source Administration". ■ See "Tables to dbedit to add an Re" on page 5-20. Look at the column for the conversion, and ensure tables marked with "1" are populated with needed values. For each "1", to see which values are needed for each feature, see each table in Appendix A, "Reference Database Tables". (Many such tables are pre-populated with values for all features.) <p>Note Some "1" tables are for defining FDCs, explained at "Add or Modify FDCs" on page 5-58. For a similar table regarding sources, see Chapter 14, "CIM Source Administration".</p>
Make a diagram	
3	<p>For reference throughout this procedure:</p> <ul style="list-style-type: none"> ■ Draw a diagram showing the Re, its source, and NTP. (For examples for each conversion, see the "CIM-to-CFIM Conversions" section in Appendix B of the <i>GUI User's Guide</i>.) ■ With help from the Re's administrator, draw in other elements the Re is connected to (such as SCPs, STPs, and possible De's), and existing Re's that see the new Re as a De.
Add the Re to swarch	
4	<p>If the Re is not already in swarch, use "Add to Swarch (or other "arch") Table" on page 5-46 to add the Re to swarch.</p> <p>Note Groups and segments. The last step of that procedure is to use "Manage Network Groups and Segments" on page 7-24 to add the network element to network groups or segments, as desired.</p>

Step	Action
Get a source	
5	<p>Determine the new Re's source (you will need it, for the Source field of the rearch table, in Step 7).</p> <p>Note You may be able to use an existing source, or you may need to add a new source. A few conversions require a new source for each Re. See Chapter 14, "CIM Source Administration" for what to do. To list sources in NTP, enter: sui find source=source</p>
6	<p>Ensure the NTP interface to the source is activated. If source has an interface to more than one Re, it will probably already be active. Use "Activate or deactivate a source interface with dbedit" on page 14-13.</p>
Add Re to rearch	
7	<p>Use "Add to Rearch Table" on page 5-48 to add the new Re to rearch.</p> <p>Note</p> <ul style="list-style-type: none"> ■ Autoplex MSC. With Autoplex MSC (F6234) conversion, add the ECP as Re. Then use this procedure again to add each 5ESS module as an Re. See "AUTOPLEX MSC (F6234)" on page 5-18. ■ GeoProbe. If a GeoProbe (F6272) Re is ALREADY in rearch (for another conversion), add it a SECOND time — with a GeoProbe in the Source field and univ in the Conv field.
Add the Re's swarch-type De's, and map the Re to those De's	
8	<p>Consult your diagram to figure out what swarch-type De's the new Re can see. Determine routes out of the Re a call can be processed, and identify De's for all routes.</p>
9	<p>If any of those De's are not in swarch, add them to swarch by using "Add to Swarch (or other "arch") Table" on page 5-46.</p>
10	<p>Use the procedure "Map an Re to its swarch De's" on page 5-51, to Map the Re to each swarch-type De. Do this in the Re's routing table. For example, if the Re is a 5ESS from a 5ESS conversion, dbedit route5e.</p> <p>Note With some conversions, routing tables are not used. Step 3 of "Map an Re to its swarch De's" on page 5-51, tells you what to do.</p>
Add the new Re as De's	
11	<p>Consult your diagram to figure out what EXISTING Re's see the new Re as a De.</p>

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Step	Action
12	<p>Note Normally this step is done when other Re's are added.</p> <p>Do the same as Step 10, but in the opposite direction. That is, add the new Re to the routing table of each EXISTING Re that sees it as a De.</p> <p>Example If an existing 1AESS Re see's the new 5ESS Re as a De, dbedit route1a.</p>
Add SCPs and map SCPs and STPs	
13	<p>Note Normally, you should have added STPs and SCPs first before other Re's. However, at this point you can check .</p> <p>Go to "Tables to dbedit to add an Re" on page 5-20. Look in the column for the Re's conversion, at the scparch row. Is there a "2" there?</p> <ul style="list-style-type: none"> ■ If no, go to the next step. ■ If yes use the procedure in "Add and Map SCPs and STPs" on page 5-26. If you are mapping to an existing SCP, you can start at Step 8 on "" on page 5-28 (and you may need to do nothing).
Conversion specifics	
14	Go to " Add an Re, conversion specifics " on page 5-18. Then return here.
Test and monitor	
15	<p>To ensure CIMs are arriving from the switch, and are being changed to CFIMs, enter (here switch 2222222222 is being checked): sui find source=cfim search=re=2222222222</p> <p>or sui trapcfim re=2222222</p> <p>Note Look for CFIMs with the current date. If you see no data after 5 to 10 minutes, check the log files in \$LOGDATA to see if data is being discarded. See also "CIM Source Administration" on page 14-1 for more on monitoring data links.</p>

Step	Action
16	<p>Use the operating system cat command or a text editor (such as vi) to view the latest incon (inconsistency) log.</p> <p>Example</p> <ul style="list-style-type: none"> ■ To go to the \$LOGDATA directory and list the contents to find incon logs ■ Use a text editor (such as vi) to view the incon log with the most recent timestamp (in incon234.02.30, for example, the 234.02.30 is the julian date and time of the first message in the file). ■ A message resembling the following tells you that the record for switch clmbohxxcg0 in the swarch table needs a value in its hnpa field. Use dbedit to correct the record in the swarch table. <pre>Tue Jun 24 12:58:41 1997 HP-UX:9000/891:io_cpl:ntp Incon.C:121 ERR002 EVENT No HNPA for "clmbohxxcg0" in swarch</pre> <p>Reference See "incon Log" on page 11-22.</p>
Correct any inconsistencies reported for the new switch.	
17	<p>Only for a new 4ESS Re, make a note to watch for CFIM's where the new 4ESS is Re, and the Rt field is incorrect. This can happen if the 4ESS talks to new De's not in the de2route table.</p> <p>Reference "Correct Wrong or Missing Rt Values" on page 5-41.</p>
Run sui modmat	
18	<p>Are you using flexible thresholding only?</p> <ul style="list-style-type: none"> ■ If yes, STOP. You are done. ■ If no, go to the next step.
19	A system soak must occur for the new Re. See Chapter 8, "Thresholding and Alerting" .
20	<p>Note Do not turn on the Ai field for new Re's (and De's) until you are sure you are getting data throughout all periods of the day.</p> <p>Turn off thresholding, run sui modmat, turn on thresholding, and again run sui modmat. See "Stop or restart thresholding via Ai" on page 8-32 to change Ai to "on" in the CLLI's record in the swarch table. Then run sui modmat (see "sui modmat Command" on page 8-35) to start thresholding.</p>
Done	

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Add an Re (Continued)

Add an Re, conversion specifics

This is a sub-task of "Add an Re" on page 5-14. When you finish here, return to [Step 14](#) on page 5-16. This sub-task requires you to know the Re's conversion (see ["Figure out what conversion to use"](#) on page 5-13).

If Conversion is	Do this
1AESS	NA
4ESS	<ul style="list-style-type: none"> ■ If you implemented Adjuncts, and the new Re sees them as De's, see "Add an adjunct as De" on page 5-36. If the Re sees existing adjuncts as Re's, start at Step 8 on page 5-36 (in this case, you may need to do nothing). ■ If you implemented ECOS areas, and the new Re sees them as De's see "Add an ECOS area as De" on page 5-38. If the Re sees existing ECOS areas as Re's start at Step 8 on page 5-36 (in this case, you may need to do nothing).
5ESS	IF the switch is a 5ESS, and IF it is in generic 5E12 or later, ask the switch administrator if the switch has multiple PCs (point codes). In other words, does it have, not only a PC address for the switch, but also, one or more additional PC address for remote switching modules? If it does, use dbedit to, put the switch CLLI, and each of its PCs in the pc2ccli table. See "pc2ccli Table" on page A-106 for an illustration.
7R/E PLS (F6259)	NA
AUTOPLEX MSC (F6234)	<p>This is a wireless switch with four components, ECP, 5ESS modules, cell base stations, and location registers. Add both ECPs and 5ESS modules as Re's as follows:</p> <ul style="list-style-type: none"> ■ ECP Re. Add the following as De's: <ul style="list-style-type: none"> — Its own 5ESS modules. Use Step 8 on page 5-15. — Locations registers. Use "Add a location register as a De" on page 5-30. — Cell base stations. Use "Add a cell base station" on page 5-34. ■ Its own 5ESS modules Re's, with PSTN switches as De's. Use "Add an Re" on page 5-14. (In other words, use this procedure again for each 5ESS module.)
DMS MTX MSC (F6276)	This is a wireless switch. It sees as De's its cell base stations. To add them as De's, see "Add a cell base station" on page 5-34.
OTR (DMS TOPS module)	See "OTR FDCs" on page 5-65. dbedit the lrn2ne and lrarch tables, so NTP can fill in the CFIM's Lrn field. See "lrn2ne Table" on page A-75 and "lrarch Table" on page A-74.
OTR (5ESS OSPS module)	See "OTR FDCs" on page 5-65.
DMS	NA
EWSD (F6171)	NA

If Conversion is	Do this
Succession SN02 (F6289)	NA
GeoProbe (F6272)	<p>This Re is in swarch and reach. De's are NOT in swarch, any other "arch", or any routing table. Also, scparch and scproute are not used, though univlog is used.</p> <p>However, you do need to identify the new Re's De's by getting their CLLIs and point codes (from the GeoProbe administrator, or maybe from messages in the incon or univlog log), and using dbedit to add them to the pc2ccli table. (In that table, add the new Re's ccli and point code too, so other Re's can see it as a De.)</p> <p>Note</p> <ul style="list-style-type: none"> ■ Point codes arrive in GeoProbe CIMs' OPC and DPC fields. You populate pc2ccli so NTP knows how to convert them to CLLIs. ■ You do NOT need to add the new Re and its De's to route tables (such as dmsroute), or "arch" tables (such as scparch) other than swarch. GeoProbe conversion does not use those tables.
AXE 10 (F6186)	<p>Add Re (and its De's) to the id2ne table. De's are NOT in swarch, any other "arch", or any routing table, but are taken from CDRs. Also, scparch and scproute are not used.</p> <p>Note This will be changed by MR ntp963956.</p>
AXE 10 TRADO (F6313)	NA
Lucent Softswitch (F6314)	dbedit the lrn2ne and lrarch tables, so NTP can fill in the CFIM's Lrn field. See " lrn2ne Table " on page A-75 and " lrarch Table " on page A-74.
IPDRs (F6305)	De's in swarch need ipaddress field filled in. No routing table used for De's.
Any from a consultant- added CDR conversion (F6306)	NA

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Tables to Edit to Add an Re

Tables to dbedit to add an Re

This table lists all NTP databases you must **dbedit** when adding an Re. Tables shown for enhanced CDR analysis (F6306) may be used in consultant-configured configurable converter installations.

Legend

- **1** — **dbedit** the table before adding the FIRST Re (when setting up the interface), and edit again only if needed. Many of these tables are pre-filled, and you need only verify they are current.
- **2** — **dbedit** the table for EACH Re.
- **Grey blocks** — information to be determined.

Reference

Tables for source administration. For tables used to add CIM sources, see "[Description](#)" on page 14-9. Some sources can collect and forward data from multiple Re's. For some direct interfaces, however, you must add a unique source for EACH Re.

Table	1AESS	4ESS	5ESS and 7R/E PLS (F6259)"	5E AUTOPLEX MSC (F6234)	DMS MTX MSC (F6276)	OTR (5ESS OSPS, DMS TOPS)	DMS	EWSD (F6171)	Succession SN02 (F6289)	GeoProbe (F6272)	AXE 10 (F6186)	AXE 10 TRADO (F6313)	Lucent Softswitch (F6314)	IPDRs (F6305)	Consultant-Added CDR (F6306)
acode2fdc	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1
adjarch	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-
adjroute	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-
carrier	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
cellroute	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-
city	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
cos	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
country	-	1	-	-	-	-	-	-	-	1	-	-	1	-	1

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Table	1AESS	4ESS	5ESS and 7R/E PLS (F6259)¹	5E AUTOPLEX MSC (F6234)	DMS MTX MSC (F6276)	OTR (5ESS OSPS, DMS TOPS)	DMS	EWSD (F6171)	Succession SN02 (F6289)	GeoProbe (F6272)	AXE 10 (F6186)	AXE 10 TRADO (F6313)	Lucent Softswitch (F6314)	IPDRs (F6305)	Consultant-Added CDR (F6306)
ctcode2ct	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1
custcode	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
custid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
custip	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
customer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
dcode2d	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
de2route	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
dmsroute	-	-	-	-	2	-	2	-	2	-	-	-	-	-	-
domain	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
ecosarch	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
ecosroute	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
eqtype	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ess1a2fdc	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ewsdroute	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
fdc	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
fdc2tn	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
fdcgroupp (optional)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
fdchelp (optional)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
fdcgrouppmap (optional)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
fdcpermit (optional)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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Table	1AESS	4ESS	5ESS and 7R/E PLS (F6259)"	5E AUTOPLEX MSC (F6234)	DMS MTX MSC (F6276)	OTR (5ESS OSPS, DMS TOPS)	DMS	EWSD (F6171)	Succession SN02 (F6289)	GeoProbe (F6272)	AXE 10 (F6186)	AXE 10 TRADO (F6313)	Lucent Softswitch (F6314)	IPDRs (F6305)	Consultant-Added CDR (F6306)
gtspec (used only for GTT translations)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
homedigits (for custom configurations)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
id2ne	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
iparch (May be used for IPDR, which normally uses swarch.)	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
ixcarrier	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
latacode	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
lrarch	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-
lrn2ne	-	-	-	2	2	-	-	-	-	-	-	-	2	-	-
netsegmap (For new new Re's; you might modify other "net" tables not listed here.)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
npt	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
oline2st	-	-	-	-	-	-	-	1	-	1	-	-	-	1	1
otr2fdc	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
owner	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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Table	1AESS	4ESS	5ESS and 7R/E PLS (F6259)*	5E AUTOPLEX MSC (F6234)	DMS MTX MSC (F6276)	OTR (5ESS OSPS, DMS TOPS)	DMS	EWSD (F6171)	Succession SN02 (F6289)	GeoProbe (F6272)	AXE 10 (F6186)	AXE 10 TRADO (F6313)	Lucent Softswitch (F6314)	IPDRs (F6305)	Consultant-Added CDR (F6306)
pc2cli (Used with 5ESS switches only if they have multiple point codes.)	-	-	2	2	-	-	-	-	-	2	-	-	-	-	-
potsroute	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-
reach	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
route1a	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
route5e	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-
rtarch	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
samplingrate	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
scparch	-	2	-	-	2	-	2	-	-	-	-	-	-	-	-
scproute (may be needed for Re's using a BILLDATS source)	-	2	-	-	2	-	2	-	-	-	-	-	-	-	-
scode2sig	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
sdthresh (For optional system day thresholding, but always applies to OTR.)	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-
sdttype	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
signaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
signet		1	1	-	-	-	-	-	-	-	-	-	-	-	-
st	-	-		1	-	-	-	1	-	1	1	1	1	1	1

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Table	1AESS	4ESS	5ESS and 7R/E PLS (F6259)”	5E AUTOPLEX MSC (F6234)	DMS MTX MSC (F6276)	OTR (5ESS OSPS, DMS TOPS)	DMS	EWSD (F6171)	Succession SN02 (F6289)	GeoProbe (F6272)	AXE 10 (F6186)	AXE 10 TRADO (F6313)	Lucent Softswitch (F6314)	IPDRs (F6305)	Consultant-Added CDR (F6306)
stcode2st	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1
stparch (may be used in some CDR installations)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
swarch	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
tcapdiag	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
univroute	-	-	-	-	-	-	-	-	2	-	2	2	2	-	2
vpnid (for custom configurations)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
vpnroute (for custom configurations)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

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Add De-Only Elements

Overview

Definition

Use procedures in this section so De-only elements can show up in CFIMs' De fields.

- SCPs (signal control points) — mapped to Re's and STPs
 - AUTOPLEX (F6234) — (used by one customer only)
 - Location register
 - Cell base station (also for DMS-MTX, F6276)
 - Adjuncts (used by one customer only)
 - ECOS area (used by one customer only, F6244)
-

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Add and Map SCPs and STPs

Purpose

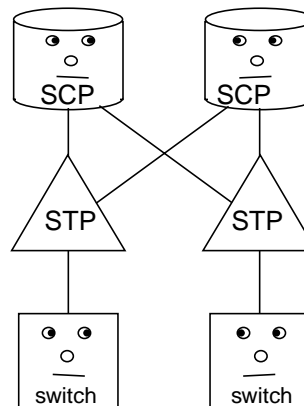
This procedure tells how to add SCPs, and how to map SCPs to Re's and STPs, so that:

- SCPs can appear as De's on CFIMs. (An SCP can NOT be an Re, since it does not create CIMs.)
- STPs can appear in the CFIM Rs and Ds fields.

The main table we **dbedit** in this procedure is scproute.

SCP and STP illustration

An SCP is actually a pair of databases, used by a pair of STPs (signal transfer points), which supply signalling (SS7) to network elements such as switches.



STPs

Although you might think of STPs (signal transfer points) as another non-switch network element, NTP treats them differently, as follows:

- There is no STP type in the eqtype table. Instead, each STP is listed in the stparch table.
- On CFIMs, STPs do not appear in De, or Related fields. Instead they are in Rs (reporting STP) and Ds (distant STP) fields.
- Adding STPs happens when you add SCPs (or other non-switches).
- STPs are not thresholded.

(Continued on next page)

Add and Map SCPs and STPs (Continued)

Which conversions use this

Go to ["Tables to dbedit to add an Re" on page 5-20](#). Look in the column for your Re's conversion, at the scparch row. Is there a "2" there? If yes, use this procedure when needed to add SCPs, and to map SCPs to STPs and Re's.

Procedure: Add an SCP as De

Use this procedure to add a new SCP as a De for existing Re's.

Reference

To edit files in this procedure you can use any ASCII text editor, such as **vi**. For more information on using **vi**, see ["Edit \(vi\) ASCII Files" on page 4-12](#).

Step	Action
Add to the scparch table	
1	To make a template record for the scparch table, enter sui find source=scparch noheader delim='";"' maxsave=1 > temp
2	Use a text editor (such as vi) to open the temp file. Response The file resembles this: #Scpclli;Mateclli;Dpc;Stp;Ai sv0apasla15;sv0bpadga15;122-101-122;sv0b;on
3	Change the second line to represent the SCP you are adding, and save the file. Reference For what to put in each field of the scparch table, see "scparch Table" on page A-126 .
4	To insert the record from the temp file into the scparch table, enter dbedit -i -t scparch -f temp -s";"
5	If you receive a message ending with: <ul style="list-style-type: none"> ■ "dbedit completed successfully", go to the next step. ■ "Errors saved in file...", see "Correct dbedit Errors" on page 4-33.
6	To verify the CLLI is in scparch, enter (this example is for CLLI 2222222222): sui find source=scparch search=scpcli=2222222222
7	Remove the temp file.

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Step	Action
Add to the scproute table	
8	<p>Is there more than one SCP in the network?</p> <ul style="list-style-type: none"> ■ If NO go to Step 17. ■ If YES, you need to use the scproute table to map which 800 and 888 numbers go to each SCP. Go to the next step.
9	To make a template record for the scproute table, enter sui find source=scproute noheader delim=";" maxsave=1 > temp
10	<p>Use a text editor (such as vi) to open the temp file, change the line to what you are adding, and save the file.</p> <p>Response The file resembles this: 122122;svladmscp01</p> <p>Reference For what to put in each field of the scproute table, see "scproute Table" on page A-128.</p>
11	To insert the record from the temp file into the scproute table, enter dbedit -i -t scproute -f temp -s";"
12	<p>If you receive a message ending with:</p> <ul style="list-style-type: none"> ■ "dbedit completed successfully", go to the next step. ■ "Errors saved in file...", see "Correct dbedit Errors" on page 4-33.
13	To verify the CLLI is in scproute, enter (this example is for scpcli 2222222222): sui find source=scproute search=scpcli=2222222222
14	Remove the temp file.
Add to gtspec	
15	<p>You may also need to add entries into the gtspec table to find De's.</p> <p>Caution Review Chapter 13, "" before attempting to make changes to the gtspec table.</p>
Run sui modmat	
16	See " Stop or restart thresholding via Ai " on page 8-32 to change Ai to "on" in the CLLI's record in the scparch table. Then run sui modmat (see " sui modmat Command " on page 8-35) to start thresholding.
Add to the netsegmap and netgroupmap tables	
17	To add the SCP to any network groups or segments you want it to belong to, see " Modify a network group or segment " on page 7-30.
Done	

Add an AUTOPLEX Location Register as De

Purpose

A location register is a database used for authenticating AUTOPLEX (wireless) calls. This section tells how to add an AUTOPLEX location register. These can show up on CFIMs as De's only, and only on CFIMs from AUTOPLEX switches.

Re's and De's

With the Autoplex conversion, you may see four types of elements.

Element	Purpose	On CFIMs from AUTOPLEX switches, seen in this field:	Reference
ECP (executive cellular processor)	Governs the AUTOPLEX	Re (it sees as De's its own 5ESS modules, location registers, or cell base station)	"Add an Re" on page 5-14
5ESS switch modules within AUTOPLEX	Connect the AUTOPLEX to the PSTN	<ul style="list-style-type: none"> ■ Re (it sees as De's switches in the PSTN) ■ De (as seen by the ECP) 	"Add an Re" on page 5-14,
Location registers	Databases for authenticating wireless calls.	De (as seen by the ECP)	"Add an AUTOPLEX Location Register as De" on page 5-29
Cell base stations	Grouping of radios and other hardware for wireless calls.	De (as seen by the ECP)	"Add an AUTOPLEX (F6234) or DMS MTX (F6276) Cell Base Station as De" on page 5-32

First-time

The following are one-time changes that must be made before the first AUTOPLEX location register can be added.

What to do	Note	Reference
Create the lrarch table	This is done automatically, when you load NTP software (G7 or later). You populate this table in "Add a location register as a De" on page 5-30.	"lrarch Table" on page A-74

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Add an AUTOPLEX Location Register as De (Continued)

Procedure: Add a location register as a De

Use this procedure to add a new location register as a De for AUTOPLEX Re's.

Reference

To edit files in this procedure you can use any ASCII text editor, such as **vi**. For more information on using **vi**, see ["Edit \(vi\) ASCII Files" on page 4-12](#).

Step	Action
Add to the lrarch table	
1	To make a template record for the lrarch table, enter sui find source=lrarch noheader delim='";"' maxsave=1 > temp
2	Use a text editor (such as vi) to open the temp file. Response The file resembles this: #Clli;Dpc;Ai svohlr01;122-101-122;on
3	Change the second line to represent the location register you are adding, and save the file. Reference For what to put in each field of the lrarch table, see "lrarch Table" on page A-74 .
4	To insert the record from the temp file into the lrarch table, enter dbedit -i -t lrarch -f temp -s";"
5	If you receive a message ending with: <ul style="list-style-type: none"> ■ "dbedit completed successfully", go to the next step. ■ "Errors saved in file...", see "Correct dbedit Errors" on page 4-33.
6	To verify the CLLI is in lrarch, enter (this example uses CLLI 2222222222): sui find source=lrarch search=clli=2222222222
7	Remove the temp file.
UN-Map location registers De's to MSC Re's	
8	There is no "location register route" table. Instead, use: <ul style="list-style-type: none"> ■ route5e table to un-map location register Re's from 5ESS AUTOPLEX MSC Re's ■ dmsroute table to un-map location register Re's from DMS-MTX MSC Re's
Add to the netsegmap and netgroupmap tables	

Step	Action
9	To add the location register to any network groups or segments you want it to belong to, see "Modify a network group or segment" on page 7-30 . Note If you create a network group of location registers, their type is lr.
Run sui modmat	
10	See "Stop or restart thresholding via Ai" on page 8-32 to change Ai to "on" in the CLLI's record in the lrarch table. Then run sui modmat (see "sui modmat Command" on page 8-35) to start thresholding.
Done	

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Add an AUTOPLEX (F6234) or DMS MTX (F6276) Cell Base Station as De

Purpose

A cell base station is a collection of radios and other hardware for wireless switching, usually located next to an antenna. This section tells how to add a cell base station so it can show up on CFIMs as De's.

You see cell base stations as De's only on CFIMs where the Re is a wireless switch—either:

- AUTOPLEX (F6234)
- DMS MTX (F6276).

Re's and De's

For what AUTOPLEX MSC (F6234) conversion sees as Re's and De's, see ["Re's and De's" on page 5-29](#).

DMS MTX MSC (F6276) conversion sees the following as Re's and De's.

Element	Purpose	On CFIMs from DMS MTX switches, seen in this field:	Reference
DMS MTX switch (as a whole, NOT by DMS modules)	Wireless switch	Re	"Add an Re" on page 5-14
Cell base stations	Grouping of radios and other hardware for wireless calls.	De	"Add an AUTOPLEX (F6234) or DMS MTX (F6276) Cell Base Station as De" on page 5-32

(Continued on next page)

Add an AUTOPLEX (F6234) or DMS MTX (F6276) Cell Base Station as De (Continued)

First time The following is a one-time change that must be made before the first cell base station can be added.

What to do	Note	Reference
Create the cellroute table.	This is done automatically, when you load NTP software (G7 or later). You populate this table in "Add a cell base station" on page 5-34.	"cellroute Table" on page A-20
Add "base" to the eqtype table. Note Do this so you can put base in the eqtype field of the swarch table for each cell base station in that table. Something similar is NOT done for location registers, since they are identified by being in the lrarch table. (Cell base stations are the only non-switches in swarch. There is no cellarch table.)	The general procedure for updating a table is in "dbedit Insert or Update Example" on page 4-37.	"eqtype Table" on page A-44

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Add an AUTOPLEX (F6234) or DMS MTX (F6276) Cell Base Station as De (Continued)

Procedure: Add a cell base station Use this procedure to add a new cell base station as a De for AUTOPLEX or DMS MTX Re's.

Reference

To edit files in this procedure you can use any ASCII text editor, such as **vi**. For more information on using **vi**, see ["Edit \(vi\) ASCII Files" on page 4-12](#).

Step	Action
Add to the swarch table	
1	Use the procedure in "Add to Swarch (or other "arch") Table" on page 5-46 to see if the new CLLI is in swarch, and add it if it is not. Note Put base in the eqtype field of the swarch table. If you fail to do this, the system will run normally, but you may have trouble identifying which CLLIs in swarch belong to cell base stations.
Add to the cellroute table	
2	To make a template record for the cellroute table, enter sui find source=cellroute noheader delim=";" maxsave=1 > temp
3	Use a text editor (such as vi) to open the temp file. Response The file resembles this: #Clli;Cell;De sv0cbauto01;121;sv0gdi5e001
4	Change the second line to what you are adding, and save the file. Reference For what to put in each field of the cellroute table, see "cellroute Table" on page A-20 .
5	To insert the record from the temp file into the cellroute table, enter dbedit -i -t cellroute -f temp -s";"
6	If you receive a message ending with: <ul style="list-style-type: none"> ■ "dbedit completed successfully", go to the next step. ■ "Errors saved in file...", see "Correct dbedit Errors" on page 4-33.
7	To verify the CLLI is in cellroute, enter (this example uses CLLI 2222222222): sui find source=cellroute search=ccli=2222222222
8	Remove the temp file.

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Step	Action
Add to the netsegmap and netgroupmap table	
9	To add the cell base station to any network groups or segments you want it to belong to, see "Modify a network group or segment" on page 7-30 . Note If you create a network group of cell base stations, their type is cell.
Run sui modmat	
10	See "Stop or restart thresholding via Ai" on page 8-32 to change Ai to "on" in the CLLI's record in the swarch table. Then run sui modmat (see "sui modmat Command" on page 8-35) to start thresholding.
Done	

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Add an Adjunct

Purpose

Adjunct switches are modules that reside on another switch but are treated as separate network entities. Use this procedure to add a new adjunct as a De. You can NOT add an adjunct as an Re.

Procedure: Add an adjunct as De

Use this procedure to add an adjunct as a De.

Reference

To edit files in this procedure you can use any ASCII text editor, such as **vi**. For more information on using **vi**, see ["Edit \(vi\) ASCII Files" on page 4-12](#).

Step	Action
Add to the adjarch table	
1	To make a template record for the adjarch table, enter sui find source=adjarch noheader delim='";"' maxsave=1 > temp
2	Use a text editor (such as vi) to open the temp file. Response The file resembles this: #Adjclli;Dpc;Type;Swclli;Stp;Ai sv0prfadj59;-;nscx;sv0prfdml84;sv0p;on
3	Change the second line to the adjunct you are adding, and save the file. Reference For what to put in each field of the adjarch table, see "adjarch Table" on page A-12 .
4	To insert the record from the temp file into the adjarch table, enter dbedit -i -t adjarch -f temp -s";"
5	If you receive a message ending with: <ul style="list-style-type: none"> ■ "dbedit completed successfully", go to the next step. ■ "Errors saved in file...", see "Correct dbedit Errors" on page 4-33.
6	To verify the CLLI is in adjarch, enter (this example uses CLLI 2222222222): sui find source=adjunct search=adjclli=2222222222
7	Remove the temp file.
Add to the adjroute table	
8	Add the same CLLI to the adjroute table. To make a template record for the adjroute table, enter sui find source=adjroute noheader delim='";"' maxsave=1 > temp

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Step	Action
9	Use a text editor (such as vi) to open the temp file. Response The file resembles this: #Digits;Adjclli 179;sv0prfadj28
10	Change the second line to the adjunct you are adding, and save the file. Reference For what to put in each field of the adjroute table, see "adjroute Table" on page A-13 .
11	If you receive a message ending with: <ul style="list-style-type: none"> ■ "dbedit completed successfully", go to the next step. ■ "Errors saved in file..", see "Correct dbedit Errors" on page 4-33.
12	To verify the CLLI is in adjroute, enter (this example uses CLLI 2222222222): sui find source=adjroute search=adjclli=2222222222
13	Remove the temp file.
Add to the netsegmap and netgroupmap tables	
14	To add the adjunct to any network groups or segments you want it to belong to, see "Modify a network group or segment" on page 7-30 .
Add to the gtspec table	
15	If the addition of the adjclli affected the gtspec table, update that table. Caution Review Chapter 13, "Update the gtspec Table" before attempting to make changes to the gtspec table.
Run sui modmat	
16	See "Stop or restart thresholding via Ai" on page 8-32 to change Ai to "on" in the CLLI's record in the adjarch table. Then run sui modmat ("sui modmat Command" on page 8-35) to start thresholding.
Done	

Add an ECOS Area

Purpose

ECOS (end-to-end Class of Service) is a way to group calls by some criteria, so NTP can treat each grouping (called an “area”) as if it were a De. Use this procedure to add a new ECOS area as a De for existing Re’s. You can NOT add an ECOS area as an Re.

Note

Scope. One customer only uses ECOS.

Procedure: Add an ECOS area as De

Use this procedure to add an ECOS area as a De.

Reference

To edit files in this procedure you can use any ASCII text editor, such as **vi**. For more information on using **vi**, see ["Edit \(vi\) ASCII Files" on page 4-12](#).

Step	Action
Add to the ecosarch table	
1	To make a template record for the ecosarch table, enter sui find source=ecosarch noheader delim='";"' maxsave=1 > temp
2	Use a text editor (such as vi) to open the temp file. Response The file resembles this: #Area;Ai sv0ecos0001;on
3	Change the second line to the ECOS area you are adding, and save the file. Reference For what to put in each field of the ecosarch table, see "ecosroute Table" on page A-42 .
4	To insert the record from the temp file into ecosarch, enter dbedit -i -t ecosarch -f temp -s";"
5	If you receive a message ending with: <ul style="list-style-type: none"> ■ “dbedit completed successfully”, go to the next step. ■ “Errors saved in file...”, see "Correct dbedit Errors" on page 4-33.
6	To verify the CLLI is in ecosarch, enter (this example uses CLLI 2222222222): sui find source=ecosarch search=area=2222222222
7	Remove the temp file.
Add to the ecosroute table	

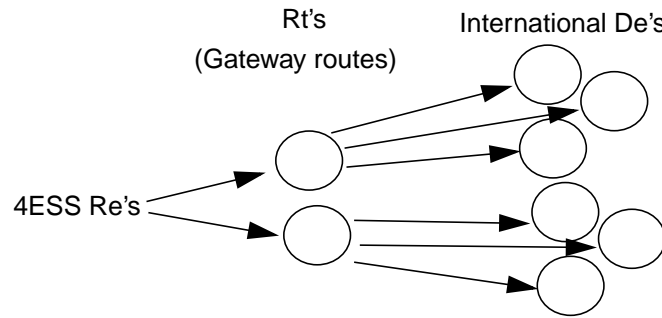
Step	Action
8	To make a template record for the ecosroute table, enter sui find source=ecosroute noheader delim='";"' maxsave=1 > temp
9	Use a text editor (such as vi) to open the temp file. Response The file resembles this: #Ro;Areaid;Area sv0alt00001;234;sv0ecos000
10	Change the second line to the ECOS area you are adding, and save the file, Reference For what to put in each field of the ecosroute table, see "ecosroute Table" on page A-42 .
11	To insert the record from the temp file into ecosroute, enter dbedit -i -t ecosroute -f temp -s";"
12	If you receive a message ending with: <ul style="list-style-type: none"> ■ "dbedit completed successfully", go to the next step. ■ "Errors saved in file...", see "Correct dbedit Errors" on page 4-33.
13	To verify the CLLI is in ecosroute, enter (this example uses adjcli 2222222222): sui find source=ecosroute search=adjcli=2222222222
14	Remove the temp file.
Run sui modmat	
15	Use the procedure on "Stop or restart thresholding via Ai" on page 8-32 to change Ai to "on" in the CLLI's record in the ecosarch table. Then run sui modmat (see "sui modmat Command" on page 8-35) to start thresholding.
Done	

Rt's

Overview

Rt illustration

Re, Rt, and De are CFIM fields. An Rt is a gateway route, which is a switch between an Re and an international De, illustrated here.



This section tells how to correct problems that cause Rt values to be wrong or missing on CFIMs.

Note

- **4ESS only.** You will see values in a CFIM's Rt field only if the CFIM's Retype field says 4ESS.
- **Rt feature.** The Rt field was added in F6263.
- **Flexible alerting.** F6268, flexible alerting, lets you threshold on the Rt field. See ["Flexible Thresholding and Alerting" on page 8-94.](#)

Table overview

For Rt's to appear on CFIMs, two tables must be populated. Both are populated during installation by your NTP support organization.

Table	Purpose	How often to update
Rtarch	Names Rt's.	Rarely. Only if an Rt is added or removed.
De2route	Maps each international De to an Rt.	Often. Each time Rt-De routing changes.

Correct Wrong or Missing Rt Values

Purpose This section tells what to do if you see wrong or missing values in a CFIM's Rt field.

When to use Use this procedure when a CFIM's Rt value is:

- **Wrong.** Rt values can often be wrong, since Rt-to-De assignments may change. See network managers for current Rt-to-De routing, and check the De2route table. To see De2route records, enter **sui find source=de2route**
- **Missing.** Rt values can be missing. A missing Rt value is NOT indicated by a "?" in Rt, but by "-" in Rt when Ccd is NOT "-". So, to list CFIMs with missing Rt values, enter **sui find source=cfim search=ccd!="-" AND search=rt="-"**
Then use this procedure for each unique De on output.

Note

NEMOS. NEMOS can be a source to get Rt-De assignments from NEMOS. See your NTP support organization for details.

Procedure: Correct wrong or missing Rt values Use this procedure to correct wrong or missing Rt values on CFIMs.

Reference

To edit files in this procedure you can use any ASCII text editor, such as **vi**. For more information on using **vi**, see ["Edit \(vi\) ASCII Files" on page 4-12](#).

Step	Action
1	Get correct Rt-De pair information (see "When to use" on page 5-44).
2	Verify that the Rt (of the Rt-De pair you are correcting) is already in the Rtarch table. Example To list all Rt's in Rtarch, enter: sui find source=rtarch

Step	Action
3	<p>Is the Rt in Rtarch? If:</p> <ul style="list-style-type: none"> ■ YES, go to the next step. ■ NO, go to "Add an Rt" on page 5-44 <p>Note Since (currently) Rt is populated only on CIMs where Re's are 4ESS, De's do NOT need to be in Swarch (4ESS De's are in the CIMs).</p>
4	<p>If you need to:</p> <ul style="list-style-type: none"> ■ Add a new Rt-De pair, go to the next step. ■ Modify an existing Rt-De pair, go to the next step. ■ Delete an Rt-De pair, go to Step 10.
Add or modify an Rt-De pair	
5	<p>To:</p> <ul style="list-style-type: none"> ■ Add. Make a template record for the De2route table. Enter sui find source=de2route noheader delim='";"' maxsave=1 > temp ■ Modify. Using the De as your key, retrieve the record you want to modify. <p>Example To modify the record where Re is rtparis (and Rt is anything), enter sui find source=de2route search=de=hamburg12345 noheader delim='";"' > temp</p>
6	<p>Use a text editor (such as vi) to open the temp file.</p> <p>Response The file resembles this: #De;Rt hamburg12345;rtparis</p>
7	<p>Change the record to the De and Rt you want, and save the file</p> <p>Note A given De can appear in only one record.</p> <p>Reference For what to put in each field of the Rtarch table, see "de2route Table" on page A-37</p>
8	<p>To update or insert the record from the temp file into de2route, enter dbedit -ui -t de2route -f temp -s";"</p>
9	<p>Go to Step 13.</p>
Delete an Rt-De pair	

Step	Action
10	Using the De as your key, make a delete file. Example To delete the record where De is hamburg12345 (and Rt is anything), enter sui find source=de2route search=de=hamburg12345 noheader delim=' ";"' > temp
11	Use the operating system cat command or a text editor (such as vi) o verify temp holds the correct De. Response The temp file resembles this: #De;Rt hamburg12345;rtparis
12	To delete the record, enter dbedit -d -t rtarch -f temp -s";"
Check	
13	If you receive a message ending with: <ul style="list-style-type: none"> ■ “dbedit completed successfully”, go to the next step. ■ “Errors saved in file..”, see "Correct dbedit Errors" on page 4-33.
14	To verify the record was added, corrected, or deleted, enter (this example uses De of hamburg12345): sui find source=de2route search=de=hamburg12345
15	Remove the temp file.
Done	

Add an Rt

Purpose This section tells how to add an Rt to the rtarch table.

When to use Rarely. Use this if you discover a new Rt (for example, in [Step 3](#) of "Correct wrong or missing Rt values" on page 5-41).

Procedure: Add an Rt Use this procedure to add a new Rt.

Reference

To edit files in this procedure you can use any ASCII text editor, such as **vi**. For more information on using **vi**, see ["Edit \(vi\) ASCII Files"](#) on page 4-12.

Step	Action
1	Make a template record for the rtarch table, enter sui find source=rtarch noheader delim='";"' maxsave=1 > temp
2	Use a text editor (such as vi) to open the temp file. Response The file resembles this: #Rt londonlrt
3	Change the second line to the Rt you are adding, and save the file. Reference For what to put in each field of the Rtarch table, see "rtarch Table" on page A-123.
4	To insert the record from the temp file into Rtarch, enter dbedit -i -t rtarch -f temp -s";"
5	If you receive a message ending with: <ul style="list-style-type: none"> ■ "dbedit completed successfully", go to the next step. ■ "Errors saved in file...", see "Correct dbedit Errors" on page 4-33.
6	Verify the record is added. Example To verify rtparis is add in rtarch, enter sui find source=rtarch search=rt=rtparis
7	Remove the temp file.
Done	

Shared Procedures

Purpose

Purpose This section give procedures called from other procedures in this chapter.

Backup Before modifying the any table, it is recommended that you make a backup ASCII copy of the table.

Example

To make a backup ASCII copy of swarch, enter

```
sui find source=swarch noheader delim='";'' max=100000>  
hold_swarch
```

Ai fields If you **dbedit** a record that has an Ai (alert indicator) field, it is recommended that you initially set if to off. Then, after verifying NTP is collecting data and processing it to CFIMs for all intervals, **dbedit** again to make it on, to start thresholding.

Whenever you change an Ai field to on or off, you also need to run **sui modmat** (see "[sui modmat Command](#)" on page 8-35) to implement the change in the threshold matrix.

Add to Swarch (or other “arch”) Table

When to use

Use this procedure to add elements to all “arch” tables except `search`. That is, to add to `swarch`, `larch`, and other “arch” tables listed in the second column of the table at [“Arch” and route tables](#) on page 5-6.

Note

If your network has SCPs or STPs, you must add them first. Otherwise you can’t add the appropriate information for these elements in the `swarch` table in [Step 6](#).

Before you begin

Before an entity can be added to the `swarch` (or other “arch”) table, its equipment type must be in the `eqtype` table. To see this table, enter **`sui find source=eqtype`**

Procedure: Add to swarch or other “arch” table

Use this procedure to add an entity to the `swarch` table. If using this procedure to add a non-switch entity to another “arch” type table, substitute that table name in place of `swarch` in this procedure.)

Reference

To edit files in this procedure you can use any ASCII text editor, such as `vi`. For more information on using `vi`, see [“Edit \(vi\) ASCII Files”](#) on page 4-12.

Step	Action
1	See if the entity is already in the <code>swarch</code> table. Example If the entity’s CLLI is 2222222222, enter <code>sui find source=swarch search=clli=2222222222</code>
2	Is the CLLI in the <code>swarch</code> table? <ul style="list-style-type: none"> ■ If YES, STOP. You are done ■ If NO, go to the next step.
3	Enter <code>sui find source=swarch noheader delim='";"' maxsave=1 > temp</code>
4	Use a text editor (such as <code>vi</code>) to enter the file. Response For <code>swarch</code> , the file resembles this: <pre> Clli Dpc Eqtype Stp Owner Hnpa Ai Ccd Ippaddress Description sv009099009;-;4ess;sv02;svtst;508; on;-; -;switch svaxetrado2;-;axe10;-; svtst;-;on; -;-;switch </pre>

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Step	Action
5	<p>Change the second line to represent the element you are adding, and save the file.</p> <p>Note</p> <ul style="list-style-type: none"> ■ Dpc. For entities monitored by GeoProbe (F6272), you must populate the Dpc field to identify De's. ■ Ai. If you are using basic thresholding, for now, we recommend you delay thresholding by putting "off" in the Ai field. Later, when ready to start thresholding, dbedit to change Ai to "on" and enter sui modmat (see "sui modmat Command" on page 8-35). This does NOT apply for flexible thresholding. <p>Reference</p> <p>For what to put in each field of the swarch table, see "swarch Table" on page A-143 (or another "arch" table's entry in that appendix).</p>
6	<p>To insert the record from the temp file into the swarch table, enter dbedit -i -t swarch -f temp -s";</p>
7	<p>If you receive a message ending with:</p> <ul style="list-style-type: none"> ■ "dbedit completed successfully", go to the next step. ■ "Errors saved in file...", see "Correct dbedit Errors" on page 4-33.
8	<p>Verify the CLLI is in swarch.</p> <p>Example</p> <p>If CLLI is 2222222222 enter: sui find source=swarch search=clli=2222222222</p>
9	<p>Remove the temp file.</p>
10	<p>Does the record you added to Swarch or another "arch" table have an STP in its Stp field?</p> <ul style="list-style-type: none"> ■ If no (value is "-"), go to the next step. ■ If yes, ensure the STP is defined in the Stparch table. If it is not, add it to Stparch. <p>Example</p> <p>You see sv01 in the Stp field of the Re's record in swarch. To see if STP sv01 is in scparch, enter: sui find source=scparch search=stp=sv01</p> <p>Reference</p> <p>For how to edit tables, see "dbedit Insert or Update Example" on page 4-37. For how to populate stparch fields, see "stparch Table" on page A-142.</p>
11	<p>If the Re's record in Swarch has Eqtype of 4ESS, or DMS100, DMS200, etc., ensure the Re's SCPs are in the Scparch table. If they are not, add them. (This table tells NTP how to correctly fill in CFIM's Rs an Ds fields.)</p>
Done	

Add to Rearch Table

Purpose

For an entity to be an Re (on a CFIM), it must be in the rearch table.

Procedure: Add an entity to rearch

Use this procedure to add an entity to the rearch table.

Note

Reference

To edit files in this procedure you can use any ASCII text editor, such as **vi**. For more information on using **vi**, see ["Edit \(vi\) ASCII Files" on page 4-12](#).

Step	Action
1	<p>Enter sui find source=swarch and look in the output's Clli field for the CLLI of the new Re. Is it there?</p> <ul style="list-style-type: none"> ■ If yes, go to the next step. ■ If no, STOP. You must add the Re to the swarch table (see "Add to Swarch (or other "arch") Table" on page 5-46). Then return here.
2	<p>To make a template record for the rearch table, enter sui find source=rearch search=conv=type noheader delim='";"' maxsave=1 > temp</p> <p>Reference For converter types (conv field), see the Conv field in the rearch table, on "rearch Table" on page A-114.</p> <p>Example For any Re type using the configurable converter, enter sui find source=rearch search=conv=ccc noheader delim='";"' maxsave=1 > temp</p>
3	<p>Use a text editor (such as vi) to edit the temp file.</p> <p>Response The file resembles this: <pre>#re;Source;Tag;Conv;Down;Degraded;Interval;Calc svaxetrado1;trado;2 -; univ; 0; 3; 100 y; 100; est5edt</pre></p> <p>Note For 4ESS switches, the tag field must have an entry OTHER than "-".</p>

Step	Action
4	<p>Change the second line to represent the switch you are adding, and save the file.</p> <p>Reference For what to put in each field, see "rearch Table" on page A-114.</p> <p>Note For 4ESS switches, associate the tag (see the previous step) with the channel assigned from the CP database.</p>
5	To insert the record from the temp file into rearch, enter dbedit -i -t rearch -f temp -s";
6	<p>If you receive a message ending with:</p> <ul style="list-style-type: none"> ■ "dbedit completed successfully", go to the next step. ■ "Errors saved in file...", see "Correct dbedit Errors" on page 4-33.
7	To verify the CLLI is now in rearch, enter (this example uses CLLI 2222222222): sui find source=rearch search=re=2222222222
8	Remove the temp file.
9	Use "Manage Network Groups and Segments" on page 7-24 to add the Re to network groups or segments, as desired.
Done	

Map an Re to its Swarch De's

Purpose

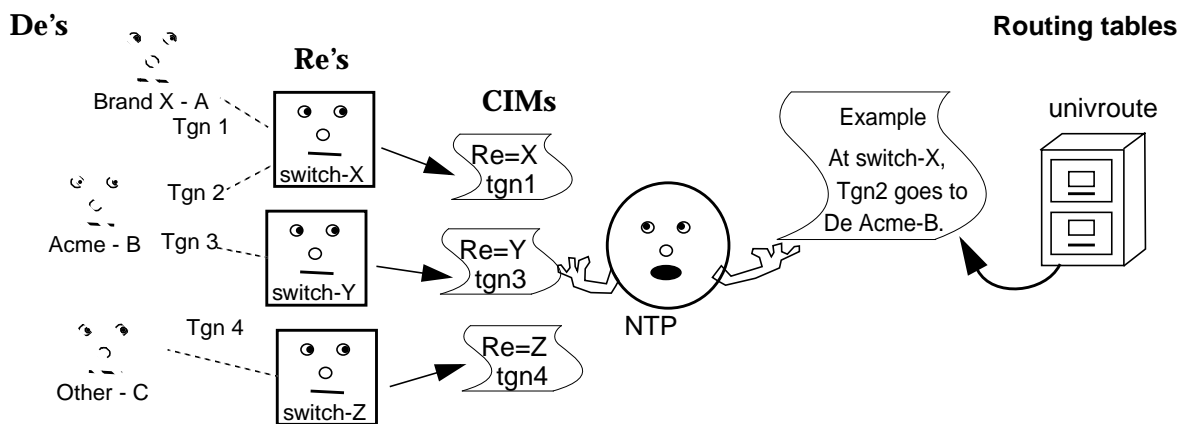
This section gives a procedure for mapping an Re to its De's, if those De's are found in the swarch table. This includes trunk routing, cell routing, and gateways (non-digit lookup).

Note

Exceptions. Routing tables are not always used. See [Step 3](#) on [page 5-52](#).

What are routing tables

This illustrates how most routing tables are used.



In detail:

- **Re's.** NTP knows Re's by looking at the CFIMs.
- **De's.** NTP knows De's by taking a Tgn, tgcli, or cell number from the CFIM and looking it up in the Re's routing table.
- **Related.** The related entity is determined if another network element is used in setting up and processing the call, for example and SCP, tandem, or gateway. NTP may derive the related entity from a routing table, and put it in the CFIM's Related field. You need do nothing special for Related's.

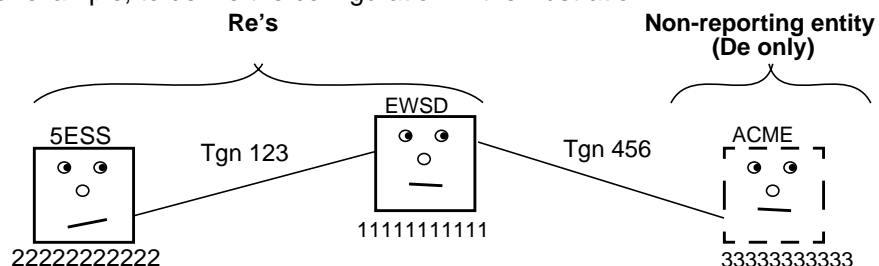
(Continued on next page)

Map an Re to its Swarch De's (Continued)

Example

Since Re's may see each other as De's, you may need to use this procedure multiple times, from the viewpoint of each Re.

For example, to define the configuration in the illustration.



From the viewpoint of this Re	Update this routing table	With this Clli:Tgn;De
11111111111	ewsdroute	11111111111;123;2222222222 11111111111;456;33333333333
22222222222	route5e	22222222222;123;11111111111
33333333333	Not applicable. Not an Re.	

Procedure: Map an Re to its swarch De's

Use this procedure to map an Re to its De's found in swarch, so the Re's CFIM's will correctly populate the De field.

Reference

To edit files in this procedure you can use any ASCII text editor, such as **vi**. For more information on using **vi**, see ["Edit \(vi\) ASCII Files" on page 4-12](#).

Step	Action
1	Use this procedure ONLY if De is in swarch. For other De's, such as an SCPs (in scparch) start at "Add De-Only Elements" on page 5-25 . Do NOT use this procedure for cell base stations (although they are in swarch). Instead use "Add a cell base station" on page 5-34 , which maps Re's to De's in cellroute.
2	To see what can be De's, see illustrations of each conversion's De's in Appendix B of the <i>BB-GUI User's Guide</i> .

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Step	Action																																
3	<p>See the second column, below, for what routing table to dbedit. If there is an NA in the second column it means no route table is used—so SKIP this procedure, and do what the column says.</p> <table border="1"> <thead> <tr> <th>If Re is from conversion:</th> <th>Map the Re to its De's in this routing table:</th> </tr> </thead> <tbody> <tr> <td>1AESS</td> <td>route1a</td> </tr> <tr> <td>4ESS</td> <td>NA. Do nothing. De's are determined from data in CIMs.</td> </tr> <tr> <td>5ESS, or 7R/E PLS (F6259)</td> <td>route5e</td> </tr> <tr> <td>AUTOPLEX MSC (F6234)</td> <td>route5e</td> </tr> <tr> <td>DMS MTX MSC (F6276)</td> <td>dmsroute</td> </tr> <tr> <td>OTR (5ESS osps module)</td> <td>NA. dbedit lrn2ne, gtspec, and potsroute.</td> </tr> <tr> <td>OTR (DMS tops module)</td> <td>NA. dbedit lrn2ne, gtspec, and potsroute. For TOPS LNP (F6223), also dbedit dmsroute.</td> </tr> <tr> <td>DMS</td> <td>dmsroute</td> </tr> <tr> <td>EWSD (F6171)</td> <td>ewsdroute</td> </tr> <tr> <td>Succession SN02 (F6289)</td> <td>dmsroute</td> </tr> <tr> <td>GeoProbe (F6272)</td> <td>NA. If a De has a point code, make sure it is populated in the Dpc field of the De's swarch record, and in the pc2cli table, if applicable.</td> </tr> <tr> <td>AXE 10 (F6186)</td> <td>NA. Ensure each De, and Re, is in the id2ne table. (This Re sees only its own Retype as De's.)</td> </tr> <tr> <td>AXE 10 TRADO (F6313)</td> <td>univroute</td> </tr> <tr> <td>Lucent Softswitch (F6314)</td> <td>univroute</td> </tr> <tr> <td>IPDRs (F6305)</td> <td>NA. Ensure De's have ipaddress in their swarch records.</td> </tr> </tbody> </table>	If Re is from conversion:	Map the Re to its De's in this routing table:	1AESS	route1a	4ESS	NA. Do nothing. De's are determined from data in CIMs.	5ESS, or 7R/E PLS (F6259)	route5e	AUTOPLEX MSC (F6234)	route5e	DMS MTX MSC (F6276)	dmsroute	OTR (5ESS osps module)	NA. dbedit lrn2ne, gtspec, and potsroute.	OTR (DMS tops module)	NA. dbedit lrn2ne, gtspec, and potsroute. For TOPS LNP (F6223), also dbedit dmsroute.	DMS	dmsroute	EWSD (F6171)	ewsdroute	Succession SN02 (F6289)	dmsroute	GeoProbe (F6272)	NA. If a De has a point code, make sure it is populated in the Dpc field of the De's swarch record, and in the pc2cli table, if applicable.	AXE 10 (F6186)	NA. Ensure each De, and Re, is in the id2ne table. (This Re sees only its own Retype as De's.)	AXE 10 TRADO (F6313)	univroute	Lucent Softswitch (F6314)	univroute	IPDRs (F6305)	NA. Ensure De's have ipaddress in their swarch records.
If Re is from conversion:	Map the Re to its De's in this routing table:																																
1AESS	route1a																																
4ESS	NA. Do nothing. De's are determined from data in CIMs.																																
5ESS, or 7R/E PLS (F6259)	route5e																																
AUTOPLEX MSC (F6234)	route5e																																
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AXE 10 TRADO (F6313)	univroute																																
Lucent Softswitch (F6314)	univroute																																
IPDRs (F6305)	NA. Ensure De's have ipaddress in their swarch records.																																
4	Make sure the to-be-mapped De's are in swarch (if needed, use "Add to Swarch (or other "arch") Table" on page 5-46).																																
5	Find out each Tgn and far-end CLLI out of the Re.																																
6	<p>In the chosen table (from Step 3 on page 5-52), use dbedit to add a record for each Tgn-De pair (from Step 5). To start, make a template record for the appropriate route table.</p> <p>Example For the any route table, enter the following, where <i>rouetable</i> is the table name. sui find source=<i>rouetable</i> noheader delim=" "; "' maxsave=1 > temp</p>																																
7	Use a text editor (such as vi) to open the temp file.																																

Step	Action
8	<p>Change the second line to represent the switch you are adding as a distant switch, add additional lines for other De's, and save the file.</p> <p>Reference For what to put in fields, see Appendix A, "Reference Database Tables" for the table you are updating.</p>
9	<p>Insert the record from the temp file into the routing table.</p> <p>Example For ewsdroute, enter dbedit -i -t ewsdroute -f temp -s";"</p>
10	<p>If you receive a message ending with:</p> <ul style="list-style-type: none"> ■ "dbedit completed successfully", go to the next step. ■ "Errors saved in file...", see "Correct dbedit Errors" on page 4-33.
11	<p>Verify the record or records are added.</p> <p>Example To verify CLLI 1111111111 is in ewsdroute, enter sui find source=ewsdroute search=clli=1111111111</p>
12	Remove the temp file.
Done	

Define Routes to Eliminate “?”s

Overview

Question marks“

You sometimes see “?” in an output field. Typically, this means you need to put a missing value in a reference database.

Note

Nulls. Two other null characters (“-” and “~”) are okay, with the exception of the rt field for 4ESS. See ["Null characters" on page 4-8](#).

How to fix “?”

Only some fields may display a “?”. Those fields are listed in the following table, with references for how to eliminate the “?”.

If you see “?” in this field...	On this output...	Go to...
Lrne	<ul style="list-style-type: none"> ■ Find/ Cfim ■ Trapcfim 	"Eliminate “?” in Lrne" on page 5-55
De	<ul style="list-style-type: none"> ■ Find/ Cfim ■ Trapcfim 	"Eliminate a “?” De" on page 5-57
Ne	<ul style="list-style-type: none"> ■ Ascreen when Type is De ■ Trapalert when Type is De 	
Dpc	<ul style="list-style-type: none"> ■ Find/ CFIM 	The DCP can be used to determine the De.

Eliminate “?” in Lrne

“?” in the lrne field

If you see “?” in the Lrne (location routing number network element) field of Find/ Cfim or Trapcfim output, you need to put an entity in the Lrn2ne table.

Note

- **Optional.** LRNE is part of the LNP feature. LNP is separately optional for different entity types.
- **Administering LNP.** Other than keeping the Lrn2ne table updated, there is no other housekeeping for you to do for the LNP feature. If this table is out of date, the LRNE field will be incorrect or will say “?”. Nothing else is affected.
- **See Lrn2ne.** To see what is currently in the Lrn2ne table, use **sui find** to create a temporary file that you can view (or edit). Enter **sui find source=lrn2ne > temp**

Reference

For the:

- **LNP feature**, in the *GUI User's Guide* see:
 - Appendix A for Lnp and related fields in the Cfim table.
 - Chapter 6, for which switch types may have the LNP feature.
- **Lrn2ne table**, see "[Lrn2ne Table](#)" on page A-75.

Procedure: Eliminate “?” in lrne

Use this procedure if you see a “?” in the Lrne field of Find/ Cfim or Trapcfim output.

Reference

Examples in this procedure use the **vi** editor. For more information on using **vi**, see "[Edit \(vi\) ASCII Files](#)" on page 4-12.

Step	Action
1	On Find/ Cfim or Trapcfim output, write down the LRNs from records where LRNE is “?”. Example On Find/ Cfim Output, you find all CFIMs with LRNE of “?” have LRNs of either 614123456 or 61411111. You would write down those two LRNs.
2	From switching, translations, or other persons, find out the network element that each LRN maps to, and write that beside each LRN you wrote down.

Step	Action
3	Use a text editor (such as vi) to open a new temp file.
4	<p>In the file, type in a line for each LRN you are adding, and then save the file. (If you want, you can type in a header line for reference, as long as you make sure you start it with #.)</p> <p>Example The header line and lines for two Lrns would resemble the following: <pre>#Lrn;Ne 614123456;cmbsohbrhx1 6141111111;chgsilabcx2</pre></p> <p>Reference For what goes in each field, see "lrn2ne Table" on page A-75.</p>
5	To insert the records from the temp file into the lrn2ne database, enter dbedit -i -t lrn2ne -f temp -s";"
6	<p>Did you receive a messages ending with: "Errors saved in file..."? </p> <ul style="list-style-type: none"> ■ If NO, go to the next step. ■ If YES, see "Correct dbedit errors" on page 4-36.
7	<p>Use sui find to verify that your update is in the lrn2ne table.</p> <p>Example Enter sui find source=lrn2ne > temp2</p> <p>Then vi or cat the temp2 file. When you are done, to remove the file, enter rm temp2</p>
8	Remove the temp file.
Done	

Eliminate “?” De

Procedure: Eliminate a “?” De

The procedure to administer NTP to eliminate a “?” De depends on the Re and conversion type. Some effort in analysis is necessary.

First determine the Retype by viewing the rearch table. Based on the general Re type, the key areas that require attention differ.

Re conversion type	Use these guidelines...
Circuit-based conversions (TGN-based routing)	For circuit-based Re's, use Compute or viewcfim to see the Re and TGN. Then dbedit the appropriate routing table, such as univroute, routet5e, dmsroute, ewsdroute, etc.
Cellular conversions (cell number-based routing)	For cellular Re's, look at the CIM for the cell number and use it to dbedit the cellroute table (cell field).
IPDR conversions (gateway IP address-based routing)	For IPDR Re's, look at the CIM for the IP address of the gateway, and use it to dbedit the swarch table (ipaddress field).
Digits (no TGN or gateway, using SS7)	For digit-based Re's, use Compute to see the Re and digits. Then dbedit the appropriate table, such as scproute or gtspec.
DPC (no TGN, gateway, or digits)	These cases are rare. For DPC Re's, look at the CIM for the destination point code, and use it to dbedit the swarch table.

FDCs

Add or Modify FDCs

Overview

When NTP translates a CIM to a CFIM, it adds an FDC (final disposition code) to categorize the CFIM, typically for thresholding.

When to add or modify an FDC

Add or modify FDCs in the following circumstances:

- When you add a new conversion. In this case, you will typically have help from your NTP support organization since you will probably be adding many FDCs.
- If you see a discarded CIM in the incon, univlog, and sccs logs because NTP cannot determine an FDC for a CIM (see ["incon Log" on page 11-22](#), ["univlog Log" on page 11-28](#), and ["sccs Log" on page 11-27](#)). This happens when an Re sends a new message type.
- To broaden or narrow what an FDC means. (see ["Broaden or narrow an FDC" on page 5-59](#)).

(Continued on next page)

Add or Modify FDCs (Continued)

Broaden or narrow an FDC

With some conversions, FDCs are defined one-to-one with a code on the CIM. (For example, 4ESS conversion takes a CIM's FHC and maps it to an FDC in the fdc table.) These one-to-one FDCs cannot be broadened or narrowed. But some conversions take more than one CIM string to map to an FDC, using both the FDC table, and another table, such as acode2fdc. With these conversions, one or more strings in (for example) acode2fdc can be mapped to one or more FDCs in the fdc table, enabling you to broaden or narrow the FDC. (See [Step 13](#) in "Add or modify an FDC" on page 5-60).

Example

From a DMS switch, CIMs with code TRK121 can mean different problems, each identified by a reason or "TRBCODE" (such as NO_START_DIAL shown here).

```
45 TRK 121 2472 FLT OUTPUTSING TRBL CKT NYCNNY94001DE 1
TRBCODE NO_START_DIAL TRBLINFO
NIL
FAILURE FIRST_TRIAL_FAILURE
INCTRK CKT NYCMNY72BK1 33 CLDNO 3734772
DIGSOUT $ CALLID 244328 NILC
```

Here are records in the acode2fdc table mapping TRK121 messages to separate FDCs by trouble code. (FDCs must be defined in the fdc table.)

Acode	Fname	FDC
NO_START_DIAL	trk121	nsd121
UNEXPECTED_STOP_DIAL	trk121	nsd122
REVERSED_TRUNK	trk121	rt121

(Continued on next page)

Add or Modify FDCs (Continued)

Procedure: Add or modify an FDC

Use this procedure to add or modify an FDC name. Reference

Reference

Examples in this procedure use the **vi** editor. For more information on using **vi**, see ["Edit \(vi\) ASCII Files" on page 4-12](#).

Step	Action
1	<p>Identify the conversion used for the FDC's CFIMs.</p> <p>Reference See "Find a CFIM's conversion" on page 5-8.</p>
2	<p>Go to the FDC table (see "fdc" on page A-10) and write down the value you will assign to each field.</p> <p>Note For 4ESS and 5ESS MDIIs, the FDC name must match the switch final disposition code (failure or event). For other switches, you can select the FDC name. in Step 13. You may need to consult switch references, as well as feature design documents supplied by your NTP support organization.</p>
3	<p>See if the value you wrote down for the:</p> <ul style="list-style-type: none"> ■ eqtype field is found in the type field of the eqtype table ■ sig field is found in the type field of the signaling table ■ st field is found in the type field of the st table <p>Example To verify a value xyz is in the eqtype table, enter sui find source=eqtype search=type=xyz</p>
4	<p>Were each of the values above found?</p> <ul style="list-style-type: none"> ■ If YES, go to the next step. ■ If NO, add the missing value to the eqtype, signaling, or st table. <p>Reference For the general procedure for adding values to tables, see "dedit Insert or Update Example" on page 4-37.</p>
5	<p>Make a backup ASCII file of the FDC table, in case you later need to back out of your changes. To do this, enter sui find source=fdc noheader delim='";"' > hold_fdc</p>
6	<p>Copy the header and first record into from the fdc database into a temp file. To do this, enter sui find source=fdc noheader delim='";"' maxsave=1 > temp</p>

Step	Action
7	<p>Use a text editor (such as vi) to open the temp file.</p> <p>Response The file holds two lines, resembling this: #Fdc;Tc;Eqtype;Al;S;D;Sig;St;Tm;Ai;Mc 100p_1;dms;dms100;mi;n;o;-;-;p;on;-</p>
8	<p>Change the second line of the temp file to the values you wrote down in Step 2, and save the file.</p> <p>Note In the Ai field, enter off.</p>
9	<p>To add the record to the fdc table, enter dbedit -i -t fdc -f temp -s";"</p>
10	<p>Did you receive a messages ending with: "Errors saved in file..."? </p> <ul style="list-style-type: none"> ■ If NO, go to the next step. ■ If YES, use the procedure in "Correct dbedit Errors" on page 4-33.
11	<p>Verify the FDC is in the fdc table.</p> <p>Example To verify an FDC named xyz is in the fdc table, enter sui find source=fdc search=fdc=xyz (If you get no response, the FDC is not there.)</p>
12	<p>Recommended: dbedit the fdchelp table to add help text for the new FDC. For the procedure, see "Edit FDC Help Text" on page 9-14.</p>

Step	Action																																				
13	<p>Further map the FDC in the appropriate table, as shown below.</p> <table border="1"> <thead> <tr> <th>If the FDC is for this conversion:</th> <th>Further map the FDC as follows:</th> </tr> </thead> <tbody> <tr> <td>1AESS</td> <td>ess1a2fdc</td> </tr> <tr> <td>4ESS</td> <td>(none besides the fdc table)</td> </tr> <tr> <td>5ESS MDII</td> <td>(none besides the fdc table)</td> </tr> <tr> <td>5ESS DSE</td> <td>acode2fdc</td> </tr> <tr> <td>7R/E PLS (F6259)</td> <td>acode2fdc (also see "7R/E PLS (F6259) FDCs" on page 5-63)</td> </tr> <tr> <td>AUTOPLEX MSC (F6234)</td> <td>acode2fdc</td> </tr> <tr> <td>DMS-MTX MSC (F6276)</td> <td>acode2fdc (also, see "DMS MTX (F6276) FDCs" on page 5-64)</td> </tr> <tr> <td>OTR</td> <td>otr2fdc (see "OTR FDCs" on page 5-65)</td> </tr> <tr> <td>DMS</td> <td>acode2fdc</td> </tr> <tr> <td>EWSD (F6171)</td> <td>acode2fdc</td> </tr> <tr> <td>Succession SN02 (F6289)</td> <td>acode2fdc</td> </tr> <tr> <td>GeoProbe (F6272)</td> <td>See "GeoProbe (F6272) FDCs" on page 5-67.</td> </tr> <tr> <td>AXE 10 (F6186)</td> <td>(none besides the fdc table)</td> </tr> <tr> <td>AXE 10 TRADO (F6313)</td> <td>acoded2fdc, dcode2d, scode2sig, stcode2st (see also "CDR FDCs" on page 5-70)</td> </tr> <tr> <td>Lucent Softswitch (F6314)</td> <td>None besides the fdc table (see also "CDR FDCs" on page 5-70)</td> </tr> <tr> <td>IPDRs (F63305)</td> <td>acode2fdc (see also "CDR FDCs" on page 5-70)</td> </tr> <tr> <td>Any consultant added (F6306)</td> <td>Consult your NTP support organization (see also "CDR FDCs" on page 5-70)</td> </tr> </tbody> </table>	If the FDC is for this conversion:	Further map the FDC as follows:	1AESS	ess1a2fdc	4ESS	(none besides the fdc table)	5ESS MDII	(none besides the fdc table)	5ESS DSE	acode2fdc	7R/E PLS (F6259)	acode2fdc (also see "7R/E PLS (F6259) FDCs" on page 5-63)	AUTOPLEX MSC (F6234)	acode2fdc	DMS-MTX MSC (F6276)	acode2fdc (also, see "DMS MTX (F6276) FDCs" on page 5-64)	OTR	otr2fdc (see "OTR FDCs" on page 5-65)	DMS	acode2fdc	EWSD (F6171)	acode2fdc	Succession SN02 (F6289)	acode2fdc	GeoProbe (F6272)	See "GeoProbe (F6272) FDCs" on page 5-67 .	AXE 10 (F6186)	(none besides the fdc table)	AXE 10 TRADO (F6313)	acoded2fdc, dcode2d, scode2sig, stcode2st (see also "CDR FDCs" on page 5-70)	Lucent Softswitch (F6314)	None besides the fdc table (see also "CDR FDCs" on page 5-70)	IPDRs (F63305)	acode2fdc (see also "CDR FDCs" on page 5-70)	Any consultant added (F6306)	Consult your NTP support organization (see also "CDR FDCs" on page 5-70)
If the FDC is for this conversion:	Further map the FDC as follows:																																				
1AESS	ess1a2fdc																																				
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5ESS DSE	acode2fdc																																				
7R/E PLS (F6259)	acode2fdc (also see "7R/E PLS (F6259) FDCs" on page 5-63)																																				
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Any consultant added (F6306)	Consult your NTP support organization (see also "CDR FDCs" on page 5-70)																																				
14	<p>When you are ready to threshold on the FDC (basis alerting only), see "Stop or restart thresholding via Ai" on page 8-32 to change the FDC's Ai field to "on" in the fdc table. Then run sui modmat (see "sui modmat Command" on page 8-35) to start thresholding.</p>																																				
Done																																					

7R/E PLS (F6259) FDCs

Purpose

This section gives information that may be useful when defining FDCs for 7R/E PLS (Packet Local Solution) CFIMs. Most 7R/E PLS FDCs are 5ESS FDCs, defined in Fdc and Acode2fdc tables.

Note

System day. Some 7R/E PLS FDCs may be appropriate for system day alerting—if you use it.

7R/E PLS CFIMs

NTP converts the following 7R/E PLS CIMs to CFIMs:

- Existing circuit-side 5ESS MDIIs based on ISUP signaling.
- A subset of existing 5ESS MDIIs based on BICC signaling.
- Three new MDIIs for packet-side failures of the 7R/E PLS 3.0.
 - ATMRJ — The Terminating Packet switch (TPS) encounters an IPDC signaling failure with the Interworking Gateway (IWG, formally called PVG) for one of the following reasons.
 - RELEASE COMPLETE message received
 - Timeout waiting for UNI message
 - AEVENT — The Originating Packet Switch (OPS) or TPS gets an EVENT message for one of the following reasons.
 - Timeout waiting for STATUS message
 - Call state mismatch on STATUS ENQUIRY procedure
 - UNI timer expired
 - AOMRJ — The OPS receives a failure from an IWG that encountered a timeout during UNI signaling or other unexpected events.

New 7R/E PLS FDCs

At the time this was written, we planned to add a number of new 7R/E PLS FDCs starting with these strings:

- atmrj
- aevrst
- aomrj

To see what was added, see these strings in the Fdc and Acode2fdc tables.

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DMS MTX (F6276) FDCs

Purpose

DMS MTX is the wireless DMS switch. This section contains information that may be useful when defining FDCs for DMS MTX switches.

FDCs for DMS MSC switches (and for regular wireless DMS switches) are defined in the Fdc and Acode2fdc tables.

DMS MTX FDCs

For log messages C7UPXXX, TRKXXX, LNPXXX and TCPXXX, the DMS MTX switches use the same FDC definitions used for regular (wireless) DMS switches.

But, you must define new FDCs for the following log messages:

- **CELL1XX** for failed calls. (CELL2XX for test, CELL3XX for manual, and CELL9XX probably are not useful.)
- **CLFLXXX** for failed calls.
- **DROPXXX** for dropped calls.

Populate (**dbedit**) the acode2fdc table as follows:

- **acode** — A code from one of these LOG fields: TRBL, TRBLCODE, INFO ATD, REASON, EVENT, or "EVENT:". (Labels may use a "=" or ":".)
 - **fname** — The log name, such as CELL100, CLFL100, or DROP100.
 - **fdc** — The name you want to give the final disposition code based on acode and fname.
-

OTR FDCs

OTR comparison

OTR (operator trouble reports) CFIM's are from reports entered manually by operators. NTP collects them from either:

- 5ESS OSPS (Operator Services Position Systems) module.
- DMS TOPS (Traffic Operator Position Systems) module.

Reference

Message types. For messages types collected, and feature numbers, see "osps" and "tops" in the "What CIMs are" table in Appendix B in the *GUI User's Guide*.

Procedure: Save OTR CFIMs to the OTR table

To ensure OTR CFIMs go to the OTR summary table, F8178 (where they are retained much longer than regular CFIMs), ensure OTR CFIMs' FDCs are in the otr2fdc table. If an FDC is missing, **dbedit** to add it.

System day

System day thresholding enables you to replace normal 5-minute and hourly thresholds with daily thresholds. This is ideal for CFIMs that trickle in slowly, such as OTR CFIMs. See "[System Day Thresholding](#)" on page 8-67.

(Continued on next page)

OTR FDCs (Continued)

OTR fields you can affect To affect OTR CFIMs, **dbedit** the otr2fdc, fdc, or potsroute tables. Details are in this table.

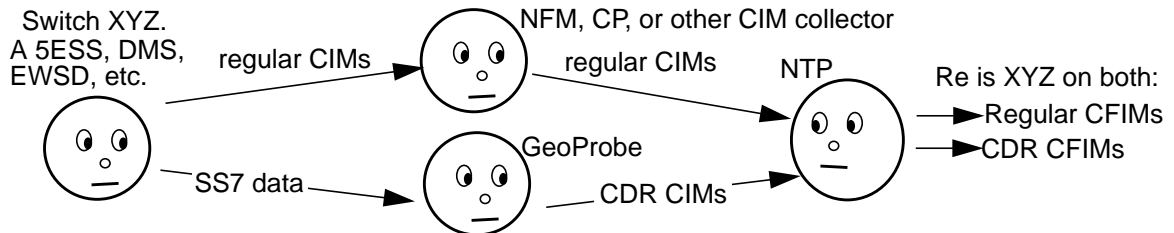
This field...	Gets its value from these reference database tables...
FDC	<p>A lookup into the otr2fdc table, which maps the CIM OTR trouble codes to FDCs. The FDC must also be defined in the fdc table.</p> <p>The otr2fdc table contains the following fields.</p> <ul style="list-style-type: none"> ■ TRB -- This field contains the actual value of the trouble code field in the OTR. This is a key field in the otr2fdc table. ■ FDC -- This field contains the FDC indicated by the trouble code. This value must exist in the fdc field of the fdc table. ■ OC -- This field indicates whether an operator or customer encountered the problem, as indicated by the trouble code. Valid values for this field are: c (customer encountered) and o (operator encountered).
RE	<p>Either:</p> <ul style="list-style-type: none"> ■ For operator-encountered OTRs (determined by the OC field of the otr2fdc database table), the RE is the reporting OSPS/TOPS. ■ For customer-encountered OTRs, the RE is obtained by doing a lookup into the potsroute table using the calling party digits as the key. If this lookup fails, then the RE is determined by doing a lookup into route5e or dmsroute using the trunk group information in OTR. If this lookup also fails, the RE is set to ? (unknown).
DE	<p>A lookup into either using the called digits from the CIM as the key:</p> <ul style="list-style-type: none"> ■ The gtspec table. ■ The potsroute table.
Related entity	<p>Either:</p> <ul style="list-style-type: none"> ■ For operator-encountered OTRs the Related Entity is obtained by doing a lookup into the potsroute table using the calling party digits as the key. If this lookup fails, then the Related Entity is determined by doing a lookup into route5e or dmsroute using the trunk group information in OTR. If this lookup also fails, the Related Entity is set to ? (unknown). ■ For customer-encountered OTRs, the Related Entity is the reporting OSPS/TOPS.

GeoProbe (F6272) FDCs

Background

GeoProbe conversion (F6272) enables NTP to convert GeoProbe CDR CIMs to CFIMs. GeoProbe is a mediation system, monitoring SS7 networks. For NTP, it is a “source”, supplying CDR CIMs.

This illustrates that you may see an Re from one conversion (such as the 5ESS conversion), and then again, from the GeoProbe conversion.



Note

- **Probes.** Actually, SS7 data comes, NOT from switches, but from probes between switches and STPs.
- **SS7 CDR CIMs.** Currently the CDRs GeoProbe sends to NTP are limited to those reporting SS7 data about call failures.
- **Binary.** GeoProbe CIMs arrive at NTP in binary code. NTP reformats them into what it displays as GeoProbe CIMs, before reformatting them into GeoProbe CFIMs.

(Continued on next page)

GeoProbe (F6272) FDCs (Continued)

When to add a GeoProbe FDC

If the incon log reports it is unable to assign an FDC to a CFIM (where the CFIM source is a GeoProbe, such as inet), it means the CFIM had a caus code not in acode2fdc.

Reference

Also see ["When to add or modify an FDC" on page 5-58](#).

GeoProbe FDC fields

In [Step 2](#) of this procedure, the following assignments are recommended:

- fdc— Unique, up to 7 characters. Use the model of other SS7 FDCs, and name it in the range ccs1 to ccs127, where the number is the caus code.
- tc — suggested values by caus code:
 - nrlevt — Normal event. If caus code is 1-31.
 - rscunv — Resources unavailable. If caus code is 34-47.
 - srvunv — Service or option unavailable. If caus code is 50-63.
 - srvnim — Service or option not implemented. If caus code 65-79.
 - invmsgl — Invalid message. If caus code is 87-95.
 - ptlerr — Protocol error. If caus code is 97-111.
 - itwcls — Interworking class. If cause code is 127.
- eqtype — "-". Field is ignored.
- al — Either Cr (critical), Ma (major), or Mi (minor).
- s — "f" fatal.
- d — "-". Field is ignored.
- sig — "ccitt7".
- st — "-". Field is ignored.
- tm — "p", meaning standard thresholding.
- ai — "off" for now.
- mc — "y" if you have the MCAscreen feature. Otherwise "-"

(Continued on next page)

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GeoProbe (F6272) FDCs (Continued)

Procedure: Add a GeoProbe FDC

Use this procedure to add or modify a GeoProbe FDC.

Step	Action
1	Find the caus code that is not yet in the Acode2fdc table.
2	<p>Add the new FDC to the Fdc table</p> <p>Reference</p> <ul style="list-style-type: none"> ■ For field values to assign, see "GeoProbe FDC fields" on page 5-68. ■ For the general procedure for adding values to tables, see "dbedit Insert or Update Example" on page 4-37.
3	Recommended: dbedit the fdchelp table to add help text for the new FDC. For the procedure, see "Edit FDC Help Text" on page 9-14 .
4	<p>Add a record to the acode2fdc table, where fields are:</p> <ul style="list-style-type: none"> ■ acode — caus code from the new FDC's CIM. ■ fname — "SS7". ■ fdc — same fdc as in Step 2. <p>Reference</p> <p>For the general procedure for adding values to tables, see "dbedit Insert or Update Example" on page 4-37.</p>
5	When you are ready to threshold on the FDC, see "Stop or restart thresholding via Ai" on page 8-32 to change the FDC's Ai field to "on" in the fdc table. Then run sui modmat (see "sui modmat Command" on page 8-35) to start thresholding.
Done	

CDR FDCs

Purpose

For any of the following conversions, if the icon log reports it is unable to assign an FDC to a CFIM, it means the CFIM had a caus code not in `acode2fdc`.

- AXE 10 TRADO (F6313)
- Lucent Softswitch (F6314)
- IPDRs (F63305)
- Any consultant added (F6306)

Note

The source type on the CFIM will be "ccc".

When to add a CDR FDC

Add a CDR FDC if necessary to reprocess CDRs that appear in the reprocess directory for a CDR source.

Reference

See the following sections for more information:

- ["Reprocess CDRs" on page 11-32](#)
 - ["When to add or modify an FDC" on page 5-58](#)
-

CDR FDC fields

The following assignments are recommended:

- `fdc`— Unique, up to 7 characters. With CDR type CFIMs, FDCs are:
 - `inprog` — successful call in process. These are not counted in alert cases or summary reports (if your system implements additional traffic analysis).
 - `comp` — completed call
 - `busy` — called party line is busy (cause code 17)
 - `net_fail` — network, switching, or signaling failure (cause codes 4, 8, 9, 18, 27, 29, 31, 34, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 49, 50, 51, 53, 54, 55, 57, 58, 62, 63, 65, 66, 69, 70, 79, 87, 88, 90, 91, 95, 97, 99, 102, 103, 110, 111, 127, 255)
 - `no_ans` — calling party disconnects the call prior to answer (cause codes 16, 19)
 - `route_fail` — call routing failure (cause codes 1, 2, 3, 5, 6, 20, 21, 22, 24, 25, 26, 28)

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- tc — Either:
 - ok — If Fdc is comp, busy, no_ans, or call_ab
 - inprog — If Fdc is inprog
 - eqtype — cdr
 - al — Either Cr (critical), Ma (major), or Mi (minor).
 - s — “f” fatal.
 - d — “-”. Field is ignored.
 - sig — “ccitt7”.
 - st — Typical values, cellular, voice over IP, toll, local POTS, international, incoming international. (This may be populated directly from the CDR or by other means, such as through the ["gtspec Table" on page A-61](#) or by using the ["stcode2st Table" on page A-141.](#))
 - table tm — “p”, meaning basic thresholding.
 - ai — (ignored for flexible thresholding, F6268) For inprog FDCs use “off”.
 - mc — “y” if you have the MCAscreen feature. Otherwise “-”
-

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Delete a Network Element

Description

To delete a network element, use the procedure in this chapter that you followed to add the element, but in reverse order.

The system prompts you if you attempt to remove an element from a reference database table where there are field dependencies to other tables.

Reference

For information on various database field dependencies, see ["Field Dependency During Updates" on page 4-42](#), ["Field Dependency During Installation" on page 4-48](#), and information on the various database tables in ["Reference Database Tables" on page A-1](#).

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Introduction

Task Overview

Purpose

This chapter provides the procedures to add and delete system users. Adding a user gives that person access to the user interface (see also "[User Interfaces](#)" on page 2-6 and "[How Users Access NTP](#)" on page 6-72). The access users have to NTP depends on how you add them to the system.

- The BB-GUI (browser-based graphical user interface) is the normal NTP interface for analysts.
- NTP administrators need to access the SUI (command line) interface.

Note

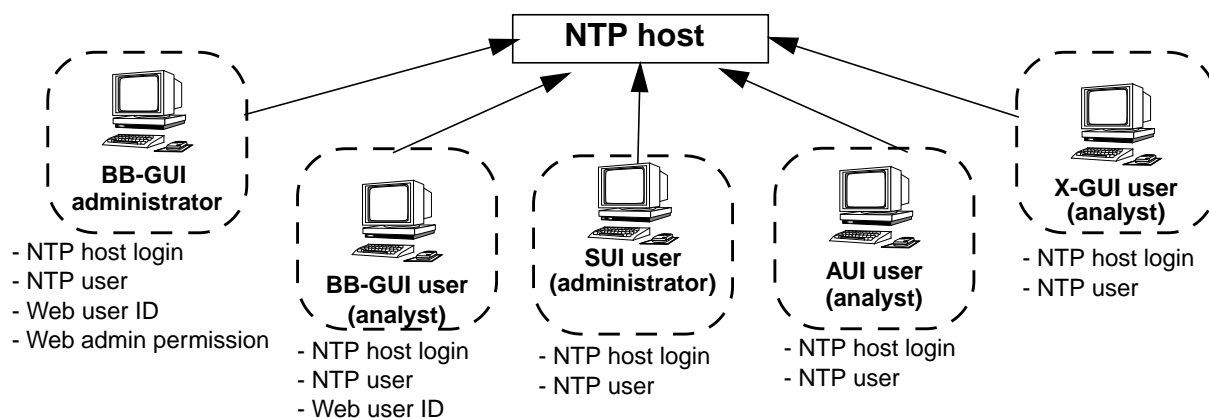
Some customers still use the legacy X-GUI (X-based GUI) and AUI (ASCII user interface). This chapter tells how to add users for those interfaces also.

Reference

- To modify attributes for an existing, see [Chapter 7, "Modify Users"](#).
- To access NTP, see "[How Users Access NTP](#)" on page 6-72.

Illustration

This illustration shows the relationship between how users are administered and their permissions to use the system and interfaces.



Note: Permissions on the NTP host may be restricted for non-administrative users. The system administrative login (ntp) is distinct from NTP administrative logins.

(Continued on next page)

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Task Overview

List of tasks

This table lists the tasks, procedures, and guidelines for adding and deleting NTP users IN THE ORDER they are typically done.

The table shows the relation between the procedures and the interface(s) users can access.

Access	Task order	Description	Procedures and guidelines
Add users			
X-GUI	"CSL User Administration" on page 6-73	If your site has CSL (Communications Software Launcher), users can start the X-GUI from it. A user's login ID for the NTP host and CSL must match.	"Match NTP and CSL logins" on page 6-73
all	"Add a User Login ID on the NTP Host" on page 6-9	All users need a login on the host computer where NTP runs, regardless of what interface(s) they access or tasks they perform. A user's host login must exist BEFORE you can add him or her to NTP.	Use standard administrative procedures for your operating system, but see "Create a host user ID" on page 6-11 for guidelines.
all	"Add NTP Users" on page 6-20	Use the add_ntpuser command (see "Add NTP Users" on page 6-20) to add the user to NTP. The attributes file read by this command sets user attributes. Similar attributes are set again SEPARATELY for the BB-GUI when you make the NTP user a BB-GUI user (see below).	"Add an NTP user" on page 6-21
BB-GUI	"Add BB-GUI Users" on page 6-43	Use the Web User Information page to make the NTP user a BB-GUI user, and install the client software on the user's PC or workstation.	<ul style="list-style-type: none"> ■ "Add a BB-GUI Web User ID" on page 6-38 (includes several subprocedures to set user attributes for the BB-GUI) ■ "Install Client Software for the BB-GUI" on page 6-48

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Access	Task order	Description	Procedures and guidelines
X-GUI, AUI, SUI	Set up user access	You must set up a way for users to access the X-GUI, AUI, or SUI interface. You can configure remote access through: <ul style="list-style-type: none"> ■ A workstation workspace menu or icon ■ A customer-provided PC X-emulation tool 	<ul style="list-style-type: none"> ■ "Workstation Workspace Administration for X-GUI Access" on page 6-74 (also covers AUI) ■ "PC X-Emulation Tool Administration for X-GUI Access" on page 6-76 (also covers AUI) ■ (SUI) Follow local practices for remote access to host systems.
BB-GUI	Set up user access	Your NTP support organization will have set up web service on your network for the BB-GUI when the system was installed.	
all	Explain NTP access to users	Inform users how to access the interface(s) for which you have administered them.	"Tell users how to access NTP" on page 6-72
Delete users			
BB-GUI	"Delete BB-GUI Users" on page 6-44	Use the user's Web User Information page to delete the user, and uninstall the client software from the user's PC or workstation.	<ul style="list-style-type: none"> ■ "Delete a BB-GUI user" on page 6-44 ■ "Uninstall Client Software for the BB-GUI" on page 6-67
all	"Delete NTP Users" on page 6-26	Use the <code>del_ntpuser</code> command to remove the user from NTP (see "del_ntpuser Command" on page 6-28).	"Delete NTP Users" on page 6-26 Note If the user is also to be deleted from the NTP host, use standard operating system procedures to do so.

Add and Delete NTP Users

Overview

Purpose

This section explains how to use the following NTP commands to add and delete NTP users:

- Add — ["add_ntpuser Command" on page 6-24](#)
 - Delete — ["del_ntpuser Command" on page 6-28](#)
-

Add

The procedures for **add_ntpuser** assume that a standard operating system login ID on the NTP host has already been created for the new NTP user.

- **Host permissions.** NTP users have shell access to the NTP host according to the permissions set for their operating system login IDs, unless you restrict them. Besides standard operating system restrictions on logins, further user restrictions are possible (see ["Set X-GUI Table Name Display" on page 7-55](#)).
- **BB-GUI.** If users will access the BB-GUI interface, you must ALSO use a separate procedure in ["Add a BB-GUI user" on page 6-43](#) to make them BB-GUI users, after you have added them to NTP.
- **Other.** Users created by **add_ntpuser** have access to SUI commands unless you restrict them, as well as to the legacy X-GUI and AUI.

Reference

In upgrades from G8 to G8.1, existing users do NOT have to be re-added to NTP. See the G8 documentation for information on user permissions and access for existing users in a upgrade situation.

Delete

The **del_ntpuser** command takes away a user's access to NTP, but does not affect the user's operating system login ID or remove his or her BB-GUI ID.

- To completely remove BB-GUI users from NTP, you must use a separate procedure in ["Delete a BB-GUI user" on page 6-44](#).
 - To completely remove users from the NTP host, you must remove their login IDs through standard administrative procedures for your operating system.
-

Add a User Login ID on the NTP Host

Purpose Before you can add an NTP user, you must create a login ID for the user on the NTP host.

Note

RDS (reference data synchronization). If the host is in a host pair for the RDS (refsync, 6214), use this procedure twice to add the user to both hosts in the pair, with identical login ID and permissions. See ["Reference Database Synchronization \(RDS\)" on page 15-1](#).

root and ntp login ID's

The operating system **root** login and the NTP administrative login (**ntp**) are installed with the system. Do NOT attempt to add or delete these logins.

User shell assignment

The operating system shell you assign to a new user depends on what kind of system access they need.

User type	Access required	Shell (/etc/passwd file)
administrator	Administrators do such tasks as add and delete NTP users, modify reference data, and monitor NTP errors logs. Administrators use: <ul style="list-style-type: none"> ■ SUI commands ■ Operating system commands There may be only one NTP administrator at your site (the ntp login), or you may give other logins administrator permission.	<ul style="list-style-type: none"> ■ On HP systems, /bin/sh (POSIX shell) ■ On Sun systems, /bin/ksh Note The ntp_start and ntp_stop commands are restricted to the ntp login. Not even the root login can run these commands.
analyst	Analysts use the BB-GUI(or the legacy X-GUI or AUI). They: <ul style="list-style-type: none"> ■ Do not use SUI commands ■ May not need to use operating system commands Note Normally, if an analyst needs SUI or operating system access, you should add him or her as an NTP administrator, NOT as an analyst.	<ul style="list-style-type: none"> ■ On HP systems, /bin/sh (POSIX shell) ■ On Sun systems, /bin/ksh Reference Also see special guidelines on password assignment for BB-GUI users in "Create a host user ID" on page 6-11 .

User type	Access required	Shell (/etc/passwd file)
analyst (AUI shell)	<p>Some AUI users need to run SUI commands from a remote terminal. They can do so via the shell command from the AUI main menu.</p> <p>Reference See "Manage Restricted Shell" on page 7-58 for information configuring access to commands through rksh.</p>	<p>\$USERDIR/au</p> <p>Note Or, you can assign the user /bin/ksh, and have the user .profile execute the au command upon login. Use standard administrative procedures for your operating system.</p>
Restricted (ftp logins)	<p>A restricted user ID is normally set up for an ftp login, (where an ftp process writes to a user directory). Restricted users do not need to access an NTP interface or to run ANY NTP commands.</p> <p>Note Some procedures to add a data source to NTP require you to set up a restricted ftp login. See "Add or Modify a Source for a Configurable Conversion" on page 14-38.</p>	<p>Follow local practice and use standard administrative procedures for your operating system to assign a restricted shell.</p> <p>Note /etc/shells. The shell you assign may need to appear in the /etc/shells file. See the documentation for your operating system and ftp. For security, you may need to list ONLY this shell in /etc/shells.</p>

(Continued on next page)

Add a User Login ID on the NTP Host (Continued)

Procedure: Create a host user ID

Use standard administrative procedures for your operating system to add the user ID and login. For example you may use SAM tool for HP systems, or the admintool for Sun systems. Use the guidelines in the following table:

User	Guidelines
home directory	Create the <i>user</i> as <i>/home/user</i> . (For NIS networks, you may see this as <i>/export/home/user</i> .)
shell	See "User shell assignment" on page 6-9 for information on the appropriate operating system shell to assign.
password	End users do not typically need shell access on the NTP host. To restrict users from free system access, you can assign a password of NP in the <i>/etc/passwd</i> file. The user will have permission in the Oracle database, but will not be able to log on the host to run any commands. Note Command groups. Another way to restrict access is to assign users to specific command groups that prevent them from running sui commands or NTP commands like dbedit . (Command groups are not supported on the BB-GUI.) See "Manage Command Groups" on page 7-8 .
.profile	Create a <i>.profile</i> for the user. This file can be empty as long as it exists. The procedure to add an NTP user requires that a <i>.profile</i> be present in the user's home directory so a line for the NTP environment can be added to it. Note You can add this line later, if necessary. See "add_ntpuser addition to user .profile" on page 6-24 .
login and ID	Be sure the user has a unique login and ID on the NTP host. For the login to be made an NTP user, it MUST be 1 to 8 lowercase alphanumeric or "-" characters
group	You can assign the user to any user group. Note You may wish to assign all users who perform like functions to the same user group. See information on the group attributes file in "Custom user and group attributes files" on page 6-12 . But this is optional, and there is no required relationship between the operating system group assignment and group attributes.
CSL (for X-GUI only)	If a user already has a login ID for the CSL (Communications Software Launcher) product, the user's login ID on the NTP host MUST match the CSL login ID if the user is to access NTP through CSL. See "Match NTP and CSL logins" on page 6-73 .

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Attributes File for add_ntpuser Command

Overview

The **add_ntpuser** command reads an attributes file to set parameters for the NTP user it creates. You can:

- Use the system default attributes settings (see ["Default attributes file" on page 6-14](#))
- Modify the default attribute settings (see ["Modify the default attributes file" on page 6-19](#))
- Specify a custom default file for an individual user or a groups of users (see ["Create a custom attributes file" on page 6-19](#))

Reference

See ["Add NTP Users" on page 6-20](#) for a command description.

Default attributes file

- **Template** — \$MODELDIR/uadmin/def_attributes
NTP is installed with a template attributes file in the \$MODELDIR directory.
 - **Working copy** — \$USERDIR/uadmin/def_attributes
A copy of the template is installed in the \$USERDIR/uadmin directory as the default. The **add_ntpuser** command reads the default file unless you specify a custom attributes file. You can modify the attributes in the default file and use your modified copy as the default.
-

Custom user and group attributes files

The **add_ntpuser** command lets you use custom attributes files instead of the default. These files **MUST** be in \$USERDIR/uadmin and be named as follows:

- **Group** — grp_groupname_attributes
where *groupname* is any name (-g option to **add_ntpuser**):
- **User** — user_username_attributes
where *username* is the user's operating system login ID (-l option to **add_ntpuser**):

(Continued on next page)

Attributes File for `add_ntpuser` Command (Continued)

Order of precedence for attributes files

When `add_ntpuser` runs, the user file overrides the group file, and the group file overrides the default file. That is, `add_ntpuser` sets user attributes as follows:

1. If a user `_username_attributes` file resides in `$USERDIR/uadmin` where `username` matches the user's login ID, specified with the `-l` option, `add_ntpuser` reads it.
 - This file is read REGARDLESS of whether you use the `-g` option to specify a group attributes file.
 - If any other user attributes files reside in `$USERDIR/uadmin`, `add_ntpuser` ignores them.
2. If no matching user attributes file is present and you specify a group name with the `-g` option, `add_ntpuser` uses the corresponding `grp_groupname_attributes` file.
3. If you do not specify a group file and there is no matching user file, `add_ntpuser` reads the default file, `def_attributes`.

Note

The `groupname` does NOT have to match the operating system group to which the user's login ID belongs. You may wish to assign operating system group membership to track with NTP group attributes, but this is not required.

Use default attributes for BB- GUI users

Attributes set with `add_ntpuser` do not apply for the BB-GUI. BB-GUI attributes are set SEPARATELY on the Web User Information page (see

Nevertheless, you must FIRST add all users to NTP using the procedures in this section in order to set the Oracle database permissions, NTP environment, and other elements for the user. Then proceed with ["Add a BB-GUI user" on page 6-43](#).

Note

Use the default attributes file (`def_attributes`) to add BB-GUI users to NTP.

(Continued on next page)

Attributes File for add_ntpuser Command (Continued)

Default attributes file The default attributes file, `def_attributes`, contains the following lines.

Reference

See ["Attributes for add_ntpuser" on page 6-15](#) for a complete description of each attribute.

```
#!/usr/bin/sh
##This file contains default definitions
#Default tablespace for this user
DEF_ORA_TBSLSPACE=usr
#Temporary tablespace for this user
TMP_ORA_TBSLSPACE=temp
#Enter a valid FDC group
FDCGROUP=
#Enter a valid network group or segment
NETGROUP=
#Enter a valid command group
CMDGROUP=allcmds
#Is this user a restricted user
RESTRICTED=n
#Is this user a CSL user
CSLUSER=n
#Enter commentary for the user in
#up to 30 printable characters
#(excluding characters : and ').
COMMENT=" "
#Specify an existing user login upon which to base environment defaults.
#If no value specified, system defaults will be used.
#Environment defaults include: output formats, find command,
#option settings, search matrix formats, history, etc.
ASEXISTINGUSER=
```

(Continued on next page)

Attributes File for add_ntpuser Command (Continued)

Attributes for add_ntpuser

This table explains the functions of the attributes set with the **add_ntpuser** command (see ["Default attributes file" on page 6-14](#) for an example of a attributes file that **add_ntpuser** reads).

Attribute	Description
DEF_ORA_TBSLSPACE	Defines the user's Oracle tablespace. Default: usr
TMP_ORA_TBSLSPACE	Defines the user's temporary Oracle tablespace. Default: temp
FDCGROUP	<p>For a BB-GUI user or an administrative (SUI) user, accept the default of all (null attribute).</p> <p>Assigns the user to an FDC group. Values: Any group defined in the fdcgroup table (see "Define FDC Groups" on page 7-17) or null (blank), which means all FDC groups. Default: The group defined by the FDC_GROUP variable (see "Manage User Environment Variables" on page 7-36). When NTP is installed, the default is all FDC groups.</p> <ul style="list-style-type: none"> ■ BB-GUI. This attribute applies only for SUI, X-GUI, and AUI users and does not affect FDC group access in the BB-GUI, for which FDC group access is assigned SEPARATELY (see "Assign a BB-GUI user's FDC groups" on page 6-41). Nonetheless, you must define an attribute to add the user. ■ "all". There is no FDC group called "all". You do NOT need to create one. ■ User self-reassignment. If you assign a group, make a note that IF the user needs to switch to any other group, you must use "Change user FDC group (mod_fdcgrp)" on page 7-22 to give the user permissions for those groups. ■ sysuser table. The group you select is entered in the fdcgroup field in the "sysuser Table" on page A-146. If you select all by leaving this attribute blank, a value of - is entered into the sysuser table. <p>Note If you assign the user to all FDC groups, you can NOT restrict the user (see the RESTRICTED attribute below).</p>

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Attribute	Description
NETGROUP	<p>For a BB-GUI user or an administrative (SUI) user, accept the default of all (null attribute).</p> <p>Assigns the user to a network group or segment. Values: Any group defined in the netgroup table OR netseg table (see "Define Network Groups and Segments" on page 7-27) or null (blank), which means all network groups and segments. Default: Null (the group defined by the NET_GROUP variable — see "Manage User Environment Variables" on page 7-36). When NTP is installed, this default is null, which allows the user to switch among ALL network groups and segments.</p> <ul style="list-style-type: none"> ■ BB-GUI. This attribute applies only for SUI, X-GUI, and AUI users and does not affect the BB-GUI, for which network group and segment access is assigned SEPARATELY (see "Assign a BB-GUI user's network groups" on page 6-42). Nonetheless, you must define an attribute to add the user. ■ "all". There is no network group or segment called "all". Do NOT need to create one. ■ User self-reassignment. If you assign a group (or segment), make a note that IF the user needs to switch to any other group or segment, you must use "Change user network group (mod_netgrp)" on page 7-34 to give the user permissions for those groups. ■ sysuser table. The group you select is entered in the netgroup field in the "sysuser Table" on page A-146. If you select all by leaving this attribute blank, a value of - is entered into the sysuser table. <p>Note If you assign the user to all network groups and segments, you can NOT restrict the user (see the RESTRICTED attribute below).</p>
CMDGROUP	<p>For a BB-GUI user or an administrative (SUI) user, accept the default of allcmds.</p> <p>Assigns the user to a command group. Values: This group must be defined in the cmdgroup table (see "Define Command Groups" on page 7-10). Default: allcmds, which give the user access to all NTP commands.</p> <ul style="list-style-type: none"> ■ BB-GUI. This attribute applies only for SUI, X-GUI, and AUI users and does not affect the BB-GUI. BB-GUI users execute pages rather than commands. Nonetheless, you must define an attribute to add the user. ■ allcmds. We recommend you do NOT redefine the allcmds group, which is prepopulated in the cmdgroup table when your system is installed. ■ sysuser table. The group you select is entered in the cmdgroup field in the "sysuser Table" on page A-146.

Attribute	Description
RESTRICTED	<p>For a BB-GUI user or an administrative (SUI) user, accept the default of n.</p> <p>Determines whether the user can switch among FDC groups and among network groups and segments. Values: y (yes, restricted) or n (not restricted). Default: n.</p> <p>Typically you will enter n to enable the user to switch among all FDC groups and network groups and segments. You will probably use y only for a person external to your company.</p> <ul style="list-style-type: none"> ■ BB-GUI. This attribute applies only for SUI, X-GUI, and AUI users and does not affect FDC group and network group and segment access in the BB-GUI, which are assigned SEPARATELY (see "Assign a BB-GUI user's FDC groups" on page 6-41 and "Assign a BB-GUI user's network groups" on page 6-42). Nonetheless, you must define an attribute to add the user. ■ Restricted users. A restricted user sees and can access: <ul style="list-style-type: none"> — The FDC group you assigned with the FDCGROUP attribute, plus any groups you give permission for in the fdcpermit table.(see "Give user FDC group permission" on page 7-23) <p style="margin-left: 40px;">PLUS</p> <ul style="list-style-type: none"> — The network group or segment you assigned with the NETGROUP attribute, plus any groups and segments you give permission for in the netpermit table (see "Give user network group or segment permission" on page 7-35) ■ Unrestricted users. An unrestricted user sees and can access "all" as a choice for both FDC groups and network groups and segments IN ADDITION to the choices assigned with the FDCGROUP and NETGROUP attributes and in the fdcpermit and netpermit tables. (In the X-GUI, the user types a group or segment name to access a group or segment not displayed.) Making a user unrestricted effectively overrides his or her assignment for FDC groups and network groups and segments. ■ Not for command groups. This attribute does NOT affect command group access. ■ sysuser table. The value (y/n) you select is entered in the restricted field in the "sysuser Table" on page A-146.

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Attribute	Description
CSLUSER	<p>For a BB-GUI user or an administrative (SUI) user, accept the default of n.</p> <p>Specifies whether the user will use CSL to access the NTP X-GUI (F6266). Values: y (yes) or n (no). Default: n.</p> <ul style="list-style-type: none"> ■ BB-GUI. Currently, BB-GUI users cannot use the Lucent CSL to access NTP. If you need to do so, see you NTP support organization. ■ CSL logins. Use y if the user already has a CSL login. A user's login IDs on CSL and NTP MUST match (see "Match NTP and CSL logins" on page 6-73. CSL users get a special .profile (see "add_ntpuser addition to user .profile" on page 6-24). An NTP icon is placed on the CSL launch page. A user selects the icon to launch the NTP X-GUI (not the BB-GUI).
COMMENT	<p>Lets you enter a comment for this user, such as role, location, responsibility, and so forth. Values: Up to 30 alphanumeric characters, excluding colon (:) and single quote ('). Default: Null (no comment).</p> <ul style="list-style-type: none"> ■ BB-GUI. This attribute applies only for SUI, X-GUI, and AUI users and does not affect the BB-GUI. Users are described SEPARATELY in the BB-GUI (see "Assign a BB-GUI user description" on page 6-38). Nonetheless, you must define an attribute to add the user. ■ sysuser table. This value is entered into the name field of the "sysuser Table" on page A-146.)
ASEXISTINGUSER	<p>For a BB-GUI user or an administrative (SUI) user, you typically accept the default of null (no entry).</p> <p>Lets you specify an existing NTP user on which to base the new user's environment settings, such as output formats, option settings, search matrix formats, history, etc. Values: Login ID of an existing user. Default: No entry (use the defaults).</p>

Attributes File for add_ntpuser Command (Continued)

Procedure: Modify the default attributes file

You can modify the default attributes file (\$USERDIR/uadmin/def_attributes) for your installation.

- Use a text editor (such as **vi**) to change the attributes, as needed.
- If you need to return to the system default attributes file, copy it from \$MODELDIR/uadmin to \$USERDIR/uadmin.

Reference

See "[Attributes for add_ntpuser](#)" on page 6-15 for specific information on values for the various attributes.

Procedure: Create a custom attributes file

Use this procedure to create a custom attributes file.

Step	Action
1	Copy the \$MODELDIR/def_attributes template file (or any other attributes file previously created in \$USERDIR/uadmin) to another filename. To create: <ul style="list-style-type: none"> ■ A group attributes file to be used for any users, copy the file to the following filename in \$USERDIR/uadmin: grp_groupname_attributes where <i>groupname</i> is any name. ■ An attributes file for a specific user, copy the file to the following filename in \$USERDIR/uadmin: user_username_attributes where <i>username</i> is the user's login ID on the NTP host.
2	Use a text editor (such as vi) to change the attributes, as needed. <p>Reference See "Attributes for add_ntpuser" on page 6-15 for specific information on values for the various attributes.</p>
Done	

Add NTP Users

Purpose

This procedure creates an NTP user from a login on the NTP host. The user then has access to the system interfaces (except the BB-GUI).

Note

- **BB-GUI access.** To access the BB-GUI interface, a user must also have a BB-GUI user ID. See ["Add a BB-GUI user" on page 6-43](#).
- **RDS (reference data synchronization).** If the host is in a host pair for RDS (refsync, F 6214), use this procedure twice to add the user to both hosts in the pair, with identical login ID and permissions. See ["Reference Database Synchronization \(RDS\)" on page 15-1](#).

Before you begin

- **Host login.** A login must exist on the NTP host for the NTPuser you want to create (see ["Add a User Login ID on the NTP Host" on page 6-9](#) for guidelines). If the user's login ID does not exist on the host, you see the following message:

```
User user not defined
```

Add the user on the NTP host, and return to this procedure.

- **add_ntpuser command.** This procedure uses the **add_ntpuser** command on the login ID of a user who already exists on the NTP host. See ["Add NTP Users" on page 6-20](#) for a complete description of **add_ntpuser** options.
- **Attributes file.** You can specify a custom group or user attributes file, which must reside in the \$USERDIR/uadmin directory when you run **add_ntpuser** (see ["Attributes File for add_ntpuser Command" on page 6-12](#)). However, you can run **add_ntpuser** from any directory.
- **CSL login.** For CSL users (value of **y** for the CSLUSER attribute), a CSL login must already exist (see ["Match NTP and CSL logins" on page 6-73](#)). If you see the following message, ask the CSL administrator for help, and then return to this procedure.

```
Login incorrect. <login> does not exist in CSL login database or does not have <application> permission. Please add user to CSL login database before executing this command. Login login does not exist in CSL database.
```

(Continued on next page)

Add NTP Users (Continued)

Procedure: Add an NTP user

Use this procedure to create an NTP user from a host login. The procedure assumes the user will access NTP through the BB-GUI. If instead the user will use the legacy X-GUI or AUI, you are directed to a checklist of further steps.

Step	Action
1	<p>Log on the NTP host, enter su -, and when prompted, enter the root password.</p> <p>Note This gives the root login the NTP environment. You must be root with the NTP environment to proceed.</p>
2	<p>Enter add_ntpuser -l <i>username</i> -c (where <i>username</i> is the user's login ID on the NTP host).</p> <p>You can specify a custom attributes file, if desired:</p> <ul style="list-style-type: none"> ■ To set custom group attributes, use the -g <i>groupname</i> option to specify a <i>grp_groupname_attributes</i> file in \$USERDIR/uadmin. ■ To set custom individual attributes, make sure a <i>user_username_attributes</i> file resides in \$USERDIR/uadmin. <p>Note If you see the following message, use the -h /home_directory option to the command. User home directory does not exist</p> <p>Example This example for user johndoe uses a group (analyst) attributes file, and asks for confirmation. (See the examples in "Add NTP Users" on page 6-20 for more information.) add_ntpuser -l johndoe -g analyst -c</p> <p>Response (If you did not use the -c option, go to the response in Step 4.)</p> <p>The NTP attributes that will be set for this user are displayed, followed by a prompt to abort (a) or continue (c).</p> <pre>User: johndoe Comment: Csluser:n Login used as template: Command group: allcmds FDC group: Network group: Restricted user: n Create user or Abort the add_ntpuser command? (c or a)</pre>

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Step	Action
3	Check the attributes, and if they are: <ul style="list-style-type: none"> ■ Correct, go to the next step. ■ Incorrect, enter a to abort. Return to the beginning of this procedure.
4	Enter c to continue. Response <p>You see a series of messages, including the following:</p> <pre>Creating Oracle account for user Setting application environment for user PRM configured from file: /etc/prmconf [list of PRM users]</pre> <p>When the user has been successfully added, you see the following message:</p> <pre>User user added to Oracle and <application> successfully.</pre>
5	Ensure that the user's .profile has been updated appropriately. (See the requirements for a user .profile in "add_ntpuser addition to user .profile" on page 6-24 and also "add_ntpuser addition to user .profile" on page 6-24 .) <ul style="list-style-type: none"> ■ The following line should appear at the end of the new user's .profile, where \$APPLBIN is the /appl/bin directory under \$SNASDIR, for example /lucent/ntp/snas/appl/bin: <ul style="list-style-type: none"> — . \$APPLBIN/u_profile (for users who will not use CSL) — . \$APPLBIN/csl_profile (for CSL users) ■ If the user has no .profile, create one, and use a text editor (such as vi) to include the appropriate entry as the LAST line in the file. Reference <p>The user is a CSL user if the CSL_USER attribute is set to y. See "Attributes File for add_ntpuser Command" on page 6-12 for more information. See also "add_ntpuser addition to user .profile" on page 6-24.</p>
6	Will the user access NTP exclusively through the BB-GUI? <ul style="list-style-type: none"> ■ If YES, do the following: <ol style="list-style-type: none"> a. Use "Add and Delete BB-GUI Users" on page 6-29 to add a BB-GUI user ID and install the client software. b. Tell the user his or her Web User ID and password. c. Tell the user how to access NTP. Use "How Users Access NTP" on page 6-72 for reference. ■ If NO, go to the next step.

Step	Action
7	<p>a. Use this checklist to determine what else to do to configure the user.</p> <ul style="list-style-type: none"> ■ Will the user access NTP through a workstation? If YES, add an X-GUI or AUI item to the user's workspace menu. See "Workstation Workspace Administration for X-GUI Access" on page 6-74. ■ Will the user access NTP through a PC? If YES, configure an X-emulation tool for NTP access. See "PC X-Emulation Tool Administration for X-GUI Access" on page 6-76 ■ Did you assign the user to an FDC group other than all, and will the user need to switch to other groups? If YES, see "Give user FDC group permission" on page 7-23 to give the user permission for other groups. ■ Did you assign the user to a network group or segment other than all, and will the user need to switch to other groups and segments. If YES, see "Give user network group or segment permission" on page 7-35 to give the user permission for other groups and segments. ■ Will the user use the AUI and need access to shell commands? If YES, see "Manage Restricted Shell" on page 7-58 for guidelines and procedures. <p>b. Tell the user his or her NTP host login and password and choices for command groups, FDC groups, and network groups and segments.</p>
Done	

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add_ntpuser Command

Purpose

The **add_ntpuser** command creates an NTP user from a login ID that you have already created on the NTP host (see ["Add a User Login ID on the NTP Host" on page 6-9](#)).

Description

The **add_ntpuser** command reads an attributes file in the \$USERDIR/uadmin directory and uses the parameters defined there to configure the new user. See ["Attributes File for add_ntpuser Command" on page 6-12](#) for a complete description of the attributes. This command also sets up the user's:

- NTP environment
- Oracle database account and permissions

add_ntpuser addition to user .profile

The **add_ntpuser** command appends a line to the end of the new user's .profile, where \$APPLBIN is the /appl/bin directory under the application home (\$SNASDIR) for your system (for example, /lucent/ntp/snas/appl/bin). This line must remain in the .profile. Do not remove it.

The following entry is for users who will NOT use CSL. (The CSLUSER attribute for a CSL user is set to **n** in the attributes file read by **add_ntpuser** when the user is added.)

```
. $APPLBIN/u_profile
```

The following entry is for users who WILL access NTP through CSL. (The CSLUSER attribute for a non-CSL user is set to **y** in the attributes file read by **add_ntpuser** when the user is added).

```
. $APPLBIN/csl_profile
```

Note

The CSLUSER user attribute determines a CSL user when **add_ntpuser** runs (see ["Attributes File for add_ntpuser Command" on page 6-12](#)).

(Continued on next page)

add_ntpuser Command (Continued)

Syntax **add_ntpuser -l username [-g groupname] [-h home_directory] [-c]**

Parameter	Description
-l username	<p>(required) Specifies the user's login ID on the NTP host (see "Add a User Login ID on the NTP Host" on page 6-9). When the command executes, an entry is made for this user in the sysuser table.</p> <p>Note If a user_<i>username</i>_attributes file resides in \$USERDIR/uadmin (where <i>username</i> is the login ID), add_ntpuser uses this file to set the user's attributes, regardless of whether you use the -g (group) option below.</p>
-g groupname	<p>(optional) Specifies a group, which causes add_ntpuser to use a custom group attributes file, called grp_<i>groupname</i>_attributes, if one exists.</p> <ul style="list-style-type: none"> ■ The grp_<i>groupname</i>_attributes file MUST reside in \$USERDIR/uadmin. ■ If a user attributes file exists for this user (see the -l option above), add_ntpuser will use it instead, and ignore the group attributes file. ■ <i>groupname</i> must match <i>groupname</i> in the grp_<i>groupname</i>_attributes filename. <p>Reference See "Attributes File for add_ntpuser Command" on page 6-12 for more information.</p>
-h home_directory	<p>(seldom used) Specifies the fully qualified path to the user's home directory on the NTP host (normally /home/<i>user</i>). This option is available for custom applications. You will NOT use it under normal circumstances.</p>
-c (confirmation)	<p>(optional but recommended) Displays NTP attributes that will be set for this user, and allows you to confirm them before the user is actually added.</p>

Examples

- This command makes the NTP host login johndoe an NTP user with the default user attributes from the def_attributes file.
add_ntpuser -l johndoe
- These commands prompt you for confirmation before making NTP host login johndoe an NTP user with custom attributes.
 - Uses a group attributes file named grp_analyst_attributes
add_ntpuser -l johndoe -g analyst -c
 - Uses a user attributes file named user_johndoe_attributes.
add_ntpuser -l johndoe -g johndoe -c

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Delete NTP Users

Purpose

This procedure removes a user's access to NTP. For why you would delete an NTP user, see ["List of tasks" on page 6-6](#).

Note

- **BB-GUI access.** BB-GUI access is administered separately. After you complete the procedure in this section, you must also remove the user's BB-GUI user ID. See ["Add and Delete BB-GUI Users" on page 6-29](#) for more information.
- **Host login.** To completely remove the user from the NTP host, you must also remove the user's login ID. Use standard administrative procedures for your operating system. See your operating system reference documents, if necessary.
- **RDS (reference data synchronization).** If the host is in a host pair for RDS (refsync, F6214), use this procedure twice to delete the user from both hosts in the pair. See ["Reference Database Synchronization \(RDS\)" on page 15-1](#).

Before you begin

del_ntpuser command. This procedure uses the **del_ntpuser** command on the login ID of the NTP user. See ["Add and Delete BB-GUI Users" on page 6-29](#) for a complete description.

Procedure: Delete an NTP user

Use this procedure to remove NTP access for a login ID on the NTP host.

Step	Action
1	Warn the user to be deleted that all his or her working sets (user files) will be deleted. Note The files in the user's home directory will NOT be affected.
2	Log on the NTP host, enter su - , and when prompted, enter the root password. Note This gives the root login the NTP environment. You must be root with the NTP environment to proceed.

Step	Action
3	<p>Enter <code>del_ntpuser -c username</code> where username is the user's login ID on the NTP host.</p> <p>Response (If you did not use the <code>-c</code> option, go to the response in Step 4.)</p> <p>You are prompted to confirm the deletion, as follows: User: <code>user</code> WARNING: All tables for <code>user</code> will be removed. Delete <code>user</code> or Abort the <code>del_ntpuser</code> command? (d or a)>></p>
4	<p>Enter <code>d</code> to delete the user.</p> <p>Response You see output resembling the following as the user is removed.</p> <pre>User dropped.</pre> <pre>User user dropped from Oracle [a list of rows deleted] [a list of users] PRM application manager state: Enabled (polling interval: 30 seconds)</pre> <pre>Disk manager state: Disabled User dummy deleted from Oracle and <application> successfully</pre>
5	<p>Use these steps to remove other NTP-related elements for this user.</p> <ul style="list-style-type: none"> ■ Does the user use the BB-GUI? <ul style="list-style-type: none"> — If YES, remove: the user's BB-GUI web user ID. See "Add and Delete BB-GUI Users" on page 6-29. — If NO, you are done. ■ (For legacy interfaces only.) Is there an X-GUI or AUI item on the user's workspace menu?. <ul style="list-style-type: none"> — If YES, See workstation user manuals. — If no, continue.
6	<p>(For the legacy X-GUI only.) Does the user use CSL?</p> <ul style="list-style-type: none"> ■ If NO, you are done. ■ If YES, tell the CSL administrator to remove the user's login, if NTP was the only application the user entered via CSL.
Done	

del_ntpuser Command

Purpose

The **del_ntpuser** command removes a user from NTP. It takes away the user's:

- Oracle database account and permissions
- Access to the NTP user interfaces
- NTP environment variables
- Working sets (user files)

However, **del_ntpuser** does not remove the user's:

- BB-GUI user ID (see ["Delete a BB-GUI user" on page 6-44](#))
- NTP host login or any files in the user's home directory (See documentation on user administration for your platform for standard procedures to remove login IDs.)

Note

Modify users. Do NOT attempt to change a user's attributes by deleting and re-adding them as an NTP user. Instead, see [Chapter 7, "Modify Users"](#).

Syntax

```
del_ntpuser -c username
```

Parameter	Description
-c (confirmation)	(optional) Prompts you to confirm that you really want to delete the user.
<i>username</i>	(required) Specifies the user's login ID on the NTP host (see "Add a User Login ID on the NTP Host" on page 6-9).

Example

This command removes NTP user johndoe.

```
del_ntpuser johndoe
```

Add and Delete BB-GUI Users

Overview

Background

NTP is installed with an initial BB-GUI administrator ID (**NetAdmin**). This ID can add other users and can give them BB-GUI administration permission. All BB-GUI administrators can add and delete BB-GUI users, as well as modify user information for all BB-GUI user IDs.

BB-GUI client software must be installed on users' PCs or workstations before they can run the BB-GUI. This software should be uninstalled when a client machine is taken out of service from NTP. Required software components differ depending on whether the BB-GUI runs on a PC or a workstation and whether a user needs to access Pattern Painter graphical output.

Note

Add user on both host and BB-GUI. Users must be added to both NTP AND the BB-GUI in order to run the BB-GUI (see ["Add NTP Users" on page 6-20](#)). Users should be deleted from both the host and the BB-GUI if they no longer need access to NTP (see ["Delete NTP Users" on page 6-26](#)).

Task overview

Use these procedures for BB-GUI user administration tasks.

Task	Procedures
Add users	<ul style="list-style-type: none"> ■ "Add a BB-GUI user" on page 6-43 ■ "Install Client Software for the BB-GUI" on page 6-48 (use the appropriate procedures for your platform) <ul style="list-style-type: none"> — "Install BB-GUI client software — PC" on page 6-50 — "Install BB-GUI client software — workstation" on page 6-54 — "Install Oracle client software — PC" on page 6-60 — "Install Pattern Painter software — PC" on page 6-56 — "Install Acrobat Reader" on page 6-66
Modify users	<ul style="list-style-type: none"> ■ "Modify BB-GUI user Information" on page 7-6 ■ "Modify connections for the Oracle client" on page 7-7

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Task	Procedures
Delete users	<p>"Uninstall Client Software for the BB-GUI" on page 6-67 (use the appropriate procedures for your platform)</p> <ul style="list-style-type: none"><li>■ "Uninstall BB-GUI client software — PC" on page 6-67<li>■ "Uninstall BB-GUI client software — workstation" on page 6-69<li>■ "Uninstall Oracle client software — PC" on page 6-70<li>■ "Uninstall Pattern Painter client software — PC" on page 6-69<li>■ "Uninstal Adobe Acrobat Reader software" on page 6-71

Reference

- For pages you use to administer BB-GUI user IDs, see "Web User Administration Page" on page 6-31 and "Web User Information Page" on page 6-35.
- For other tasks and procedures related to the BB-GUI, see "Modify BB-GUI Users" on page 7-6 and "Customize the BB-GUI" on page 9-4.

Web User Administration Page

Overview

- ["Purpose" on page 6-8](#)
- ["Go to the Web User Administration page" on page 6-31](#)
- ["Example" on page 6-36](#)
- ["Web User Administration page parts" on page 6-33](#)
- ["Display a blank Web User Information page" on page 6-34](#) (for adding a new user)
- ["Display a user's Web User Information page" on page 6-34](#) (to see information about an existing user)

Purpose

The Web User Administration page lists all BB-GUI users. It allows any user with BB-GUI administration permission to

- Select an existing BB-GUI user to administer by accessing their Web User Information page
- Access a blank Web User Information page to add a new BB-GUI user

Reference

See ["Web User Information Page" on page 6-35](#).

Note

Only users with BB-GUI administration permission can access the Web User Administration page. When users without this permission click **Web User Administration** from the product Launch page, they are redirected to their own Web User Information page.

Procedure: Go to the Web User Administration page

From the product Launch page, click **Web User Administration**, and enter your user ID and password when prompted.



Reference

For information on the Launch page, see the *BB-GUI User's Guide*.

Web User Administration Page (Continued)

Example

Here is an example of the Web User Administration page. For a description of the page parts, see "[Web User Administration page parts](#)" on page 6-33.

Annotations in the image:

- Search area
- Web user list
- Button: Create new entry in table
- You are currently authenticated as user NetAdmin

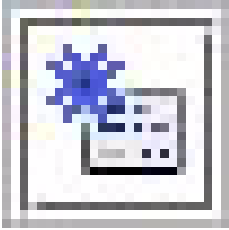
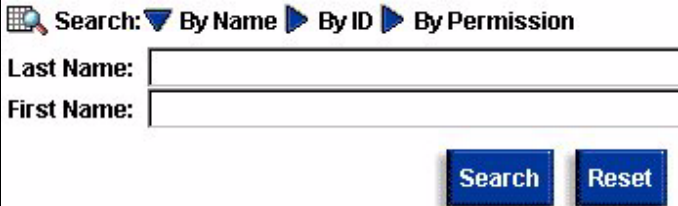
Web User ID	Common Name	First Name	Last Name	Description
NetAdmin	NetMinder Administrator	NetMinder	Administrator	Default Web User Admini...
djd	Dave Daulton	Dave	Daulton	analyst
jdoe	John Doe	John	Doe	example user
wrbn	Wendy Ban	Wendy	Ban	documentation and test

(Continued on next page)

Web User Administration Page (Continued)

Web User Administration page parts

The Web User Administration page parts have the following functions:

Part	Function								
	<p>Button: Create new entry in table. Click this button to display a blank Web User Information page where you can add a new BB-GUI user (see "Web User Information Page" on page 6-35).</p> <p>Note This button is located at the right side of the page, as highlighted in the example illustration (see "Example" on page 6-32).</p>								
	<p>Search area. Click the triangle next to By Name, By ID, or By Permission to search for users. From the search results, you can select a user to administer. To search by:</p> <ul style="list-style-type: none"> ■ Name — Enter the user's first name, last name, or both. For example, if you enter Bob in the First Name field, the user information for all BB-GUI users named Bob is displayed. ■ User ID — Enter a user's Web User ID. ■ Permission — Select either Network Analysts or Web User Administration. 								
<p>32 Web Users</p> <table border="1"> <thead> <tr> <th>↑ Web User ID</th> <th>Common Name</th> <th>First Name</th> <th>Last Name</th> </tr> </thead> <tbody> <tr> <td>WebAdmin</td> <td>WebAdministrator</td> <td>Web</td> <td>Administrator</td> </tr> </tbody> </table>	↑ Web User ID	Common Name	First Name	Last Name	WebAdmin	WebAdministrator	Web	Administrator	<p>Web user list. This list includes all BB-GUI users, and shows the user information for each one.</p> <p>To go to a page displaying information for a particular user, left-click the user's Web User ID in the list.</p>
↑ Web User ID	Common Name	First Name	Last Name						
WebAdmin	WebAdministrator	Web	Administrator						

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Web User Administration Page (Continued)

Procedure: Display a blank Web User Information page

To display a blank Web User Information page to use for adding a new user, go to the Web User Administration page and click the **create new entry in table** button.

Reference

To access the Web User Administration page, see ["Go to the Web User Administration page" on page 6-31](#). For an illustration of the Web User Administration page and the **create new entry in table** button, see ["Example" on page 6-32](#) and ["Web User Administration page parts" on page 6-33](#).

Procedure: Display a user's Web User Information page

To display a particular user's Web User Information page so you can check or modify their user information, go to the Web User Administration page and do one of the following:

- Select the user from the list of users (see ["Web User Administration page parts" on page 6-33](#)) on the page.
- Use the search area (see ["Web User Administration page parts" on page 6-33](#)) to find the user, and then click the user's Web User ID.

Reference

To access the Web User Administration page, see ["Go to the Web User Administration page" on page 6-31](#). For an illustration of the Web User Administration page, see ["Example" on page 6-32](#).

Web User Information Page

Overview

- "Purpose" on page 6-35
- "Example" on page 6-36
- "Go to the Web User Information page" on page 6-37
- "Web User Information page parts" on page 6-37
- "Add a BB-GUI user" on page 6-43
 - "Add a BB-GUI Web User ID" on page 6-38
 - "Assign a BB-GUI user description" on page 6-38
 - "Assign a BB-GUI user password" on page 6-38
 - "Assign BB-GUI administrator permission" on page 6-38
 - "Set BB-GUI Ascreen exception level displays" on page 6-39
 - "Show or hide BB-GUI navigation buttons" on page 6-39
 - "Set BB-GUI colors" on page 6-40
 - "Change BB-GUI Max table size" on page 6-40
 - "Change BB-GUI font size" on page 6-41
 - "Assign a BB-GUI user's FDC groups" on page 6-41
 - "Assign a BB-GUI user's network groups" on page 6-42
 - "Define the host for a BB-GUI user connection" on page 6-42
 - "Define the host UID for a BB-GUI user connection" on page 6-42
- "Delete a BB-GUI user" on page 6-44

Purpose

The Web User Information page is where you create and remove BB-GUI users, or modify their configuration information.

- There is a separate instance of this page for each BB-GUI user.
- A user can access his or her own Web User Information page and modify some of the information there.
- Users with administration permission can access the Web User Information pages of all other users and modify all information there except values fixed by the system.

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Web User Information Page (Continued)

Example

Here is an example of a Web User Information page. This example shows the BB-GUI attributes set for user "John Doe".

Note

Each BB-GUI user has a unique instance of this page. To add a new BB-GUI user, bring up a blank Web User Information page.

Web User Information

*Last Name : Doe
 *First Name : John
 *Web User ID : jdoe
 Description : example user
 Password :
 Verify Password :
 Permission : Web User Administration
 Alert/Severity Indication : Indicate by Icon Indicate by Color
 Navigation Links : Show by Default Hide by Default
 Regular Mode Colors : Dark Foreground on Light Background
 Projection Mode Colors : Light Foreground on Dark Background
 Page Language : English
 On-line Help Language : English

Table Size : 5000
 Max Table Size : 30000
 Font Size : Small Medium Large Largest
 FDC Group : all
 Network Group/Segment : all

Host Information :
 Host Name : lue6500
 Host UID : jdoe

Submit Reset Delete

(Continued on next page)

Web User Information Page (Continued)

Procedure: Go to the Web User Information page

You go to this page in various ways, depending on what you want to do.

- **New users.** To access a blank Web Information Page for adding users, you simply click the button at the right side of the page (see "[Web User Administration page parts](#)" on page 6-33).
- **Existing users.** To access an individual user's Web User Information Page, used for modifying user information or deleting the user, either:
 - Click the user's Web User ID.
 - Use the search area to find the user, and then click the user's Web User ID.

See "[Web User Administration page parts](#)" on page 6-33 for information on the list of users and the page area for searching for users.

Web User Information page parts

The Web User Information page has the following that These areas that consist of fields in which you select or enter information.

- Web User Information area
- Preferences area
- Permissions for this information are as follows:

Any user can change values in fields with **analyst permission**.

- Only BB-GUI administrators can set or change values in fields with **admin permission**.
- Some fields have a default **system value** that you cannot change.

Note

Default options and values. See "[Customize BB-GUI Attributes](#)" on page 9-5 for more information on default system options and values for some values in this table.

Field	Description	Permission
Web User Information		
Last Name	Contain the BB-GUI user's last and first name, respectively.	Admin
First Name		

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Field	Description	Permission
Web User ID	<p>Sets a user's web user ID. Values: This ID must match the user's login on the NTP host.</p> <p>Note The user may already have a BB-GUI user ID (and host login) for another product. In that case, match the BB-GUI ID here.</p> <p>Procedure: Add a BB-GUI Web User ID</p> <ol style="list-style-type: none"> 1. Type the user's name in the Last Name and First Name fields. 2. Type the ID in the Web User ID field. 3. Click Submit. 	admin
Description	<p>(optional) Identifies a BB-GUI user, such as by job responsibility or location.</p> <p>Procedure: Assign a BB-GUI user description</p> <ol style="list-style-type: none"> 1. Type the description in the Description field. 2. Click Submit. 	
Password Verify Password	<p>Used for password administration. The BB-GUI administrator initially assigns a password for new BB-GUI users. Users can change their passwords at will.</p> <p>Procedure: Assign a BB-GUI user password</p> <ol style="list-style-type: none"> 1. Type the password in the Password field. 2. Type the same password in the Verify Password field. 3. Click Submit. 	analyst
Permission	<p>Determines whether a user has BB-GUI administration permission. BB-GUI administrators can add other BB-GUI users and can change the user information for all BB-GUI users. Values: selected or unselected.</p> <p>Procedure: Assign BB-GUI administrator permission</p> <ul style="list-style-type: none"> ■ Click the checkbox to assign a user BB-GUI administrator permission. ■ Click the checkbox again to unassign permission. 	admin

Field	Description	Permission
Exception Level	<p>Determines how the BB-GUI Ascreen page displays exception levels.</p> <p>Values:</p> <ul style="list-style-type: none"> ■ Indicate by Background. The background of the entire row is colored if you select Dark Foreground on Light Background in the Regular Mode Colors and Projection Mode Colors fields (see below). If you select Light Foreground on Dark Background in those fields, the text, not the background, is colored. Colors are: <ul style="list-style-type: none"> — Red — critical — Yellow — major — Cyan (blue-green) — minor ■ Indicate by Icon. A thermometer icon appears in the Alert Level (AI) field. <p>Procedure: Set BB-GUI Ascreen exception level displays</p> <ol style="list-style-type: none"> 1. Click Indicate by Background or Indicate by Icon. 2. Click Submit. 	analyst
Navigation Links	<p>Determines whether BB-GUI pages show navigation and common buttons.</p> <p>Values: Show by Default or Hide by Default.</p> <p>Reference For information on the navigation and common buttons, see Chapter 3 of the <i>BB-GUI User's Guide</i>.</p> <p>Procedure: Show or hide BB-GUI navigation buttons</p> <ol style="list-style-type: none"> 1. Click Show by Default to show buttons or Hide by Default to hide them. 2. Click Submit. 	analyst

Field	Description	Permission
Regular Mode Colors	Set the colors for BB-GUI pages displayed on a monitor or projected. Values: Dark Foreground on Light Background or Light Foreground on Dark Background.	analyst
Projection Mode Colors	Reference For how to display output in projection mode, see "Toolbar items" in Chapter 3 of the <i>BB-GUI User's Guide</i> . Procedure: Set BB-GUI colors 1. Click the blue triangles to pull down menus. 2. Select either Dark Foreground on Light Background or Light Foreground on Dark Background . 3. Click Submit .	
Page Language	The language for BB-GUI pages and on-line help, respectively. Values: English only, currently.	system value (cannot be changed)
On-line Help Language		
Preferences		
Table Size	The maximum number of scrollable rows displayed in Find/Analyze at one time. This is a block of rows identified by the numbers and arrow under the bottom left corner of output. Each block is identified by numbers in the bottom left corner of output. Values: 5000. Example If Table Size is 5,000, and Find/Analyze output indicates "15000 records found", then below the bottom left corner of output you see "1 2 3". The bold typeface means you are looking at records 1 through 5000. Click 2 to see records 5,001-10,000. Click 3 to see records 10,001-15,000.	system value (cannot be changed)
Max Table Size	The actual maximum number of records Find/Analyze retrieves and Compute is done on (although at one time you can scroll only chunks of records, determined by the Table Size field). Values: Initial default of 10,000; can be raised to a maximum of 30,000 for. Do NOT type commas between digits in this field. Note NTP does Computes on the whole set of records defined by the Max Table Size, not on the scrollable number of records defined by the Table Size field. Procedure: Change BB-GUI Max table size 1. Type a new table size. Do NOT use commas. 2. Click Submit .	

Field	Description	Permission
Font Size	<p>The font size for the display of all pages in a user's command group. Values: Small (12 point), medium (20 point), large (28 point, or largest (36point).</p> <p>Procedure: Change BB-GUI font size</p> <ol style="list-style-type: none"> 1. Select either Small, Medium, Large, or Largest. 2. Click Submit. 	analyst
FDC Group	<p>Limits output on the Alert Cases and Trap Alerts pages to only those alert cases (or CFIMs) with FDCs in the group. Values: FDC group(s) or all for no limits.</p> <ul style="list-style-type: none"> ■ Defined on host. You define FDC groups on the NTP host (see "Define FDC Groups" on page 7-17). The definitions affect ALL interfaces. When you administer a BB-GUI user, this field lists all groups defined. If none are defined, the only listing is all. ■ Assigned separately. FDC groups are assigned SEPARATELY for the BB-GUI and other NTP interfaces (SUI [administrative], and also legacy interfaces that a few customers still use). A user can have access to one set of FDC groups in the BB-GUI and to another set in the other NTP interfaces. ■ Access to multiple groups. The user can access any FDC group you assign here. The default group is the first group in the drop-down list. A user must select another group on the Web User Information page to change groups (see "Web User Information Page" on page 6-35). ■ Override. A user's current FDC group shows on output pages beside the page name. But using a page's search criteria overrides group settings. <p>Procedure: Assign a BB-GUI user's FDC groups</p> <ol style="list-style-type: none"> 1. Click the blue triangles to pull down the menu, and select (highlight) the group(s) you want the user to be able to access. <p>Note To select multiple groups, press Shift and left-click each group.</p> <ol style="list-style-type: none"> 2. Click Submit. The user will see only the groups you assigned, and can select one. 	analyst

Field	Description	Permission
Network Group/Segment	<p>This field limits output to only those alert cases with those entities in the NE field, or CFIMs with those entities in the Re or De fields.</p> <ul style="list-style-type: none"> ■ Defined on NTP host. You define network groups and segments on the NTP host (see "Define Network Groups and Segments" on page 7-27). The definitions affect ALL interfaces. When you administer a BB-GUI user, this field lists all groups and segments defined. If none are defined, the only listing is all. ■ Assigned separately. Network groups and segments are assigned SEPARATELY for the BB-GUI and other NTP interfaces (SUI [administrative], and also legacy interfaces that a few customers still use). A user can have access to one set of groups and segments in the BB-GUI and to another set in the other NTP interfaces. ■ Access to multiple groups. The user can access any network group or segment you assign here. The default group is the first group in the drop-down list. A user must select another group on the Web User Information page to change groups (see "Web User Information Page" on page 6-35). <p>Procedure: Assign a BB-GUI user's network groups</p> <ol style="list-style-type: none"> 1. Click the blue triangles to pull down the menu, and select the group(s)/segments you want the user to be able to access. (To select multiple groups, press Shift and left-click each group.) 2. Click Submit. The user will see only the groups/segments you assigned, and can select one. 	analyst
Host Name	<p>This field contains the machine name of the NTP host (as it appears in the /etc/hosts file). You MUST enter the correct host name for the user to run the BB-GUI.</p> <p>Procedure: Define the host for a BB-GUI user connection</p> <ol style="list-style-type: none"> 1. Type the machine name of the NTP host. 2. Click Submit. 	admin
Host UID	<p>This field contains the login ID of this user on the NTP host. You MUST enter the correct NTP login ID for the user to run the BB-GUI. Values: If you enter nothing, the value defaults to the Web User ID.</p> <p>Procedure: Define the host UID for a BB-GUI user connection</p> <ol style="list-style-type: none"> 1. Type the login ID of the user on the NTP host. 2. Click Submit. 	admin

Add BB-GUI Users

Overview

You use the Web User Information page to add (or modify) a BB-GUI user.

Procedure: Add a BB-GUI user

Use this procedure to configure a BB-GUI user's access to NTP by adding a web user ID and user information.

Step	Action
1	Open a blank Web User Information page. Reference See " Go to the Web User Information page " on page 6-37 for information on accessing the page.
2	Enter information in the various fields on the page. Reference For what to enter, see " Web User Information page parts " on page 6-37.
3	Click Submit . Response A new BB-GUI user is added.
Done	

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Delete BB-GUI Users

Overview You use the Web User Information page to delete a BB-GUI user.

Note

After you delete a user from the BB-GUI, the user still exists as an NTP user. To entirely remove the user, see ["Delete NTP Users" on page 6-26](#).

Procedure: Delete a BB-GUI user Use this procedure to remove a user's access to the BB-GUI by deleting their web user ID and user information. I

Step	Action
1	Go to the Web User Information page for the user. Reference See "Go to the Web User Information page" on page 6-37 for the procedure.
2	Click Delete . Response A window displays the following prompt: <code>Select Yes to delete the userid or No to cancel this operation.</code>
3	Click Yes to delete the user.
Done	

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Install and Uninstall Client Software for the BB-GUI

Overview

Task overview

The client software includes the following components, described below:

- ["BB-GUI client software components" on page 6-46](#)
- ["Pattern Painter software components" on page 6-46](#)
- ["Adobe Acrobat reader component" on page 6-47](#)

Use these procedures for all client software components.

Task	Procedures
Install	"Install Client Software for the BB-GUI" on page 6-48
Uninstall	"Uninstall Client Software for the BB-GUI" on page 6-67

Note

To modify or configure additional client connections for Pattern Painter, see ["Configure Oracle Client Connections for Pattern Painter" on page 7-7](#).

(Continued on next page)

Overview (Continued)

BB-GUI client software components

The BB-GUI runs on PCs and workstations (see "[Hardware and Software, and Connectivity](#)" on page 2-7 for information on the supported platforms). To run the BB-GUI, users must have the BB-GUI client software installed on their PCs or workstations. This software includes two components:

- Java provisioning component (all platforms)
- Java 1.2.2-006 plug-in (Java Runtime Environment)

Note

If a user tries to access any BB-GUI page from a machine without the Java plug-in installed, their browser will automatically be redirected to a client installation page to download the plug-in.

Caution

- **All platforms.** On all PC and workstations platforms, if the Java plug-in is ever reinstalled, the provisioning software must be reinstalled also.
- **Solaris 2.8.** On Solaris 2.8 workstations, the Java plug-in is already installed as part of the OS installation. DO NOT attempt to install the Java plug-in on Solaris 2.8 systems. Doing so will cause significant problems for the platform.

Pattern Painter software components

Pattern Painter runs in association with the BB-GUI to display graphical depictions of NTP data. Pattern Painter runs on PCs only, not on workstations. To run Pattern Painter, BB-GUI users must have the following software installed on their PCs.

- **Pattern Painter client software**, which includes two components:
 - Pattern Painter executables
 - Visual Insights components
- **Oracle client software**, which enables the client to connect to the NTP host database and access the data that Pattern Painter displays. One host connection is configured as a part of the initial software installation. After installation, you can:
 - Modify the parameters for the initial connection,
 - Set up additional connections (for example, to multiple NTP hosts)
 - Delete connections

(Continued on next page)

Overview (Continued)

Adobe Acrobat reader component

The Adobe Acrobat Reader software is required to read user documentation files provided in .pdf (Portable Document Format), accessible from the BB-GUI.

Note

A CD-ROM containing the user documentation files and the Adobe Acrobat Reader software is also provided for each NTP installation. Thus, there are multiple ways to access the documentation and the Adobe Acrobat Reader software. The procedures in this book cover installation of the Adobe Acrobat Reader from the client software CD and the web, and do not cover the separate CD. Your NTP support organization supplies information for the stand-alone documentation CD.

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Install Client Software for the BB-GUI

Overview

During initial system installation, your NTP support organization may assist you in configuring PCs and workstations of BB-GUI users. But thereafter, when new BB-GUI users join your work group, you must install the client software they need to access the BB-GUI. You can do this either:

- From CD-ROM (see ["CD-ROM installation" on page 6-48](#))
- From your intranet, (see ["Web-based installation" on page 6-48](#))

CD-ROM installation

A single CD-ROM labeled "WebGUI CLIENT Software" contains all the client software. See ["Install and Uninstall Client Software for the BB-GUI" on page 6-45](#) for complete information on the installable software.

Web-based installation

For web-based installation of the client software, you download installation files from the web and execute them locally on the PC or workstation.

Installation of the Oracle client software from your intranet requires that a stage area be set up on the NTP host, or another web server (see ["Set up stage data for Oracle client web install" on page 6-49](#)). This area contains just enough stage files to support an "Application User" installation of the Oracle client necessary for Pattern Painter. Any other types of Oracle client installation (Administrator, Programmer, or Custom) must be done via the CD-ROM. Normally, you can use your intranet to install the client software that your BB-GUI users will need.

The executable installation files must be placed on the server with the stage area. Space requirements are as follows:

- Executables — 43 Mbytes
- Stage area — 70 Mbytes

Note

Free up disk space. If you do not want to support web-based client software installation in the future, you can free up the disk space by removing all files with a .EXE extension in the \$SNASDIR/wgui/html directory on the NTP host.

(Continued on next page)

Install Client Software for the BB-GUI (Continued)

Task overview Use the following table to select the appropriate procedures to install the client software.

Component	Procedures	Use when...
BB-GUI client software <ul style="list-style-type: none"> ■ PC ■ Workstation 	<ul style="list-style-type: none"> ■ "Install BB-GUI client software — PC" on page 6-50 ■ "Install BB-GUI client software — workstation" on page 6-54 	Adding new users and setting up their PCs or workstations to run the BB-GUI Note
Pattern Painter client software	"Install Pattern Painter software — PC" on page 6-56	<ul style="list-style-type: none"> ■ Install the Oracle client software and Pattern Painter client software only if a PC user will need to access Pattern Painter. ■ Set up a stage area only to enable web-based installation of the Oracle client software (for Pattern painter).
Oracle client software	<ul style="list-style-type: none"> ■ "Set up stage data for Oracle client web install" on page 6-49 (required only to support web-based installation) ■ "Install Oracle client software — PC" on page 6-60 	
Adobe Acrobat Reader	"Install Acrobat Reader" on page 6-66	

Note

Installation order. You can install the client software in any order, but for web-based installation it is easier to install the BB-GUI client software first. Order of installation matters for components of the BB-GUI client software in some circumstances. See ["Install BB-GUI client software — PC" on page 6-50](#).

Procedure: Set up stage data for Oracle client web install

(Optional) Use this procedure to set up the stage area on the NTP host., or any web server, so the Oracle client software necessary to run Pattern Painter can be installed on client machines from your intranet.

Step	Action
1	Load the CD-ROM labeled "WebGUI Client Software" into the CD-ROM drive on the NTP host.
2	Enter wgui_oraclestage
3	When the command completes, remove the CD-ROM from the CD-ROM drive.
Done	

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Install Client Software for the BB-GUI (Continued)

Procedure: Install BB-GUI client software — PC

Use this procedure to install the BB-GUI client software on a PC from either:

- Your intranet (if your location supports web-based installation)
- CD-ROM

This is a standard PC installation procedure that simply requires you to follow prompts and accept the defaults. You can install:

- Both the Java plug-in and the Java provisioning component
- Either of these components individually

Reference

See "[BB-GUI client software components](#)" on page 6-46 for a description of this software.

Note

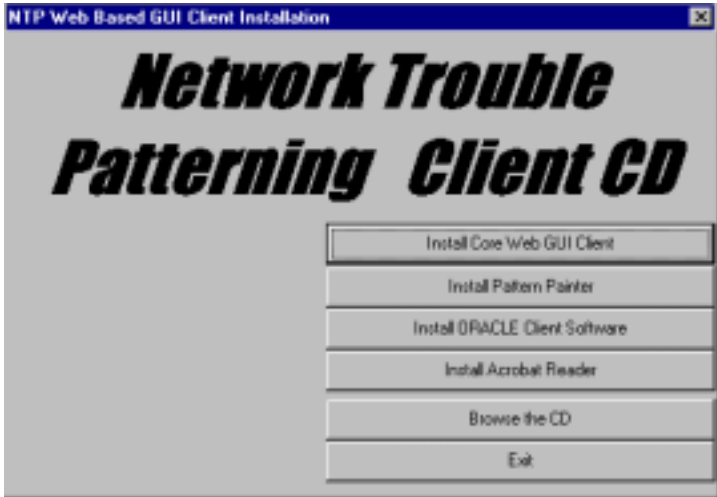
- **Reboot.** If you install the software while the Java plug-in is active (your browser is running), you **MUST** reboot your PC. Otherwise you will get a provisioning error when you try to use the BB-GUI. To avoid having to reboot, exit your browser before installing the software (as instructed in the procedure).
- **Reinstall.** If you reinstall the Java plug-in, you **MUST** then reinstall the Java provisioning software. You can install "over" the current installation of the Java provisioning software or the plug-in (you do not have to uninstall first).
- **Download location.** For intranet installations, this procedure has you create a temporary directory to use for downloading installation program. You can download to the desktop instead. Be sure to delete the program when you are finished.

Step	Action
1	If you are installing from: <ul style="list-style-type: none"> ■ Your intranet, close all applications that may be running on the PC EXCEPT your browser, and go to Step 2. ■ CD-ROM, close any applications that may be running on the PC, INCLUDING all browser windows, and go to Step 3.

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Step	Action
2	<p>Download the installation file, as follows:</p> <ol style="list-style-type: none"> a. Create a temporary directory to store the installation files you will download. b. Point your browser to the BB-GUI Launch page, and then click the Client Installation button to go to the Web Based GUI Client Installation Download Page. <p>Reference For how to access the BB-GUI Launch page, see Chapter 3 in the <i>BB-GUI User's Guide</i>.</p> <p>Note If the Java plug-in is NOT already installed on your PC, AND you are using the:</p> <ul style="list-style-type: none"> ■ Netscape browser, you are automatically redirected to the Web Based GUI Client Installation Download Page. ■ Internet Explorer browser, click Yes when a window asks if you want to install and run NTP_WEBGUI.EXE, wait for the installation program to display a welcome window, click Install Core Web GUI Client, and go to Step 4. <p>Note For Internet Explorer, you may see an error message unless your internet security option for Active-X controls is set to "low" for your local intranet (set through Tools -> Internet Options... -> Security). If necessary, consult your network administrator or internet support personnel for assistance in setting the appropriate option.</p> c. Read the instructions for the NTP_WEBGUI.EXE file, and then left-click the NTP_WEBGUI.EXE link. <p>Response A Save As... window pops up.</p> d. Save the installation file in the temporary directory you created. The filename includes the generic and date, for example NTP_WEBGUIx.x_010115.EXE, where x.x is the generic and 010115 indicates January 01, 2001 (your date may differ). <p>Note Instead of using a temporary directory to download the installation, you can put it on the desktop, access it from there in the next step, and remove it from the desktop when the installation is complete.</p>

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Step	Action
3	<p>If you are installing from:</p> <ul style="list-style-type: none"> ■ Your intranet, run the installation program. To do this, either <ul style="list-style-type: none"> — From the Windows Start menu, select Run and enter <i>Drive:\directory\filename</i> (specify the drive, directory, and filename from Step 2). — Double-click the filename (from Step 2) in Windows Explorer. ■ CD-ROM: <ul style="list-style-type: none"> a. Load the CD labeled “WebGUI CLIENT Software” into the CD-ROM drive. <p>Response The Client CD installation window is displayed.</p>  <p>Note If the window does not pop up, select Start -> Run, and then enter <i>Drive:\webgui\windows\NTP_WEBGUI.EXE</i> (where <i>Drive</i> is your CD-ROM drive).</p> <ul style="list-style-type: none"> b. Click Install Core Web GUI Client. <p>Response A standard PC installation program starts, and a welcome window is displayed.</p>
4	<p>Click Next.</p> <p>Response A window shows the destination directory for the installed software.</p>
5	<p>Click Next to accept the default.</p> <p>Response A window lists the BB-GUI client software components.</p>

Step	Action
6	<p>Select both Java Plugin 1.2.2-006 and WEBGUI Provisioning, and then click Next to continue.</p> <p>Note If the Java plug-in is already installed, do NOT select it. You do not need to reinstall it.</p> <p>Response A Provisioning Details window is displayed.</p>
7	<p>Click Next.</p> <p>Note Unless you have information to the contrary from your network administrator, do NOT select the option to install the Java JAR file on the local machine.</p>
8	<p>Click Next.</p> <p>Note A window is displayed to start the installation.</p>
9	<p>Click Next.</p> <p>Response Progress windows are displayed as the plug-in is unpacked, followed by a Software License Agreement Window.</p>
10	<p>Click Yes to accept the licensing agreement.</p> <p>Response A window prompts you to select the location to install the Java Runtime Environment.</p>
11	<p>Click Next to accept the default location (C:\Program Files\JavaSoft\JRE\1.2).</p> <p>Response Progress windows and other messages are displayed, followed by a window showing the installation is complete (installation of the Java provisioning software happens very quickly).</p>
12	<p>Click Finish.</p> <p>Response If you are installing from:</p> <ul style="list-style-type: none"> ■ Your intranet, you are done. Skip the next step. ■ CD-ROM, the original installation window (Step 3) is displayed.
13	<p>If you are installing from CD-ROM, select Exit, remove the CD from the CD-ROM drive, and store it according to local practice.</p>
Done	

Install Client Software for the BB-GUI (Continued)

Procedure: Install BB-GUI client software — workstation

Use this procedure to install the BB-GUI client software on a workstation from either:

- Your intranet (if your location supports web-based installation)
- CD-ROM

You can install:

- Both the Java provisioning software and the Java plug-in
- Only the Java provisioning software

Caution

Solaris 2.8. On Solaris 2.8 workstations, the Java plug-in is already installed as part of the OS installation. DO NOT attempt to install the Java plug-in on Solaris 2.8 systems. Doing so will cause significant problems for the platform.

Reference

See "[BB-GUI client software components](#)" on page 6-46 for a description of this software.

Step	Action
1	Log on the workstation as root .
2	If you are installing from: <ul style="list-style-type: none"> ■ Your intranet, go to Step 3. ■ CD-ROM, go to Step 5.

Step	Action
3	<p>Download the installation file, as follows:</p> <ol style="list-style-type: none"> a. Create a temporary directory to store the installation files you will download. <ul style="list-style-type: none"> Reference For how to access the BB-GUI Launch page, see Chapter 3 in the <i>BB-GUI User's Guide</i>. b. Point your browser to the BB-GUI Launch page (or any BB-GUI page), and then click the Client Installation button to go to the Web Based GUI Client Installation Download Page. <ul style="list-style-type: none"> Note If the Java plug-in is NOT already installed on your workstation, you are automatically redirected to the Web Based GUI Client Installation Download Page. c. Read the instructions for the ntp_webgui.tar file, and then left-click the ntp_webgui.tar link <ul style="list-style-type: none"> Response A Save As... window pops up. d. Save the tar file in the temporary directory you created. <ul style="list-style-type: none"> Note The filename includes the generic and date, for example ntp_webguix.x_sun_010115.tar (your date may differ).
4	<p>Extract the file contents. To do so, go to the temporary directory where you saved the tar file (Step 3), and enter tar xf tar_file (where <i>tar_file</i> is the name of the tar file).</p>
5	<p>If you are installing from:</p> <ul style="list-style-type: none"> ■ Your intranet, from the temporary directory in Step 3, go the subdirectory ntp_webguix.x_subdirectory/sun <ul style="list-style-type: none"> Note The subdirectory name matches the name of the tar file you extracted. ■ CD-ROM, insert the CD labeled “WebGUI CLIENT Software” into the CD-ROM drive, and go to the /webgui/sun directory.
6	<p>(For Solaris 2.8 systems, see the caution below.) Enter ./sunclient to install both the Java 1.2.2 plug-in and Java provisioning software.</p> <p>Caution If the Java plug-in is already installed on the workstation and you do not wish to reinstall it, enter ./sunclient -p to install only the provisioning software. The system prompts you if it cannot locate the path to the Java plug-in directory.</p> <p>Note You must be logged on the workstation as root to run sunclient.</p> <p>Response The installation software checks whether the appropriate patches are already installed on the workstation and lists those not found. Then your shell prompt is returned.</p>

Step	Action
7	<p>If the patches on your machine are more RECENT than the ones cited in the message above, leave them. Otherwise install the patches indicated.</p> <p>Reference See the vendor documentation for your workstation for information on patch installation.</p>
8	<p>If you installed from:</p> <ul style="list-style-type: none"> ■ Your intranet, remove the temporary directory (and all its contents) you created in Step 3. ■ CD-ROM, remove the CD from the CD-ROM drive and store it according to local practice.
Done	

Note

The Sun 06 version of SUNWj2pi has been repackaged with the plug-in as LNTPj2pi6.

Procedure: Install Pattern Painter software — PC

Use this procedure to install the Pattern Painter client software on a PC from either:

- Your intranet (if your location supports web-based installation)
- CD-ROM

This is a standard PC installation routine that simply requires you to follow the prompts and accept the default selections.

Note

- **Web-based installation.** This procedure assumes you have already installed the BB-GUI client software. See "[Install BB-GUI client software — PC](#)" on page 6-50.
- **Reboot.** If you are instructed or prompted to reboot your PC, do so.

Step	Action
1	<p>If you are installing from:</p> <ul style="list-style-type: none"> ■ Your intranet, close all applications that may be running on the PC EXCEPT your browser, and go to Step 2. ■ CD-ROM, close any applications that may be running on the PC, INCLUDING all browser windows, and go to Step 3.

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Step	Action
2	<p>Download the installation files, as follows:</p> <ol style="list-style-type: none"> a. Point your browser to the BB-GUI Launch page (or any BB-GUI page), and then click the Client Installation button to go to the Web Based GUI Client Installation Download Page. <p>Reference For how to access the BB-GUI Launch page, see Chapter 3 in the <i>BB-GUI User's Guide</i>.</p> <p>Note For Internet Explorer, you may see an error message unless your internet security option for Active-X controls is set to "low" for your local intranet (set through Tools -> Internet Options... -> Security). If necessary, consult your network administrator or internet support personnel for assistance in setting the appropriate option.</p> b. Read the instructions for the NTP_PatternPainterx.x.EXE file, and then left-click the NTP_PatternPainterx.x1.EXE link. <p>Response A Save As... window pops up.</p> c. Save the installation file to a drive on your PC.
3	<p>If you are installing from:</p> <ul style="list-style-type: none"> ■ Your intranet, run the installation program. To do this, either <ul style="list-style-type: none"> — From the Windows Start menu, select Run and enter <i>Drive:\directory\filename</i> (specify the drive, directory, and filename from Step 2). — Double-click the filename (from Step 2) in Windows Explorer. ■ CD-ROM: <ol style="list-style-type: none"> a. Load the CD labeled "WebGUI CLIENT Software" into the CD-ROM drive. <p>Response The Client CD installation window is displayed. (See "Install BB-GUI client software — PC" on page 6-50 for an illustration of this window.)</p> <p>Note If the window does not pop up, select Start -> Run and enter <i>Drive:\webgui\windows\NTP_PatternPainterx.x.EXE</i> (where <i>Drive</i> is your CD-ROM drive).</p> b. From the menu, select Install Pattern Painter. <p>Response A standard PC installation program starts, and a welcome window is displayed.</p>
4	<p>Click Next to continue.</p> <p>Response A window shows the destination directory for the installed software.</p>

Step	Action
5	<p>Click Next to accept the default and continue.</p> <p>Response A window lists Pattern Painter software components.</p>
6	<p>Select Pattern Painter and Visual Insights, and click Next to continue. (You can also select Visual Insights Documentation, but this is not required.)</p> <p>Note If you are upgrading or reinstalling the software, select only the component you need. This procedure assumes you are installing both components.</p> <p>Response A window indicates that the components you selected will be installed.</p>
7	<p>Click Next to continue.</p> <p>Response A window prompts you to close any applications that may be running.</p>
8	<p>Click OK to continue.</p> <p>Response A window with an icon in the upper left is displayed that allows you to change the directory where the software will be installed.</p>
9	<p>Accept the default directory, and then click the icon to continue.</p> <p>Response Windows show the progress of Pattern Painter setup, and indicate when setup is complete.</p>
10	<p>Click OK to continue.</p> <p>Response Windows indicate that the Pattern Painter software is being installed.</p>
11	<p>You may need to do the following. If not, continue with the next step.</p> <ol style="list-style-type: none"> a. Click OK to continue. <p>Response A window is briefly displayed indicating that the Visual Insights installation is beginning, followed by a welcome window for installing the Visual Insights component.</p> b. Click Next to continue. <p>Response A window prompts you to select the folder to install the Visual Insights component.</p> c. Accept the default folder, and then click Next to continue. <p>Response Windows shows the progress of the installation, and indicate when setup is complete.</p>

Step	Action
12	Click Finish . Response A window shows that the setup has executed.
13	Click Finish to continue. Response The original installation window is displayed (Step 3).
14	Click Exit Installation .
15	If you installed from: <ul style="list-style-type: none">■ Your intranet, remove the file you downloaded in Step 2.■ CD-ROM, remove the CD from the CD-ROM drive and store it according to local practice.
Done	

Note

Removing residual Pattern painter installation files. After the NTP_PatternPainter.x.EXE program executes on a client PC to install Pattern Painter and Visual Insights, you may remove the residual files and folders to save disk space (about 33M). The default location of the files is C:\NTP_PatternPainter. However, you may have specified a different path during installation. The residual files will exist whether the installation was done via the CD or downloaded from the server.

(Continued on next page)

Install Client Software for the BB-GUI (Continued)

Procedure: Install Oracle client software — PC

Caution

Before you can install the Oracle client from the intranet, a stage area must be set up on the NTP host (or some other web server). See ["Set up stage data for Oracle client web install"](#) on page 6-49 for more information.

Before you begin

This procedure requires you to enter information about the NTP host:

- **IP address and host name.** Get the IP address and host name by checking the `/etc/hosts` file on the host. For example, the entry for host `eastos` with IP address `555.5.55.555` might appear as:

```
555.5.55.555          eastos
```
- **Oracle SID.** This information appears in the `/etc/tnsnames.ora` file on the NTP host in a line containing the string `SID =` that is part of the definition of the net service.

The following example shows an `/etc/tnsnames.ora` file for net service **ntp.world** (highlighted in bold text in the example), where the SID is **ntp** (highlighted in bold text in the example).

```
#####
# Filename.....: tnsnames.ora
# Node.....: ntp.world
# Date.....: 26-Jul-99 12:19:13
#####
ntp.world =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS =
        (COLMMUNITY = ntp.world)
        (PROTOCOL = TCP)
        (Host = eastos)
        (Port = 1521)
      )
    )
  (
    (CONNECT_DATA = (SID = ntp)
  )
)
```

(Continued on next page)

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Install Client Software for the BB-GUI (Continued)

Procedure: Install Oracle client software — PC (continued)

Use this procedure to install the Oracle client software on a PC from either:

- Your intranet (if your location supports web-based installation)
- CD-ROM

This procedure also configures one connection to the NTP host. To configure additional connections, see "[Modify connections for the Oracle client](#)" on page 7-7.

Note

- **Reboot.** If you are instructed or prompted to reboot your PC, do so. I
- **Web-based installation.** This procedure assumes you have already installed the BB-GUI client software. See "[Install BB-GUI client software — PC](#)" on page 6-50.
- **Reinstallation.** The initial windows displayed in this procedure differ slightly depending on whether you are installing the software for the first time or reinstalling. This procedure assumes you are installing for the first time.

Step	Action
1	<p>If you have not already done so, uninstall any versions of the Oracle client that reside on your PC.</p> <p>Reference See "Uninstall Oracle client software — PC" on page 6-70.</p>
2	<p>If you are installing from:</p> <ul style="list-style-type: none"> ■ Your intranet, close all applications running on the PC EXCEPT your browser, and go to Step 3. ■ CD-ROM, close any applications running on the PC, INCLUDING all browser windows, and go to Step 4.

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Step	Action
3	<p>Download the installation files, as follows:</p> <ol style="list-style-type: none"> a. Point your browser to the BB-GUI Launch page (or any BB-GUI page), and click the Client Installation button to go to the Web Based GUI Client Installation Download Page. <p>Reference For how to access the BB-GUI Launch page, see Chapter 3 in the <i>BB-GUI User's Guide</i>.</p> <p>Note For Internet Explorer, you may see an error message unless your internet security option for Active-X controls is set to "low" for your local intranet (set through Tools -> Internet Options... -> Security). If necessary, consult your network administrator or internet support personnel for assistance in setting the appropriate option.</p> b. Read the instructions for the OracleClientInstall.EXE file, and then left-click the OracleClientInstall.EXE link. <p>Response A Save As... window pops up.</p> c. Save the installation file to a drive on your PC. d. Close all browser windows. e. Run the installation program. To do this, either <ul style="list-style-type: none"> ■ Double-click the filename (from Step 2) in Windows Explorer, or ■ From the Windows Start menu, select Run and enter <i>Drive:\directory\filename</i> (specify the drive, directory, and filename from Step 2). <p>Response A window indicates that a stage area must have been set up on the web server before you can proceed. See "Set up stage data for Oracle client web install" on page 6-49.</p> f. Click Continue. <p>Response An welcome window is displayed.</p> g. Go to Step 5.

Step	Action
4	<p>Start the installation program as follows:</p> <ol style="list-style-type: none"> Load the CD labeled “WebGUI CLIENT Software” into the CD-ROM drive. <p>Response The Client CD installation window is displayed. (See "Install BB-GUI client software — PC" on page 6-50 for an illustration of this window.)</p> <p>Note If the window does not pop up, select S tart -> Run, enter <i>Drive:\setup.exe</i> (where <i>Drive</i> is your CD-ROM drive), and go to Step 5.</p> From the menu, select Install Oracle Client software. <p>Response An initial window is displayed with an option to install or deinstall products.</p> Click Install/Deinstall Products. <p>Response A welcome window is displayed.</p> Go to Step 5.
5	<p>Click Next to continue.</p> <p>Response A window shows default source and destination paths for the product files.</p>
6	<p>If you are installing:</p> <ul style="list-style-type: none"> ■ Your intranet, accept the default destination path but change the source path to the URL of the stage/products.jar file on the web server, and then click Next to continue <p>Example <code>http://NTP_host/Oracle8i_client/stage/products.jar</code></p> ■ From CD-ROM, accept the default paths, and then click Next to continue <p>Response A progress bar shows that products information is being loaded, followed by a window that prompts you to select an installation type.</p>
7	<p>Select Application User, and then click Next to continue.</p> <p>Response A progress bar indicates files are being processed, followed by a summary window.</p>
8	<p>Click Install to continue.</p> <p>Response A progress window shows the progress of the installation, followed by a window prompting you to start the Net8 Configuration Assistant.</p>

Step	Action
9	<p>Click Next to continue.</p> <p>Note Do NOT check the box to perform the typical configuration.</p> <p>Response A window prompts you to configure directory service access.</p>
10	<p>Click No, I want to defer directory service access configuration to another time, and then click Next.</p> <p>Response A window prompts you to select a naming method.</p>
11	<p>Make sure Local appears in the Selected Naming Methods column, and then click Next.</p> <p>Response A window prompts you to select an version of Oracle.</p>
12	<p>Select Oracle8i database or service, and then click Next.</p> <p>Response A window prompts you to enter a service name.</p>
13	<p>Enter the SID defined in the tnsnames.ora file on the NTP host, and then click Next.</p> <p>Reference See "Before you begin" on page 6-60 for information on how to determine the SID.</p> <p>Response A window prompts to select a communication protocol.</p>
14	<p>Select TCP, and then click Next.</p> <p>Response A window prompts you to enter information for the communication link.</p>
15	<p>Do the following:</p> <ol style="list-style-type: none"> a. Enter the IP address of the NTP host in the Host Name field <p>Note Do NOT enter the machine name of the host.</p> <ol style="list-style-type: none"> b. Select Use the standard port number of 1521. c. Click Next. <p>Response A window asks if you want to test the connection.</p>

Step	Action
16	<p>Use these steps to test the connection.</p> <p>a. Click Test.</p> <p>Response By default, the program first uses its own login and password to test the connection. Ignore the unsuccessful test results displayed.</p> <p>b. Click Change login to test the connection using another host login and password.</p> <p>Response The window prompts you to enter a login and password.</p> <p>c. Enter db\$ in the Username field, db in the Password field, and click OK to continue.</p> <p>Response A window should display this message: <code>Connecting... test successful</code></p> <p>d. Click Next to continue.</p> <p>Response A window prompts you to choose a name for this net service name.</p>
17	<p>Enter the machine name of the NTP host in the Net Service Name field, and click Next.</p> <p>Reference See "Before you begin" on page 6-60 for information on how to determine the machine name.</p> <p>Response A window prompts you to configure another net service name.</p>
18	<p>Click Next three times to continue, and then click Finish to complete the installation.</p> <p>Response A window indicates that the installation is complete.</p>
19	<p>Click Exit to exit the installation program, and click Yes at the prompt to confirm your exit.</p>
20	<p>If you installed from:</p> <ul style="list-style-type: none"> ■ Your intranet, remove the temporary directory (and all its contents) you created in Step 3. ■ CD-ROM, remove the CD from the CD-ROM drive and store it according to local practice.
21	<p>Reboot the PC to ensure that Pattern Painter will run correctly.</p>
22	<p>To configure additional connections to the Oracle database on the NTP host, see "Modify connections for the Oracle client" on page 7-7.</p>
Done	

(Continued on next page)

Install Client Software for the BB-GUI (Continued)

Procedure: Install Acrobat Reader

The Adobe Acrobat Reader software may already be installed on the client. Use this procedure to check, and to install the software, if needed.

Step	Action
1	<p>Determine if Acrobat is already installed by trying to open a file with a .pdf suffix.</p> <p>Note Typically, Adobe Acrobat is installed in the following directories. (In some networks, however, this software runs from a server, not directly on client workstations.)</p> <ul style="list-style-type: none"> ■ PC — C:\Program\Files\Adobe\Acrobat X.X, where X.X is the version ■ Workstation — /opt/AcrobatX (where X is the version)
2	<p>Is Acrobat Reader already installed?</p> <ul style="list-style-type: none"> ■ If YES, stop (unless you want to install a newer version). ■ IF NO, go to the next step.
3	<p>Can your browser go to the Adobe website at www.adobe.com?</p> <ul style="list-style-type: none"> ■ If YES, go there, and follow the Adobe prompts to install the software. ■ If NO, go to the next step.
4	<p>Find the Acrobat Reader installation file for your platform (PC or workstation) from either:</p> <ul style="list-style-type: none"> ■ The BB-GUI client software installation CD, labeled "WebGUI CLIENT Software" ■ The NTP host: <ul style="list-style-type: none"> — PC — \$APPLROOT/wgui/html/info/en/acrobatinstall/windows/ar405eng.exe — Workstation — \$APPLROOT/wgui/html/info/en/acrobatinstall/sun/sunsparc-rs-405.tar.gz ■ Your intranet, if your location supports web-based installation. (See "Install BB-GUI client software — PC" on page 6-50 for how to access the menu of web-based installation files. Select Install Acrobat Reader from the menu.) <p>Note Workstation. You must unzip the workstation version using a program similar to gunzip (to uncompress the archive), and run tar xvf to extract the installation files from the archive. See your operating system documentation for information on compressed files and tar archives. The archive contains a readme file with installation instructions.</p>
5	<p>Run the Adobe installation program for your platform, and follow Adobe's installation prompts.</p>
Done	

(Continued on next page)

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Uninstall Client Software for the BB-GUI

Task overview

Use the following procedures to uninstall the client software from the PCs or workstations of BB-GUI users.

Note

Uninstall before upgrade. You do NOT have to uninstall the BB-GUI client software or the Pattern Painter client software to install a new version. You can “install over” the older version. However, you MUST uninstall the Oracle client software before installing a new version.

Component	Procedures	Use when...
BB-GUI client software	"Uninstall BB-GUI client software — PC" on page 6-67	A BB-GUI user's PC or workstation is taken out of service from NTP (to free up disk space. on the PC or workstation)
	"Uninstall BB-GUI client software — workstation" on page 6-69	
Pattern Painter client software — PC only	"Uninstall Pattern Painter client software — PC" on page 6-69	Note The Oracle client software and the Pattern Painter client are installed only if a PC user used Pattern Painter for graphical output.
Oracle client software — PC only	"Uninstall Oracle client software — PC" on page 6-70	

Procedure: Uninstall BB-GUI client software — PC

Use this procedure to remove both components of the BB-GUI client software from PC (see "BB-GUI client software components" on page 6-46).

- Java provisioning software
- Java plug-in

Or you can remove (and reinstall) either of these components separately. You can remove these components in any order.

Step	Action
1	From the Windows Start menu, select Settings -> Control Panel -> Add/Remove Programs .
	Response The Add/Remove Programs Properties window is displayed, with a scrolling list of software.

Step	Action
2	<p>To remove the Java provisioning software:</p> <ol style="list-style-type: none"> Select NTPWEBGUI Client from the scrolling list, and click the Add/Remove button (on Windows 2000 systems, this will be the Change/Remove button). <p>Response A standard uninstall program is launched, followed by a welcome window.</p> <ol style="list-style-type: none"> Accept the Automatic uninstall option (the default), and click Next to continue. <p>Response A standard uninstall window is displayed.</p> <ol style="list-style-type: none"> Click Finish to perform the uninstallation. <p>Response A message states that the Java provisioning software is being removed from the PC.</p> <p>Note If prompted to remove:</p> <ul style="list-style-type: none"> ■ Shared components, remove them. ■ Any remaining files that the uninstall utility could not remove, click Details to see a list of the files, and delete them from Windows.
3	<p>To remove the Java plug-in:</p> <ol style="list-style-type: none"> Select Java 2 Runtime Environment Standard Edition v1.2.2 from the scrolling list (Step 1), and click the Add/Remove button. <p>Response A prompt asks you to confirm the uninstallation.</p> <ol style="list-style-type: none"> Click Yes to continue. <p>Response Messages indicate the progress of the uninstallation.</p> <p>Note If prompted to remove:</p> <ul style="list-style-type: none"> ■ Shared components, remove them. ■ Any remaining files that the uninstall utility could not remove, click Details to see a list of the files, and delete them from Windows. <ol style="list-style-type: none"> When you see the following message, click OK to finish: Uninstall successfully completed.
Done	

Uninstall Client Software for the BB-GUI (Continued)

Procedure: Uninstall BB-GUI client software — workstation

To uninstall the BB-GUI client software from a workstation, use the operating system **pkgrm** command on the /opt/NSCPcom and /opt/SUNWj2p directories.

Reference

See your operating system documentation for information on **pkgrm**.

Procedure: Uninstall Pattern Painter client software — PC

Use this procedure to remove the Pattern Painter software from a client PC. This is a standard Windows uninstall procedure that simply requires you to follow the prompts and accept the default selections.

Note

To completely uninstall software associated with Pattern Painter, you must also uninstall the Oracle client software. See ["Uninstall Oracle client software — PC" on page 6-70](#).

Reference

See ["Pattern Painter software components" on page 6-46](#)).

Step	Action
1	<p>From the Windows Start menu, select Settings -> Control Panel -> Add/Remove Programs.</p> <p>Response The Add/Remove Programs Properties window is displayed, with a scrolling list of software.</p>
2	<p>One at a time, in any order, select the following software from the scrolling list, click the Add/Remove button, and follow all prompts and messages:</p> <ul style="list-style-type: none"> ■ NTP x.x Pattern Painter ■ Visual Insights Components <p>Note If prompted to remove:</p> <ul style="list-style-type: none"> ■ Shared components, remove them. ■ Any remaining files that the uninstall utility could not remove, click Details to see a list of the files, and delete them from Windows.
Done	

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Uninstall Client Software for the BB-GUI (Continued)

Procedure: Uninstall Oracle client software — PC

Use this procedure to remove the Oracle client software from a client PC. This procedure invokes the Oracle uninstall utility, which requires you to follow the prompts and accept the default selections. You need IITHER of the following:

- CD-ROM with the BB-GUI client installation files
- Installation file from your intranet (if your location supports web-based installation)

Note

To completely uninstall software associated with Pattern Painter, you must also uninstall the Pattern Painter client software. See ["Uninstall Pattern Painter client software — PC" on page 6-69](#).

Reference

See ["Pattern Painter software components" on page 6-46](#)).

Step	Action
1	Follow the initial steps in "Install Oracle client software — PC" on page 6-60 to start the Oracle client installation utility from either the CD-ROM or the downloaded installation file.
2	Click Deinstall Products . Response A window shows all the Oracle client software components installed.
3	Select all installed products, including those below, and click Remove . <ul style="list-style-type: none"> ■ Java Runtime Environment ■ Oracle Universal Installer ■ Oracle8i client
4	Follow the prompts to confirm the uninstallation. Response A window shows the progress of the uninstallation, followed by a window with the message: <code>There are no installed products.</code>
5	Follow the prompts to exit the uninstall program.
Done	

Uninstall Client Software for the BB-GUI (Continued)

**Procedure: Uninstall
Adobe Acrobat
Reader software**

Follow the Adobe vendor instructions for your platform to uninstall the Acrobat Reader software.

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Administer User Access

How Users Access NTP

Purpose You must inform users how to access the NTP interface(s) for which you have administered them.

Procedure: Tell users how to access NTP Use this reference to inform users how to access NTP. Most users will access NTP through the BB-GUI (or SUI). A few customers may still use legacy interfaces (AUI, X-GUI). .

Access	Administrator	Analyst
BB-GUI	URL, Web User ID, and password. Go to the BB-GUI URL configured when your NTP support organization installed and configured the BB-GUI, and enter your Web User ID and password.	
SUI and system commands	Host login and password. Log on the NTP host, to go to the operating system shell that was assigned in " Create a host user ID " on page 6-11.	Normally analysts do not need shell access.
X-GUI and AUI	Host login and password. Each user who access a legacy interface from a host shell must know his or her NTP login and password on the NTP host.	
X-GUI	<ul style="list-style-type: none"> ■ Workstation, Select a workspace menu item or icon that is configured locally (see "Add a workspace item to start the X-GUI" on page 6-75 and "Set up PC X-emulation tools to start X-GUI" on page 6-76) ■ PC. Use a third-party X-windows emulation tool configured locally to go directly to the X-GUI or a host login prompt from which the X-GUI can be launched and the display exported). ■ CSL. Select the item for NTP (see the CSL documentation and "CSL User Administration" on page 6-73). 	
AUI	<ul style="list-style-type: none"> ■ Log on the NTP host and enter aui at the command line to go to the AUI. ■ (Preferred) Select a local workspace menu item or icon that goes directly to the AUI. 	
shell (AUI restricted shell, NO SUI commands)	Not needed. SUI commands are not available in restricted shell.	From the AUI, go to restricted shell (shell command from AUI Main Menu), if provided by the system administrator. (Users cannot go to shell from the GUI interfaces.) (See "Manage Restricted Shell" on page 7-58 for more information on restricted shell.)

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CSL User Administration

Background

CSL (Communications Software Launcher) is a Lucent Technologies software product that enables users to call up various applications from a single interface that is accessed through a web browser.

- **Matching logins.** The `add_ntpuser` command can automatically place an icon on CSL for an NTP user to start the NTP X-GUI. But for this to happen, the user's login ID on the NTP host and login ID on CSL MUST match.
- **CSL administration.** Your CSL administrator administers CSL. The following procedure is the only CSL administrative item that involves you.

Note

- **Not for BB-GUI.** In G8.1, BB-GUI users do not access NTP via CSL.
- **HP platforms only.** For G9.1, NTP supports CSL for HP platforms only.
- **Customer support.** CSL and NTP are both Lucent Technologies applications, but they are supported by different organizations.

Procedure: Match NTP and CSL logins

After CSL is installed in your network, use the following guidelines to correct or prevent a mismatch between a user's CSL login ID and NTP login ID.

User	What to do
existing NTP users	<ol style="list-style-type: none"> 1. Use <code>del_ntpuser</code> to remove the user from NTP, (see "Delete NTP Users" on page 6-26), and use standard operating system procedures to remove the user's login ID from the NTP host. 2. Then use <code>add_ntpuser</code> to add each removed user as if he or she is a new user (see "Add a User Login ID on the NTP Host" on page 6-9 and "Add NTP Users" on page 6-20). <ul style="list-style-type: none"> ■ Use the user's CSL login ID as his or her NTP login ID. ■ Set the CSLUSER attribute to <code>y</code> (see "Attributes File for add_ntpuser Command" on page 6-12).
future NTP users	<p>Use <code>add_ntpuser</code> to add each user (see "Add NTP Users" on page 6-20). When you do so:</p> <ul style="list-style-type: none"> ■ Coordinate with the CSL administrator to ensure that the NTP host login ID you assign each user is the same that was used, or will be used, as that user's CSL login ID. ■ Set the CSLUSER attribute to <code>y</code> (see "Attributes File for add_ntpuser Command" on page 6-12).

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Workstation Workspace Administration for X-GUI Access

Purpose

This section provides background information needed to add an item to a user's workstation workspace to start the X-GUI on the NTP host.

Note

- **BB-GUI.** This section does NOT apply to users running the BB-GUI.
- **SUI (system administrators only) or AUI.** To access the SUI remotely, you can open an X-term (or other) window, **rlogin** or **telnet** to the NTP host, and enter SUI commands. For the AUI, you can **rlogin** or **telnet** to the NTP host and enter **au** to start the AUI. You can administer a menu or icon for these sessions.
- **UNIX administration.** The user's UNIX login and ID should be administered appropriately on the workstation and the NTP host, and the `/etc/hosts` and `.rhosts` files must be configured appropriately on the respective machines to allow remote connections. Typically, connection will be successful if the user can **rlogin** to the destination machine without being prompted to enter a login or password.

Background

Users can run the X-GUI remotely from a Sun, HP, or other workstation. Most workstation workspace environments let you configure a menu item or icon that a user can select to execute a command to run NTP remotely. Workstation vendors each have their own procedures and configuration files to associate the command with the menu or icon.

Reference

- See the vendor documentation for your workstation for specific information on how to create workspace menus or icons.
- Basic required elements are similar to those for configuring a connection from a PC through an X-windows emulation tool. Compare "[PC X-Emulation Tool Administration for X-GUI Access](#)" on page 6-76.

(Continued on next page)

Workstation Workspace Administration for X-GUI Access (Continued)

Procedure: Add a workspace item to start the X-GUI

We cannot document the various vendor procedures to create workspace menus and icons. However, the examples below for a Sun workstation illustrate the elements typically required to define menus or icons.

Example (Sun workstation)

Open an X-term window, and enter the following commands. These commands assume NTP is installed in `/lucent/ntp/snas` on the NTP host. Your installation directory may vary.

```
xhost +  
rsh host "DISPLAY='hostname':0 CONNID=/ LOGNAME=$LOGNAME /lucent/ntp/snas/bin/guish"
```

- **rsh** executes a remote shell.
- *host* is the machine name of the NTP host. You may need to use the IP address if your network cannot resolve the machine name.
- *Oracle_net_service_name* identifies the Oracle net service in the `tnsnames.ora` file. This file is in `/etc` on the NTP host. (You can often omit the `CONNID` because `/` is the default.)

For more information on the Oracle net service name, see the section on the `tnsnames.ora` file in "[Install Oracle client software — PC](#)" on [page 6-60](#). An example of a net service name is: `ntp.world`

- **guish** is the command that starts the X-GUI.
-

PC X-Emulation Tool Administration for X-GUI Access

Purpose

NTP users can run the X-GUI remotely from a CP if you configure an X-windows emulation tool to enable it.

Note

- **BB-GUI.** This section does NOT apply to users running the BB-GUI. It applies only to the X-GUI.
- **SUI (system administrators only) or AUI.** To access the SUI remotely, you can use an X-term (or other type of) window to **rlogin** or **telnet** to the NTP host and enter SUI commands. For the AUI, you can **rlogin** or **telnet** to the NTP host and enter **au** to start the AUI. You can configure a connection in your X-windows emulation tool for these sessions.
- **User administration.** The user's operating system login and ID should be administered appropriately on the NTP host.

Background

PC users can launch the X-GUI through a customer-supplied X-windows emulation tool. Typically, such tools allow you to configure a client startup application so that a user can click an icon or a menu to automatically connect to the NTP host and start the X-GUI.

Reference

- See the vendor documentation for your users' X-windows emulation tool for specific information on how to configure connections.
- The basic elements required to configure an X-emulation tool are similar to those required to create a menu item or icon on a UNIX-type workstation. See "[Workstation Workspace Administration for X-GUI Access](#)" on page 6-74 for comparison.

Procedure: Set up PC X-emulation tools to start X-GUI

We cannot document the various vendor procedure to configure PC X-emulation tools. However, examples below illustrate the basic elements typically required to define an X-windows session.

The example is for the Hummingbird Exceed product, a widely-used X-emulation tool. Adapt the information in the example to your environment and X-emulation tool.

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PC X-Emulation Tool Administration for X-GUI Access (Continued)

Procedure: Set up PC X-emulation tools to start X-GUI (continued)

Example

This sample Hummingbird Exceed window shows the configuration for an X-windows connection to run the X-GUI remotely on the NTP host.

- The start method is **rexec** over TCP/IP protocol (Start Method field), and the terminal emulation type is X-windows (Program Type field).
- The User ID and Password fields contain the user's login and password on the NTP host.
- The Host field contains the IP address of the NTP host. A machine name can be used if it can be resolved on your network.
- The Host Type field identifies the machine type (HP in this example).

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PC X-Emulation Tool Administration for X-GUI Access (Continued)

Procedure: Set up PC X-emulation tools to start X-GUI (continued)

Command

In the example, the entry in the Command field is truncated. The full command is as follows.

```
export CONNID=/; /lucent/ntp/snas/guish -display local_ IP_address:0.0
```

The Command field:

- Exports the CONNID, which identifies the Oracle net service in the tnsnames.ora file. On the NTP host, this file is in the /etc directory. (You can often omit the CONNID because / is the default.) For more information on the Oracle net service name, see the section on the tnsnames.ora file in "[Install Oracle client software — PC](#)" on page 6-60. A typical net service name is: ntp.world
 - Provides the path to the **guish** command that starts the X-GUI.
 - Exports the display back to the PC. You can use the local IP address, or the PC name, if it can be resolved on your network.
-

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Overview

Purpose

When you add an NTP user you set up how the system works for that user (see ["Add NTP Users" on page 6-20](#)). This chapter tells how you can later modify a user's setup.

Similarly, after you give a user access to the browser-based GUI (BB-GUI), you can later change the initial information you set up (see ["Modify BB-GUI user Information" on page 7-6](#)). For Pattern Painter, you can modify parameters for the host connection that allows a Pattern Painter user to access the Oracle database (see ["Modify connections for the Oracle client" on page 7-7](#)).

Note

X-GUI versus BB-GUI. Procedures in this chapter for the GUI apply for both the X-GUI and the BB-GUI, with the following exception. For G8, saving output of a find to a database is not possible (though saving to an ASCII file IS possible).

Scope

Modifications can affect all users, individual users, or either, for example:

- Individual users — assigning a user to an FDC group
- All users — redefining an FDC group
- Either — assigning a printer, either one user's, or a new default for all users who do not have an individual printer assignment.

Sections in this chapter indicate the scope of procedures.

Special note for RDS

Host pair synchronization. If you have RDS (reference data synchronization) (refsynch, F6214), if you modify a user on one host of a host pair, the changes are made on the other host automatically at 00:30 when the **bdr_syncref** command runs from crontab. However, if you add or delete a user, you must do so on BOTH systems in the host pair. See [Chapter 15, "Reference Database Synchronization \(RDS\)"](#).

(Continued on next page)

Overview (Continued)

Task overview

This table lists things you can modify for users, and indicates the interface affected.

Note

When to use. Just because something appears in this table does not imply you need to administer it. Typically, the initial defaults are used.

Separate for BB-GUI. Some user attributes, such as permission to switch between FDC groups and network groups, are set SEPARATELY for the BB-GUI. A user can have one assignment for the BB-GUI and a different assignment for the SUI and the legacy X-GUI and AUI.

Interface	To modify...	Use...	Reference
all	FDC groups, and the FDCs in them	dbedit on fdcgroup and fdcgroupmap tables	"Define FDC Groups" on page 7-17
	Network groups and segments, and the entities in them	dbedit on netgroup, netgroupmap, netseg, and netsegmap tables	"Define Network Groups and Segments" on page 7-27
unrestricted shell	Access to operating system cron functions	edit cron.allow and cron.deny files	"Restrict User cron Functions" on page 7-61
BB-GUI	BB-GUI user information, including: <ul style="list-style-type: none"> ■ user description ■ password ■ administrator permission ■ exception level displays ■ Ascreen navigation buttons ■ color of display ■ font size of display ■ Max table size, ■ FDC group ■ network group and segment assignment and permissions 	Web User Administration page	"Modify BB-GUI User Information" on page 7-6
	BB-GUI client connections for Pattern Painter	Oracle vendor utility	"Configure Oracle Client Connections for Pattern Painter" on page 7-7

Interface	To modify...	Use...	Reference
AUI restricted shell	Commands available to users from the AUI restricted shell.	cp or ln commands to rbin or rbintools	" Manage Restricted Shell " on page 7-58
X-GUI (display)	Menus; which database tables are listed	dbedit on menutables table	" Set X-GUI Table Name Display " on page 7-55
SUI, X-GUI and AUI	Command group — assign to a user	mod_cmdgrp command	" Change user command group (mod_cmdgrp) " on page 7-14
	FDC group — assign, to determine which FDCs appear on output	mod_fdcgrp command	" Change user FDC group (mod_fdcgrp) " on page 7-22
	FDC group — give a user permission to switch among groups	dbedit on fdcpermit table	" Give user FDC group permission " on page 7-23
	Entities — assign a network group or segment to determine which appear on output	mod_netgrp command	" Change user network group (mod_netgrp) " on page 7-34
	Entities — give a user permission to switch among network groups or segments	dbedit on netpermit table	" Give user network group or segment permission " on page 7-35
	Several defaults for all users, (such as printer and output formats) that are set by environment variables.	admset command	" Manage User Environment Variables " on page 7-36

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Modify BB-GUI Users

Modify BB-GUI User Information

Overview

A BB-GUI administrator can use the Web User Administration Page to modify the user information for all BB-GUI user IDs. Any BB-GUI user can modify a subset of this information for his or her own BB-GUI user ID. See "[Web User Information Page](#)" on page 6-35 for a list BB-GUI user information and who has permission to modify it.

Reference

For procedures to add and delete BB-GUI users, see "[Add a BB-GUI user](#)" on page 6-43 and "[Delete a BB-GUI user](#)" on page 6-44.

Procedure: Modify BB-GUI user Information

Use this procedure modify the information displayed on the Web User Information page for a BB-GUI user.

Step	Action
1	Go to the Web User Information page for the user. Reference See " Go to the Web User Information page " on page 6-37 for the procedure.
2	Change the information in the fields on the page. Reference See " Web User Administration page parts " on page 6-33 for information about the fields.
3	Click Submit . Response The system saves your modifications.
Done	

Configure Oracle Client Connections for Pattern Painter

When to use

Use this procedure on a BB-GUI user's PC that is running Pattern Painter when you have already installed the Oracle client software (see ["Install Client Software for the BB-GUI" on page 6-48](#)) and need to modify or delete the connection, or to add a connection to another NTP host. You might modify a connection, for example, if the host name or IP address changes.

Procedure: Modify connections for the Oracle client

The procedure to install the Oracle client software on a BB-GUI user's PC includes steps to configure one connection to the NTP host. Use the following procedure to modify parameters for that connection, delete it, test it, or to configure more connections.

Step	Action
1	<p>Start the Net8 Configuration utility on the PC from the Windows Start menu by selecting Programs -> Oracle-OraHome81 -> Network Administration ->Net8 Configuration Assistant.</p> <p>Response A configuration window is displayed.</p>
2	<p>Select Local Net Service Name configuration, and then click Next.</p> <p>Response A window allows you to add, modify, delete, rename, or test connections.</p>
3	<p>Select the action you want, and follow the prompts.</p> <ul style="list-style-type: none"> ■ To add a connection, select Oracle8i database or service when prompted to choose a version of the Oracle database or service. ■ To add or modify a connection, proceed as you did in "Install Oracle client software — PC" on page 6-60 to define the following parameters and to test the connection: <ul style="list-style-type: none"> — Service name (SID from the /etc/tnsnames.ora file on the NTP host) — Protocol (TCP) — Host name (IP address of the NTP host from the /etc/hosts file on the NTP host) — Port number (accept the default) — Net service name (machine name of NTP host from the /etc/hosts file)
Done	

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Manage Command Groups

Overview

Purpose

Command groups determine which commands are available to a SUI user (and to users of the legacy X-GUI or AUI). Once a command group is defined, you can assign users to it. Defining the command groups and assigning users to groups are separate tasks:

- ["Define Command Groups" on page 7-10](#)
- ["Assign Users to Command Groups" on page 7-13](#)

Note

Not applicable for BB-GUI. Currently, command groups do NOT apply to the BB-GUI. When you give users web user IDs for the BB-GUI, they can execute all BB-GUI pages. See ["Add a BB-GUI user" on page 6-43](#).

Example

This example illustrates the process for managing a command group and the user impact:

1. Create a command group called "analyst" containing Ascreen and TrapCfim.
 2. Assign users to the analyst group. (They cannot assign themselves.)
 3. The users can access only Ascreen and TrapCfim output.
-

Command groups

- The default group to which new users are assigned is **allcmds**, which enables access to all commands.

Note

The system is installed with the **allcmds** group already defined. You do NOT have to define it.

- Any command in allcmds can also be in one or multiple other command groups.
 - If you modify a command group, you affect ALL persons assigned to that group.
-

Overview (Continued)

Database tables for command groups

You use the following tables to manage command groups.

Table	Purpose
"command Table" on page A-28 Note You do NOT dbedit this table except for custom configuration (see your NTP support organization).	Lists commands you can group and allow users to access (to see the commands, enter sui find source=command more). Commands in this table are of two basic types: <ul style="list-style-type: none"> ■ Commands such as Ascreen and Acresolve can be in a user's command group and automatically available from the AUI and X-GUI. The value in the aumenu field for these commands is y. ■ Other commands, such as dbedit, cannot be made available on the X-GUI or listed in the AUI, but can only be entered by typing on the command line or in shell. The value in the aumenu field for these commands is n.
"cmdgroup Table" on page A-25	Names and describes each command group.
"cmdgroupmap Table" on page A-26	Defines which commands are in each group.

Procedure: List command groups

Here are some **sui** commands you can use to list command groups.

- List all command groups, with a description of each
sui find source=cmdgroup | more
- List all command groups, and the commands in each group
sui find source=cmdgroupmap | more
- List commands in a specific command group
sui find source=cmdgroupmap se=cmdgroup=analyst | more
- List command groups a specific command is in
sui find source=cmdgroupmap se=command=acresolve | more

Define Command Groups

Overview

Currently, these procedures do NOT apply for the BB-GUI:

- ["Create a command group" on page 7-10](#)
- ["Redefine a command group" on page 7-12](#)
- ["Delete a command group" on page 7-12](#)

Procedure: Create a command group

Use this procedure to create a command group.

Note

Not for BB-GUI. This procedure does NOT apply for the BB-GUI.

Reference

For steps that use **dbedit**, see **dbedit** in [Chapter 4, "Reference Data Tables"](#).

Step	Action
1	Log on the NTP host as ntp .
2	Use sui find to copy the cmdgroup table into a temporary file (temp). Example sui find source=cmdgroup delim=":" noheader > temp
3	Use a text editor (such as vi) to add a command group to the temporary file. <ul style="list-style-type: none"> ■ name field. Specifies a unique name (up to 10 alphanumeric characters) for a command group. ■ description field. Describes the command group (up to 50 characters). You cannot leave this field blank, but you can enter - (no description). Example Name:Dexcription allcmds:all commands analyst:analyst cmd group admin:admin cmd group
4	Use the temporary file to dbedit the cmdgroup table. Example dbedit -u -t cmdgroup -f temp -s:
5	If you receive a message ending with: <ul style="list-style-type: none"> ■ "dbedit completed successfully", go to the next step. ■ "Errors saved in file...", see "Correct dbedit Errors" on page 4-33.

Step	Action
6	<p>Confirm that the change was made by using sui find to view cmdgroup table.</p> <p>Example To confirm that an FDC group named analyst exists, enter sui find source=cmdgroup se=name=analyst</p>
7	<p>Use sui find to copy the cmdgroupmap table into a temporary file (temp).</p> <p>Example sui find source=cmdgroupmap delim=":" noheader > temp</p>
8	<p>Use a text editor (such as vi) to add a line to the temp file for each command you want in the new command group.</p> <ul style="list-style-type: none"> ■ cmdgroup field. Names the cmdgroup (for example, analyst). The command group must have been previously defined in the name field in the cmdgroup table (Step 3). ■ command field. Specifies a command to be mapped to the named command group. The command must have been previously defined in the command table. <p>Example This is an example from the cmdgroupmap table for the analyst command group.</p> <pre>Cmdgroup Command analyst acresolve analyst ascreen analyst compute ...</pre>
9	<p>Use dbedit to submit the changes.</p> <p>Example dbedit -u -t cmdgroupmap -f temp -s:</p>
10	<p>If you receive a message ending with:</p> <ul style="list-style-type: none"> ■ “dbedit completed successfully”, go to the next step. ■ “Errors saved in file...”, see "Correct dbedit Errors" on page 4-33.
11	<p>Confirm that the change was made by using sui find to view cmdgroupmap table.</p> <p>Example To see commands in a command group named analyst, enter sui find source=cmdgroupmap se=cmdgroup=analyst</p>
Done	

(Continued on next page)

Define Command Groups (Continued)

Procedure: Redefine a command group

To change which commands are mapped to a command group in the cmdgroupmap table, start with [Step 7](#) in "Create a command group" on page 7-10.

Note

Not for BB-GUI. This procedure does NOT apply for the BB-GUI.

Procedure: Delete a command group

To delete a command group, use **dbedit** with the **-d** option to remove the command group:

- FIRST from the cmdgroupmap table
- THEN from the cmdgroup table.

Use **sui find** to create temporary files for **dbedit**, and to check the changes you make to both tables. If you receive a message ending with: "Errors saved in file...", see ["Correct dbedit Errors"](#) on page 4-33.

Note

Not for BB-GUI. This procedure does NOT apply for the BB-GUI.

Assign Users to Command Groups

Purpose Use the **mod_cmdgrp** command to change a user's command group.

Note

Not for BB-GUI. This command does NOT apply for the BB-GUI.

User assignment

- By default, all new users are assigned to the **allcmds** group, which offers all commands as part of the procedure in ["Add an NTP user" on page 6-21](#). However, if you use a custom attributes file with the **add_ntpuser** command, the user may be assigned to another group.
- A user can be assigned to only one command group at a time.
- Any number of users can be assigned to the same command group.
- Command group assignment applies to the SUI, X-GUI and AUI (though some commands are not available on the X-GUI — see ["Database tables for command groups" on page 7-9](#)).
- A user can NOT reassign himself or herself to another group.

mod_cmdgrp command

The **mod_cmdgrp** changes a user's command group assignment.

Syntax

```
mod_cmdgrp username command_group
```

Parameter	Description
<i>username</i>	(required) The user's login ID on the NTP host (see "Add a User Login ID on the NTP Host" on page 6-9).
<i>command_group</i>	(required) The command group to which the user will be assigned. This must already be defined in the cmdgroup table (see "Manage Command Groups" on page 7-8). Note You can view the command groups by entering sui find source=cmdgroup more

Examples

This command assigns user johndoe to the analyst command group.

```
modcmdgrp johndoe analyst
```

This command assigns user johndoe to the allcmds command group.

```
modcmdgrp johndoe allcmds
```

Assign Users to Command Groups (Continued)

Procedure: Change user command group (mod_cmdgrp)

Use this procedure to assign an existing user to a different command group.

Before you begin

Be sure you know the name of the command group you will assign the user. See ["List command groups" on page 7-9](#)

Note

- **Not for BB-GUI.** This procedure does NOT apply for the BB-GUI.
- **sysuser table.** For the SUI, X-GUI, and AUI, the cmdgroup field in the sysuser table defines the command group to which a user is assigned. Instead of using this procedure, you can **dbedit** the sysuser table to reassign a user's command group. But NEVER dbedit sysuser to add or delete an NTP user.

Step	Action
1	Log on the NTP host as ntp .
2	<p>Enter mod_cmdgrp username command_group where:</p> <ul style="list-style-type: none"> ■ <i>username</i> is the user's login ID on the NTP host ■ <i>command_group</i> is the command group the user is to be assigned <p>Note The <i>command_group</i> must exist in the "cmdgroup Table" on page A-25.</p> <p>Response There is no message if mod_cmdgrp completes successfully. You see messages, if the user is not defined on the NTP host, if you enter an illegal value for the command group, or if you fail to specify a command group.</p> <p>Reference See "Manage FDC Groups" on page 7-15 for complete information on the command syntax.</p>
3	<p>Check to ensure that the change has been made in the cmdgroup field in the sysuser table for this user by entering</p> <pre>sui find source=sysuser grep username</pre>
Done	

Manage FDC Groups

Overview

Purpose

FDC groups determine which FDCs' alert cases appear on NTP output. FDC groups are defined by the procedures in ["Define FDC Groups" on page 7-17](#) in this section.

Note

Assigned separately for the BB-GUI. FDC group definitions apply to all interfaces. However, FDC group assignment and access are administered SEPARATELY for BB-GUI users and users of the SUI, AUI, and X-GUI.

- For the BB-GUI, see information about the FDC Group field on the Web User Administration and Web User Information pages used in ["Assign a BB-GUI user's FDC groups" on page 6-41](#)
- Otherwise, see ["Assign Users to FDC Groups" on page 7-20](#)

Example

This illustrates the process for managing an FDC group and the user impact:

1. Create an FDC group called "trunk", consisting of FDCs related to trunking problems.
2. Trunking analysts assign themselves to the trunk FDC group and use Ascreen or Trapalert with no search criteria.
3. Output shows only alert cases with trunk -related FDCs.

Database tables for FDC groups

You use the following database tables to manage FDC groups.

Table	Purpose
"fdc Table" on page A-51	Defines all FDCs. You will NOT dbedit this table in the context of user administration, but you will do so if your system adds FDCs.
"fdcgrouptable" on page A-57	Names each FDC group.
"fdcgrouptablemap" on page A-58	Tells which FDCs are in each FDC group.
"fdcpertable" on page A-60	(Does NOT apply for the BB-GUI.) Tells which groups each user is permitted to reassign himself or herself to.

(Continued on next page)

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Overview (Continued)

FDC groups

The same FDC can be in multiple FDC groups.

Default

“**All**”. NTP is installed with a default FDC group that is assigned to new users unless you set another group in ["Add an NTP user" on page 6-21](#). The default is null, which means ALL FDC groups.

User self-assignment for FDC groups

Users can switch between any groups they have permission to access.

Procedure: List FDC groups

Here are some **sui** commands you can use to list command groups.

- List all FDC groups, with a description.
sui find source=fdcgroup | more
 - List all FDC groups, with FDCs in each group.
sui find source=fdcgroupmap | more
 - List the FDCs in an FDC group (such as analyst).
sui find source=fdcgroupmap se=fdcgroup=analyst | more
 - List the FDC groups an FDC (such as 1981) is in.
sui find source=fdcgroupmap se=fdc=1981 | more
 - (Does not apply for the BB-GUI) List FDC groups a user has permission to reassign himself or herself to.
sui find source=fdcpermit se=sysuser=user | more
 - (Does not apply for the BB-GUI) List all users and the FDC groups they have permission to reassign themselves to. Permission for the **all** group means a user has permission for all groups, even though the groups are not listed by this command.
sui find source=fdcpermit | more
-

Define FDC Groups

Overview

Use these procedures to define FDC groups.

- ["Create an FDC group" on page 7-17](#)
- ["Modify an FDC group" on page 7-19](#)
- ["Delete an FDC group" on page 7-19](#)

Procedure: Create an FDC group

Use this procedure to create an FDC group by using **dbedit** on the `fdgroup` and `fdgroupmap` tables.

Reference

For steps that use **dbedit**, see **dbedit** in [Chapter 4, "Reference Data Tables"](#).

Step	Action
1	Log on the NTP host as ntp .
2	Use sui find to copy the <code>fdgroup</code> database into a temporary file (<code>temp</code>). Example <code>sui find source=fdgroup delim=";" noheader > temp</code>
3	Use a text editor (such as vi) to add an FDC group to the temporary file. <ul style="list-style-type: none"> ■ name field. Specifies a unique name (up to 10 alphanumeric characters) for an FDC group. ■ description field. Describes the FDC group (up to 50 characters). You cannot leave this field blank, but you can enter - (no description). Example <pre>Name:Description analyst:analyst FDC group dom:domestic FDC group int:international FDC group</pre>
4	Use the temporary file to dbedit the <code>fdgroup</code> table. Example <code>dbedit -u -t fdgroup -f temp -s:</code>
5	If you receive a message ending with: <ul style="list-style-type: none"> ■ "dbedit completed successfully", go to the next step. ■ "Errors saved in file...", see "Correct dbedit Errors" on page 4-33.

Step	Action
6	<p>Confirm that the change was made by using sui find to view the fdcgroup table.</p> <p>Example To confirm an FDC group named dom exists, enter sui find source=fdcgroup se=name=dom</p>
7	<p>Use sui find to copy the fdcgroupmap database into a temporary file (temp).</p> <p>Example sui find source=fdcgroupmap delim=":" noheader > temp</p>
8	<p>Use a text editor (such as vi) to add a line to the temporary file for each FDC in the new FDC group.</p> <ul style="list-style-type: none"> ■ fdcgroup field. Names the FDC group (for example, dom for domestic). The FDC group must have been previously defined in the name field in the fdcgroup table (Step 3). ■ fdc field. Specifies an FDC to be mapped to the named FDC group. The FDC must have been previously defined in the fdc table. <p>Example</p> <pre>Fdcgroup Fdc int 444000 int 444002 int 444003</pre>
9	<p>Use dbedit to submit the changes.</p> <p>Example dbedit -u -t fdcgroupmap -f temp -s:</p>
10	<p>If you receive a message ending with:</p> <ul style="list-style-type: none"> ■ “dbedit completed successfully”, go to the next step. ■ “Errors saved in file...”, see "Correct dbedit Errors" on page 4-33.
11	<p>Confirm that the change was made by using sui find to view the fdcgroupmap table.</p> <p>Example To see FDCs in an FDC group named domestic, enter sui find source=fdcgroupmap se=fdcgroup=domestic</p>
Done	

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Define FDC Groups (Continued)

Procedure: Modify an FDC group

You can modify an existing FDC group to:

- Add FDCs to the group
- Delete FDCs from the group

To modify an FDC group, start with [Step 7](#) in "[Create an FDC group](#)" on [page 7-17](#), and change which FDCs are in the `fdcgrouplist` table.

Procedure: Delete an FDC group

To delete an FDCgroup, use **dbedit** with the **-d** option to remove the FDC group:

- FIRST from the `fdcgrouplist` table
- THEN from `fdcgroup` table

Use **sui find** to create temporary files for **dbedit**, and to check the changes you make to both tables. If you receive a message ending with: "Errors saved in file...", see "[Correct dbedit Errors](#)" on [page 4-33](#).

Reference

See "[Create an FDC group](#)" on [page 7-17](#) for examples of the **sui find** and **dbedit** syntax.

Note

Be sure no users are assigned to the group before you attempt to delete it. See "[Assign Users to FDC Groups](#)" on [page 7-20](#) for more information.

Assign Users to FDC Groups

Overview

FDC group assignment and access for users are handled SEPARATELY for the BB-GUI and the SUI, X-GUI, and AUI. A user can have one FDC group assignment and group access on the BB-GUI and a DIFFERENT FDC group and access on the SUI, X-GUI, and AUI.

Assigning a new user to an FDC group is part of the procedure in ["Add an NTP user" on page 6-21](#), using the **add_ntp user** command.

Use the following procedures to reassign an existing user to an FDC group and to administer a user's ability to self-assign to FDC groups:

- **BB-GUI**
 - See the FDC Group field on the Web User Administration and Web User Information pages used in ["Assign a BB-GUI user's FDC groups" on page 6-41](#).
- **Other**
 - Use the **mod_fdcgrp** command in ["Change user FDC group \(mod_fdcgrp\)" on page 7-22](#) (for users accessing one group only)
 - **dbedit** the `fdcpermit` table in ["Give user FDC group permission" on page 7-23](#) (for users accessing multiple groups)

User assignment

- The system is installed with a default FDC group that is assigned to new users unless you set another group in ["Add an NTP user" on page 6-21](#). NTP is installed with this default set to null, which means all FDC groups. However, if you used a custom attributes file to add the user, you may have assigned the user to a specific FDC group.
- Normally, internal analysts (those who work for your company), are assigned to the "all" group and can access all FDC groups.
- A user can be assigned to only one group at a time (including the "all" group), but you can give users permission to switch among groups.
- Any number of users can be assigned to the same group.
- If you modify a group, you affect every user assigned to that group.

(Continued on next page)

Assign Users to FDC Groups (Continued)

User reassignment You enable users to reassign themselves to FDC groups as follows.

Note

Not for BB-GUI. These procedures do NOT apply for the BB-GUI.

To let a user...	You do this...	Reference
Use only one group.	Assign the user to that group.	"Change user FDC group (mod_fdcgrp)" on page 7-22
Reassign self to any group.	Assign the user to all groups (null).	
Reassign himself or herself to some groups.	FIRST assign the user to one group. THEN give the user permission for other groups.	<ul style="list-style-type: none"> ■ "Change user FDC group (mod_fdcgrp)" on page 7-22 ■ "Give user FDC group permission" on page 7-23

mod_fdcgrp command

The **mod_fdcgrp** command changes a user's FDC group assignment.

Syntax

mod_fdcgrp *username fdc_group*

Parameter	Description
<i>username</i>	(required) The user's login ID on the NTP host (see "Add a User Login ID on the NTP Host" on page 6-9).
<i>fdc_group</i>	(required) The FDC group to which the user will be assigned. This must already be defined in the fdcgroup table (see "Manage FDC Groups" on page 7-15), or nothing (null) for all groups. Default: Null (blank) — all groups. Note The default may be changed for your system. See the FDC_GROUP variable in "Manage User Environment Variables" on page 7-36.

Examples

- This command assigns the user johndoe to the "test" FDC group.
mod_fdcgrp johndoe test
- This example allows a user to access all groups (the default "null").
mod_fdcgrp johndoe

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Assign Users to FDC Groups (Continued)

Procedure: Change user FDC group (mod_fdcgrp)

Use this procedure to reassign an existing user to:

- ONE FDC group (such as a user external to your company)
- ALL FDC groups

Do NOT use this procedure to change the list of groups a user is permitted to switch among if you assign a specific group (see ["Give user FDC group permission" on page 7-23](#))

Before you begin

Be sure you know the name of the FDC group to which you will assign the user. See ["List FDC groups" on page 7-16](#).

Note

- **Not for BB-GUI.** This procedure does NOT apply for the BB-GUI.
- **sysuser table.** For the SUI, X-GUI, and AUI, the fdcgroup field in the sysuser table defines the FDC group to which a user is assigned. Instead of using this procedure, you can **dbedit** the sysuser table to reassign a user's FDC group. But NEVER **dbedit** sysuser to add or delete an NTP user.

Step	Action
1	Log on the NTP host as ntp .
2	<p>Enter mod_fdcgrp username fdc_group where:</p> <ul style="list-style-type: none"> ■ <i>username</i> is the user's login ID on the NTP host ■ <i>fdc_group</i> is the FDC group to which the user is to be assigned. <p>Response There is no message if mod_fdcgrp completes successfully. You see messages if the user is not defined on the NTP host or if you enter an illegal (or no) value for the FDC group,</p> <p>Reference See "mod_fdcgrp command" on page 7-21 for complete information on the command syntax.</p>
3	Verify that the change has been made in the fdcgroup field in the sysuser table for this user by entering sui find source=sysuser grep user
Done	

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Assign Users to FDC Groups (Continued)

Procedure: Give user FDC group permission Use this procedure to add a group to the list of FDC groups a user can switch among. The user must already be created via the **add_ntpuser** command.

Note

Not for BB-GUI. This procedure does NOT apply for the BB-GUI.

Reference

For steps that use **dbedit**, see **dbedit** in [Chapter 4, "Reference Data Tables"](#).

Step	Action
1	Log on the NTP host as ntp .
2	Enter sui find source=fdcpermit se=sysuser=login where <i>login</i> is the login of the user. Response Output lists each fdcgroup the user has permission to switch to.
3	Use sui find to copy the fdcpermit table into a temporary file (temp). Example sui find source=fdcpermit delim=":" noheader > temp
4	Use a text editor (such as vi) to edit the temporary file to add or modify a user's FDC group. <ul style="list-style-type: none"> ■ sysuser field. Specifies a user's login ID from the sysuser table. A user can have multiple entries, each line with a different fdcgroup. ■ fdcgroup field. Specifies the fdcgroup the user can reassign to himself or herself to. This group must have been previously defined in the fdcgroup table.
5	Use dbedit to submit the changes. Example If the changes are in a file named temp, enter dbedit -u -t fdcpermit -f temp -s:
6	If you receive a message ending with: <ul style="list-style-type: none"> ■ "dbedit completed successfully", go to the next step. ■ "Errors saved in file...", see "Correct dbedit Errors" on page 4-33.
7	Confirm that the change was made by using sui find to view the fdcpermit table. Example For user johndoe, enter sui find source=fdcpermit se=login=johndoe
Done	

Manage Network Groups and Segments

Overview

Purpose

Network groups and segments determine the entities users see on output. For example you might group entities by:

- Entity type or function
- Geographical areas or load areas
- Operations center, for managers to monitor their own entities only or quickly switch to monitoring entities belonging to another center
- A customer's PBXs, to enable customers to monitor their own equipment (and no one else's).

Network groups (and segments) are defined by the procedures in "[Define Network Groups and Segments](#)" on page 7-27.

Note

Assigned separately for the BB-GUI. Network group and segment definitions apply to all interfaces. However, network group and segment assignment and access are administered SEPARATELY for BB-GUI users and users of the SUI, AUI, and X-GUI.

- For the BB-GUI, see information about the Network Group/Segment field on the Web User Administration and Web User Information pages used in "[Assign a BB-GUI user's network groups](#)" on page 6-42
- Otherwise, see "[Assign Users to Network Groups and Segments](#)" on page 7-32

Example

This example illustrates the process for managing a network group and the user impact:

1. You create an network group called "dms", consisting of DMS switches.
2. An analyst who monitors DMS switches assigns himself or herself to the dms group and runs Ascreen or Trapalert with no search criteria.
3. Output shows alert cases for DMS switches only.

(Continued on next page)

Overview (Continued)

Database tables You use the following database tables to manage network groups and segments.

Table	Purpose
"netseg Table" on page A-92	Names each network segment.
"netsegmap Table" on page A-93	Tells which entities are in each network segment.
"netgroup Table" on page A-89	Names each network group.
"netgroupmap Table" on page A-90	Tells which network segments are in each network group.
"netpermit Table" on page A-91	(Does NOT apply for the BB-GUI.) Tells which network groups and network segments each user is permitted to reassign himself or herself to.

Network segments and groups

- You can put entities into subgroups called segments, and you can combine segments into groups.
- You can create as many as 300 segments.
- The same entity can be in multiple networks segments AND groups.
- You can create a network group that contains just one network segment (but normally this is not done).

Default

Default group is **all**, which offers all network groups (and segments).

User self-assignment for network groups

Users can switch between any network groups or segments they have permission to access. See "[Give user network group or segment permission](#)" on page 7-35.

Audit

To audit network segments, enter **audit -t netseg** (see "[NTP Audits](#)" on page 4-54 for how to audit).

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Overview (Continued)

TNs override network filtering

TN grouping overrides network filtering.

Example

An entity in a user's network group has alert case X, whose TN is shared by alert case Y from an entity NOT in the user's network group. Alert case Y is listed on Ascreen output.

To get rid of alert case Y, the user can ungroup it from the TN. (For how, see Chapter 5 in the *GUI User's Guide*.) More drastically, you can have your NTP support organization disable automatic TN grouping system-wide. If you do that, analysts can still manually group alert cases into TNs.

Procedure: List network segments and groups

Here are some sui commands you can use to list network segments and groups

- List all groups, with a description.
sui find source=netgroup | more
- List all groups, with segments in each group.
sui find source= netgroupmap | more
- List segments in a group (example: group ohio).
sui find source=netgroupmap se=netgroup=ohio | more
- List groups that a segment is in (example: segment columbus).
sui find source=netgroupmap se=netseg=columbus| more
- List all network segments, with a description.
sui find source=netseg | more
- List all network segments, with CLLI codes in each.
sui find source= netsegmap | more
- List entities in a segment (such as segment columbus).
sui find source=netsegmap se=netseg=columbus | more
- List segments an entity is in (example: CLLI DNVR222222).
sui find source=netsegmap se=ne=DNVR222222| more
- (Does not apply for the BB-GUI) List all users and the network segments and groups they have permission to reassign themselves to.
sui find sou=netsegpermit | more

Define Network Groups and Segments

Overview

Use these procedures to define network groups and segments:

- ["Create a network segment" on page 7-27](#)
- ["Create a network group" on page 7-29](#)
- ["Modify a network group or segment" on page 7-30](#)
- ["Delete network group or segment" on page 7-31](#)

Procedure: Create a network segment

Use this procedure to create a network segment by modifying the netseg and netsegmap tables.

Reference

For steps that use **dbedit**, see **dbedit** in [Chapter 4, "Reference Data Tables"](#).

Step	Action
1	Log on the NTP host as ntp .
2	Use sui find to copy the netseg table into a temporary file (temp). Example sui find source=netseg delim=":" noheader > temp
3	Use a text editor (such as vi) to add a new network segment to the temporary file (temp). <ul style="list-style-type: none"> ■ name field. Specifies a network segment (up to 10 characters). Cannot be already used in the netseg or netgroup tables. ■ description field. Describes the segment (up to 50 characters). Example Name:Description sv0gdins01:107networkstement sv0gdins02:107networksegment
4	Use dbedit to submit the change. Example dbedit -u -t netseg -f temp -s:
5	If you receive a message ending with: <ul style="list-style-type: none"> ■ "dbedit completed successfully", go to the next step. ■ "Errors saved in file...", see "Correct dbedit Errors" on page 4-33.

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Step	Action
6	<p>Confirm that the change was made by using sui find to view the netseg table.</p> <p>Example To confirm a network segment named columbus exists, enter sui find source=netseg se=name=columbus</p>
7	<p>Use sui find to copy the netsegmap database into a temporary file (temp).</p> <p>Example sui find source=netsegmap delim=":" noheader > temp</p>
8	<p>Use a text editor (such as vi) to add to the temporary file a line for each entity you want to put in the new network segment.</p> <ul style="list-style-type: none"> ■ netseg field. Specifies the name of the new network segment. The network segment must have been previously defined in the name field in the netseg table (Step 3). ■ ne field. Specifies the name of an entity to be in the new network segment. The ne must be either "?" to represent an unknown entity, or one of the following: <ul style="list-style-type: none"> — cli defined in swarch, — scpcli defined in scparch — ne in stparch — adjcilli in adjarch ■ type field. Specifies the type of entity in the ne field. Either sw, stp, scp, or adj. <p>Example</p> <pre>Netseg Ne type sv0gdins01 sv0gdidm001 sw sv0gdins01 sv0gdidm002 sw</pre>
9	<p>Use dbedit to submit the changes.</p> <p>Example dbedit -u -t netgroupmap -f temp -s:</p>
10	<p>If you receive a message ending with:</p> <ul style="list-style-type: none"> ■ "dbedit completed successfully", go to the next step. ■ "Errors saved in file...", see "Correct dbedit Errors" on page 4-33.
11	<p>Confirm that the change was made by using sui find to view the netgroup table.</p> <p>Example To see entities in a network segment named columbus, enter sui find source=netsegmap se=netgroup=columbus</p>
Done	

Define Network Groups and Segments (Continued)

Procedure: Create a network group Use this procedure to create a network group by using **dbedit** on the netgroup and netgroup tables.

Step	Action
1	Log on the NTP host as ntp .
2	Use sui find to copy the netgroup database into a temporary file (temp). Example To copy netgroup database into a file named temp, enter sui find source=netgroup delim=":" noheader > temp
3	Use a text editor (such as vi) to add a line with a new network group to the temporary file. <ul style="list-style-type: none"> ■ name field. Specifies a unique name for the network group (up to 10 characters). The name cannot already be used in the netseg or netgroup table. ■ description field. Describes the network group (up to 50 characters) This field cannot be blank, but you can enter "-" for null.
4	Use dbedit to submit the changes. Example dbedit -u -t netgroup -f temp -s
5	If you receive a message ending with: <ul style="list-style-type: none"> ■ "dbedit completed successfully", go to the next step. ■ "Errors saved in file...", see "Correct dbedit Errors" on page 4-33.
6	Confirm that the change was made by using sui find to view the netgroup table. Example To confirm an FDC group named ohio exists, enter sui find source=netgroup se=name=ohio
7	Use sui find to copy the netgroupmap database into a temporary file (temp). Example sui find source=netgroupmap delim=":" noheader > temp

Step	Action
8	Use a text editor (such as vi) to add a line in the temporary file for each network segment you want to put in the new network group. <ul style="list-style-type: none"> ■ netgroup — Specifies the network group. The network group must already be defined in the netgroup table (Step 3). ■ netseg — Specifies a network segment that will be in the network group. The network segment must have been previously defined in the netseg table (see "Create a network segment" on page 7-27).
9	Use dbedit to submit the changes. <p>Example dbedit -u -t netgroupmap -f temp -s:</p>
10	If you receive a message ending with: <ul style="list-style-type: none"> ■ "dbedit completed successfully", go to the next step. ■ "Errors saved in file...", see "Correct dbedit Errors" on page 4-33.
11	Confirm that the change was made by using sui find to view the netgroupmap table. <p>Example To see network segments in a network group named ohio, enter sui find source=netgroupmap se=netgroup=ohio</p>
Done	

Procedure: Modify a network group or segment

To modify a network group or segment to add or delete elements it contains.

- **Network segments** — start with [Step 7 in "Create a network segment" on page 7-27](#) and change which CLLIs are in netsegmap.
- **Network groups** — start with [Step 7 in "Create a network group" on page 7-29](#) and change which segments are in netgroupmap.

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Define Network Groups and Segments (Continued)

Procedure: Delete network group or segment

To delete a network group or segment, use **dbedit** with the **-d** option to remove the group or segment from the appropriate tables:

- **Network segments** — FIRST the netsegmap table and THEN the netseg table
- **Network groups** — FIRST the netgroupmap table and THEN the netgroup or netseg table

Use **sui find** to create temporary files for **dbedit**, and to check the changes you make to the tables. If you receive a message ending with: "Errors saved in file...", see ["Correct dbedit Errors" on page 4-33](#).

Reference

See ["Create a network segment" on page 7-27](#) and ["Create a network group" on page 7-29](#) for examples of the **sui find** and **dbedit** syntax.]

Assign Users to Network Groups and Segments

Purpose

Network group and segment assignment and access for users are handled SEPARATELY for the BB-GUI and the SUI, X-GUI, and AUI. A user can have one network group/segment assignment and access on the BB-GUI and a DIFFERENT network group/segment assignment and access on the SUI, X-GUI, and AUI.

Assigning a new user to a network group or segment is part of the procedure in ["Add an NTP user" on page 6-21](#), using the **add_ntp user** command.

Use the following procedures to reassign an existing user to a network group or segment and to administer a user's ability to self-assign to network groups and segments:

- **BB-GUI**

- See the Network Group/Segment field on the Web User Administration and Web User Information pages used in ["Assign a BB-GUI user's FDC groups" on page 6-41](#).

- **Other**

- Use the **mod_netgrp** command in ["Change user network group \(mod_netgrp\)" on page 7-34](#)
- **dbedit** the netpermit table in ["Give user network group or segment permission" on page 7-35](#).

User assignment

- The system is installed with a default group that is assigned to new users unless you specify another network group or segment in ["Add an NTP user" on page 6-21](#). NTP is installed with this default set to null, which means all network groups and segments. However, if you used a custom attributes file, you may have assigned the new user to a specific network group or segment.
- A user can be assigned to only one network group or segment at a time.
- Any number of users can be assigned to the same group or segment.
- If you modify a group or segment, you affect ALL persons assigned to that group or segment.

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Assign Users to Network Groups and Segments (Continued)

User self-reassignment for network groups

You enable users to reassign themselves to different groups, as follows (in this table, group means either group or segment).

Note

Not for BB-GUI. These procedures do NOT apply for the BB-GUI.:

To let a user...	You do this...	Reference
Use only one group	Assign the user to that group.	"Change user network group (mod_netgrp)" on page 7-34
Self-assign to any group	Assign the user to all groups and segments (null).	
Self-assign to a restricted set of groups	FIRST assign the user to one group. THEN give permission for other groups.	<ul style="list-style-type: none"> ■ "Change user network group (mod_netgrp)" on page 7-34 ■ "Give user network group or segment permission" on page 7-35

mod_netgrp command

Syntax

`mod_netgrp username net_group`

Parameter	Description
<i>username</i>	(required) The user's login ID on the NTP host (see "Add a User Login ID on the NTP Host" on page 6-9).
<i>net_group</i>	(required) The new network group or segment to which the user will be assigned. This group must have been previously defined in the netgroup or netseg table (see "Manage Network Groups and Segments" on page 7-24). Default: Null (blank) — all groups and segments. Note The default may be changed for your system. See the NET_GROUP variable in "Manage User Environment Variables" on page 7-36

Examples

- This command assigns the user johndoe to the dms network group.
mod_netgrp johndoe dms
- "Null" assignment lets a user access all network groups and segments.
mod_netgrp johndoe

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Assign Users to Network Groups and Segments (Continued)

Procedure: Change user network group (mod_netgrp)

Use this procedure to reassign an existing user's network group (or segment). You must decide if the user should be assigned to:

- ONE group or segment (such as a user external to your company)
- ALL groups and segments

Do NOT use this procedure to add a group or segment to the list a user is permitted to switch among. Instead use ["Give user network group or segment permission" on page 7-35](#).

Before you begin

Be sure you know the name of the network segment or group to which you will assign the user. See ["List network segments and groups" on page 7-26](#).

Note

- **Not for BB-GUI.** This procedure does NOT apply for the BB-GUI.
- **sysuser table.** For the SUI, AUI, and X-GUI, the netgroup field in the sysuser table defines the network group or segment to which a user is assigned. Instead of using this procedure, you can **dbedit** the sysuser table to reassign a user's network group. But NEVER **dbedit** sysuser to add or delete an NTP user.

Step	Action
1	Log on the NTP host as ntp .
2	<p>Enter mod_netgrp <i>username net_group</i> where</p> <ul style="list-style-type: none"> ■ <i>login</i> is the user's login ID on the NTP host ■ <i>net_group</i> is the network group or segment to which the user is to be assigned. <p>Reference See "mod_netgrp command" on page 7-33 for complete information on the command syntax.</p> <p>Response There is no message if mod_netgrp completes successfully. You see messages if the user is not defined on the NTP host or if you enter an illegal (or no) value for the network group or segment.</p>
3	Verify that the change has been made in the netgroup field in the sysuser table for this user by entering sui find source=sysuser grep user
Done	

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Assign Users to Network Groups and Segments (Continued)

Procedure: Give user network group or segment permission

To add a group or segment to the list a user is permitted to switch among, see ["Give user FDC group permission" on page 7-23](#), EXCEPT, in place of the `fdcpermit` table, use the `netpermit` table.

Note

Not for BB-GUI. This procedure does NOT apply for the BB-GUI.

Netpermit table

- **sysuser field.** Use this field to specify the user's login ID.
- **netseg field.** Use this field to specify a network group or segment.
 - A segment must be defined by the name field in the `netseg` table.
 - A group must be defined by the name field in the `netgroup` table.

Example

Here is an example of the `netpermit` table.

```
Sysuser  Netseg
ampe    sv_newyork
amw     sv0gdins01
bcj     sv_newyork
drs     sv_newhork
```

Reference

- See the instructions on when to use ["Change user network group \(mod_netgrp\)" on page 7-34](#) for how this fits with a related procedure.
- See ["User self-assignment for network groups" on page 7-25](#) for a discussion of reassignment permissions.

Manage User Environment Variables

Overview

Purpose

Environment variables determine some attributes for the SUI, X-GUI and AUI. Since the system provides defaults for these variables, you may seldom, if ever, need to modify them.

Note

Not for the BB-GUI. None of the environment variables in this section apply for the BB-GUI. Equivalent BB-GUI attributes are defined SEPARATELY. See ["Web User Information Page" on page 6-35](#) for more information.

How variables are set

The system provides defaults for environment variables. The **add_ntpuser** command uses some of these variables if you do not specify an attribute in the attributes file when you add a new NTP user (see ["Add NTP Users" on page 6-20](#)).

- You can set environment variables that affect all users with the **admset** command —see ["admset command" on page 7-38](#).
 - X-GUI use can set their own login's variables by customizing the GUI, (see Chapter 9 of the *GUI User's Guide*).
 - Each user with shell access can set his or her own login's variables via the **sui set** command (see ["sui set Command" on page B-22](#)).
-

Scope

The NTP administrator can set or modify ALL environment variables for either:

- **One user** — Via **add_ntpuser** (new users) or **admset** (existing users)
- **All users** — Via the **admset** command to set a new default, used by all users who do not have an individual value

For a list of things you can modify via the **admset** command, ["User environment variable list \(admset\)" on page 7-39](#).

Note

Users can modify most of their own variables with the **sui set** command (see ["User environment variable list \(admset\)" on page 7-39](#)).

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Overview (Continued)

Defaults

This table explains the use of user environment variable defaults.

Default	Who can set it
Initial default value	No one. It is installed with the system.
New default value	The ntp login, using admset . The value you set overrides the initial default.
Individual user value (this is not default)	<ul style="list-style-type: none"> ■ The ntp login, using admset ■ Any administrative user, using sui set ■ Any user by customizing the X-GUI.

Reference

To see initial defaults, see "[User environment variable list \(admset\)](#)" on page [7-39](#) or enter **admset -l** and read the descriptions.

admset command

Purpose Use **admset** to set environment variables for either a new default or individual users.

Syntax **admset -l**
admset [-u user] [variable] [value]

Parameter	Description
-l	Lists all variables with descriptions.
u user	Specifies login ID for whom the variable values are to be listed, set, or unset back to system default.
none	Sets the system default, to either a new default (if you enter a value, or to the initial system default (if you enter no value).

Note

You must be logged on NTP as **ntp** to use the **admset** command.

List and set user variables This table shows all the ways you can use **admset**.

Purpose		Enter...
List	All environment variables with definitions (including initial default value (see " User environment variable list (admset) " on page 7-39. for output).	admset -l
	All new defaults (lists only environment variables not using initial defaults).	admset
	One user's individual variables (lists the user's environment variables not using initial or new default)	admset -u user
Set	A variable from initial default to a new default	admset VARIABLE value
	One user's variable	admset -u djd VARIABLE value
Unset	A variable from new default back to initial default	admset VARIABLE
	A user's variable back to default	admset -udjd VARIABLE

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Manage User Environment Variables (Continued)

User environment variable list (admset)

These are the user environment variables you can set from **admset**. You see a list of these variables if you enter **admset -l** (but **admset -l** may list other variables that do not affect your system). Variables that can also be modified with the **sui set** command are noted.

Note

- **Format.** "Format" in this table means choosing which fields to display, and field order (but Compute output has other format considerations).
- **Colors.** For a list of colors (used by some variables for the X-GUI), run **/usr/openwin/bin/showrgb**. You may want to save the command's output to a file (there are many colors). For BB-GUI colors, see ["Web User Information Page" on page 6-35](#).
- Some variables affect only legacy interfaces still used by some customers. Unless otherwise indicated, variables apply to the SUI.

Variable	Function	Values	Modify with sui set?
ACASE_FORM	Format, Find Acase output.	Default: list of Acase fields.	no
ALCOLOR_CR	X-GUI ONLY. Color of critical alert level on Ascreen and Trapalert.	A valid X color name. Default: red.	yes
ALCOLOR_MA	X-GUI ONLY. Color of major alert level on Ascreen and Trapalert.	A valid X color name. Default: orange.	yes
ALCOLOR_MI	X-GUI ONLY. Color of minor alert level on Ascreen and Trapalert.	A valid X color name. Default: null (no change to the default foreground color).	yes
ALERT_FORM	Format, Find Alert output.	Default: list of Alert fields.	no
ASCREEN_FORM	Format, Ascreen output.	Default: list of Acase fields.	no
ASCREEN_SORT	Sort order, Ascreen output.	Value: a valid Sort list. Default: lda time: d,lcnt:d	no
ASCREEN_SRCHFIELDS	X-GUI ONLY. Format, Ascreen search screen.	Default: all Acase fields.	no
CFIM_FORM	Format, Find CFIM and TrapCfim output	Default: list of Cfim fields.	no

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Variable	Function	Values	Modify with sui set?
COMP_ECHO	Format, Compute output. Values echoed in the Compute title.	Values: none or all (default); or a list of one or more of min , interval , or sort .	yes
EDITOR	AUI ONLY. Text editor used in AUI	Values: vi (default), emacs , or ed .	yes
FDC_GROUP	X-GUI ONLY. Sets which alert cases display when a user runs Ascreen or Trapalert. Also applies to Find CFIM and Trapcfim if FDC_SEARCH is not all .	Values: Any FDC group. (To list FDC groups, see "List FDC groups" on page 7-16.)	yes
FDC_SEARCH	X-GUI ONLY. Sets the default FDCs that show on Ascreen, Trapalert, Find CFIM and Trapcfim. Sets which CFIMs are retrieved in Find CFIM or Trapcfim.	Values: group — Find CFIM gets only CFIMs with FDCs in the FDC_GROUP the user is assigned to; all (null) — FDC_GROUP is ignored. Note "Unrestricted" users can change their own FDC_GROUP and can enter an FDC or FDCs in a search to override FDC_GROUP.	yes
FIND_SRCHFIELDS_ACASE	X-GUI ONLY. Format, Find Acase search screen.	A list of Acase fields. Default: All Acase fields.	no
FIND_SRCHFIELDS_ALERT	X-GUI ONLY. Format, Find Alert search screen.	Values: A list of Alert fields. Default: All Alert fields.	no
FIND_SRCHFIELDS_CFIM	X-GUI ONLY. Format, Find CFIM search screen.	Values: A list of Cfim fields. Default: All Cfim fields.	no
FIND_SRCHFIELDS_LINK	X-GUI ONLY. Format, Find Linkalert search screen.	Values: A list of Linkalert fields. Default: All Linkalert fields.	no
FIND_TIME	Find time. Default time duration for Find on surveillance tables.	Range: a number 1 to 120. Default: 10.	yes
LABEL_DATA_POINTS	X-GUI ONLY. Format, Compute output.	Values: yes — One-dimensional Compute graphs have data items labeled with the value and count; or no — data items are not labeled.	no

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Variable	Function	Values	Modify with sui set?
LINK_FORM	Format, Find Linkalert output screen	Output format of Find on Linkalert tables. This should be a valid Format. Default: the list of Linkalert fields.	no
LOCPRTYPE	AUI ONLY. Default local printer type for terminals supporting local printers.	Values: A supported local printer type. Default: dumb.	yes
MAX_DISP	Determines how many records can be displayed at one time.	Value: a whole number less than or equal to 30,000.	yes
MAXSAVE	Finds, default maximum number of user files to save	Range: A number 1 to MAXSAVE_MAX. Default:10000.	no
MAXSAVE_MAX	Finds, maximum value a user can give for Find's maxsave parameter or the MAXSAVE variable.	Range: A number 1-999999. Default: 100000.	yes
MAX_COUNT	X-GUI ONLY. Format, Compute output. Y-axis maximum for Compute Line and Bar graphs.	Default: 0. Range: If OUTPUT is: count — a whole number 0 to MAXSAVE; if OUTPUT is percent — a floating-point number 0.00 to 100.00.	no
MAX_GRAPH	X-GUI ONLY. Format, Compute output. Maximum number of distinct x-values for Compute graphs.	Range: A number to -100. Default: 25.	no
MIN_COUNT	X-GUI ONLY. Format, Compute output. Minimum value of data points output by Compute.	Default: 0. Range: If OUTPUT is: count — a whole number 0 to MAXSAVE minus one; if OUTPUT is percent — a floating-point number 0.00 to 99.99	yes

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Variable	Function	Values	Modify with sui set?
NET_GROUP	X-GUI ONLY. Sets the default alert cases on a user's Ascreen or Trapalert output. Users assigned to a group — by the system administrator (if the user is restricted, or by the user if unrestricted — see only alert cases with the group's (or segment's) network elements in the Ne field. Also applies to Find CFIM and Trapcfim if NET_SEARCH is not all .	Values: Any network group or segment. (To list network groups, see " List network segments and groups " on page 7-26.) Note Unrestricted users can enter an Ne in a search, and override NET_GROUP.	yes
NET_SEARCH	X-GUI ONLY. Sets which alert cases display when a user runs Ascreen, Trapalert, Find CFIM, and Trapcfim.	Values: group — Ascreen and Trapalert display only alert cases with Ne's in the NET_GROUP the user is assigned to; all — NET_GROUP is ignored. Unrestricted users can enter an Ne in a search, and override NET_GROUP. Unrestricted users can also change their own NET_GROUP.	yes
NUM_AUTO_COLS	Format, Compute output. Number of column values used by Compute when the user does not give any.	Range: a number 1 to 12. Default: 7.	yes
OUTPUT	Format, Compute output. Note Changing OUTPUT changes MIN_COUNT and MAX_COUNT for the same user, if set. Because the system default for OUTPUT affects the way all MIN_COUNT and MAX_COUNT user defaults are interpreted, we recommend you use the system default.	Values: count (default) — Compute output is shown by count, and MIN_COUNT and MAX_COUNT are in interpreted as counts; percent — compute output is shown by percent, and MIN_COUNT and MAX_COUNT are interpreted as percentages.	

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Variable	Function	Values	Modify with sui set?
PRINTER	AUI AND X-GUI ONLY. Default printer name for printing.	A valid printer name on the host machine or a workstation. Default: value of the operating system environment variable \$PRINTER, if set, (otherwise no default).	yes
PROC_SIZE	Maximum size to which any user interface process can grow (in bytes).	Range: any positive number. Default: 60000000 (60 Mbytes). Can be overridden with the environment variable NTP_PROC_SIZE.	no
RANGE	Range of rows output by the Find command. Note Syntax when setting a range is: "30001 - 50000" For example: sui admset variable=RANGE value="30001 - 50000"	Value: a range <i>MM-NN</i> where <i>MM</i> and <i>NN</i> are both less than MAXSAVE, and the <i>MM-NN</i> includes at most 30000 rows. Default: 1-10000.	yes
SAMESIZE	AUI ONLY. Screen size	Values: yes — The AUI pager never changes the window size; no — the AUI pager reshapes to the maximum size available according to the terminal type when the output format exceeds the line width. Default: no .	yes
TERMINAL	AUI ONLY. Terminal type default.	Values: a supported AUI terminal type. Default: xterm	yes
TRAPALERT_FORM	Format, Trapalert output.	Values: A valid Format. Default: list of Trapalert fields.	no
TRAPALERT_SRCHFIELDS	X-GUI ONLY. Format, Trapalert search screen.	Values: A list of Trapalert fields. Default: all Trapalert fields.	no
TRAPCFIM_ROWS	AUI ONLY. TrapCfim, number of rows in 630/730 terminal buffer in AUI.	Range: a number 10 to 60. Default: none.	no
TRAPCFIM_SRCHFIELDS	X-GUI ONLY. Format, TrapCfim search screen.	Values: A list of Cfim fields. Default: list of all Cfim fields.	no

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Manage User Files and Databases

Overview

Purpose

Users can create and save ASCII files and SQL database files. Since, enough of these can accumulate to degrade system performance, so you must ensure unneeded files are deleted. Accumulated databases are potentially more of a problem than accumulated ASCII files. This section explains how user ASCII files and user databases are created, how to recognize when they are a problem for your system, and provides procedures to remove them.

Note

- **NOT applicable for BB-GUI-only users.** Currently, BB-GUI users cannot save Find output to databases. Nor do they save ASCII (text) files on the NTP host (though they can save text files on their client PCs or workstations). Unless users have shell access or use a legacy interfaces still run by a few customers, you will seldom need to manage their user files or databases.
- **SUI users (shell access).** Any user with shell access, however, can create ASCII files in a variety of ways as well as user files with the **-w user_file** option to **sui find** (see your NTP support organization for more information.)

Definition

Working sets vs. user files. Database files referred to here are NOT working sets. A working set is automatically created by the system when a user does a **find** and has a “ws” in its name. Each one is automatically overwritten by a later **find**, which prevents them from multiplying. If you remove a working set, however, it causes no harm, since it is replaced by the next **find**. Although they are called “user files”, user-created SQL databases are NOT files (you CANNOT list them with shell commands such as **ls** or **lsc**).

How users create and remove ASCII files

- **Creation.** Users of the legacy X-GUI create an ASCII file each time they do either of the following (legacy AUI users accumulate ASCII files similarly):
 - On a Help dialog box, select **Save -> Save to ASCII**
 - On an output window, select **File -> Save to ASCII**.
- **Removal.** Users can remove ASCII files they create only if they have access to the operating system shell. If they do not, you must remove unneeded ASCII files for them.

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Overview (Continued)

How users create and remove databases (user files)

- **Creation.** User databases are created in two ways:
 - **Automatically.** Each time the user does a Find. The name includes the letters “ws” (for working set).
 - **Manually.** For example, when a user of the legacy X-GUI selects **File > Save to User File** on a Find output window. The name is whatever the user called it.

Automatically created databases do NOT need to be removed, as each is overwritten with a later find.

Manually created databases must eventually be removed, by the user, or by you if the user forgets to remove them.

- **Removal.** Users without shell access can remove their own manually created databases through the legacy interface they used to create them:
 - X-GUI — Go to **Main Menu > File > Remove User File**
 - AUI — Use the **remove** command, if offered on the AUI menu.

Task overview

Use the information in the following sections to remove user databases and ASCII files if users cannot do so for themselves.

- ["Remove User ASCII Files" on page 7-46](#)
 - ["Remove User Databases" on page 7-47](#)
-

Remove User ASCII Files

Procedure: Remove user ASCII files

Use this procedure whenever disk resources run low and users have accumulated unneeded ASCII files.

Step	Action
1	Log on the NTP host as root. Note To remove another person's files, you must log on as root .
2	Go to the user's home directory, and enter file * Response All files in the user's home directory are listed, each identified as ASCII or other type file.
3	Are there too many ASCII files in the user's home directory? <ul style="list-style-type: none"> ■ If NO, never mind. Done. ■ If YES, go to the next step. Note "Too many" depends on your system resources.
4	Does the user have access to shell on the NTP host? <ul style="list-style-type: none"> ■ If YES, ask the user to use the operating system rm command to remove unneeded files from his or her home directory, including ASCII files saved from the GUI or AUI. ■ If NO, coordinate with the user, and then log on as root, cd to the user's home directory and use the operating system rm command to remove the files yourself, <p style="text-align: center;">Done</p>

Remove User Databases

When to use

Remove user databases when periodic checks show an accumulation of databases or when the master error log indicates a space problem.

You use the **sui remove** command to remove user databases (see "[sui remove Command](#)" on page 7-53).

Note

No need to remove ws's. Each automatically created database has a ws in its name. These you do not need to remove, since each is overwritten by later **finds**, which prevents them from multiplying. However, if you DO remove one, it will cause no harm, since it will be replaced by subsequent **finds**.

Max # extents message

"Max # extents" messages in the master error log indicates you are running out of space, possibly due to an accumulation of user-created databases (or possibly due to other problems not discussed here — see Oracle references).

You use the **ptspace** command to check extents for your system see "[ptspace Command](#)" on page 7-49).

Example

This is an example of a "max # extents" message in the master error log:

```
ERR001 CHRON_OBJECTS insert failed: error code -1631, ORA-01631:
max # extents (500) reached in table DB$.CHRON_OBJECTS;
```

Reference

For how to monitor the master error log, see "[master Log](#)" on page 11-19.

Periodic checks

You use the **ptspace** command to do periodic checks (see "[ptspace Command](#)" on page 7-49). You can also use the **sui list** command "[sui list Command](#)" on page 7-51).

(Continued on next page)

Remove User Databases (Continued)

Procedure: Remove user databases

Use this procedure to check the space used for user databases and to remove them if necessary.

Step	Action
1	Log on the NTP host as ntp .
2	<p>Run the ptspace command to check user databases.</p> <p>Example ptspace users</p> <p>Reference See "ptspace Command" on page 7-49 for more information.</p> <p>Note For a different view of a user's databases, log on NTP as that user and run the sui list command. See "sui list Command" on page 7-51 for more information.</p>
3	<p>Use the sui remove command to remove unneeded databases.</p> <p>Example To delete database files mary1 and mary2, belonging to login mtm, (not your current login) enter sui remove force files=mtm/mary1,mtm/mary2</p> <p>Reference See "sui remove Command" on page 7-53 for more information.</p>
Done	

ptspace Command

Purpose

The **ptspace** command lists user databases for all users, or for users you name. It is useful to check if users have accumulated too many databases. This command is a script provided by NTP. It is not found in Oracle references. You must be logged on as **ntp** to run **ptspace**.

When to use

Use **ptspace** as follows:

- **Periodic checks.** Typically, an accumulation of user database is a rare problem. Checking every few months is normally sufficient.
 - **“max # extents” message.** A “max # of extents” in the master error log may be caused by too many user databases (see [“Max # extents message” on page 7-47](#)).
-

ptspace and sui remove

After you have run **ptspace**, you can use the [“sui remove Command” on page 7-53](#) to remove unneeded user files.

Syntax

ptspace *tablespace* [*username*]

Parameter	Description
<i>tablespace</i>	(required) Any SQL database tablespace (to check user databases, use user).
<i>username</i>	(optional) An user ID, to list only one user’s databases. This parameter makes sense only if you put user in the first parameter

Examples

- To check all user databases for all users, enter **ptspace user**
 - For other purposes, you can look at any tablespace, especially:
 - **ptspace reference** — lists reference databases
 - **ptspace system** — lists Oracle internal databases
-

(Continued on next page)

ptspace Command (Continued)

Output

Output is a list of user-created databases. Output has the following fields:

Field	Function
OWNER	User who created the database.
SEGMENT_NAME	Database name.
BLKS	How many blocks are in the database.
EXTENTS	Number of extents the database is divided among.

Output example

This is an example of an output from the command **ptspace user**

```

OWNER          SEGMENT_NAME          BLKS  EXTENTS
-----
JWV            WS_MYFILE             200   8
FAU            FAUTEST               50    2
JWV            CFIM_NCA              50    2
JWV            MYFILE_ASCII         50    2
NISHA          TESTWS                50    2
NLZ            MINE                  50    2
NLZ            NLZTEST               50    2
NLZ            MEDCFIM               50    2
8 rows selected.
```

Too many extents

To see the total number of extents for your system, you must use **ptspace** with each tablespace in turn, and sum the number of extents for all. However, if you see too many extents for the user tablespace alone, you already know you need to delete some user databases. The following table gives guidance:

This total number of extents	Means
1-20	No problem
20-50	Acceptable
50-200	System performance is affected. If you approach 200, take action.
200-500	Take action immediately
500	Danger of system failure

sui list Command

Purpose

The **sui list** command lists user files (databases) created from any NTP interface, for your current login ONLY. This is an NTP command. It is not found in Oracle references.

To use **sui list**, you can be in any directory, but you must log on as the user whose databases files you want to list.

Reference

Besides **sui list**, commands for user files (databases) are: "[sui join Command](#)" on page B-19), "[sui remove Command](#)" on page 7-53, "[sui rename Command](#)" on page B-21, and "[sui sort Command](#)" on page B-24,

When to use

Possibly, never. Instead, use the **ptspace** command see ("[ptspace Command](#)" on page 7-49) with a login ID in its *username* parameter. **Ptspace** is easier to use. Perhaps the only time you would use **sui list** would be if you needed an output field provided by **sui list** and not by **ptspace**.

Syntax

sui list [**files**=*userfile1, userfile2...*]

With no parameters, **sui list** shows all database files created from any NTP interface for the current login ID.

Parameter	Description
files (optional)	Restricts the list of user database files to be displayed. Separate multiple expressions with commas. You can use the * metacharacter in database names (see " Search Expressions in sui find " on page 4-20).

Example

To list all user database files named beginning with "cfim" for your current login enter **sui list files=cfim***

(Continued on next page)

sui list Command (Continued)

Output

Output is a list of databases files created by the user you are logged in as. Output has the following parts:

Field	Function
File	Name of the database file, which was named when the user did a find . Note Databases whose names include “ws” were named automatically and are automatically overwritten. Other databases were named by users, and persist until manually removed.
Type	The name of the system database where the user was doing a find when the user-created database file was created.
Size	The size of the user database file bytes.
Last modified	When the use database file was created or overwritten.

Output example

You log on as a user you want to check, and, in any directory, enter **sui list**. Output is:

```
File                Type      Size  Last modified
davel              notify    1     00/01/01 02:37
ws                 outdkdial 22    99/12/31 23:25
ws_view            cfim      10000 00/01/01 02:35
ws_view_prev       cfim      1048  00/01/01 02:34
```

sui remove Command

Purpose

The **sui remove** command removes user files (databases) created from NTP interfaces. This is an NTP command. It is not found in Oracle references. You must be logged on as **ntp** to use **sui remove**. It does not matter which directory you are in — results are the same.

This command is useful if a user has accumulated too many user databases file and is not available to remove them (see ["How users create and remove databases \(user files\)" on page 7-45](#) for how users remove their own database files).

Caution

Typically you remove only user databases files, which are in the user table space. Removing databases from other table spaces may be dangerous.

Reference

Other commands for user files are ["sui join Command" on page B-19](#), ["sui list Command" on page 7-51](#), ["sui rename Command" on page B-21](#), and ["sui sort Command" on page B-24](#).

Syntax

```
sui remove [force] files=login/userfile1,login/userfile2
```

Parameter	Description
force (optional)	<ul style="list-style-type: none"> ■ Omit if removing databases files that belong to your current login. ■ Use if removing another user's files (system administrators only).
files=<i>login/userfile1,login/userfile2</i> (required)	<p>Lists one or more user database files to be deleted (use commas to separate filenames). You can use the * metacharacter in database names (see "Search Expressions in sui find" on page 4-20).</p> <ul style="list-style-type: none"> ■ <i>login</i> — (optional) Login ID whose database you are deleting. Use only if deleting for a login other than your current login. ■ <i>database</i> — (required) Name of database you are deleting.

(Continued on next page)

sui remove Command (Continued)

Examples

- To delete a database files named daves belonging to your current login, enter **sui remove files=daves**
- To delete database file mary1 belonging to login mtm (not your current login), enter **sui remove force files=mtm/mary1**
- To delete database files mary1 and mary2, belonging to login mtm, (not your current login) enter
sui remove force files=mtm/mary1,mtm/mary2

Note

The mtm/mary1 and mtm/mary2 in the examples above are NOT paths. They are login_ID/database_name.

Output

This command has no output.

Set X-GUI Table Name Display

Overview

Purpose

Some dialog boxes in the X-GUI list system database tables in a selectable list. Entries in the menutables table control what tables are listed for user selection. (Even if a table is NOT listed, a user CAN type in the table name.)

You can use the menutables table to show or hide database tables in the X-GUI.

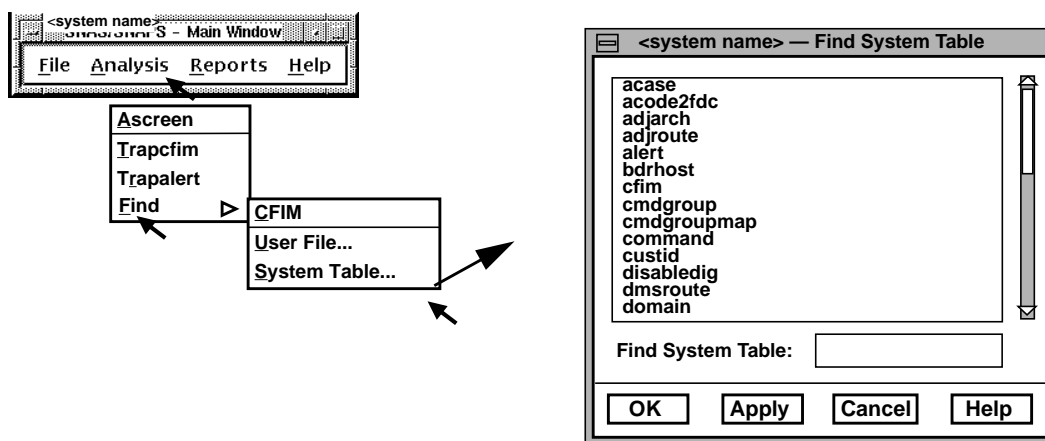
- ["Show X-GUI table names" on page 7-56](#)
- ["Hide X-GUI table names" on page 7-56](#)

Note

- **Not for BB-GUI.** This procedure affects only the X-GUI. It does NOT apply for the BB-GUI.
- **Interface, not user-specific.** This procedure affect the X-GUI for all users. You can NOT do this individually by user.

Example

This example shows database tables listed on a dialog box in the X-GUI.



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Show or Hide X-GUI Table Names

Procedure: Show X-GUI table names Use this procedure to show a database table in X-GUI dialog boxes.

Step	Action
1	Log on the NTP host as ntp .
2	Use sui find to copy the menutables database into a temporary file (temp). Example sui find source=menutables delim="":" noheader > temp
3	Edit the temporary file to add the table you want to show. Note There is one field in this table: <ul style="list-style-type: none"> ■ tablename — The name of a database table.
4	Use dbedit with the -u option on the menutables table to submit the changes contained in the temporary file. Example dbedit -u -t menutables -f temp -s:
5	If you receive a message ending with: <ul style="list-style-type: none"> ■ “dbedit completed successfully”, go to the next step. ■ “Errors saved in file...”, see "Correct dbedit Errors" on page 4-33.
Done	

Procedure: Hide X-GUI table names Use this procedure to hide a database table so it does not appear in X-GUI dialog boxes.

Step	Action
1	Log on the NTP host as ntp .
2	Create a temporary file (temp) that contains the name of each table you want to hide, each on a separate line.
3	Use dbedit with the -d option on the menutables tables to delete the lines in the temporary file. Example dbedit -d -t menutables -f temp -s:

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Step	Action
4	If you receive a message ending with: <ul style="list-style-type: none"><li>■ “dbedit completed successfully”, go to the next step.<li>■ “Errors saved in file...”, see "Correct dbedit Errors" on page 4-33.
Done	

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Manage Restricted Shell

Overview

Purpose

This section applies only for the legacy AUI.

You can define the commands accessible to AUI users with restricted shell. This affects ALL users with restricted shell. You can NOT set this per user.

- To give an individual AUI user access to restricted shell, see ["Give shell command to AUI users" on page 7-60](#)
- To define which commands ALL users running the **shell** command can use, see ["Assign commands to restricted shell" on page 7-60](#)

Obsolete. Only a few customers use the legacy AUI, so you may rarely, if ever, need to define commands for restricted shell.

Terms

This table explains terms used in this section.

Term	Description
Shell	Shell means shell on the NTP host. If a local user opens an xterm or other window to shell, the user is in a shell, but NOT an NTP shell. If the local user runs rlogin to the NTP host, the user may go to an NTP shell, or may automatically go to the AUI (or X-GUI). This depends on how you administered the user.
Unrestricted shell	A user in unrestricted NTP shell can use all NTP commands, as well as SUI commands. The NTP kshell command from the AUI menu accesses an unrestricted shell on the NTP host. This shell is for system administrators ONLY and is not documented for end users. Enter exit to terminate this shell.
Restricted shell	A user in restricted NTP shell can use ONLY the commands in the \$USERDIR/rbin directory. These do NOT include functions like changing directories, redirecting output, or setting variables. A restricted user can NOT use SUI commands, the operating system cd command, or any command with a path, such as \$USERDIR/bin/command. The NTP shell command from the AUI main menu accesses a restricted shell (rksh) on the NTP host. When an AUI user runs the shell command, the \$USERDIR/misc/r_profile file sets up the user's restricted shell environment. The r_profile is installed with the system and should not require modification. The r_profile informs the user of available shell commands, sets a limited command search PATH, provides a shell \$ prompt (PS1), and enters the user into the /bin/rksh. Enter exit to return to the AUI main menu.
AUI shell	The AUI shell takes the user directly to the AUI upon login to NTP. The user cannot access NTP or operating system commands, unless these commands are accessible from the AUI main menu via the shell command (see restricted shell above).

Command Set for Restricted Shell

\$USERDIR/rbin and \$USERDIR/rbintools

You define the restricted **shell** command set by the contents of the \$USERDIR/rbin and \$USERDIR/rbintools directories (the only two directory paths of the **rksh** PATH variable set in r_profile). NTP provides a default set of rbin and rbintools commands. Except for the **rbinHelp** script in \$USERDIR/rbin, you can modify the contents of rbin and rbintools as needed.

- \$USERDIR/rbin is for commands visible to and directly executable by the user.
- \$USERDIR/rbintools is for commands hidden from the user and indirectly executable as embedded commands with rbin programs.

Note

- **rbinHelp.** Do NOT modify the rbinHelp file; it is called by r_profile and by **help** while within the restricted shell to display available rbin commands to the user.
- **Check after system updates.** Both standalone and linked scripts may reside in restricted directories. Unlinked files can be edited or copied into the restricted directories. Generally, you should use symbolic links to install existing operating system and NTP commands.
- **Caution.** When installing new restricted commands take care not to compromise system security (for example, installing commands that allow escape to an unrestricted shell). Change ownerships, groups, and permissions appropriately.

Reference

The **shell** command on the AUI main menu calls up the HP-UX restricted shell **rksh**. For more information, see the HP-UX documentation on **rksh**.

Restricted directory modes

Modes of restricted directories should be:

```
drwxr-xr-x  2 ntp      ntp      /lucent/ntp/snas/user/rbin
drwxr-xr-x  2 ntp      ntp      /lucent/ntp/snas/rbintools
```

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Command Set for Restricted Shell (Continued)

Procedure: Assign commands to restricted shell

Use this procedure to make a command accessible to all persons with restricted shell.

Step	Action
1	<p>Log on the NTP host, enter su -, and when prompted, enter the root password.</p> <p>Note This gives root the NTP environment. You must be root with the NTP environment to proceed.</p>
2	<p>To make a command accessible to restricted shell, either copy (cp) or link (ln) the command to the \$USERDIR/rbin directory.</p> <p>Example Link banner command: ln /usr/bin/banner \$USERDIR/rbin/banner</p> <p>Note After each operating system or NTP software update, validate that all restricted shell commands continue to function. Symbolic links may need to be reestablished. Custom scripts created by the administrator that depend on operating system and NTP executables may need to be revised.</p>
Done	

Procedure: Remove commands from restricted shell

To remove (or unlink) commands from restricted shell, log on NTP as **root** with the NTP environment, go to the rbin directory, find the command you want to remove, and remove it using the operating system **rm** command.

Procedure: Give shell command to AUI users

To give a user restricted shell from the AUI, add the **shell** command to the user's command group (see ["Manage Command Groups" on page 7-8](#)).

Note

Normally, AUI users have **\$APPLETC/au**. as their shell assignment in the etc/passwd file This causes the AUI to be launched upon login. From the AUI main menu, the user can use the shell command. See ["User shell assignment" on page 6-9](#).

Restrict User cron Functions

Overview

Purpose You can assign restricted **cron** functions to users on a per-user basis.

Scope Typically, only users with administrative access to NTP (shell access) will need **cron** functionality.

Background If any functions using **crontab** are to be restricted to a set of users, those users must be listed in the `/usr/lib/cron/cron.allow` file. This file contains a list of the logins that have cron access, one name on each line.

If instead of `cron.allow`, an empty `cron.deny` file exists in `/usr/lib/cron`, user access to **cron** functions is unrestricted.

Note

`Cron.allow` and `cron.deny` must have permissions set (**chmod**) to 644.

Procedure: Restrict user cron access

Do the following, as appropriate:

- To restrict user access to **cron** functions, add them to the `cron.allow` file.
- To allow unrestricted user access to **cron** functions, remove the `cron.allow` file entirely and create an empty `cron.deny` file in the same directory.

Reference

- For complete information on **cron** functions, see **crontab** in the reference documentation for your operating system.
 - For managing NTP (not user) **cron** function, see [Chapter 3, "Start and Stop"](#).
-

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Overview

Purpose

This chapter describes the two kinds of thresholding and alerting that NTP offers:

- ["Basic Thresholding and Alerting" on page 8-6](#)

Basic thresholding is done on `fdc/re` or `fdc/de`. This type of thresholding is essential for systems where alert cases show network problems.

- ["Flexible Thresholding and Alerting" on page 8-94](#)

Flexible thresholding is done on `Re`. This type of thresholding is fundamental for systems where call volume is monitored to analyze usage and revenue. Flexible thresholding and alerting can be customized for your system.

Scope

The sections in this chapter on basic and flexible thresholding/alerting are discrete and separate. See the appropriate section for the type of thresholding implemented for your system.

Note that some system commands used for basic thresholding, such as **sui modmat** and **sui showthresh**, are NOT used for flexible thresholding.

Basic Thresholding and Alerting

Types of Basic Thresholding

Description Basic thresholds are of these types.

Threshold type	Output is on	Reference
5-minute and hourly	Ascreen Output	<ul style="list-style-type: none"> ■ "5-Minute and Hourly Basic Thresholds" on page 8-10 ■ "Alert Cases" on page 8-46 ■ "System Variables Basic Thresholds" on page 8-53
System day (optional feature)	Ascreen Output	"System Day Thresholding" on page 8-67
Mass call (optional feature)	MCAtresh Output	"Mass Call Alerting" on page 8-80
All		"Review for Basic Thresholding" on page 8-90

Reference

Outputs above are in Chapter 5 of the *GUI User's Guide*.

Reference

Documented elsewhere are actions you can take to limit which alerts appear on a user's outputs, as follows:

- **Network groups and segments.** Limit output be FDCs for network elements. See ["Manage Network Groups and Segments" on page 7-24](#).
- **Disable digits.** Limit output by dialed digits. See ["Disable Alerting by Digits" on page 9-25](#).

Routine Tasks for Basic Thresholding

Routine tasks

This table summarizes tasks you do for basic thresholding.

When	Task	Reference
Daily	Monitor capacity of 5-minute and hourly threshold files	<ul style="list-style-type: none"> ■ "5-Minute and Hourly Basic Thresholds" on page 8-10
As needed	<ul style="list-style-type: none"> ■ Add or remove FDC or entity ■ Remove an FDC's or entity's thresholds (via Ai) when you no longer want to see its alert cases (but you still want to see its CFIMs) 	<ul style="list-style-type: none"> ■ Chapter 5, "Add Network Elements" ■ Page 8-32
Rarely (when requested by your NTP support organization)	<ul style="list-style-type: none"> ■ All other procedures ■ Use setsys to set a threshold-related system variable 	<ul style="list-style-type: none"> ■ "Procedure list" on page 8-7 ■ "System Variables for Basic Thresholding" on page 8-8

Procedure list

Here are all procedures in associated with basic thresholding:.

Thresholding type	Procedure and Reference
5-minute and hourly	"See current thresholds" on page 8-22
	"See past thresholds" on page 8-23
	"Set a manual threshold" on page 8-28
	"Return a manual threshold to automatic" on page 8-29
	"Stop or restart thresholding via Ai" on page 8-32
	"View soak periods" on page 8-40
	"Force a resoak of an entity or FDC" on page 8-44
	"Force a system-wide resoak" on page 8-45
Alert cases (from 5-minute and hourly thresholds)	"Set the alert case number (ACN) to 1" on page 8-50
	"Edit an Fcause" on page 8-52
System day (optional feature)	"Set system day reporting for an FDC" on page 8-70
	"Override system day thresholds" on page 8-73
Mass call (optional feature)	"Mass Call Alerting" on page 8-80

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System Variables for Basic Thresholding

Description

The following are all the system variables that affect basic thresholding.

Reference

For a complete list of system variables, see "[System Variable Defaults](#)" on page 8-83 and "[System Variable Definition](#)" on page 8-87. For the command to view or see system variables, see "[sui setsys Command](#)" on page 8-81.

Caution

Change system variables ONLY when asked to do so by a procedure in this chapter or by your NTP support organization.

For...	Variable	Determines...	Reference
5-minute and hourly thresholds	MTDB_ERRLOG	How big threshold files get before an error message is generated	" Change the MTDB_ERRLOG variable " on page 8-63
	AUTOx	How many days of LSPs to include in soaks	" AUTOx Variables " on page 8-54
	SF (sensitivity factor)	How each LSP does automatic threshold adjustment; to ignore CFIM count spikes	" SF Variable " on page 8-56
	WFx (weight factor)	How much automatic threshold adjustment favors historic or current values; to ignore CFIM count spikes	" WFx Variables " on page 8-58
	MIN_5_THR1 to MIN_5_THR15, MIN_H_THR1 to MIN_H_THR15	Minimum CFIM count, below which automatic thresholds are not used for alert generation	" MIN_5_THRxx, MIN_H_THRxx Variables " on page 8-60
Alert cases (from 5-minute and hourly thresholds)	AC_COUNT1, AC_CLOSE1, AC_CLOSE2	How soon inactive alert cases close	" Set Alert Case Closing " on page 8-47

For...	Variable	Determines...	Reference
System day (optional feature)	SYSTEM_RESET	Time each day when system day reporting starts over	"Set System Day Reset Time" on page 8-76
	SD_DEFAULT	Default threshold for system day reporting	"Set System Day Default Threshold" on page 8-75
	AC_CLOSE_SD	How many inactive periods cause a system day reporting alert case to close	"Set System Day Alert Closing" on page 8-77
	ALERT_TOLERANCE	How alert severity (Asevd field on Ascreen Output) is computed for system day reporting	"Set System Day Tolerance" on page 8-78
Mass call (optional feature)	MCTHRESH	The threshold used by MCAscreen output	"Mass Call Alerting" on page 8-80

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5-Minute and Hourly Basic Thresholds

Purpose

This section tells how to modify automatic and manual thresholding for 5-minute and hourly intervals.

Background

- NTP counts CFIMs.
 - If a CFIM count exceeds a 5-minute or hourly threshold, NTP creates an alert case, which appears on Ascreen Output.
 - NTP automatically creates and continually adjusts 5-minute and hourly thresholds.
-

How many thresholds?

As explained in detail in ["How thresholds are identified" on page 8-13](#), there is a different threshold for each unique combination of values for FDC/CLLI/entity-role, 5-minute or hourly, and LSP.

So, if NTP monitors 10 switches for 100 FDCs, how many thresholds are there?

Answer: 60,000.

Since:

- For 5-minute thresholds there are:
 $100 \text{ FDCs} \times 15 \text{ LSPs} \times 10 \text{ switches} \times 2 \text{ entity roles (reporting or distant)} = 30,000 \text{ thresholds.}$
- For hourly thresholds, there are 30,000 more.

Note

Typically, customers monitor hundreds of switches for hundreds of FDCs, resulting in hundreds of thousands, or even millions of thresholds.

(Continued on next page)

5-Minute and Hourly Basic Thresholds (Continued)

Entity-role

Entity role is the part played by a CLLI, either:

- **Reporting entity** (Re)
- **Distant entity** (De)

Virtually all CFIMs give an Re, and most also give a De. (Some also give a Related entity, but is not used for thresholding.)

Note

- **Call origin and destination.** Often the Re is the call originating switch, and the De is the call destination switch; but not always. For details, see ["Entity Roles" on page 2-25](#).
- **Table.** You see FDC/CLLI/entity-role on CFIMs or alert cases as follows:

This entity...	Is in this field on CFIMs	Is in this field on Alert Cases
FDC	Fdc	Fdc
CLLI	Either field:	Ne
Entity role <ul style="list-style-type: none"> ■ Reporting entity ■ Distant entity 	<ul style="list-style-type: none"> ■ RE — holds the Re CLLI ■ DE — holds the De CLLI 	Ne Type, whose value is either: <ul style="list-style-type: none"> ■ RE (reporting entity) ■ DE (distant entity)

(Continued on next page)

5-Minute and Hourly Basic Thresholds (Continued)

LSPs with basic alerting

Load set periods (LSPs) are used with both basic and flexible alerting. Basic alerting uses the 15 default load set periods.

To see LSP times, log on to NTP host as **ntp** and enter:

```
lsp 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
```

Note

- **Change LSPs.** If you ever need to change LSPs (which is unlikely) call your NTP support organization for assistance. They may also need to adjust crontab for LSP threshlog reporting (see "[ntp crontab File](#)" on [page 3-27](#)).
- **Avoid boundary.** Do not enter **sui modmat** (see "[sui modmat Command](#)" on [page 8-35](#)) on an LSP boundary — for example, not at 0300, 0900, or 1000.

Reference

For LSP purpose, scope, and the default 15 LSPs, see "[LSPs](#)" on [page 8-96](#).

Default LSPs

See "[Traditional LSPs](#)" on [page 8-96](#)

(Continued on next page)

5-Minute and Hourly Basic Thresholds (Continued)

How thresholds are identified This table shows how basic 5-minute (and hourly) thresholds are identified.

There is a unique threshold for each unique combination of...	Note	Reference
FDC/CLLI/entity-role	<ul style="list-style-type: none"> ■ FDC — Final disposition code identifying a CFIM ■ CLLI — Identifies a switch, SCP, or other entity ■ Entity-role — Whether the CLLI refers to either a: <ul style="list-style-type: none"> — Reporting entity (RE) —the entity reporting the problem — Distant entity (DE) — an entity reported on, if known 	<ul style="list-style-type: none"> ■ "CIM types" on page 2-19 ■ none ■ "Entity-role" on page 8-11
5-minute and hourly	<ul style="list-style-type: none"> ■ 5-minute — Detects bursty problems, such as NCA (no circuit announcement) or trunk failures. ■ Hourly — Detects chronic problems, such as bad address or bad ANI (Automatic Number ID, such as calling party digits). <p>Note If you have the optional system day feature, you can threshold FDCs daily. If you threshold an FDC daily, it is NOT thresholded on 5-minutes or hourly. For system day, see "System Day Thresholding" on page 8-67.</p>	None
LSP (load set period)	There are 15 LSPs per week.	"Default LSPs" on page 8-96

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5-Minute and Hourly Basic Thresholds (Continued)

How alert cases are identified

This table compares how basic alert cases and thresholds are uniquely identified.:

There is a unique threshold for each unique combination of...	There is a unique alert case for each unique combination of...	Note
FDC/CLLI/entity-role.	FDC/CLLI/entity-role	There would be a different alert case for: <ul style="list-style-type: none"> ■ FDC 1984, switch X, RE. ■ FDC 1981, switch X, RE ■ FDC 1984, switch Y, RE ■ FDC 1984, switch X, DE.
5-minute and hourly	not applicable	Each alert case shows both a 5-minute and an hourly CFIM count (even if only one of the two counts is above threshold).
LSP	not applicable	If an alert case lasts a whole week, it uses thresholds of all 15 LSPs.

Note

- **Acase.** On Ascreen Output, each alert case has a unique FDC/CLLI/entity-role, but the acase table also holds expired alert cases, which can have the same FDC/CLLI/entity-role, but different Fdate and Ftime.
- **System day.** System day thresholds (optional) are identified by FDC only. A system day threshold cancels 5-minute and hourly thresholds.

(Continued on next page)

5-Minute and Hourly Basic Thresholds (Continued)

How to cause thresholding

To cause a new FDC or entity to be thresholded, you:

- First tell NTP that the FDC or entity exists. Do this by adding:
 - An FDC to the `fdc` table.
 - A switch or other element to the `swarch` table or other “arch” table (see [“Arch” and route tables](#) on page 5-6). To do this, see [Chapter 5, “Add Network Elements”](#).
- Often, you add an FDC or entity with “off” in the `Ai` (alert indicator) field of its added record. When you are ready to begin thresholding, change “off” to “on”. To do this, see [page 8-31](#).
- Once the `Ai` field is changed to “on”, run **sui modmat** (see [“sui modmat Command”](#) on page 8-35).

Non-Example

stparch. The `stparch` table (for STPs) has no `Ai` field, so STPs are never thresholded, and do not appear on Ascreen Output.

Threshold matrix

The term “threshold matrix” refers to the database tables holding all 5-minute and hourly thresholds. The threshold matrix never refers by name to tables, since you do not view or update those tables directly. Instead, you:

- **View**. Use the **showthresh** command (see [“sui showthresh Command”](#) on page 8-17) to view thresholds in the threshold matrix.
- **Update**. Use some procedure in this chapter to update a database table that updates thresholds in the threshold matrix.

Note

sui modmat. You may make several database table edits with **dbedit**, but they change the threshold matrix only when you enter the command **if sui modmat** (see [“sui modmat Command”](#) on page 8-35). If you see that command in a procedure, you know you are affecting the threshold matrix.

Example

You change an FDC’s `Ai` field to **off** in the `fdc` table and then run **sui modmat**. This change removes all of the FDC’s thresholds from the threshold matrix.

(Continued on next page)

5-Minute and Hourly Basic Thresholds (Continued)

Threshold lifetime Here is how basic 5-minute and hourly thresholds are created and maintained.

Stage	Notes	Reference
1. Add an entity or FDC	Add a new FDC to the fdc table. Or add a new entity to the swarch, scparch or adjarch table. Once you do this, the CFIMs for the entity or FDC are collected and available for viewing via Find Cfim (see the <i>GUI User's Guide</i>).	<ul style="list-style-type: none"> Chapter 5, "Add Network Elements" for adding an FDC or entity
2. Turn alert indicator on	In the same table, put on in the Ai (alert indicator) field	"Stop or Restart Thresholding for Entity or FDC via Ai" on page 8-31
3. Add to Matrix and Soak	Run sui modmat . Results for a new FDC or entity are: <ul style="list-style-type: none"> Adds its threshold records to the threshold matrix. "Soaks" the thresholds, which means to calculate their values. Soak takes several weeks (but you can change how long a soak takes by modifying the AUTOx variable (see "AUTOx Variables" on page 8-54). 	"sui modmat Command" on page 8-35: <ul style="list-style-type: none"> "Threshold matrix" on page 8-15 "Soak 5-Minute and Hourly Thresholds" on page 8-38
4. Maintain	Either <ul style="list-style-type: none"> Automatic. Do nothing to let NTP automatically adjust automatic thresholds every LSP. Manual. Replace one or more automatic thresholds with a manual threshold. (Then run sui modmat.) Turn off. In the swarch, scparch, adjarch or fdc table, change the Ai (alert indicator) field to off. (Then run sui modmat.) This removes all of an FDC's or entity's thresholds from the threshold matrix. 	<ul style="list-style-type: none"> "System Variables Basic Thresholds" on page 8-53 for variables used "Set or Unset Manual 5-Minute or Hourly Thresholds" on page 8-28 "Stop or Restart Thresholding for Entity or FDC via Ai" on page 8-31

Reference

Alert cases. For alert case lifetimes, see "Alert case lifetime" on page 8-46.

sui showthresh Command

Purpose

The **sui showthresh** command displays thresholds from the threshold matrix. It shows a threshold for each unique FDC/CLLI/entity-role/5-minute-or-hourly/LSP.

Caution

Avoid “all”. To avoid huge outputs, be careful using the **all** option in **sui showthresh** parameters.

Note

- **System day.** This command does not show system day thresholds (see "[System Day Thresholding](#)" on page 8-67).
- **Flexible alerting.** This command does not work for flexible alerting (F6268).

Syntax

:

```
sui showthresh id=x lsp=x class=x [fdc=x | tc=x] [active=x] ent=x [dest=x]
```

Example

Enter the following from shell to see hourly thresholds for switch wplsny01dmt, as a De, during load set period 1, for FDCs of 8, 905, and 908:

```
sui showthresh id=wplsny01dmt lsp=1 class=hourly fdc=8,905,908 ent=de
```

(Continued on next page)

sui showthresh Command (Continued)

Parameters

This table explains **sui showthresh** parameters.

Parameter	Function	Value
id=	Required. You can use metacharacters (* or &). Specifies entities.	<ul style="list-style-type: none"> ■ A CLLI, or CLLIs separated by commas. ■ all ■ - (dash, for the null entity)
lsp=	Required. Specifies load set periods. Reference For LSPs, see "Default LSPs" on page 8-96 .	<ul style="list-style-type: none"> ■ 1 to 15 ■ Combination of numbers, 1 - 15, separated by commas ■ all
class=	Required. Specifies either hourly or 5-minute thresholds.	<ul style="list-style-type: none"> ■ hourly ■ 5minute
fdc=	You must use either this parameter, or tc= (not both). You can use metacharacters (* or &). Specifies FDCs.	<ul style="list-style-type: none"> ■ An FDC, or FDCs separated by commas ■ all
tc=	You must use either this, or fdc= (not both). You can use metacharacters (* or &). Specifies a trouble category, which is a group of FDCs.	<ul style="list-style-type: none"> ■ A TC, or TCs separated by commas ■ all
active=	Optional. Specifies either manual or automatic thresholds. If omitted, you see both kinds.	<ul style="list-style-type: none"> ■ manual — the manual threshold used. ■ auto — the automatic threshold used. <p>Note Switches currently soaking are also "manual".</p>
ent=	Required. Specifies either: <ul style="list-style-type: none"> ■ Entity type, such as scp, nisw, or nscx ■ Entity role — De, Re, or both ("switch") 	<ul style="list-style-type: none"> ■ switch — both Re's and De's ■ de — distant entities only ■ re — reporting entities ■ scp — service control point ■ nisw — network interconnect switch ■ nscx — network service center exchange ■ area — ECOS .

Parameter	Function	Value
dest=	Optional. Valid only on AUI menu. This does NOT work with sui .	<p>With the AUI menu only:</p> <ul style="list-style-type: none"> ■ pager — See output on your terminal screen via the pager, which means you can page output by pressing Return. (This is default). ■ lp or a printer name — “lp” defaults to the printer defined in the PRINTER environment variable. ■ llocal — A printer attached to your 630/730 terminal. Also use llocal if you logged in as an xterm (SUN) and your system has optional local printer support for xterms. ■ terminal — Your terminal screen, bypassing the pager. This is useful if you are running on a PC, or wish to send to an unsupported local printer. ■ Name of an ASCII file. <p>Note With shell or AUI command line, dest= does not work. Instead, you can:</p> <ul style="list-style-type: none"> ■ “ pg” to page output on your screen. Example (on one line): sui showthresh class=hourly ent=de id=wplsny01dmt fdc=8,905,908 lsp=1 pg ■ “> temp” to put output in an ASCII file named temp, which you can then print, vi, or cat. Example (on one line): sui showthresh class=hourly ent=de id=wplsny01dmt fdc=8,905,908 lsp=1 > temp

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sui showthresh Command (Continued)

showthresh output example

sui showthresh output resembles this:

ID	TYPE	LSP	CLASS	FDC	TC	ACTIVE	AUTO	MAN	MEAN
sv0prf5es01	RE	01	HOURLY	1984	msc	AUTO	4	65535	0.00
sv0prf5es02	RE	01	HOURLY	1984	msc	AUTO	4	65535	0.00
sv0prf5es04	RE	01	HOURLY	1984	msc	AUTO	4	65535	0.00
sv0prf5es05	RE	01	HOURLY	1984	msc	AUTO	4	65535	0.00
sv0prf5es06	RE	01	HOURLY	1984	msc	AUTO	4	65535	0.00
sv0prf5es12	RE	01	HOURLY	1984	msc	AUTO	4	65535	0.00

showthresh output fields

This table explains **sui showthresh** output.

Part	Function: Identifies the...	Value	Reference
ID	Entity	CLLI code.	"id=" on page 8-18
TYPE	Entity's role	RE , DE , or type of entity, such as scp, nisw, or nscx	"ent=" on page 8-18
LSP	Load set period	1 to 15.	"lsp=" on page 8-18.
CLASS	Threshold as hourly or 5-minute	hourly or 5minutes .	"class=" on page 8-18
FDC	Final disposition code	A final disposition code.	"fdc=" on page 8-18
TC	Trouble category, grouping FDCs	A trouble category code	"tc=" on page 8-18
ACTIVE	Automatic or manual threshold is used	MANUAL or AUTO .	"active=" on page 8-18
AUTO	Automatic threshold (used if ACTIVE is AUTO)	0 - 65535	Adjusted each LSP from MEAN, below
MAN	Manual threshold (used if ACTIVE is MANUAL)	0 - 65535	-
MEAN	Value from the average CFIM count, used by NTP to adjust automatic thresholds	0 - no limit Or NEW , which means the threshold is soaking	"WFx Variables" on page 8-58

(Continued on next page)

sui showthresh Command (Continued)

Special cases

In some cases **sui showthresh** gives no output or gives special output, as follows:

At this step of adding an entity or FDC...	Then...	And sui showthresh output gives...
1. You put an entity in swarch or another "arch" table (see " Arch " and route tables " on page 5-6), or an FDC in the fdc table.	The entity or FDC is not yet in the threshold matrix.	Nothing for the entity or FDC
2. You enter sui modmat and the soak is in progress.	The entity or FDC is in the threshold matrix, but it is not yet thresholding.	<ul style="list-style-type: none"> ■ MANUAL in the active field ■ 65535 in the MAN field ■ NEW in the MEAN field
3. Soak completes.	The entity or FDC is in the threshold matrix, and it is thresholding.	Normal output

Note

Ai off. If you **dbedit** fdc, swarch, or another threshold related table to put **off** in the Ai field for an FDC or entity, and then you enter **sui modmat** to implement the change, then the FDC's or entity's thresholds are taken out of the threshold matrix and **sui showthresh** gives nothing for the entity or FDC.

See 5-Minute or Hourly Thresholds

Procedure: See current thresholds

Use this procedure to see current 5-minute or hourly thresholds..

Step	Action
1	Log on the NTP host.
2	<p>At shell, enter the sui showthresh command, with the following syntax: sui showthresh id=x lsp=x class=x [fdc=x tc=x] active=x ent=x pg</p> <p>Note</p> <ul style="list-style-type: none"> ■ All fields above are required except active=x, but you can put all in these fields: <ul style="list-style-type: none"> — id= — lsp= — fdc= or tc= ■ Rather than end the command with “ pg” to page output to screen, you can end with “> temp” to send output to a temp file. Then you can print, “vi”, or “cat” the temp file. <p>Reference For showthresh parameters, see "Parameters" on page 8-18.</p> <p>Examples To see:</p> <ul style="list-style-type: none"> ■ 5-minute thresholds for switch sv0prf5es01, enter sui showthresh id=sv0prf5es01 lsp=all class=5minute fdc=all ent=switch pg ■ Hourly thresholds for switch sv0prf5es01, De role only, enter sui showthresh id=sv0prf5es01 lsp=all class=hourly fdc=all ent=de pg ■ 5-minute thresholds for FDC 1984 for all switches, Re role only, enter sui showthresh id=all lsp=all class=5minute fdc=1984 ent=re pg <p>Result See output example in "showthresh output fields" on page 8-20.</p>
	Done

(Continued on next page)

See 5-Minute or Hourly Thresholds (Continued)

Procedure: See past thresholds

5-minute or hourly thresholds may change with each LSP. For PAST thresholds:

- You can NOT use **sui showthresh**.
- Nor is there any other way to see the details **sui showthresh** offers.

However, you can use this procedure to look at the Thresh field in alert records.

Note

Alerts. Remember, alert records are the 5-minute intervals in an alert case. For a given alert case, alert records in different LSPs can have different thresholds.

Step	Action
1	Call up the GUI.
2	Call up Ascreen Output.
3	<p>On Ascreen Output, can you find the Alert Case whose thresholds you want to know?</p> <ul style="list-style-type: none"> ■ If YES, go to the next step. ■ If NO, the Alert Case is closed. So: <ul style="list-style-type: none"> — Go to Analysis > Find > System Table, left-click Acase (NOT Alert), left-click OK. This calls up the search window for all (active and closed) alert cases. — Enter search criteria to find the closed alert case and left-click OK. Note that: <ul style="list-style-type: none"> — If you enter no date or time (no Date, Time, Fdate, Ftime, Ldate, Ltime, or Datime), you see alert cases for the last 10 minutes only. — Tn (trouble number) is a useful criterion. — If you do not know the Tn, you may need to use some or all of these fields: Fdate, Ftime, Ne, Type, and Fdc.

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Step	Action
4	From the alert case on Ascreen Output (or Find Acase Output), write down the values of the following fields: <ul style="list-style-type: none"> ■ Fdate ■ Ftime ■ Ltime (not needed for active alert cases) ■ Ldate (not needed for active alert cases) ■ Ne ■ Type ■ Fdc
5	On the GUI, left-click Analysis > Find > System Table . This calls up the Find System Table window.
6	In the Find System Table window, left-click alerts , then left-click OK . This calls up the Find Alert input window.
7	In the search matrix of the Find Alert input window, fill in the values you wrote down earlier. <p>Note Fill in the Datime field as follows:</p> <ul style="list-style-type: none"> ■ Active. For an active alert case, use the values from Fdate and Ftime as minimums in the Datime field. <p>Example If Fdate is 98/11/30 and Ftime is 07:20, then in Datime enter >=98/11/30 07:20</p> ■ Closed. For a closed alert case, use the Fdate-to-Ldate Ftime-to-Ltime as a range in the Datime field. <p>Example If Fdate is 98/11/30 and Ftime is 03:30, and Ldate is 09/12/02 and Ltime is 03:30, then in the Datime field, enter 98/11/30 17:20-98/12/02/ 03:30</p>
8	In the Find Alert input window, left-click OK . This calls up a list of alerts matching your search criteria.
9	Look in the Thresh field for thresholds used. <p>Note Remember, thresholds change between (not within) LSPs.</p>
Done	

sui thresh Command

Purpose

Use the **sui thresh** command to change 5-minute and hourly thresholds as follows:

- Change automatic thresholds to manual.
- Change manual thresholds to higher or lower values.
- Change manual thresholds back to automatic.

Note

- **System day.** This command does not work for system day thresholds (see "[System Day Thresholding](#)" on page 8-67).
- **Flexible alerting.** This command has no affect on flexible alerting (F6268).

Scope

Using **sui thresh**, you can affect thresholds:

- Singly, for example, for one FDC at one Re in one LSP.
- For multiples, for example:
 - One FDC at ALL switches in one LSP.
 - One FDC at one switch in ALL LSPs.
 - For one TC (which typically cover multiple FDCs) for one or more switches in one LSP.

The **sui thresh** command ignores FDCs or entities currently soaking. These are thresholds with NEW in the MEAN field when viewed via **sui showthresh** (see "[sui showthresh Command](#)" on page 8-17).

(Continued on next page)

sui thresh Command (Continued)

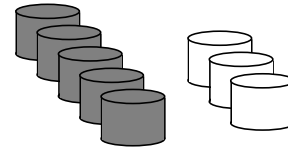
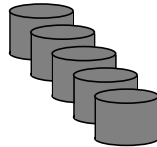
NOT affect future entities or FDCs

When assigning a manual threshold to multiple switches (or FDCs), remember that **sui thresh** does NOT apply to switches (or FDCs) added later.

Example

1. You use **sui thresh** to assign a manual threshold to ALL switches for FDC 1984 during LSP 3.

2. Later you add three more switches. The manual threshold does NOT apply to them.



Syntax

Here is the syntax of the **sui thresh** command:

```
sui thresh id=x ent=x lsp=x class=x [fdc=x | tc=x ] active=[manual | auto] val=x
```

Example

To set thresholds of 100 for switch `wplsny01dmt`, during load set period 1, for FDCs of 8, 905, and 908, enter

```
sui thresh id=wplsny01dmt ent=de lsp=1 class=hourly fdc=8,905,908 active=manual val=100
```

(Continued on next page)

sui thresh Command (Continued)

Parameters

This table gives **sui thresh** parameters.

Parameter	Function	Value
All but dest= , active= , and val=	Reference Same as with sui showthresh , in the table in "Parameters" on page 8-18 .	
dest=	Does not apply to sui thresh .	
active=	Required. For a threshold or thresholds you specify, either assigns a manual value, or returns thresholding to automatic.	<ul style="list-style-type: none"> ■ manual. To assign a manual value, with val=. ■ auto. To return to automatic thresholding. (Omit the val= parameter.)
val=	Required if active=manual . Omit if active=auto .	<ul style="list-style-type: none"> ■ 0 to 65535. Sets a manual threshold. You must also use active=manual.

Response

When **sui thresh** finishes, it usually responds with one of the following.

Response	Meaning
SET THRESHOLD COMPLETE	All changes were made.
SET THRESHOLD COMPLETED- usage exceeded lsp: 11,12	All changes were made, but the MTdb files are getting too full (they hit the percentage full value set by the MTDB_ERRLOG variable). This message identifies LSPs for the MTdbs affected: Reference "Change the MTDB_ERRLOG variable" on page 8-63 .
MTDB IS FULL - COMMAND PARTIALLY COMPLETED	The MTdb files ran out of room. Some thresholds were not set. Reference "Change the MTDB_ERRLOG variable" on page 8-63 .
SET THRESHOLD COMPLETED - SOME NOT SET BECAUSE THEY ARE STILL SOAKING	Self explanatory. The sui thresh command ignores entities and FDCs that are soaking.

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Set or Unset Manual 5-Minute or Hourly Thresholds

Procedure: Set a manual threshold

Use this procedure to either:

- Replace an automatic threshold with a manual threshold.
- Replace a manual threshold with a new manual threshold.

Caution

Capacity. If you set very many thresholds to manual, you may see threshold file capacity problems, discussed in ["5-Minute and Hourly Basic Thresholds"](#) on page 8-10.

Step	Action
1	Log on the NTP host.
2	<p>Use the sui showthresh procedure (see "See current thresholds" on page 8-22) to see all thresholds you plan to change.</p> <p>Caution It is important to do this to ensure you are setting the thresholds you want. Use caution when using "all" in parameters, since you may end up affecting thousands of thresholds.</p> <p>Result Output lists one or more thresholds, similar to this.</p> <pre>ID TYPE LSP CLASS FDC TC ACTIVE AUTO MAN MEAN sv0prf5es01 RE 01 HOURLY 1984 msc AUTO 4 65535 0.00</pre>
3	If sui showthresh shows NEW in the MEAN field for any of the thresholds you plan to change, note that those thresholds are soaking and will not be affected by sui thresh .
4	<p>Enter the sui thresh command, with syntax: sui thresh id=x ent=x lsp=x class=x [fdc=x tc=x] active=manual val=x</p> <p>Examples To set to 0 the 5-minute threshold for switch sv0prf5es0, during LSP 1, for FDC 1984, for both reporting and De, enter thresh id=sv0prf5es01 lsp=1 class=5minute fdc=1984 ent=switch active=manual val=0</p> <p>Result See "Response" on page 8-27.</p>
Done	

(Continued on next page)

Set or Unset Manual 5-Minute or Hourly Thresholds (Continued)

Procedure: Return a manual threshold to automatic

Use this procedure to return a manual threshold to automatic.

Reasonable values

Even while a manual threshold is in use, the automatic threshold is adjusting itself. So, for example, if a manual threshold is set high, NTP uses it to set a high automatic threshold. In that case, if you return to automatic thresholding, you may need to wait some time for the automatic threshold to return to a reasonable value. You could enter **sui modmat** to resoak (see ["Force a resoak of an entity or FDC" on page 8-44](#)), but that turns off the thresholds during resoak. Or, you could assign a more reasonable manual threshold, wait a few weeks, and then use this procedure — ignoring the last step.

Step	Action
1	Log on the NTP host.
2	<p>Use the sui showthresh procedure (see "See current thresholds" on page 8-22), to see all thresholds you plan to change.</p> <p>Caution It is important to do this to ensure you are setting the thresholds you want. Use caution when using "all" in parameters, since you may end up affecting thousands of thresholds.</p> <p>Result Output lists one or more thresholds, similar to this.</p> <pre>ID TYPE LSP CLASS FDC TC ACTIVE AUTO MAN MEAN sv0prf5es01 RE 01 HOURLY 1984 msc AUTO 4 65535 0.00</pre>
3	If sui showthresh shows NEW in the MEAN field for any of the thresholds you plan to change, note that those thresholds are soaking and will not be affected by sui thresh .

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Step	Action
4	<p>Enter the sui thresh command, with syntax: sui thresh id=x ent=x lsp=x class=x [fdc=x tc=x] <active=auto></p> <p>Caution Use caution when using all in parameters, since you may end up affecting thousands of thresholds.</p> <p>Note</p> <ul style="list-style-type: none"> ■ If you are unsetting for a switch, and for both reporting and De roles, you can use ent=switch to affect both roles at the same time. ■ You may need to do this twice, once with class=5minute and once with class=hourly. ■ Be sure to omit the val= parameter. <p>Examples To set to automatic the 5-minute threshold for switch sv0prf5es0, during LSP 1, for FDC 1984, for the De role, enter from shell: sui thresh id=sv0prf5es01 lsp=1 class=5minute fdc=1984 ent=de active=auto</p> <p>Result See "Response" on page 8-27.</p>
5	<p>If the manual thresholds were very high, and if in the previous step you used:</p> <ul style="list-style-type: none"> ■ ent=all and fdc= one or more FDCs, then you may want to force a resoak of the FDC or FDCs. ■ ent= one or more CLLIs and fdc=all, then you may want to force a resoak of the entity or entities. <p>But keep in mind that all thresholding and alerting for an FDC or entity are turned off during resoak.</p> <p>Reference To force a resoak, see "Force a Resoak of an Entity or FDC" on page 8-44.</p>
Done	

Stop or Restart Thresholding for Entity or FDC via Ai

Purpose

To stop all 5-minute or hourly thresholding on an entity or FDC, but still collect its CIMs and CFIMs, change the FDC's or entity's Ai field to **off** in the `fdc`, `swarch` or other "arch" table, and run **sui modmat**. To restart, change the field back to "on" and run **sui modmat**.

Caution

resoak. Changing Ai back to "on" and running **sui modmat** causes a soak, which may mean waiting weeks for thresholding to begin again. You can change how long a soak takes by modifying the AUTOX variable (see "[AUTOX Variables](#)" on page 8-54).

Scope

Editing an Ai field (in the `fdc`, `swarch` or other "arch" table (see "[Arch](#)" and [route tables](#)" on page 5-6) affects ALL thresholds for an entity or FDC.

Note

- **Just one threshold**. You can virtually stop just one threshold (one CLLI/FDC/entity-role/5-minute-or-hourly/LSP) or a set of thresholds by using the **sui thresh** command ("[Set a manual threshold](#)" on page 8-28) to assign a maximum manual threshold (65535). But this tends to push the stopped threshold's automatic value very high — see Reasonable values (see "[Reasonable values](#)" on page 8-29).
- **Manual**. Any manual threshold settings that are set to "all", for all switches (for example, an FDC threshold manually set to 0 for all switches) must be reset again via the thresh command. This step is necessary to include the new switch in the "all" threshold setting.

Result

If you change an entity's or FDC's Ai field to **off**, you remove all thresholds for the entity or FDC from the threshold matrix. This means CIMs and CFIMs are still collected for the entity or FDC, but for the entity or FDC there will be NO:

- Automatic or manual thresholding
- Alert cases where the entity is in the Ne field (or FDC in the Fdc field).
- Automatic threshold adjustments

(Continued on next page)

Stop or Restart Thresholding for Entity or FDC via Ai (Continued)

When to use

Use the following procedure for an FDC or entity that.

- No longer exists. (In this case, also remove the entity. See [Chapter 5, "Add Network Elements"](#)).
- Exists, but you do not want to threshold it, or you currently can not threshold on it.

Procedure: Stop or restart thresholding via Ai

Use this procedure to stop or restart all thresholding for an entity or FDC by editing the Ai (alert indicator).

Step	Action
1	If you are starting thresholding, use the procedure in "Soak Problems" on page 8-41 to do a presoak check.
2	Log on the NTP host as ntp .
3	Select the table where you will change Ai (alert indicator) to "off" (for stop) or "on" (for restart). Reference Tables are fdc, swarch, and other "arch" tables (see "Arch" and route tables" on page 5-6).
4	Run find on the table and send output to a temporary file. Examples <ul style="list-style-type: none"> ■ For the fdc table, enter sui find source=fdc noheader delim=";" > temp ■ For the swarch table, enter sui find source=swarch noheader delim=";" > temp Result The table is copied into the temp file.

Step	Action
5	<p>Use a text editor (such as vi) to open the file and edit the appropriate line(s) to turn thresholding on or off in the Ai field. Then save the file.</p> <p>Caution Change no more than 100 lines. If more lines need to be changed, repeat this procedure for each 100. See "Caution" on page 8-35.</p> <p>Example (This is an example from the swarch table showing clii sv0prf5es01. The Ai field shows thresholding in "on". #C11i;Dpc;Eqtype;Stp;Owner;Hnpa;Ai sv0prf5es01;-;5ess;sva1;svtst;212;on</p>
6	<p>Run dbedit with the update option and the temp file for input.</p> <p>Example</p> <ul style="list-style-type: none"> ■ For fdc, enter dbedit -ui -t fdc -f temp -s";" ■ For swarch, enter dbedit -ui -t swarch -f temp -s";"
7	Correct errors as you are informed of them by dbedit .
8	Remove the temp file.
9	<p>Enter sui modmat</p> <p>Reference "sui modmat Command" on page 8-35.</p> <p>Result</p> <ul style="list-style-type: none"> ■ If you STOPPED thresholding: <ul style="list-style-type: none"> — The entity's or FDC's records were removed from the threshold matrix. — Immediately, the entity or FDC is no longer being thresholded. ■ If you STARTED thresholding: <ul style="list-style-type: none"> — The entity's or FDC's records were added to the threshold matrix. — A soak is made for the entity or FDC. (Soak lasts 2 weeks for weekday LSPs, and 5 weeks for weekend LSPs.) — At the end of soak, thresholding begins on the entity or FDC.

Step	Action
10	If you started thresholding, make a note of the FDC or entity you are soaking and mark your calendar to check to ensure alert cases are being created for the FDC or entity. If you are using default (10 LSP) soak periods, check in: <ul style="list-style-type: none"><li>■ 2 weeks for weekday LSPs<li>■ 5 weeks for weekend LSPs
Done	

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sui modmat Command

Purpose

The **sui modmat** command checks the `fdc`, `swarch` and other “arch” tables, (see [“Arch” and route tables](#) on page 5-6) for changes you made (with **dbedit**) since the last time you ran **sui modmat**. It then implements the changes for 5-minute and hourly thresholds in two ways:

- **Update matrix.** It immediately updates the threshold matrix to match your changes. That is, it adds, modifies, or deletes FDCs and switches in the matrix (see [“Threshold matrix”](#) on page 8-15).
- **Soak.** If you added an FDC or entity in the threshold matrix, or you changed `Ai` to on, or you changed thresholding from manual to automatic, it calibrates initial thresholds by doing a soak. (See [“Soak 5-Minute and Hourly Thresholds”](#) on page 8-38.)

Note

Flexible alerting. The **sui modmat** command has no effect on flexible alerting (F6268). It is required for basic alerting only.

Caution

Background

Some procedures in this chapter use **dbedit** and **sui modmat**, as follows:

1. Copy a threshold related database table (such as `swarch` or `fdc`) into a text file and then edit the file to add, change or delete records. (Each line is one record.)
2. Use the **dbedit** command to put changes in the text file back into the database table. (So far, this is how you modify any database table.)
3. Enter **sui modmat**, which uses the updated table or tables to update the threshold matrix and (if needed) to soak thresholds.

Caution

- **dbedit** no more than 100 records (lines) in tables affecting thresholds (such as “arch” tables) before you run **sui modmat**. Run **sui modmat** before you again **dbedit**.
- Do NOT run **sui modmat** on an LSP boundary (for LSP boundaries, see [“Default LSPs”](#) on page 8-96).
- When you run **sui modmat**, watch for a screen message warning that you are running out of space for threshold files, similar to this: SET THRESHOLD COMPLETED - usage exceeded lsp l1 (see [“Monitor Threshold Capacity Warnings”](#) on page 8-63).

(Continued on next page)

sui modmat Command (Continued)

When to use Procedures in this chapter tell you when to use **sui modmat**. In summary:

Use sui modmat when you...	Reference
First install NTP	Your NTP support organization does this for you.
Add a new FDC in the fdc table	"Add or Modify FDCs" on page 5-58
Add a new entity in the swarch or other table	"Add an Re" on page 5-14
Stop or start thresholding via the Ai field	"Stop or Restart Thresholding for Entity or FDC via Ai" on page 8-31
Force resoak one or some FDCs or entities	"Force a Resoak of an Entity or FDC" on page 8-44
Force resoak all thresholds	"Force a System-Wide Resoak" on page 8-45

Note

Manual to auto. Changing thresholds from manual to automatic does not require use of **sui modmat**, but afterward you may want to force a resoak, which does require **sui modmat**. See ["Return a manual threshold to automatic" on page 8-29](#).

Syntax

sui modmat

This command has no parameters. Enter only **sui modmat**

Note

- **Variables.** You can affect this command by setting variables listed in ["System Variables Basic Thresholds" on page 8-53](#). Do this only if a procedure or your NTP support organization requests it.
- **-i.** Your NTP support organization has one parameter, **-i**, which means update ALL thresholds. This parameter is not available to you.

(Continued on next page)

sui modmat Command (Continued)

Conflicts

You can safely run more than one **sui modmat**, one after another.

For example, you can:

- Monday: **dbedit** to add a switch to swarch and run **sui modmat**
- Tuesday: **dbedit** to add another switch to swarch and run **sui modmat**
- Wednesday: **dbedit** to add an FDC to fdc and run **sui modmat**

As a result, you will have three soaks running at the same time, but there is no conflict and you will see no error messages.

However, if you do this:

- Monday: **dbedit** to add a switch to swarch and run **sui modmat**
- Tuesday: **dbedit** to delete that same switch from swarch and run **sui modmat**

Then on Tuesday, the Monday soak is going to find its switch missing. If this happens you can expect to see some error messages ((WHERE)), but the last **sui modmat** will take precedence (as is logical), and will complete successfully.

Soak 5-Minute and Hourly Thresholds

Purpose

A soak calculates initial automatic 5-minute and hourly thresholds for an entity or FDC, either:

- **New.** When you first add an entity or FDC to the `fdc`, `swarch`, or other threshold related table.
- **Re-calibrate.** When you change `Ai` to on (see ["Stop or Restart Thresholding for Entity or FDC via Ai" on page 8-31](#)).

Non-example

There is no soak if you change thresholding from automatic to manual, or manual to automatic (see ["Set or Unset Manual 5-Minute or Hourly Thresholds" on page 8-28](#)).

What a soak disables

Thresholding is disabled for an entity or FDC while it is soaking. However, CIMs and CFIMS are collected.

Procedure: Soak the system

To do a soak, enter **sui modmat** (see ["sui modmat Command" on page 8-35](#)).

What soak does

A soak does this:

1. Temporarily puts the following in to-be-soaked records in the threshold matrix (to see these fields, use **sui showthresh** (see ["Special cases" on page 8-21](#)):
 - MANUAL in the active field, meaning the threshold is manual.
 - 65535 in the MAN field, meaning the threshold is set to maximum.
 - NEW in the MEAN field, meaning the threshold is being soaked.
2. It averages CFIM counts for a soak period of 10 iterations of each LSP.
3. At the end of the soak period, it:
 - Calculates the automatic thresholds.
 - Changes the ACTIVE field from MAN to AUTO.
 - Begins automatic thresholding using the new thresholds.

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Soak 5-Minute and Hourly Thresholds (Continued)

Default soak period By default a soak period is 10 iterations of each of the 15 LSPs. This means:

- For weekday LSPs, 2 weeks.
- For weekend LSP's, 5 weeks.

Reference

LSPs. For LSPs, see ["Default LSPs" on page 8-96](#).

Modify soak period By using **setsys** to change the AUTOx variables (see ["AUTOx Variables" on page 8-54](#)), you can change soak periods. Note that:

- **Global.** Soak periods are global, so changing them affects all soaks.
- **Return to default.** If you change a soak period, you should later change it back to default.
- **Longer soak.** There is no reason you would ever assign a soak period greater than the default of 10 LSPs.
- **One-week soak.** If, for example you wanted to do a one-week soak, change weekday AUTOx values to 5 and weekend AUTOx values to 4.
- **Shorter soak.** If CFIM traffic during a soak does NOT become atypically high, then you may be able to safely shorten a soak. But, since you cannot predict CFIM traffic, you would need to use **setsys** daily to change the WF (see ["WFx Variables" on page 8-58](#)) from 1 the first day, to 1.5 the last, in increments divided by the number of days in the soak. During that time, there should be no other soaks — otherwise they will be messed up by the changed WF. This is too complex to attempt without help from your NTP support organization.

Caution

Modify soak periods ONLY if asked to do so by a procedure in this chapter, or by your NTP support organization.

(Continued on next page)

Soak 5-Minute and Hourly Thresholds (Continued)

Procedure: See if a soak is in progress

There is no easy way to see if a soak is going on. However, if you use **showthresh** (see "[showthresh output example](#)" on page 8-20) and you happen to find NEW in the MEAN field, you know there is a soak in progress.

Procedure: View soak periods

Use this to see current soak periods.

Step	Action																																																																
1	Log on the NTP host as system administrator.																																																																
2	Enter setsys Result A list is displayed of all system variables and their values.																																																																
3	Look in the Value column beside AUTO1 to AUTO15. Example <table border="1"> <thead> <tr> <th>Name</th> <th>Value</th> <th>Defval</th> <th>Type</th> </tr> </thead> <tbody> <tr><td>AUTO1</td><td>1</td><td>10</td><td>integer</td></tr> <tr><td>AUTO2</td><td>1</td><td>10</td><td>integer</td></tr> <tr><td>AUTO3</td><td>1</td><td>10</td><td>integer</td></tr> <tr><td>AUTO4</td><td>1</td><td>10</td><td>integer</td></tr> <tr><td>AUTO5</td><td>1</td><td>10</td><td>integer</td></tr> <tr><td>AUTO6</td><td>1</td><td>10</td><td>integer</td></tr> <tr><td>AUTO7</td><td>1</td><td>10</td><td>integer</td></tr> <tr><td>AUTO8</td><td>1</td><td>10</td><td>integer</td></tr> <tr><td>AUTO9</td><td>1</td><td>10</td><td>integer</td></tr> <tr><td>AUTO10</td><td>1</td><td>10</td><td>integer</td></tr> <tr><td>AUTO11</td><td>1</td><td>10</td><td>integer</td></tr> <tr><td>AUTO12</td><td>1</td><td>10</td><td>integer</td></tr> <tr><td>AUTO13</td><td>1</td><td>10</td><td>integer</td></tr> <tr><td>AUTO14</td><td>1</td><td>10</td><td>integer</td></tr> <tr><td>AUTO15</td><td>1</td><td>10</td><td>integer</td></tr> </tbody> </table> Note Remember, 1 here means 1 LSP. See " Default LSPs " on page 8-96 for LSPs.	Name	Value	Defval	Type	AUTO1	1	10	integer	AUTO2	1	10	integer	AUTO3	1	10	integer	AUTO4	1	10	integer	AUTO5	1	10	integer	AUTO6	1	10	integer	AUTO7	1	10	integer	AUTO8	1	10	integer	AUTO9	1	10	integer	AUTO10	1	10	integer	AUTO11	1	10	integer	AUTO12	1	10	integer	AUTO13	1	10	integer	AUTO14	1	10	integer	AUTO15	1	10	integer
Name	Value	Defval	Type																																																														
AUTO1	1	10	integer																																																														
AUTO2	1	10	integer																																																														
AUTO3	1	10	integer																																																														
AUTO4	1	10	integer																																																														
AUTO5	1	10	integer																																																														
AUTO6	1	10	integer																																																														
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AUTO14	1	10	integer																																																														
AUTO15	1	10	integer																																																														
Done																																																																	

Soak Problems

Purpose CFIM counts during a soak are interpreted as normal, even if they are not. This can cause a soak to give bad thresholds.

Examples The following illustrate how problems affecting CFIM counts can cause a soak to give bad thresholds.

Problem during the soak	Result
There is a mass call problem at a switch.	Thresholds for mass-call type FDCs are set too high for the switch.
Switches forward CIMs to collectors, but the collectors fail to forward CIMs with some FDCs to NTP. After the soak, the problem is fixed and the FDCs begin to arrive.	The FDCs alert because their automatic thresholds are too low. The new counts are NOT rolled into the mean while alerting, so the automatic thresholds do not get adjusted.
The link status variables are too low, so links are reported as being down all the time.	The soak ignores counts from entities with low counts, so their thresholds are stagnant during the soak, and they end up with default values.
The link status variables are too high, so links that are down are not recognized as down.	For entities that with bad links to NTP, counts of zero are continually rolled into the soak calculations, so thresholds are set too low.

Soak problems

Problems affecting soaks fall into two areas:

- **Preventable.** These are problems caused by existing mistakes or malfunctions in collectors or NTP. To prevent these from causing bad soaks, use the checklist in ["Stop or restart thresholding via Ai" on page 8-32](#).
- **Non-preventable.** These are network or traffic problems, such as mass call in or cable breaks that happen during a soak.

In either case, to correct bad thresholds, use the decision table in ["Repair a bad threshold" on page 8-43](#).

(Continued on next page)

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Soak Problems (Continued)

Presoak checklist

Use this checklist before entering **sui modmat** to start a soak.

Check	Reference
Data flow from the switch is stabilized.	-
Correct data is coming from the new switch.	-
You accurately updated the record bases.	Chapter 5, "Add Network Elements"
Link alert's are accurate.	-
Link status system variables are tuned.	-
Ai (alerting indicator) is "on" for FDCs and entities you want to threshold.	"Stop or restart thresholding via Ai" on page 8-32
Soak periods are set to default (or a shorter period, if you coordinated a change with your NTP support organization).	"View soak periods" on page 8-40

Detecting soak problems

Some you may be aware of. For example, if you know of a mass call event at a switch during soak, you know it may cause too-high thresholds for mass call FDCs at that switch.

Others you may not know of. For these, watch (and ask network managers to watch) for entities or FDCs that seem to alert too often, or not often enough.

To see which thresholds are at suspected switches or FDCs, use the **thresh** command (see ["See 5-Minute or Hourly Thresholds" on page 8-22](#)).

(Continued on next page)

Soak Problems (Continued)

Procedure: Repair a bad threshold

Use this table to decide how to repair bad thresholds caused by problems during a soak

If thresholds are too high or low for...	Then consider doing this...
One FDC for all or many entities, or one entity for all or many FDCs	Either: <ul style="list-style-type: none"> ■ Force resoak of the FDC or entity (see "Force a Resoak of an Entity or FDC" on page 8-44) ■ Assign manual thresholds for a week or two (see below)
Limited cases, for example, one FDC at one switch, during one LSP, for Re only, for 5-minute thresholds only	Assign manual thresholds for a week or two (see below).

Note

Resoak. Remember that during a soak all thresholds for an entity (or FDC) are unavailable, possibly for weeks. However, your NTP support organization, can help you shorten a soak (see ["AUTOx Variables" on page 8-54](#)).

Procedure: Set a temporary manual threshold

If you wait long enough, a bad automatic threshold will correct itself, but meanwhile, you are using a bad threshold. Instead of waiting, you can assign a reasonable manual threshold (see ["Set or Unset Manual 5-Minute or Hourly Thresholds" on page 8-28](#)) for a week or two, and then return the threshold to automatic (see ["Set or Unset Manual 5-Minute or Hourly Thresholds" on page 8-28](#)).

Why does this work? Because, while a manual threshold is in effect, the automatic threshold continues to adjust itself.

Force a Resoak of an Entity or FDC

Purpose

If automatic 5-minute or hourly thresholds for an entity or FDC become invalid, you can force those thresholds to resoak.

When to use

Use this procedure only when asked by your NTP support organization.

Note

Remember that soaking takes weeks if you use default periods. Consider:

- **Manual.** The quickest fix for bad thresholds is to replace them with manual (see ["Set a manual threshold" on page 8-28](#)), if you know what meaningful thresholds would be. Later you can return them to automatic (see ["Return a manual threshold to automatic" on page 8-29](#)).
- **Short soak.** Your NTP support organization may okay a short soak (even 1 day). Do this by changing AUTOx parameters (see ["AUTOx Variables" on page 8-54](#)).
- **No soak.** If you can wait, thresholds will eventually adjust themselves.

Procedure: Force a resoak of an entity or FDC

Use this procedure to force a resoak of an entity or FDC.

Step	Action
1	<p>Use "Stop or restart thresholding via Ai" on page 8-32 to STOP alerting on the entity or FDC that you want to resoak.</p> <p>To do so, assign "off" to the Ai (alert indicator) field of the FDC's or entity's record in the fdc, swarch, or other threshold related table.</p>
2	<p>Use "Stop or restart thresholding via Ai" on page 8-32, START alerting on the entity or FDC that you want to resoak.</p> <p>To do so, assign "on" to the Ai (alert indicator) field of the FDC's or entity's record in the fdc, swarch, or other threshold related table.</p> <p>Result Alerting begins after the soak period.</p>
Done.	

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Force a System-Wide Resoak

Purpose

Force a system-wide resoak to re-calibrate all automatic 5-minute and hourly thresholds for all entities and FDCs.

Note

NTP generates no alert cases during system-wide soak. By default, soaks lasts 2 weeks for weekday LSPs and 5 weeks for weekend LSPs.

When to use

Your NTP support organization forces a system-wide soak when NTP is installed. After that, you will probably never do a system-wide soak again.

Procedure: Force a system-wide resoak

If you need to do a system-wide resoak, call your NTP support organization. They have the **sui modmat** option **-i**, which does a system-wide resoak.

Alert Cases

Reference

For how alert cases and thresholds are identified for basic thresholding and alerting, see ["How alert cases are identified" on page 8-14](#).

Alert case lifetime

Here is the role of 5-minute and hourly thresholds in alert cases:

1. **Birth.** Every 5 minutes, NTP checks both 5-minute and hourly thresholds. If a threshold is crossed, the application creates a record called an alert for the FDC/CLLI/entity-role.
2. **Growth.** As long as an FDC/CLLI/entity-role continues to generate alerts, those alerts are summed into an alert case, which users see on Ascreen Output.
3. **Closing.** If an alert case's threshold is not crossed (so no alerts are added) for enough consecutive 5-minute intervals, the alert case closes. See ["Set Alert Case Closing" on page 8-47](#) for how you can change the number of intervals.

Note

- **System day.** I, something similar is done for daily thresholds. See ["System Day Thresholding" on page 8-67](#).
 - **Alerts.** Typically, users ignore alerts, since each is only a single interval in an alert case. But, alerts do show past thresholds, which are NOT shown on alert cases. (For how to see past thresholds on alerts, see ["See past thresholds" on page 8-23](#).)
-

Where to see alerts and alert cases

This table tells where to see alerts and alert cases.

To see...	Which are in this table...	Use this output...	Reference: <i>GUI User's Guide</i>
alerts	alert	Find alert	Appendix A
active alert cases	acase	Ascreen or Find Acase	Chapter 5 and Appendix A
both active and closed alert cases	acase	Find acase	Appendix A

Set Alert Case Closing

Overview

When an alert case stops crossing thresholds for enough consecutive 5-minute intervals, it automatically closes. A closed alert case, disappears from Ascreen Output, but stays in the acase table — with “closed” in its Status field.

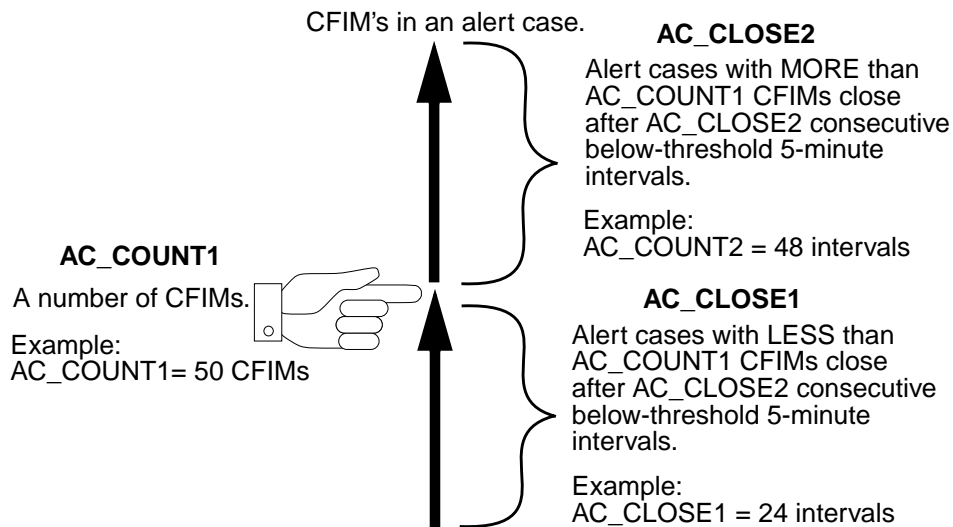
Three variables enable you to change automatic closing: AC_COUNT1, AC_CLOSE1, and AC_CLOSE2.

Note

- **Manual closing.** Analysts can manually close alert case records using the GUI.
- **System day.** Alert case records for FDCs with System Day thresholding have their own automatic closure variable, AC_CLOSE_SD (see ["Set System Day Alert Closing" on page 8-77](#)).

Illustration

This illustration shows what the AC_COUNT1, AC_CLOSE1, and AC_CLOSE2 variables do.



sui setsys

To change these variables, use the ["sui setsys Command" on page 8-81](#).

Example

```
sui setsys variable=AC_COUNT1 value=55
```

(Continued on next page)

Set Alert Case Closing (Continued)

Variables for alert case closing

Here are the three variables you can use to change alert case automatic closing:

Variable	Purpose		Default	Range
AC_COUNT1	Compare to cumulative CFIMs in the alert case, to decide which AC_CLOSE to use		50 CFIMs	1 - 10000 CFIMs
AC_CLOSE1	How many consecutive below-threshold intervals pass before an alert case closes...	...if the alert case's cumulative CFIM count is GREATER than AC_COUNT1.	24 5-minute intervals (2 hours)	1 - 6000 5-minute intervals
AC_CLOSE2		...if the alert case's cumulative CFIM count is LESS than or equal to AC_COUNT1.	48 5-minute intervals (4 hours)	1 - 9000 5-minute intervals

Note

AC_CLOSE2 must be greater than AC_CLOSE1.

Fields on alert cases

The three variables are compared to fields on alert cases as follows:

Variable	Meaning	Compared to, for 5-minute alert cases	Compared to, for hourly alert cases
AC_COUNT1	Cumulated CFIMs in the alert case	Alrts5	12 x Alrtsh
AC_CLOSE1	Consecutive below-threshold intervals	Cai5 (negative only)	12 X Caih (negative only)
AC_CLOSE2			

Note

- **Same.** Since there are 12 5-minute intervals in an hour, automatic closing is the same for hourly and 5-minute alert case. For example, using defaults, both close after being below threshold for 2 or 4 hours.
- **Hourly or 5-minute.** An alert case can be caused by an hourly thresholds only, a 5-minute thresholds only, or by both. For example, 0 in Caih means 5-minute only, and 0 in Cai5 means hourly only.

(Continued on next page)

Set Alert Case Closing (Continued)

Other parameters

Related parameters you can NOT change determine the following:

- **2,000 active.** Ascreen output can display up to 2,000 alert cases. This means, if additional active alert cases are created, the oldest active alert cases remain in the acase table, but they are closed. Actually, it is not the oldest that close, but those with the most negative value in Cai5 (or Caih x 12).
 - **40,000 total.** The Acase table can hold up to 40,000 active and closed alert cases total. After 40,000, the oldest closed records are deleted. Oldest is determined by the value in the Fdate and Ftime fields.
-

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Set Alert Case Number to 1

What is alert case number (ACN)?

The ACN is a sequential number identifying each alert case. This number:

- Appears in the acase table as the ACN field.
- Is used to make the trouble number (Tn) on Ascreen output.

When to set ACN

When the ACN reaches its maximum value, it resets itself to 1. It causes no problem to let it grow, but for aesthetic reasons, you can reset it to 1.

Procedure: Set the alert case number (ACN) to 1

Use this procedure to reset ACN to 1 for the next alert case.

Step	Action
1	Log on the NTP host as ntp
2	Enter ntpstop Result The following message appears: <pre>WARNING: You are about to shut-down the <application> software!! Continue? [y or n]</pre> Reference For ntpstop , see " ntpstop command " on page 3-16.
3	Enter y Result The screen displays a message similar to this: <pre>08/15 13:48:24 Waiting 60 seconds for SHUT-DOWN completion... 08/15 13:49:24 SHUT-DOWN complete.</pre>
4	Enter reset ACN
5	Enter ntpstart Reference For ntpstart , see " Start host-based NTP software " on page 3-9.
Done.	

Set Fcause for Alert Cases

Purpose

From NTP's viewpoint, the cause of each alert case is given in its Fdc field. but from your viewpoint, you may have your own more relevant causes.

So, NTP provides an alert case field where network managers can manually insert a code or word giving the cause of each alert case. The field is named Fcause.

Before network managers can put a code or word in the Fcause field, you must define each code or word. Once you do this, the words or codes are offered on a pop-up menu when network managers edit the Fcause field.

Reference

For how network managers edit the Fcause field on alert cases, see Chapter 5 in the *GUI User's Guide*.

Fcause table

The Fcause database table has two fields for you to fill in:

Field	Function	Value
reason (key field)	Code or word that network managers can put in the Fcause field of alert cases.	Up to 10 characters. Must be unique.
description	Explanatory comment that network managers can see if they do a Find on the fcause table.	Up to 60 characters.

(Continued on next page)

Set Fcause for Alert Cases (Continued)

Procedure: Edit an Fcause Use this procedure to add, change, or delete an Fcause.

Step	Action
1	Log on the NTP host as ntp . (You must be logged on as ntp to proceed.)
2	<p>Run find on the fcause database table and send output to a temporary file.</p> <p>Examples <code>sui find sou=fcause noheader delim="";" > temp</code></p> <p>Result The table is copied into the temp file. The first line, starting with #, is a comment line explaining fields and is ignored. The other lines are whatever you put there earlier, for example: <pre>#Reason;Description install;Installation related routing;Network routing error translate;Digits translation error</pre></p>
3	<p>Use a text editor (such as vi) to edit the temp file to add, delete, or change an Fcause, as needed, and then save the file.</p> <p>Note In the file., each line (except the first) is a record defining an Fcause. You can:</p> <ul style="list-style-type: none"> ■ Add an Fcause. Use up or down arrow keys to move to the line above where you want to add the record. Press the letter o key to open a new line below. Type in the Fcause. ■ Delete an Fcause. Use up or down arrow keys to move to the record you want to delete. Type: dd ■ Edit an Fcause. Use up or down arrow keys to move to the record you want to change. If you know vi editing, change letters or words as needed. If you do not know them, delete a line and add a new one.
4	<p>Run dbedit with the update option and the temp file for input.</p> <p>Example <code>dbedit -ui -t fcause -f temp -s";"</code></p>
5	Correct errors as you are informed of them by dbedit .
6	Remove the temp file.
Done	

System Variables Basic Thresholds

Purpose

System variables that affect 5-minute and hourly thresholding affect either:

- How **sui modmat** runs
- How NTP creates and maintains automatic thresholds.

Reference

Other variables. For ALL system variables affecting thresholding and alerting, see ["Description" on page 8-8](#).

Procedure: View system variables

To see system variables, enter (with no parameters): **sui setsys**

Procedure: Change system variables

To change system variables, use the ["sui setsys Command" on page 8-81](#).

Example

```
sui setsys variable=AUTO4 value=5
```

Caution

Change system variables ONLY when instructed to do so in a procedure, or by your NTP support organization.

AUTOx Variables

Purpose

System variables AUTO1 to AUTO15 affect the corresponding LSP1 to LSP15, telling how many iterations of the LSP will be made during soak. A soak results from entering **sui modmat** (see "[sui modmat Command](#)" on [page 8-35](#)).

Example

If you want thresholding for LSP3 set after only one iteration, change AUTO3 to 1.

Note

- **Global.** If you change a soak period, it is global, applying to any execution of the **sui modmat** command.
- **Change back.** The shortened period will NOT automatically change back to default. You must change it back by using **setsys**.

Reference

LSPs. For LSPs see "[Default LSPs](#)" on [page 8-96](#).

Default and range

Default value for each AUTOx variable is 10. This means a soak will last 2 weeks for weekday LSPs and 5 weeks for weekend LSPs

The lower end of the range is 1 LSP. Probably the largest useful value is 10.

Procedure: Change the AUTOx variable

To change this variable, see "[sui setsys Command](#)" on [page 8-81](#).

Example

To change LSP4 to 5 iterations during soak, change the AUTO4 variable by entering **sui setsys variable=AUTO4 value=5**

Note

If you change the AUTOx for an LSP during that LSP, the change takes effect immediately.

(Continued on next page)

AUTOx Variables (Continued)

No soak

((ONE procedure, at xxx. As in that procedure, immediately after running sui modmat, return soak parameters to the default of 10 iterations of each LSPs.

Shorten a soak

ASK NTP SUPPORT ORGANIZATION. ((NEED TO ADJUST BY WEIGHT, from 1 the first day, to 1.5 the last, in increments divided by the number of days in the soak. Per Debbie.))

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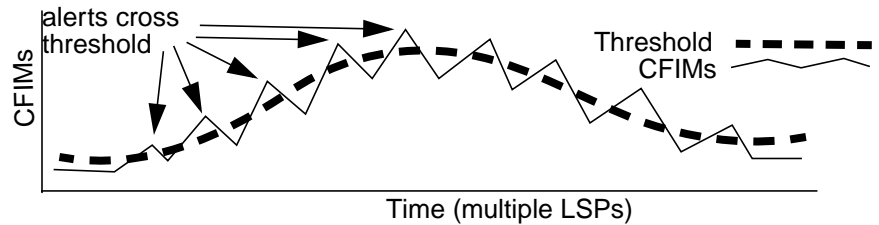
SF Variable

Purpose

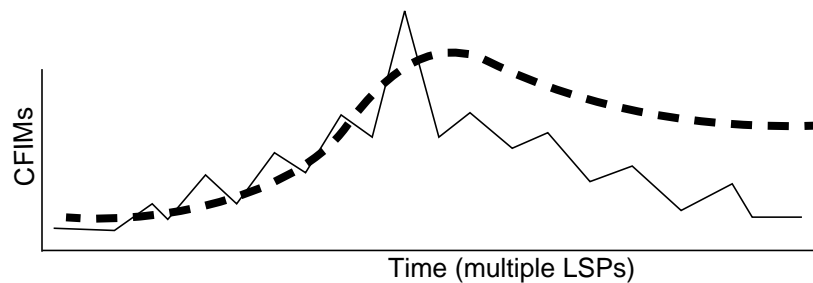
The SF (sensitivity factor) variable helps the application ignore spikes that can skew automatic thresholds.

Spikes

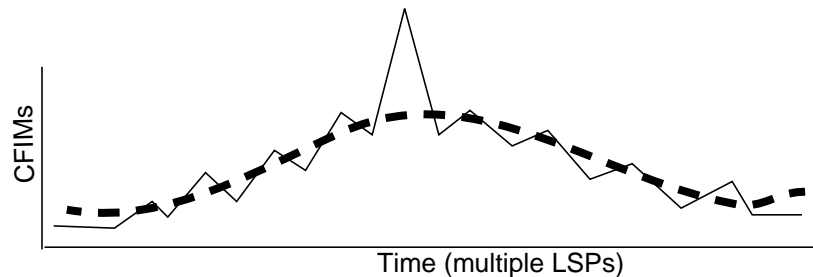
Once a threshold is established by a soak, the application adjusts that threshold at the end of each LSP. So, thresholds migrate up and down over time.



But a very high CFIM count spike can push thresholds too high and create spikes.



To prevent spiking from pushing thresholds too high, NTP uses a threshold algorithm that ignores spikes (below).



The threshold algorithm uses two variables to enable it to ignore spikes:

- SF, discussed here
- ["WFX Variables" on page 8-58](#)

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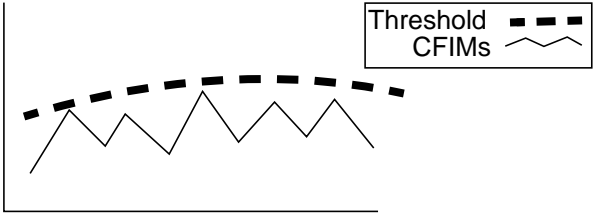
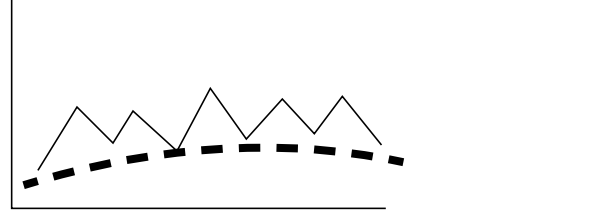
SF Variable (Continued)

Default

There is one SF system-wide. The default value for the SF is 1.1. This means multiply by 110 percent a function of the historical noise mean when calculating automatic thresholds (you do NOT need to understand this calculation).

Effects of improper SF variable setting

This table shows the effect of setting SF too high or low.

If SF is...	Then sensitivity is...	And the application makes...
Too high	Decreased	Too few alert cases 
Too low	Increased	Too many alert cases 

Procedure: Change the SF variable

To change the SF variable, use the ["sui setsys Command" on page 8-81](#).

Example

To change SF to 1.2, enter **sui setsys variable=SF value=1.2**

Note

A manually changed SF takes affect immediately.

WFX Variables

Purpose

The WF1 through WF15 (weight factor) variables help NTP to ignore spikes that can skew automatic thresholds (for what this means, see ["Spikes" on page 8-56](#)).

Default and range

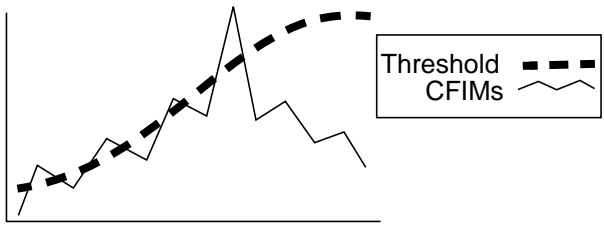
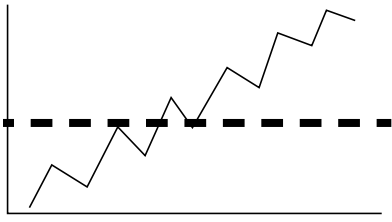
The default value for each WF (for each LSP) is 0.15. This means (and you do NOT need to understand this calculation), for all LSPs, use 0.15 for WF in the following equation:

$$\text{new mean} = ((WF) \times (\text{current period mean})) + ((1-WF) \times (\text{old mean}))$$

Range is decimal values between 0 and 1.

Effects of improper WFX variable settings

This table shows the affect of setting a WFX variable too high or low

If WF is...	Then...	So...
Too high (such as 1)	Only current data (no historic data) modifies thresholds	Spikes may skew automatic thresholds 
Too low (such as 0)	No current data modifies thresholds	Automatic thresholds are stagnant 

(Continued on next page)

WFX Variables (Continued)

Procedure: Change the WFX variable

To change this variable, use the ["sui setsys Command" on page 8-81](#).

Example

To change WF2 to 0.5, enter **sui setsys variable=WF2 value=0.5**

Note

A manually changed WF takes affect immediately if it applies to the current LSP. Otherwise, it takes affect the next time you are in the affected LSP.

MIN_5_THRxx, MIN_H_THRxx Variables

Purpose

The MIN_5_THR1 through MIN_5_THR15 and MIN_H_THR1 to MIN_H_THR15 set minimum 5-minute and hourly thresholds for each of the 15 corresponding LSPs.

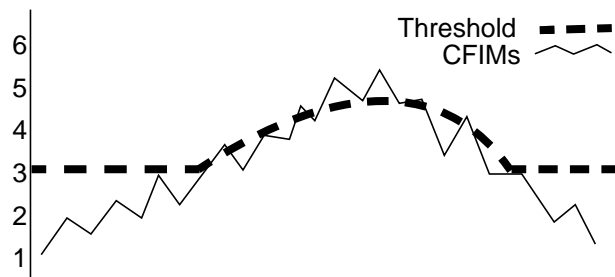
A minimum threshold means NTP cannot adjust an automatic threshold below that value.

Note

Scope. SF (sensitive factor) does not affect these variables. These variables do not apply to manual thresholds or to the (optional) system day thresholds.

Illustration

This illustration shows that, if MIN_5_THR9 (the 5-minute thresholds for LSP 9) is set to 3, then automatic 5 minute thresholds for that LSP cannot drop below 3.



Default and range

All 5-minute and hourly thresholds have a default MIN_x_THRx of 4. Ranges are:

- For MIN_5_THRxx — 0 to 20
- For MIN_H_THRxx — 0 to 60

Procedure: Change MIN_5_THRxx or MIN_H_THRxx variable

To change these variables, use the ["sui setsys Command" on page 8-81](#).

Example

To change MIN_5_THR9 to 6, enter
sui setsys variable=MIN_5_THR9 value=6

Monitor Basic Threshold Capacity

Purpose

Daily and weekly monitoring is necessary to ensure files for 5-minute and hourly thresholding (used for alert cases) do not grow too large.

Note

- **Many thresholds.** As explained in ["How many thresholds?"](#) on page 8-10, there are MANY thresholds — potentially hundreds of thousands, even millions.
- **threshlog.** The \$LOGDATA/threshlog file is not discussed in this book. It holds threshold usage data used by your NTP support organization.

Procedure: Prevent threshold file overload

Use the procedures referenced in this table to prevent threshold file overload to:

Do this	Explanation	Reference
Change Ai off	If you do not need thresholding for an FDC or entity (but you still need to see its CFIMs via Find CFIM), change its Ai to off.	"Stop or Restart Thresholding for Entity or FDC via Ai" on page 8-31
Delete FDCs or entities	If an FDC or entity no longer exists, or you do not care about it, delete it from the appropriate tables, such as Fdc and Swarch.	Chapter 5, "Add Network Elements"
Use automatic thresholds	If you no longer need a manual threshold, change it back to automatic. Note A manual threshold uses if set to maximum, 65535.	"Set or Unset Manual 5-Minute or Hourly Thresholds" on page 8-28

Note

Sampling. Another way to prevent threshold overload is to screen out a percentage of CIMs by sampling at switches, CIM collectors, or both. For sampling at switches, see switch administrators. For sampling at CIM collectors (such as the CP for 4ESS switches), see collector administrators.

(Continued on next page)

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Monitor Basic Threshold Capacity (Continued)

LSP file sets

Thresholding files reside at \$APPLROOT/mtdb. They are numbered 1 to 15, for 15 LSPs. There a set of files for each of the 15 LSPs. For example, the set of files for LSP2 is M1.02, MTdb.02, MTdbList.02, and NewEntFile.02.

Example

If you go to \$APPLROOT/mtdb and enter **ls**, you will see a list of files similar to this:

M1.01	MTdb.01	MTdbList.01	NewEntFile.01
M1.02	MTdb.02	MTdbList.02	NewEntFile.02
M1.03	MTdb.03	MTdbList.03	NewEntFile.03
M1.04	MTdb.04	MTdbList.04	NewEntFile.04
M1.05	MTdb.05	MTdbList.05	NewEntFile.05
M1.06	MTdb.06	MTdbList.06	NewEntFile.06
M1.07	MTdb.07	MTdbList.07	NewEntFile.07
M1.08	MTdb.08	MTdbList.08	NewEntFile.08
M1.09	MTdb.09	MTdbList.09	NewEntFile.09
M1.10	MTdb.10	MTdbList.10	NewEntFile.10
M1.12	MTdb.12	MTdbList.12	NewEntFile.11
M1.11	MTdb.11	MTdbList.11	NewEntFile.12
M1.13	MTdb.13	MTdbList.13	NewEntFile.13
M1.14	MTdb.14	MTdbList.14	NewEntFile.14
M1.15	MTdb.15	MTdbList.15	NewEntFile.15

Capacity for LSP file sets

NTP automatically computes how large an LSP's file set can grow without causing system problems. This value is called the capacity. Outputs shown in ["Monitor Threshold Capacity Warnings" on page 8-63](#) and ["Monitor Daily Threshold Capacity Trends" on page 8-64](#) look at this capacity — specifically, capacity already used.

Note

Caution. There is a serious danger of file overflow as capacity already used approaches 85%. It should never approach 100%

Rarely a problem. Unless you change many thresholds from automatic to manual (see ["Set or Unset Manual 5-Minute or Hourly Thresholds" on page 8-28](#)), you will probably never see threshold capacity problems.

Monitor Threshold Capacity Warnings

Purpose

Watch for error messages warning you when an LSP file set grows too large. The message appears in two places:

- **Console.** On your system console. For example after you implement a thresholding change by running **sui modmat**, that command may send the following message to your console:

```
SET THRESHOLD COMPLETED - usage exceeded lsp: 11
```
- **Log.** In the master log (for master log, see ["master Log" on page 11-19](#)).

If you see such a warning message, contact your NTP support organization.

Output

A warning message resembles this:

```
07/23/98 Threshold usage for LSP12 is 86% which exceeds  
MTDB_ERRLOG = 85%
```

This example means the LSP12 file set has used 86% of its capacity.

Procedure: Change the MTDB_ERRLOG variable

A system variable, MTDB_ERRLOG, sets a percent of capacity usage that triggers this warning message. Default is 85% capacity already used.

To change this variable, use the ["sui setsys Command" on page 8-81](#).

Example

```
sui setsys variable=MTDB_ERRLOG value=75
```

Monitor Daily Threshold Capacity Trends

Purpose

Daily monitoring of threshold capacity lets you find problems before they affect thresholding.

Procedure: Read the thresh file

To monitor growth trends of LSP file sets, daily read this 1-line file: `$SNASDIR/work/reports/thresh`

To read this file, enter **cat \$WORKDIR/reports/thresh**

Contact your NTP support organization if the file indicates that there is either (or both):

- A big jump in usage (such as a jump of 20%)
- Usage above 85%

Note

.profile An easy way to read this file daily is to put the following line in your `.profile`. This line automatically sends the one-line file to your screen each time you log on:

cat \$WORKDIR/reports/thresh

thresh output

The file has one line, updated daily, similar to this:

```
07/23/92 Highest MTdb threshold usage is in LSP12 **** 81% ****
```

This line tells you:

- Today's date.
 - The one LSP file set that used the highest percent of its capacity.
 - That percent.
-

Monitor Weekly Threshold Capacity Trends

Purpose

Weekly look at \$WORKDIR/reports/threshrpt to monitor growth trends of LSP file sets. If you see a radical increase, contact your NTP support organization.

Output

The threshrpt file is updated weekly, showing a up to 6 months of data. It resembles this:

Record of MTdb Threshold Usage			
Highest			-
----Headroom-----			
Date	MTdb %Used	FDCs	(or)
NEs/Types			
09/01/01	24%	841	
5852			
09/08/01	24%	841	
5852			
09/15/01	24%	841	
5852			
09/22/01	24%	841	
5852			
09/29/01	24%	841	
5852			
10/01/01	24%	841	
5852			
10/08/01	24%	841	
5852			
10/29/01	24%	841	
5852			

The threshrpt file tells you:

- **Date** — When the weekly update line was added to the file.
- **Highest MTdb% Used** — Highest percent capacity used by any LSP file set for the date. (Note the sudden increase in December in this example.)
- **Headroom** — The LSP's remaining capacity, given in terms of how many FDCs or NEs (network elements) can be added (see ["Headroom" on page 8-66](#)).

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Monitor Weekly Threshold Capacity Trends (Continued)

Headroom

Headroom numbers are rough guidelines.

- NEs are labeled as NEs/Types to remind you that each network entity can be thresholded as both RE and DE.

Example: A switch may be in swarch as an RE and as a DE. Each counts separately in the headroom count.

- The values for FDCs and NEs are exclusive.

Example: From the example "[Output](#)" on page 8-65, you could add all 841 FDCs or all 5852 NEs, not all of both. (In reality, you would probably be adding some of each.)

- Headroom is a projection based on, not only threshold capacity used, but also CIM traffic for your current FDCs and NEs, and such factors as how many manual thresholds you are using.
-

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System Day Thresholding

Purpose

System day thresholds are daily thresholds. They are useful for problems whose CFIMs trickle in so slowly that even hourly thresholds may miss them. If you have this optional feature, you can change any FDC from normal 5-minute-and-hourly thresholding to system day thresholding.

Note

- **Exclusive.** System day thresholding is used instead of (NOT in addition too) normal 5-minute-and-hourly thresholds. Your system may not use system day thresholding.
- **OTR.** You can apply system day thresholding to any FDC, but it is ideal for thresholding FDCs for the optional operator trouble reports (OTRs). OTRs are CFIMs created from problems reported by operators.

Compare to normal thresholding

Let us compare normal 5-minute-and-hourly thresholding with system day thresholding.

This type thresholding	Works this way...	Example
Normal 5-minute and hourly	NTP creates a unique 5-minute threshold and a unique hourly threshold for each unique combination of FDC, network element (a CLLI), entity role (either reporting or distant), and LSP.	For FDC 1984, if you have ten switches, you have 600 thresholds, as follows: One FDC X 10 switches X 2 entity roles X 15 LSPs X 2 types of threshold (5-minute or hourly) = 600
System day	Your system administrator can change each FDC from normal 5-minute-and-hourly thresholds to daily thresholding.	If you set FDC 1984 to a system day thresholding, that threshold replaces all 600 normal thresholds explained in the example above. Note There is one default system day threshold. The system administrator can override default by FDC/network-element/entity-role by using, " Override system day thresholds " on page 8-73.

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System Day Thresholding (Continued)

More differences

Unlike normal 5-minute and hourly thresholding, system day thresholding does NOT use:

- Threshold matrix
- Soaks
- Commands **sui modmat**, **sui thresh**, **sui showthresh**
- Variables AC_COUNT1, AC_CLOSE1, AC_CLOSE2
- Automatic threshold adjustment

Tasks for system day thresholding

This table lists administrative tasks for system day thresholding.

Task	Note	Reference
Change an FDC to system day thresholding (or back).	For example, change FDC 1984 to system day thresholding. Note ALL CFIMs with FDC 1984 will use the system-wide default system day threshold.	"Set system day reporting for an FDC" on page 8-70
See which FDCs use system day thresholding.	Look for FDCs with d in the Tm field in the Fdc table.	First three steps of "Set system day reporting for an FDC" on page 8-70
Selectively override the system-wide default system day threshold.	For example, for FDC 1984, for switch X when it is an Re, use 23 as the system day threshold, instead of the default system day threshold.	"Override system day thresholds" on page 8-73
See all overrides of the system-wide default system day threshold	Look in the sdthresh table.	First three steps of "Override system day thresholds" on page 8-73
Change the system-wide default system day threshold.	For example, initially, the system-wide default system day threshold is 10. You change it to 12. (Use setsys on SD_DEFAULT.)	"Set SD_DEFAULT variable" on page 8-75
Select the daily system day reset time.	Use setsys on SYSTEM_RESET	"Set SYSTEM_RESET variable" on page 8-76
Modify how system day alert cases close.	Use setsys on AC_CLOSE_SD.	"Set System Day Alert Closing" on page 8-77

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Task	Note	Reference
Modify how alert severity (Asevd field on Ascreen Output) is computed.	Use setsys on ALERT_TOLERANCE.	"Set System Day Tolerance" on page 8-78

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Set FDCs to System Day Thresholding

Purpose

You can change any FDC from 5-minute and hourly thresholding to system day thresholding by editing the Tm field in the fdc table. (You can NOT do this type of change for an entity.)

Note

Tm. If you do not have system day thresholding, the Tm field in fdc table is ignored, regardless of what you put in it.

Procedure: Set system day reporting for an FDC

Use this procedure to set an FDC to or from system day reporting.

Step	Action
1	Log on the NTP host as ntp . (You must be logged on as ntp to proceed.)
2	<p>Run find on the fdc database table and send output to a temporary file.</p> <p>Example sui find sou=fdc noheader delim=";" > temp</p> <p>Result The table is copied into the temp file. The first line, starting with #, is a comment line explaining fields and is ignored. Each of the other lines is an FDC, for example:</p> <pre>#Fdc;Tc;Eqtype;Al;S;D;Sig;St;Tm;Ai;Mc 100p_1;dms;dms100;mi;n;o;-;-p;on;- 100p_2;dms;dms100;mi;n;o;-;-p;on;- 100p_3;dms;dms100;mi;n;o;-;-p;on;- 112;ftf;4ess;mi;f;o;iband;-;p;on;y 114;xst;4ess;mi;f;o;dp;-;p;on;y 111280;perf;5ess;ma;f;i;dp;meg;p;on;- 111281;perf;5ess;ma;f;i;dp;meg;p;on;- 111282;perf;5ess;ma;f;i;dp;meg;p;on;- 111283;perf;5ess;ma;f;i;dp;meg;p;on;-</pre>
3	<p>Use a text editor (such as vi) to edit the temp file, and then save the file.</p> <p>Note You can change thresholding type to either system day thresholding or regular 5-minute and hourly thresholding by altering the Tm field to either:</p> <ul style="list-style-type: none"> ■ d for system day thresholding ■ p for 5-minute and hourly thresholding.

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Step	Action
4	Run dbedit with the update option and the temp file for input. Example dbedit -ui -t fdc -f temp -s";"
5	Correct errors as you are informed of them by dbedit .
6	Remove the temp file,
7	Enter sui modmat Reference See " sui modmat Command " on page 8-35. Note sui modmat This command updates the threshold matrix. If you are changing a threshold FROM system day to normal thresholding, this also does a soak.
Done	

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Override System Day Thresholds

Purpose

There are no automatic system day thresholds. You set manual system day thresholds by using **dbedit** on the `sdthresh` table.

Note

Defaults. If a CLLI/FDC has no record in the `sdthresh` table, it uses defaults. To set defaults, see "[Set System Day Default Threshold](#)" on page 8-75.

Sdthresh table

Set system day thresholds in the `sdthresh` database table. This table lists `sdthresh` fields.

Note

Keys. Each record must have a unique pair of values in the `Ne` and `Fdc` fields.

Field	Function	Value
<code>ne</code> (key field)	Identifies a switch or another entity	Either a: <ul style="list-style-type: none"> ■ CLLI from the <code>swarch</code> or another entity table ■ A tilde (~) as a wildcard to match all entities
<code>fdc</code> (key field)	Identifies an FDC	An FDC from the <code>fdc</code> table, up to 7 characters
<code>rethresh</code>	Sets threshold for when the <code>ne</code> is an RE entity type	0-65535
<code>dethresh</code>	Sets threshold for when the <code>ne</code> is a DE entity type	Note If you assign a value to one, the other cannot default, so you must assign a value to it also.

(Continued on next page)

Override System Day Thresholds (Continued)

Procedure: Override system day thresholds

Use this procedure to selectively override system day thresholds.

Example

If FDC1984 is being system day thresholded, ALL CFIMs with FDC 1984 use the system-wide default system day threshold.

But you can assign a different system day threshold for FDC 1984 at switch X, when the switch is a CFIM's Re, and a different threshold when the switch is a CFIM's De.

Step	Action
1	Log on the NTP host as ntp . (You must be logged on as ntp to proceed.)
2	Run find on the <code>sdthresh</code> database table and send output to a temporary file. Example sui find sou=sdthresh noheader delim=";" > temp Result The table is copied into the temp file. The first line, starting with #, is a comment line explaining fields and is ignored. Each of the other lines gives a pair of thresholds, for example: <pre>#Ne;Fdc;Rethresh;Dethresh sv0alt00001;777105;0;0 sv0nlzotr01;cn-cto;0;0 sv0nlzotr01;444otr2;0;0 sv0nlz4ess1;777101;1;1 ~;777201;19;19 ~;777000;9;10</pre>
3 u	Use a text editor (such as vi) to edit the file to add, delete, or change thresholds, and then save the file.
4	Run dbedit with the update option and the temp file for input. Example dbedit -ui -t sdthresh -f temp -s";"
5	Correct errors as you are informed of them by dbedit .
6	Remove the temp file.

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Step	Action
7	To implement the changes at this time, enter sui modmat Reference See " sui modmat Command " on page 8-35.
Done	

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Set System Day Default Threshold

Purpose

There is one system-wide default system day threshold. Initially it is 10. You can reset it.

Note

Override. You can also selectively override the default, as explained in ["Override System Day Thresholds" on page 8-72](#).

Procedure: Set SD_DEFAULT variable

The SD_DEFAULT system variable defines the default system day threshold.

To change this variable, use the ["sui setsys Command" on page 8-81](#).

Example

```
sui setsys variable=SD_DEFAULT value=10
```

Set System Day Reset Time

Purpose

A system day is a 24-hour period beginning and ending at a daily reset time.

There is one reset time for all system day reporting. Default is 18.

Reset time is used as follows:

- If no alert case has been generated for a CLLI/FDC/entity-role for an FDC set to system day, the CFIM counts for the CLLI/FDC/entity-role are cleared at reset time.
- If there has been a system day alert case for the CLLI/FDC/entity-role, its CFIM counts are carried into the next day.

Procedure: Set SYSTEM_RESET variable

The SYSTEM_RESET system variable defines reset, which is the hour boundary that ends one system day and begins another.

To change this variable, use the ["sui setsys Command" on page 8-81](#).

Enter the value as one or two digits in the range 0-23 where 0 is midnight, 6 is 6:00 AM, and 18 is 6:00 PM, and so on.

Example

To make reset 6 p.m., enter
sui setsys variable=SYSTEM_RESET value=18

Set System Day Alert Closing

Purpose

After an system day alert case has been inactive for enough days, the alert case automatically closes. Note that:

- Inactive means no alerts were generated on the open alert case during the system day (there may have been CFIMs, but not enough to cause an alert).
- The number of inactive days before closing is set by the AC_CLOSE_SD variable.
- Days are measured by daily reset time (see ["Set System Day Reset Time" on page 8-76](#)), and an alert case closes at that boundary.

There is one AC_CLOSE_SD for all system day reporting. Default is 2 days.

Note

Manual closing. Analysts can manually close any alert case through the GUI.

Non-system day. For variables for closing 5-minute and hourly alerts, see ["Set Alert Case Closing" on page 8-47](#).

Procedure: Set AC_CLOSE_SD variable

AC_CLOSE_SD defines automatic closing of system day alert cases. Range is 1-7 days.

To change this variable, use the ["sui setsys Command" on page 8-81](#).

Example

```
sui setsys variable=AC_CLOSE_SD value=3
```

Set System Day Tolerance

Background

System Day thresholding counts an FDC's CFIMs until the count exceeds a threshold, which generates an alert at the next 5-minute boundary.

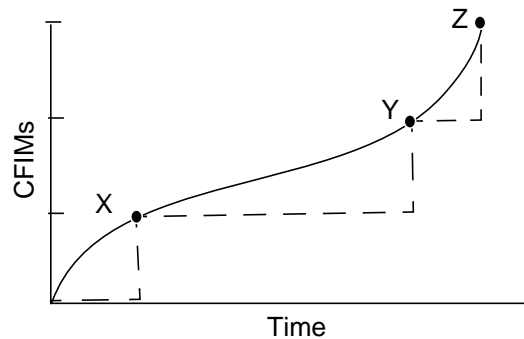
The count is then started over, toward creating a new alert for the alert case.

Notice how this type of thresholding differs for:

- **System day** — Each alert covers the amount of time needed to reach threshold.
- **5-minute and hourly** — Each alert covers a 5-minute or hourly period.

Example

In one system day alert case, three alerts, X, Y, and Z appear on the chart below. Each has the same number of CFIMs (above threshold), but some collected CFIMs faster.



Severity

As you can see in the illustration above, where the curve is steepest, the CFIMs are arriving faster, and the problem is more severe.

Based on this, information NTP computes system day alert case severity, which appears in the Asevd field on Ascreen Output.

(Continued on next page)

Set System Day Tolerance (Continued)

Tolerance

To compute severity (for the Asevd field on alert cases), NTP uses a variable called ALERT_TOLERANCE.

There is one ALERT_TOLERANCE for all system day reporting. Default is 60.

Severity is computed as follows:

severity = (minutes between alerts) / (tolerance)

Example

If ALERT_TOLERANCE variable is...	and it takes this many minutes to generate an SD alert...	Then alert severity is...
60	30	60/30 or 2
	240	60/240 or .25
	2	60/2 or 30

Procedure: Set ALERT_TOLERANCE variable

The ALERT_TOLERANCE system variable defines system day alert tolerance. Range is whole numbers, 1-1440

To change this variable, use the ["sui setsys Command" on page 8-81](#).

Example

```
sui setsys variable=ALERT_TOLERANCE value=60
```

Mass Call Alerting

Purpose

Mass call alerting is an optional feature that provides the MCAscreen output for network managers.

Note

Stand-alone. Mass call alerting is NOT related to regular 5-minute and hourly alerting, nor is it related to any other NTP output. For example, there are no GUI shortcuts between MCAscreen output and other outputs. The only thing mass call alerting has in common with other outputs is that all deal with CIMS.

Procedure: Set MCTHRESH variable

MCTHRESH (Mass Call Alert threshold) sets how many CFIMs with the same digits (and LRN) must occur in the same minute before the digits appear on MCAscreen Output.

To change this variable, use the ["sui setsys Command" on page 8-81](#).

Example

```
sui setsys variable=MCTHRESH value=20
```

Reference

For how MCAscreen works, see Chapter 5 in the *GUI User's Guide*.

Procedure: Set FDC screening

You can select which FDCs are thresholded or ignored for mass call alerting. To do so, **dbedit** the Fdc table and put y (do mass call alerting) or n (no not do it) in the Mc field of each FDC.

Typically, you would put y beside each FDC that is related to mass call problems, such as a "no circuits available" FDC. This screening should have already been done for you when the mass call alerting feature was installed.

Reference

Since you are unlikely to **dbedit** the Mc field, this book does not give a procedure for it. Such a procedure would be similar to the one in ["Stop or restart thresholding via Ai" on page 8-32](#).

sui setsys Command

Purpose

The **sui setsys** command assigns values to NTP system variables or allows you to view the values for the system variables. Most of these variables are used for thresholding.

Example

To set the thresholding sensitivity factor system variable to 2, enter **sui setsys variable=SF value=2**

Reference

Other, NON-thresholding variables are set by:

- **admset** (see "[Manage User Environment Variables](#)" on page 7-36) for default and individual system variables.
- **sui set** (see "[sui set Command](#)" on page B-22) for your own login's system variables.

Procedure: List setsys variables

To display threshold variables currently set, enter **sui setsys**

(Continued on next page)

sui setsys Command (Continued)

Syntax

sui setsys [**variable=varname**] [**value=value**]

Example

sui setsys variable=AUTO4 value=5

- **variable** — the name of the system variable to set. Valid names are:
 - **AC_CLOSE1** — Alert Case automatic closure interval 1
 - **AC_CLOSE2** — Alert Case automatic closure interval 2
 - **AC_CLOSE_SD** — Alert case automatic closure of system day alert cases (used only if your system implements system day alerting)
 - **AC_COUNT1** — Alert Case automatic closure count 1
 - **ALERT_TOLERANCE** — System day tolerance (used only if your system implements system day alerting)
 - **AUTOxx** — (Automatic threshold mode change (one variable per LSP; xx=1-15)
 - **LF1, LF2** — Number of link failures
 - **MIN_5_THRxx, MIN_H_THRxx** — 5-minute and hourly minimum thresholds; one variable per LSP; xx=1-15
 - **MTDB_ERRLOG** — Capacity threshold for MTDB files
 - **SD_DEFAULT** — System day default (used only if your system implements system day alerting)
 - **SF** — Sensitivity Factor
 - **SYSTEM_RESET** — System day reset (used only if your system implements system day alerting)
 - **TCP_PORT_X**
 - **UM1, UM2** — Percent unreadable messages
 - **WF1 - WF15** — Weighting factor
 - **ZM -** — Last message time
- **value** — the value you are using for the specified system variable. If a variable is specified but no value is specified, the variable is set to the default value.

(Continued on next page)

System Variable Defaults

Initial defaults

When NTP is installed, the system variables are initialized with default settings that can be viewed with the **sui setsys** command (see "[sui setsys Command](#)" on page 8-81). The default settings are listed below.

Note

Depending on what features you have implemented, not all variables may pertain to your system. For example, AC_CLOSE_SD, ALERT_TOLERANCE, SD_DEFAULT, and SYSTEM_RESET are used only if your system implements system day alerting MCTHRESH is used only if your system implements mass call alerting:

Name	Value	Defval	Type
AC_CLOSE1	24	24	integer
AC_CLOSE2	48	48	integer
AC_CLOSE_SD	2	2	integer
AC_COUNT1	50	50	integer
ALERT_TOLERANCE	60	60	integer
AUTO1	1	10	integer
AUTO2	1	10	integer
AUTO3	1	10	integer
AUTO4	1	10	integer
AUTO5	1	10	integer
AUTO6	1	10	integer
AUTO7	1	10	integer
AUTO8	1	10	integer
AUTO9	1	10	integer
AUTO10	1	10	integer
AUTO11	1	10	integer
AUTO12	1	10	integer
AUTO13	1	10	integer
AUTO14	1	10	integer
AUTO15	1	10	integer
CS_OOS	10	10	integer
LF1	2	2	integer
LF2	1	1	integer
MCTHRESH	20	4	integer
MIN_5_THR1	4	4	integer
MIN_5_THR2	4	4	integer
MIN_5_THR3	4	4	integer
MIN_5_THR4	4	4	integer
MIN_5_THR5	4	4	integer
MIN_5_THR6	4	4	integer
MIN_5_THR7	4	4	integer
MIN_5_THR8	4	4	integer
MIN_5_THR9	4	4	integer

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MIN_5_THR10	4	4	integer
MIN_5_THR11	4	4	integer
MIN_5_THR12	4	4	integer
MIN_5_THR13	4	4	integer
MIN_5_THR14	4	4	integer
MIN_5_THR15	4	4	integer
MIN_H_THR1	4	4	integer
MIN_H_THR2	4	4	integer
MIN_H_THR3	4	4	integer
MIN_H_THR4	4	4	integer
MIN_H_THR5	4	4	integer
MIN_H_THR6	4	4	integer
MIN_H_THR7	4	4	integer
MIN_H_THR8	4	4	integer
MIN_H_THR9	4	4	integer
MIN_H_THR10	4	4	integer
MIN_H_THR11	4	4	integer
MIN_H_THR12	4	4	integer
MIN_H_THR13	4	4	integer
MIN_H_THR14	4	4	integer
MIN_H_THR15	4	4	integer
MTDB_ERRLOG	85	85	integer
RC_OOS	10	10	integer
SD_DEFAULT	10	10	integer
SF	1.1	1.1	float
SHORT_HOLDING_TIME	5	5	integer
SYSTEM_RESET	18	18	integer
TCP_WAIT	4	4	integer
TCP_PORT_EMS	3010	0	integer
TCP_PORT_ESS4	3002	0	integer
TCP_PORT_OSPS	3003	0	integer
TCP_PORT_TOPS	3004	0	integer
TCP_PORT_UNIV1	3008	0	integer
TCP_PORT_UNIV2	3006	0	integer
TCP_PORT_UNIV3	3007	0	integer
TCP_PORT_UNIV4	3009	0	integer
TCP_PORT_UNIV5	3005	0	integer
UM1	70	70	integer
UM2	30	30	integer
WF1	.15	.15	float
WF2	.15	.15	float
WF3	.15	.15	float
WF4	.15	.15	float
WF5	.15	.15	float
AC_CLOSE1	24	24	integer
AC_CLOSE2	48	48	integer
AC_CLOSE_SD	2	2	integer
AC_COUNT1	50	50	integer
ALERT_TOLERANCE	60	60	integer

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AUTO1	1	10	integer
AUTO2	1	10	integer
AUTO3	1	10	integer
AUTO4	1	10	integer
AUTO5	1	10	integer
AUTO6	1	10	integer
AUTO7	1	10	integer
AUTO8	1	10	integer
AUTO9	1	10	integer
AUTO10	1	10	integer
AUTO11	1	10	integer
AUTO12	1	10	integer
AUTO13	1	10	integer
AUTO14	1	10	integer
AUTO15	1	10	integer
CS_OOS	10	10	integer
LF1	2	2	integer
LF2	1	1	integer
MCTHRESH	20	4	integer
MIN_5_THR1	4	4	integer
MIN_5_THR2	4	4	integer
MIN_5_THR3	4	4	integer
MIN_5_THR4	4	4	integer
MIN_5_THR5	4	4	integer
MIN_5_THR6	4	4	integer
MIN_5_THR7	4	4	integer
MIN_5_THR8	4	4	integer
MIN_5_THR9	4	4	integer
MIN_5_THR10	4	4	integer
MIN_5_THR11	4	4	integer
MIN_5_THR12	4	4	integer
MIN_5_THR13	4	4	integer
MIN_5_THR14	4	4	integer
MIN_5_THR15	4	4	integer
MIN_H_THR1	4	4	integer
MIN_H_THR2	4	4	integer
MIN_H_THR3	4	4	integer
MIN_H_THR4	4	4	integer
MIN_H_THR5	4	4	integer
MIN_H_THR6	4	4	integer
MIN_H_THR7	4	4	integer
MIN_H_THR8	4	4	integer
MIN_H_THR9	4	4	integer
MIN_H_THR10	4	4	integer
MIN_H_THR11	4	4	integer
MIN_H_THR12	4	4	integer
MIN_H_THR13	4	4	integer
MIN_H_THR14	4	4	integer

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MIN_H_THR15	4	4	integer
MTDB_ERRLOG	85	85	integer
RC_OOS	10	10	integer
SD_DEFAULT	10	10	integer
SF	1.1	1.1	float
SHORT_HOLDING_TIME	5	5	integer
SYSTEM_RESET	18	18	integer
TCP_WAIT	4	4	integer
TCP_PORT_EMS	3010	0	integer
TCP_PORT_ESS4	3002	0	integer
TCP_PORT_OSPS	3003	0	integer
TCP_PORT_TOPS	3004	0	integer
TCP_PORT_UNIV1	3008	0	integer
TCP_PORT_UNIV2	3006	0	integer
TCP_PORT_UNIV3	3007	0	integer
TCP_PORT_UNIV4	3009	0	integer
TCP_PORT_UNIV5	3005	0	integer
UM1	70	70	integer
UM2	30	30	integer
WF1	.15	.15	float
WF2	.15	.15	float
WF3	.15	.15	float
WF4	.15	.15	float
WF5	.15	.15	float
WF6	.15	.15	float
WF7	.15	.15	float
WF8	.15	.15	float
WF9	.15	.15	float
WF10	.15	.15	float
WF11	.15	.15	float
WF12	.15	.15	float
WF13	.15	.15	float
WF14	.15	.15	float
WF15	.15	.15	float
ZM	2	2	integer
MAX_SAVE_MIN	0	0	integer
MAX_SAVE_DEF	50000	50000	integer
MAX_SAVE_MAX_DEF	500000	500000	integer
MAX_SAVE_MAX_MAX	999999	999999	integer
RANGE_MAX	30000	30000	integer

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System Variable Definition

Description

Normally your system will use either the system default variable settings or the settings configured by your NTP support organization when your system is installed. This table describes the system variables that you might have occasion to modify. Consult with your NTP support organization first.

Variable	Description
AC_CLOSE1	Alert case automatic closure interval 1. This variable determines the number of 5-minute intervals of inactivity that must elapse before an alert case record is automatically closed, given the total count of CFIMs generated is less than the value of AC_COUNT1. Values: 1 - 6000 (must be less than the value of AC_CLOSE2) Default: 24.
AC_CLOSE2	Alert case automatic closure interval 2. This variable determines the number of 5-minute intervals of inactivity that must elapse before an alert case record is automatically closed, regardless of the CFIM count. Values: 1 - 9000 (nd must be greater than AC_CLOSE1) Default: 48.
AC_CLOSE_SD	(Used only if your system implements system day alerting.) Alert case automatic closure of system day alert cases. Values: 1-7 (system days). Default: 2 (records closed after two complete System Days of inactivity).
AC_COUNT1	Alert case automatic closure count 1. This variable determines the CFIM count used with the AC_CLOSE1 variable to determine if an alert case record can be closed. If the AC_CLOSE1 interval has passed AND the CFIM count for the alert case is less than or equal to this variable, then the record will automatically close. Values: 1 - 10000. Default: 5.
ALERT_TOLERANCE	(Used only if your system implements system day alerting.) Used to compute system day alert severities. Severity is inversely proportional to the amount of time (in minutes) between alerts. For example, if a threshold is set to 10 and ALERT_TOLERANCE is 60, when it takes 60 minutes to accumulate 10 CFIMs the alert severity is 60/60 or 1. If it takes 240 minutes to accumulate 10 CFIMs, then the alert severity is 60/240 or .25. If it takes 2 minutes to accumulate 10 CFIMs, then the severity is 60/2 or 30. Values: a whole number 1-1440. Default: 60.
AUTO1 to AUTO15	Automatic threshold mode change — one variable per LSP; xx=1-15. Determines the number of occurrences of the LSP that are to pass before the thresholding mode changes to auto. Use sui setsys to set an appropriately low value that will allow automatic analysis to begin as soon as is required by the situation.
LF1, LF2	Link failures (4ESS only). How many links between the CP and NTP failed.
MCTHRESH	(Used only if your system implements MCAscreen.) Mass call alert threshold. How many CFIMs with the same digits (and LRN) must occur in the same minute before the digits appear on MCAscreen output. For how MCAscreen output works, see the <i>GUI User's Guide</i> .

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Variable	Description
MIN_5_THRxx, MIN_H_THRxx	5-minute and hourly minimum thresholds; one variable per LSP; xx=1-15). The MIN_5_THRxx (xx = 1-15) values: 0-20. MIN_H_THRxx values: 0-60. Default for both: 4.
MTDB_ERRLOG	Capacity threshold for MTDB files. Set to a percentage value. If the percent of usage in any LSP \$APPLROOT/mtdb file exceeds the value of this variable, NTP outputs an event message to the master log and system console. Default: 85%.
SF	Sensitivity factor. Used to calculate automatic thresholds. There is one SF value set for the entire system. It adjusts system sensitivity to filter out irregular network troubles, such as failures that do not fit a pattern that NTP can detect and adjust for in its internal algorithms. The automatic analysis alerting algorithm is designed to detect aberrations from a historical mean determined over time, and momentary irregularities are more likely to be a temporary disturbance than an indication of a network trouble pattern. Values: set in decimal form (for example, 0.75, 1.5). Default: 1.1.
SD_DEFAULT	(Used only if your system implements system day alerting.) System day default. Used for any FDC or NE/FDC combination using the system day thresholding method without a corresponding sdthresh record. Values: a whole number 0-65535. Default: 10.
SYSTEM_RESET	(Used only if your system implements system day alerting.) System reset time for system day alerts. Sets when system day counts are zeroed. Default: 18.
TCP_PORT_X including: TCP_PORT_EMS, TCP_PORT_ESS4, TCP_PORT_OSPS, TCP_PORT_TOPS, TCP_PORT_UNIV1 through TCP_PORT_UNIV5	TCP ports. Port variables are defined for specific switch types, such as 4ESS, OSPS, TOPS, etc. However, the TCP_PORT_EMS variable can simultaneously accept data from multiple switch types. See "intcpdial Table" on page A-67 for related information. Range: 1000-9999. Default: 0 (which means no incoming TCP port will be listened on). Any other number will turn off incoming TCP. This variable is only consulted at startup; therefore changing the variable (with sui setsys , for example) will not be detected until NTP is stopped and restarted.
UM1, UM2	<p>Percent unreadable messages. 4ESS only. UM1 and UM2 determine the switch-CP status. NTP determines this percentage by dividing the value of the number of messages unreadable field in the link status message by the value of the number of messages received field in the link status message. Link status information data is used in generating link alert messages. The switch-CP link status is set to "down" if the percent of unreadable messages is greater than or equal to the threshold set for UM1. Default for UM1: 70 (70 percent of link status messages are unreadable). Use sui setsys to set UM1 to any integer value greater than UM2 and no greater than 100.</p> <p>The second unreadable message variable (UM2) sets the switch-CP link status as "degraded" if the percent of unreadable messages is greater than or equal to the threshold set for UM2. Default for UM2: 30 (30 percent of link status messages are unreadable). Use sui setsys to set UM2 to any value greater than 0 and less than the value assigned to UM1.</p>

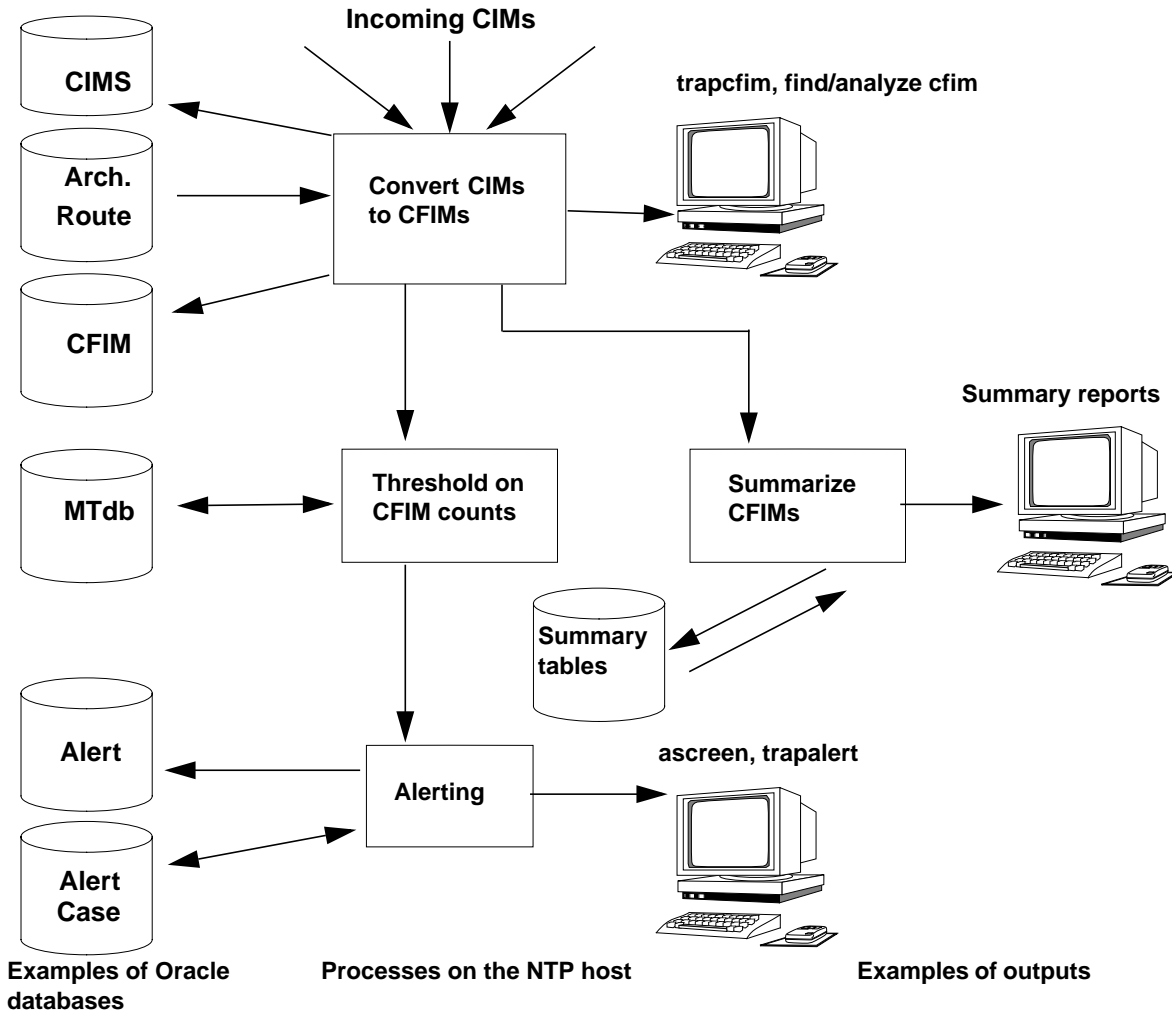
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Variable	Description
WF1 - WF15	<p>LSP weighting factor. Determines the impact of an LSP's current noise mean in the calculation of the historical mean stored in the thresholding and analysis matrices. NTP uses the following formula when updating the historical mean of an LSP. The formula for calculating the new mean for an LSP is as follows.</p> $\text{new Historical mean} = \text{WFxx}(\text{mean for most current period}) + (1-\text{WFxx})(\text{historical mean})$ <p>The weighting factor can be raised or lowered for each LSP to increase or decrease the impact of new data on the threshold crossing calculation for that LSP. If the LSP weighting factor is raised, the current data will have a greater impact and the historical mean will have a lesser impact in the algorithm that determines whether a threshold is being crossed. The reverse is true if the LSP weighting factor is lowered. Default for all LSPs: 0.15.</p>
ZM	<p>Zero message interval. 4ESS only. Determines the switch-CP link status and specifies how many ZM intervals are allowed to occur before NTP generates a link alert message. Each CP records the number of messages received on each link in its link status message. When the application receives a link status message reporting zero messages received, it counts the five-minute interval since the last link status message as a zero message interval for that switch-CP link. When the count of zero message intervals is greater than the number specified by ZM, that switch-CP link is "down" and NTP generates a link alert message. For example, if the value 3 is assigned to the ZM intervals parameter, the switch-CP link is down if the CP reports no messages received from the RE over the last three intervals (15 minutes). Default: 2 (2 link status messages have reported no messages received from the same switch in 10 minutes).</p> <p>Reference For setting ZM as part of adding a link between the CP and NTP, see "Set CP-NTP link variables" on page 14-22.</p>

Review for Basic Thresholding

Review This section summarizes basic thresholding.

System backbone This illustration is a data flow diagram, where the major NTP functions are in the center. Some proprietary Oracle databases are on the left and some NTP outputs are on the right.



Note

Summary reports are available only if additional traffic analysis is implemented for your system.

(Continued on next page)

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Review for Basic Thresholding (Continued)

Converter

- Reads raw CIMs
 - Determines entities
 - Adds additional information from reference database tables
 - Displays CFIMs as requested by **trapcfim** command
 - Creates CFIM and writes to record base
 - Passes FDC and list of entities/types to thresholder
-

Thresholder

- Keeps real-time counts for each entity/type/FDC/LSP combination
 - Displays threshold crossings as requested by the **trapalert** command
 - (Applicable only if your system implements system day alerting). At end of 5-min, hourly, and system day periods, compares counts with thresholds
 - Passes list of threshold crossings to alerter
 - Updates historical means and thresholds based on current (non-alerting) counts
-

Alerter

- For each FDC, looks at patterns among the threshold crossings
 - Looks at related entities even if below threshold
 - Eliminates entities which do not fit patterns
 - Determines most likely causes of the problem
 - Writes 5-minute alerts and displays the alert case records on ascreen
 - Writes hourly alerts and displays the alert case records on ascreen
-

Exercises for Basic Thresholding

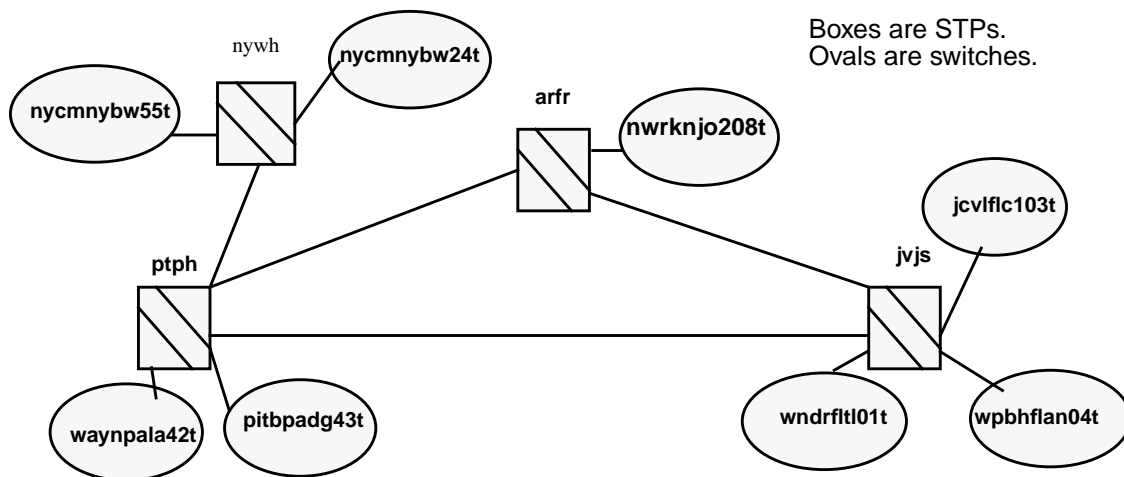
CFIMs

Each line below is a CFIM. Use these with questions that follow.

Date	Time	Fdc	Tc	Re	Rs	Ds	De	Related	Ict	Ogt	Digits
7/16/96	19:53	1984	ncs	nwrknj0208t	arfr	ptph	pitbpadg43t	nwrknj0229t	6773	61	160530
7/16/96	19:53	1984	ncs	wpbhflan04t	fvjs	ptph	pitbpadg43t	wpbhflan06t	6313	5808	160530
7/16/96	19:53	1984	ncs	nycmnybw55t	nywh	nywh	nycmnybw24t	whplny0203t	5915	5872	809928736
7/16/96	19:53	1984	ncs	wpbhflan04t	fvjs	ptph	pitbpadg43t	wpbhflan06t	8558	5807	160530
7/16/96	19:53	1984	ncs	nwrknj0208t	arfr	ptph	pitbpadg43t	nwrknj0229t	6176	7042	160530
7/16/96	19:53	1984	ncs	wpbhflan04t	fvjs	ptph	pitbpadg43t	wpbhflan06t	7161	5814	160530
7/16/96	19:53	1984	ncs	okldca0344t	ansc	ptph	pitbpadg43t	okldca0305t	6593	23	160530
7/16/96	19:53	1984	ncs	wpbhflan04t	fvjs	ptph	pitbpadg43t	wpbhflan06t	6754	96	160530
7/16/96	19:53	1984	ncs	jcvlflc103t	fvjs	ptph	pitbpadg43t	jcvlflc106t	6873	17	160530
7/16/96	19:53	1984	ncs	nwrknj0208t	arfr	ptph	pitbpadg43t	nwrknj0229t	7256	61	160530
7/16/96	19:53	1984	ncs	wpbhflan04t	fvjs	ptph	pitbpadg43t	wpbhflan06t	6280	5811	160530
7/16/96	19:53	1984	ncs	nwrknj0208t	arfr	ptph	pitbpadg43t	nwrknj0229t	6554	61	160530
7/16/96	19:53	1984	ncs	wpbhflan04t	fvjs	ptph	pitbpadg43t	wpbhflan06t	7359	5820	160530
7/16/96	19:53	1984	ncs	wndrflt101t	fvjs	fvjs	ojusflt103t	miamflflds0	315	4539	700460100
7/16/96	19:53	1984	ncs	wpbhflan04t	fvjs	ptph	pitbpadg43t	wpbhflan06t	6290	28	160530
7/16/96	19:53	1984	ncs	jcvlflc103t	fvjs	ptph	pitbpadg43t	snjnprza01t	4253	17	160530
7/16/96	19:53	1984	ncs	wpbhflan04t	fvjs	ptph	pitbpadg43t	wpbhflan06t	5913	5808	160530
7/16/96	19:53	1984	ncs	wpbhflan04t	fvjs	ptph	pitbpadg43t	wpbhflan06t	8046	5820	160530

Illustration

This illustration maps the switches in the CFIMs above. It is provided for your understanding only. You do not need it to answer the questions.



(Continued on next page)

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Exercises for Basic Thresholding (Continued)

Question 1

Pretend you had to do thresholding by hand. Which fields in the CFIMs do you have to look at?

Answer

- Date and Time, for hourly versus 5-minute thresholds
- FDC
- Re or De, to see the CLLI, and whether the switch role was reporting or distant

Question 2

Pretend you had to do thresholding by hand, and let us say all thresholds for CFIMs "[CFIMs](#)" on page 8-92 are 4 (specifically, for 5-minute thresholds for this LSP, for FDC 1984, for all CLLIs, for reporting and distant entities). Identify each alert (each crossed threshold) generated from these CFIMs.

Answer

- De of pitbpadg43t, with 16 CFIMs
- Re of wpbhflan04t, with 9 CFIMs

Note

Re of nwrknj0208t has 4 CFIMs, but that equals, not exceeds the threshold, so it is not alerted.

Question 3

If you turn the Ai off for an entity or FDC, it no longer alerts. So, why not also remove the switch from the swarch table or the FDC from the fdc table?

Answer

You might leave it in swarch or fdc so its CFIMs would still be collected, to be viewed from Find CFIM and computes.

Question 4

You used **dbedit** to turn a switch's alert indicator on or off, but nothing changed. What did you forget?

Answer

You must run **sui modmat** to update the threshold matrix after using **dbedit**.

Flexible Thresholding and Alerting

Introduction to Flexible Alerting

Scope Your system can run flexible alerting and basic alerting at the same time.

Basic versus flexible Basic alerting made a threshold for each unique combination of values in these CFIM fields: fdc/re and fdc/de (which is the same as Alert Case fields: fdc/ne/type).

Flexible alerting can do the same (and probably will in a future generic, when it replaces basic alerting). But in addition, flexible alerting can threshold on ANY set of CFIM fields (or a single CFIM field).

FQs Flexible alerting makes it possible for you to threshold on (to alert on) any set of CFIM fields that NTP developers have defined as alert-able. Such a set is called an FQ (fundamental quantity). Each FQ is a different feature.

FQs currently available are as follows:

- Two FQs are available (used by one customer only, with no feature numbers), on the following CFIM field sets.
 - fdc/ccd — Country code alerting FQ
 - fdc/ccd/rt — Country route alerting FQ
- An FQ is available for call volume alert cases, used if you turn on revenue reporting.
 - re

(Continued on next page)

Introduction to Flexible Alerting (Continued)

Thresholding tables

Flexible alerting thresholds are managed in two sets of tables (where xx is an FQ, such as cc):

- **mean_xx** — Where NTP accumulates counts used to automatically create thresholds, and where you can **dbedit** to affect soaks and LSP updates. (The tables where automatically created thresholds reside are invisible to you.)
- **man_thresh_xx** — Where you can **dbedit** to define manual thresholds.

Reference

These tables are discussed in more detail in the remainder of this chapter, and at ["mean_xx Tables" on page A-84](#) and ["man_thresh_xx Tables" on page A-80](#)

Where to see thresholds

You can see:

- **Manual thresholds** — In the man_thresh_xx table.
 - **Automatic thresholds** — Currently NOWHERE, since they are in tables not visible to you. The most you can see is the value in the count field of the mean_xx table. From that value, NTP automatically creates thresholds for each unique set of values of key fields, for each alert interval type (alert interval type corresponds to the at field of the man_thresh_xx table). (Key fields are lspid plus ["\(FQ fields\)" on page A-86.](#))
-

Procedure: Change automatic alert case closing

When an alert case stops crossing thresholds for enough consecutive intervals, it automatically closes. A closed alert case disappears from Ascreen Output but stays in the acase table — with “closed” in its Status field.

With flexible alerting, you can NOT adjust automatic alert case closing. Instead, ask your customer engineer to do this (by editing CLOSECNT, CLOSECA11, and CLOSECA12 in the flex_alert.cfg file).

LSPs

Purpose

Generally, you would NOT want the same thresholds at all times. So, NTP divides the week into LSPs (load set periods) and gives each LSP its own set of thresholds.

This section explains how LSPs are defined. It is unlikely you will ever want to change how LSPs are defined, but this information is useful for understanding soaks.

Scope

LSPs are time periods. They cycle weekly. They are defined system-wide. You can NOT have different LSPs for different switches, FDCs, FQs, or logins.

Default LSPs

With flexible alerting there are 48 initial default LSPs, as follows:

- 24 LSPs: b1 to b23, hourly, repeated Monday through Friday.
- 24 LSPs: w1 to w23, hourly, repeated Saturday and Sunday:

We show this in the following table (0000 is midnight):

	Business days				Weekend days			
lspid	b0	b1	etc.	b23	w0	w1	etc.	w23
Time	0000-0100	0100-0200	...	2300-0000	0000-0100	0100-0200	...	2300-0000

Traditional LSPs

Basic alerting used 15 LSPs, whose default values are shown below. (See ["LSPs with basic alerting" on page 8-12.](#)) If you want to use these under flexible alerting, **dbedit** the ["lsphours Table" on page A-78.](#) (If defined under flexible alerting, 1 to 10 would be b1 to b10, and 11 to 15 would be w11 to w15.)

	Business days										Weekend days				
LSP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Time	0300-0900	0900-1000	1000-1200	1200-1300	1300-1500	1500-1700	1700-1900	1900-2000	2000-2100	2100-0300	0300-1100	1100-1400	1400-1700	1700-2000	2000-0300

(Continued on next page)

LSPs (Continued)

Daily LSPs

With flexible alerting, there are also two daily LSPs you see used in the mean_xx tables:

- b — Daily for business days
- w — Daily for weekends.

Procedure: View the current LSP

To see the current LSP, enter **curlsp**.

The output does NOT show the current hour, which is the first plus second columns of the lshour table (for example, b1). Instead, this shows what LSP is assigned to the current hour, which is the first plus last columns of the lshour table (for example, b1).

(If you are using the initial system defaults, the second and last columns hold the SAME values, so current hour [e.g. b1] is the same as current lsp [e.g. b1].)

Example

You enter **curlsp** on monday at 12:30 a.m. You might see:

- b0 — From lshours table, if you use initial default values.
- b1 — From lshours table, if you set up lshours to be the traditional 15 LSPs.
- w0 — From the lspcalendar table, on Labor Day, if you set up Labor Day to use weekend (w) LSPs.

(Continued on next page)

LSPs (Continued)

Tables where LSPs are managed

Lspdays and Lsphours tables define LSPs and tell where they are used, and the Lspcalendar table overrides where they are used. Here is what you might see if you “sui find” these tables.

Table	sui find example	Output example
lspdays Reference "lspdays Table" on page A-77.	sui find source=lspdays to see which days of the week are b (business), w (weekend), or other types you may create. b and w are initial default types. You can have up to seven types. The more types, the more LSPs to soak.	Day Day FIND COMPLETED - 7 LSPDAYS mon b tue b wed b thu b fri b sat w sun w
lsphours Reference "lsphours Table" on page A-78.	sui find source=lsphours to see how many LSPs are defined. The first field must be each lspdays type in the lsphours table, the second must be 0-23 (hours) with each lspdays. The third field can be whatever you want. Each unique pair of values in the first and last fields defines a different LSP.	Day Ho Lspid FIND COMPLETED - 48 LSPHOURS b 0 0 b 1 1 b 2 2 b 3 3 (and so on, up to “b 23 23”) w 0 0 w 1 1 w 2 2 w 3 3 (and so on, up to “w 23 23”)
lspcalendar Reference "lspcalendar Table" on page A-76.	sui find source=lspcalendar to see which days of the year are exceptions. For example, you might want Labor Day to use weekend LSPs so it will use weekend thresholds.	YYYYMMDD Datype Description FIND COMPLETED - 2 LSPCALENDAR 20000704 W Use weekend LSPs 20001225 W Use weekend LSPs

(Continued on next page)

LSPs (Continued)

Tables where LSPs are used

"Tables where LSPs are managed" on page 8-98 explains that you get a unique LSP for each unique pair of values from the first and last fields of the lshours table (b0, b1 b2...w0, 21 w2, etc.). Two tables (mean_xx and man_thresh_xx, where xx is an FQ) use these pairs of values in their lspid fields.

Table	Sui find example	Output example
mean_xx Reference "mean_xx Tables" on page A-84	sui find source=mean_cc search=fdc=777000 and ccd=670 to see what thresholds exist, and their soak status, for each lspid where fdc is 777000 and ccd is 670. There is a unique threshold soaked for each unique set of values for key fields in each mean_xx table. For example, in the mean_cc table, there is a threshold for each Lspid/Fdc/Ccd. This output example shows: <ul style="list-style-type: none"> ■ A threshold soaked for each weekday (b0 to b23) LSP. ■ A threshold soaked for the daily weekday's (b) LSP. ■ No thresholds yet for weekends (w, or w to w23). Apparently no weekend has been encountered since the new fdc/ccd was detected. ■ Accum 120, is the (default) maximum number of 5-minute periods in a soak, which means soaking is done. 	<pre>Lspid Accum F Count Fdc Ccd b17 120 - 1 777000 670 b 288 n 2.9167 777000 670 b18 120 - 3 777000 670 b19 120 - 3 777000 670 b20 120 - 3 777000 670 b21 120 - 3 777000 670 b22 120 - 3 777000 670 b23 120 - 3 777000 670 b0 120 - 3 777000 670 b1 120 - 3 777000 670 b2 120 - 3 777000 670 b3 120 - 3 777000 670 b4 120 - 3 777000 670 b5 120 - 3 777000 670 b6 120 - 3 777000 670 b7 120 - 3 777000 670 b8 120 - 3 777000 670 b9 120 - 3 777000 670 b10 120 - 3 777000 670 b11 120 - 3 777000 670 b12 120 - 3 777000 670 b13 120 - 3 777000 670 b14 120 - 3 777000 670 b15 120 - 3 777000 670 b16 120 - 3 777000 670</pre>
man_thresh_xx Reference "man_thresh_xx Tables" on page A-80	sui find source=man_thresh_cc to see if any manual thresholds have been added for any Lspid's. Use man_thresh_xx where xx is an FQ, such as rt or cc.	Nothing, which means none have been added.

(Continued on next page)

LSPs (Continued)

LSP threshold adjustment

NTP adjusts thresholds at the end of each LSP.

Note

Not Soak. The difference between a threshold “soak”, and this automatic threshold adjustment is that the soak occurs when a new threshold is being created, during which time the threshold is NOT used to create alert cases.

Procedure: Freeze LSP threshold adjustment

NTP adjusts thresholds at the end of each LSP. To freeze or unfreeze a threshold's adjustment, use "[Shorten a soak in progress](#)" on page 8-103, but in [Step 6](#), edit the frozen field, assigning either:

- “y” to freeze
 - “-” to unfreeze
-

Procedure: Limit LSP threshold adjustment

NTP adjusts thresholds at the end of each LSP. To set maximum, minimum, or both, to limit how far the thresholds can automatically adjusted, use "[Limit LSP threshold adjustment](#)" on page 8-100 to:

- Put “-” in the thr field.
- Populate the max field, min field, or both.

Note

Precedence. What if, while using this procedures, you add records to a man_thresh_xx table, and those records have overlapping key fields? (Key fields are lspid plus "[\(FQ fields\)](#)" on page A-86.) For what takes precedence see "[man_thresh_xx Tables](#)" on page A-80.

Soaks

Purpose of soaks

To “soak” means to monitor a network to find normal CFIM rates, in order to set NTP thresholds. NTP does soaks in two cases:

- **Initial.** Initial full soak of the entire network when the application is first turned on.
- **New.** After the initial soak, NTP may be triggered to do new, partial, soaks, as explained next.

How a new soak is triggered

This table shows when NTP is triggered to do new soaks. (Note that flexible alerting does NOT use **sui modmat** to trigger soaks.)

If you have this FQ	And if a CFIM arrives with a new (never soaked) value in one of these key fields (and no other key field listed here is “-”), a soak is triggered.
re (reporting entity) for call volume alert cases	re
cc (country code)	fdc, ccd
rt (country routing)	fdc, ccd, rt
(In a future generic, whatever FQ is added to emulate basic thresholding.)	Both fdc, re and fdc, de

What a soak does

When a soak is triggered, NTP does the following:

- In a mean_xx table, adds records with each the new (never soaked) value in a key field (a different record for each lspid). (Key fields are lspid plus "(FQ fields)" on page A-86.)
- In each record's count field, accumulates a weighted average CFIM count for (by default) 120 5-minute periods for each LSP.
- After (default) 120 5-minute periods, uses the count value to generate different thresholds for each lspid, for each alert interval type (at). (These thresholds are in tables NOT visible to you.)

Reference

See "[mean_xx Tables](#)" on page A-84.

(Continued on next page)

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Soaks (Continued)

Example of new soak

- You add a new FDC of 777000 to your FDC table.
- The first CFIM arrives with new FDC 777000, and with ccd of 670.
- The FQ named "cc" has key fields of fdc and ccd (see "[mean_xx Tables](#)" on page A-84). So NTP automatically soaks 777000/670, for all LSPs.
- To see these soaks, look in the mean_cc table. For example, enter:
sui find source=mean_cc search=fdc=777000 and ccd=670
Output might resemble the example at "[Output example](#)" on page 8-99.

Note

Dashes don't count. NO soak is done for "-". For example, if a CFIM arrives with a new FDC of 777000, but the CFIM's ccd and rt fields are "-", then no new soak occurs in mean_cc.

Procedure: Manually trigger a new soak

You cannot manually trigger a NEW soak— and there is no need to, since it is automatic. See "[How a new soak is triggered](#)" on page 8-101. You can trigger a re-soak, explained next.

Procedure: Re-soak

To re-soak, replacing a previous soak, use "[Shorten a soak in progress](#)" on page 8-103, but in [Step 6](#), put 0 (zero) in both the Accum and Count fields.

Note

Or adjust count. Let us say you do something that will exactly double CFIM traffic (for example, you double the sampling rate on all your 4ESS reporting entities). In that case, instead of forcing a re-soak by setting accum and count to 0, you might simply double the value in count.

How long a soak takes

By default, a soak is for 120 5-minute periods. Does this mean a soak is over in 10 hours? No. ((TO BE DONE))

(Continued on next page)

Soaks (Continued)

Procedure: Shorten all future soaks for an FQ

You may want to shorten ALL new soaks for an FQ (for all LSPs), affecting all future thresholds that may be created for an FQ (as they are added to the mean_xx table). You can NOT do this. Instead ask your customer engineer to do this (by editing the LoadMin field in the flex_alert.cfg table).

Procedure: Shorten a soak in progress

Use this procedure to shorten an FQ's soaks in-progress (soaks already in the mean_xx table, and whose accum column has not reached maximum — 120 by default).

Step	Action
1	<p>Find the key fields for the FQ's mean_xx table.</p> <p>Reference See the "mean_xx Tables" on page A-84. Key fields are lspid plus "(FQ fields)" on page A-86.</p> <p>Example Key field for mean_cc are lspid, fdc, and ccd.</p>
2	<p>Use sui find with one or more key field values to pull from the mean_xx table all records you want to modify—in order to modify soaks.</p> <p>Example Key fields for mean_cc are lspid, fdc, and ccd. To pull from mean_cc all records with FDC of XYZ (for all lspid's and ccd's), enter sui find source=mean_cc search=fdc=XYZ noheader delim=' ',' ' > temp</p>
3	<p>Use a text editor (such as vi) in the temp file to change values in accum fields to bigger numbers, to shorten soaks; or to the maximum number of soak periods to end the soak. Default maximum is 120, but can vary by FQ (if you had your customer engineer change it).</p>
4	<p>Use dbedit to replace existing records in the mean_xx file with your changed records.</p> <p>Example dbedit -u -t mean_cc -f temp -s “;”</p>
5	<p>If you receive a message ending with:</p> <ul style="list-style-type: none"> ■ “dbedit completed successfully”, go to the next step. ■ “Errors saved in file...”, see "Correct dbedit Errors" on page 4-33.
6	<p>Remove the temp file.</p>
Done	

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Manually Adjust Thresholds

Purpose

You can trust NTP to automatically create and adjust thresholds. But if you want, you can manually adjust thresholds in three ways.

To do this	See
Limit how far a threshold can automatically adjust	"Limit LSP threshold adjustment" on page 8-100
Turn off thresholds	"Turn off thresholds" on page 8-104
Set manual threshold to override automatically created thresholds	"Manually Adjust Thresholds" on page 8-104

Note

- **Man_thresh_xx.** The three procedures above all add records to man_thresh_xx tables.
- **Precedence.** What if, while using procedures above, you add records to a man_thresh_xx table, and those records overlap (affect some of the same thresholds)? For precedence see ["man_thresh_xx Tables" on page A-80](#).

Procedure: Turn off thresholds

Use ["Manually Adjust Thresholds" on page 8-104](#) to put "-" in all three of these fields: thr, max, and min.

Notes

- **Not wildcard.** From ["man_thresh_xx Tables" on page A-80](#), you learn that man_thresh_xx tables use "-" for wildcard in key fields. But thr, max, and min are NOT key fields, so here "-" does not mean wildcard, but means "null".
- **No Ai.** Basic thresholding used Ai fields to do turn off thresholds. Flexible alerting does NOT use Ai fields—neither in the FDC table nor in any other table.

(Continued on next page)

Manually Adjust Thresholds (Continued)

Procedure: Assign manual thresholds

Use this procedure to assign manual thresholds to replace automatically created thresholds.

Note

Automatic thresholds. You can NOT see automatically created thresholds. For an explanation, see ["Where to see thresholds" on page 8-95](#).

Step	Action
1	<p>For the FQ whose thresholds you want to manually set, find the key fields for the man_thresh_xx table (where xx is the FQ, such as man_thresh_cc).</p> <p>Reference See the "man_thresh_xx Tables" on page A-80. Key fields are: at, lspid, and "FQ fields" on page A-82.</p> <p>Example Key fields for man_thresh_cc are: at, lspid, fdc, and ccd.</p>
2	<p>Where xx is an FQ, enter sui find source=man_thresh_xx noheader delim='";' > temp</p> <p>Example sui find source=man_thresh_cc noheader delim='";' > temp</p>
3	<p>Use a text editor (such as vi) to open and look at the temp file. If the file holds:</p> <ul style="list-style-type: none"> ■ Nothing, there are no existing manual threshold to modify or to use as templates for new manual thresholds. You must create from scratch a record for each manual threshold you want to add. To see what fields are in each record, see "man_thresh_xx Tables" on page A-80, or use the describe command. ■ One or more records, there are existing manual thresholds. With these records, you can modify non-key fields to change existing manual thresholds, or modify key fields, to add new manual thresholds. <p>Note For each record you add, make a note of what you put in the lspid field. You need that information in Step 8.</p>
4	Edit the file as desired, and save the file.
5	<p>Use dbedit to put your new or changed records into the man_thresh_xx file.</p> <p>Example dbedit -iu -t man_thresh_cc -f temp -s “,”</p>

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Step	Action
6	If you receive a message ending with: <ul style="list-style-type: none"> ■ “dcredit completed successfully”, go to the next step. ■ “Errors saved in file...”, see "Correct dcredit Errors" on page 4-33.
7	Remove the temp file.
8	For each lispid from Step 3 , enter: buildthresh <lispid> Example If you added a record with lispid of w in Step 3 , enter: buildthresh w Note <ul style="list-style-type: none"> ■ You must enter this command separately for each lispid used in Step 3, if you used “-” for all LSPs, you cannot enter “buildthresh -”, but instead enter the command separately with each lispid in the week. ■ If you fail to do this step, the manual thresholds will eventually take affect, but only AFTER the end of each affected LSP. Typically, this means waiting a week for a manual threshold to take affect. Reference There is no manual page for the buildthresh command. This is the only reference to that command.
Done	

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Overview

Purpose

This chapter tells how to modify various system defaults and options affecting what users see, and how the system runs.

Task overview

Tasks associated with this chapter are as follows.

Task	Description
"Customize the BB-GUI" on page 9-4	<ul style="list-style-type: none"> ■ Any BB-GUI table layouts and saved searches created by a BB-GUI administrator can be accessed by all BB-GUI users. You will most likely want and need to create these for use in the workflow in your organization. ■ You may want to work with your NTP support organization to alter the system defaults for some of the BB-GUI attributes, such as the retention interval for saved searches, font size of displays, and so forth (see "Customize BB-GUI Attributes" on page 9-5). ■ You may want to customize links on the BB-GUI to local or other customer documents. ■ If your system uses Pattern Painter, you may want to customize the appearance of the Pattern Painter displays (see "Customize Pattern Painter Displays" on page 9-8).
"Manage FDC Help Text" on page 9-14	<p>Though NTP typically provides a comprehensive set of FDC's and FDC help text for each conversion, as new FDCs are created, you will want to keep your help text current.</p>
"Disable Alerting by Digits" on page 9-25	<p>A few customers may want to disable reporting on some digit strings to simply output that analysts see.</p>
"Manage X-GUI and AUI Custom Reports" on page 9-26	<p>This section applies only to a few customers who still the legacy X-GUI and AUI.</p>

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Customize the BB-GUI

Create BB-GUI System Table Layouts and Saved Searches

Overview

BB-GUI users and administrators can both create table layouts and saved searches.

- Users can NOT access each other's table layouts or saved searches.
- All users CAN access table layouts and saved searches that a BB-GUI administrator creates.

As administrator, you can use the procedures below to create common table layouts and saved searches for the users on your system.

Procedure: Create system table layouts

For the procedures to create table layouts, see the *BB-GUI User's Guide*.

Procedure: Create system saved searches

For the procedures to create saved searches, see the *BB-GUI User's Guide*.

Retention duration

NTP stores unused BB-GUI table layouts and saved searches for the retention interval set for the system. Currently, the system default retention interval is 180 days (see "[BB-GUI attributes](#)" on page 9-5 for more information on the defaults for these and other BB-GUI attributes).

As long as a table layout or saved search is used within this interval at least once by at least one user, the BB-GUI system retains it. Otherwise, the **cln_bbgui** utility, run out **cron** from the **ntp** crontab file, removes the unused table layout and saved searches (see "[Cleanup of BB-GUI user files](#)" on page 3-29 for more information on this utility.)

Caution

Do not disable the cron job that runs **cln_bbgui** in an attempt to bypass the system limit on the number of saved searches and table layouts.

Customize BB-GUI Attributes

Overview

Though you cannot change them yourself, your NTP support organization can modify the following attributes of the BB-GUI if necessary for your environment. Contact your NTP support organization for assistance.

BB-GUI attributes

This table describes the default BB-GUI attributes.

Attribute	System Values	Reference
Maximum number of cfim records displayed in the pages of the Pattern Painter feature	Default: 50,000 Maximum: 50,000	For information on Pattern Painter pages, see the <i>BB-GUI User's Guide</i> Note Even if more records are available for display, they are truncated and not displayed.
Maximum number of records retrieved for Find/Analyze and Compute	Default: 10,000 Maximum: 30,000	See the Max Table Size field in " Web User Administration page parts " on page 6-33. Note The Table Size field (same page) sets the number of records displayed on a page.
Point sizes for font size preferences on BB-GUI pages	Defaults: Small (12), medium (20), large (28), and largest (36)	See the Font Size field in " Web User Administration page parts " on page 6-33.
Retention interval for saved searches (if searches are not used)	180 days	The <code>cln_bbgui</code> utility that runs nightly from the <code>ntp</code> crontab file removes old saved searches and table layouts, purges users' histories and logs output. in \$LOGDATA. For more information on <code>cln_bbgui</code> , see " ntp crontab File " on page 3-27. For more information on log, see " Monitor BB-GUI Cleanup " on page 11-30.
Retention interval for table layouts (if layouts are not used)	180 days	
Number of saved searches per user	20	
Number of table layouts per user	20	
Number of BB-GUI users	50	-
Number of pages in autoupdate mode	20	-
Date and time format	Currently not customizable.	-
Length of time a page can be active before it times out.	30 minutes	-

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Customize BB-GUI Attributes (Continued)

User histories

The number of searches displayed in the user history on each output page is fixed at 25. This is not a tunable BB-GUI attribute. Users never see more than 25 history entries regardless of how many are stored on the BB-GUI server. (See the *BB-GUI User's Guide* for complete information on the functionality of the BB-GUI user history.)

The **cln_bbgui** utility that runs nightly out of cron from the **ntp** crontab file prunes the number of user history entries stored on the BB-GUI server (see "[ntp crontab File](#)" on page 3-27 for more information on **cln_bbgui**).

Caution

Do not disable the cron job that runs **cln_bbgui** in an attempt to bypass cleanup of user histories.

Maintain Local Support Links

Overview

The BB-GUI provides links for customers to add their own information to the online documentation pages. The files below are provided as placeholders for customer-defined information.

- **Location.** The files are in the \$APPLROOT/wgui/html/info/en/custfiles directory. There is a file for each book in the user documentation set, as well as the Help button, and Customer Support.
- **Legal statements.** Any file you create should contain:
 - A contact person for the local information
 - A disclaimer stating that information in the file has not been reviewed or verified by Lucent Technologies or its representatives

Files for local support links

This table lists the system default files provided for links to customer-defined information. For current online information on these files and their links, go to the product Launch page, select **Library -> Library Help**, and then select the **Local Practices** link (not the Local Practices button). For information on the Launch page, see the *BB-GUI User's Guide*.

Filename	Description	Go to from
locstoc.html	List of the following files	Library ->Library Help->Local Practices button (not the list)
locsupp.html	Customer Support (Comments)	<ul style="list-style-type: none"> ■ Library ->Local Practices -> Customer Support ■ Library -> Local Practices -> Comments
lochelp.html	Tasks available from the BB-GUI	Library -> Local Practices ->Help
locbbgui.html	<i>BB-GUI User's Guide</i>	<ul style="list-style-type: none"> ■ Library -> Local Practices and see list ■ Tables of Contents for books that are available in HTML ■ Local Practices Table of Contents
locsa.html	<i>System Administration Guide</i>	
loccpadmin.html	<i>CP Administration and O&M</i> (used only if your system has CP sources)	
locgui.html	<i>AUI User's Guide</i> (for users of the legacy interface only)	
locxgui.html	<i>X-GUI User's Guide</i> (for users of the legacy interface only)	

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Customize Pattern Painter Displays

When to use This section only applies if you have the Pattern Painter feature.

Overview

The Pattern Painter feature that runs in association with the BB-GUI displays data in graphical form. The graphics include two pie charts and a parabox. Templates determine what CFIM data Pattern Painter graphics include. Three reference tables that you can modify with the **dbedit** command define the templates:

- ["pptemplate Table" on page A-109](#)
This table names the template, defines the CFIM data in the pie charts, and sets the cfim field that Pattern Painter uses as the primary color field for both the parabox and pie charts.
- ["pptempmap_fdc Table" on page A-111](#)
This table maps an FDC to a template. It defines the data Pattern Painter displays if a Find/Analyze involves only one FDC.
- ["pptemp_columns Table" on page A-112](#)
This table lists all the cfim fields Pattern Painter displays in the parabox for a particular template.

Note

If you delete a template from the pptemplate table, the system automatically deletes that template from the pptempmap_fdc and pptemp_columns tables.

Reference

- See **dbedit** in [Chapter 4, "Reference Data Tables"](#)
- For information on the cfim table and Pattern Painter pages, see the *BB-GUI User's Guide*.

Task overview Use these procedures to administer the Pattern Painter templates.

Task	Procedure
Create templates	"Create a Pattern Painter template" on page 9-9
Modify templates	"Modify a Pattern Painter template" on page 9-11
Delete templates	"Delete a Pattern Painter template" on page 9-12

(Continued on next page)

Customize Pattern Painter Displays (Continued)

Procedure: Create a Pattern Painter template Use this procedure to create a Pattern Painter template.

Step	Action
1	<p>Update the pptemplate table to add the new template.</p> <p>a. To make a template record for the pptemplate table, enter sui find source=pptemplate noheader delim = "" " " maxsave=1 > temp</p> <p>Response The file resembles this: 444otrltemplate cpdigits digits etime testing template wrb</p> <p>b. Use a text editor (such as vi) to change the line to define the template you want to add, and then save the file.</p> <p>c. To insert the record from the temp file into the pptemplate table, enter dbedit -i -f temp -t pptemplate -s ' '</p> <p>d. If you receive a message ending with:</p> <ul style="list-style-type: none"> ■ “dbedit completed successfully”, go to the next step. ■ “Errors saved in file...”, see "Correct dbedit Errors" on page 4-33. <p>Reference For what to put in each field of the pptemplate table, see "pptemplate Table" on page A-109.</p>
2	<p>Update the pptempmap_fdc table to add the new template.</p> <p>a. To make a template record for the pptempmap_fdc table, enter sui find source=pptempmap noheader delim = "" " " maxsave=1 > temp</p> <p>Response The file resembles this: 444otrl 444otrltemplate</p> <p>b. Use a text editor (such as vi) to change the line to define the template you want to add, and then save the file.</p> <p>c. To insert the record from the temp file into the pptempmap_fdc table, enter dbedit -i -f temp -t pptempmap_fdc -s ' '</p> <p>d. Ensure that the dbedit was successful, as you did in the previous step.</p> <p>Reference For what to put in each field of the pptempmap_fdc table, see "pptempmap_fdc Table" on page A-111.</p>

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Step	Action
3	<p>Update the pptemp_columns table to add the new template.</p> <p>a. To make a template record for the pptemp_columns table, enter sui find source=pptemp_columns noheader delim = " " maxsave=1 > temp</p> <p>Response The file resembles this: 444otrltemplate cpdigits 444otrltemplate re 444otrltemplate de 444otrltemplate digits 444otrltemplate etime</p> <p>b. Use a text editor (such as vi) to change the lines to define the template you want to add., and then save the file.</p> <p>c. To insert the record from the temp file into the pptemp_columns table, enter dbedit -i -f temp -t pptempmap_fdc -s ' '</p> <p>d. Ensure that the dbedit was successful, as you did in the previous step.</p> <p>Reference For what to put in each field of the pptemp_columns table, see "pptemp_columns Table" on page A-112.</p>
Done	

Customize Pattern Painter Displays (Continued)

Procedure: Modify a Pattern Painter template Use this procedure to modify a Pattern Painter template.

Step	Action
1	<p>Update the pptemplate table with the modifications.</p> <p>a. To make a template record for the pptemplate table, enter (where <i>name</i> is the name of the template you want to modify)</p> <pre>sui find source=pptemplate search=template_name=name noheader delim = "' '" > temp</pre> <p>Response The file resembles this: 444otrltemplate cpdigits digits etime testing template wrb</p> <p>b. Use a text editor (such as vi) to change the line to define the template you want to add, and then save the file.</p> <p>c. To insert the record from the temp file into the pptemplate table, enter</p> <pre>dbedit -u-f temp -t pptemplate -s ' '</pre> <p>d. If you receive a message ending with:</p> <ul style="list-style-type: none"> ■ “dbedit completed successfully”, go to the next step. ■ “Errors saved in file...”, see "Correct dbedit Errors" on page 4-33. <p>Reference For what to put in each field of the pptemplate table, see "pptemplate Table" on page A-109.</p>

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Step	Action
2	<p>Update the pptemp_columns table with the modifications.</p> <p>a. To make a template record for the pptemp_columns table, enter (where <i>name</i> is the name of the template you want to modify)</p> <pre>sui find source=pptemp_columns search=template_name=name noheader delim = " " > temp</pre> <p>Response The file resembles this:</p> <pre>444otrltemplate cpdigits 444otrltemplate re 444otrltemplate de 444otrltemplate digits 444otrltemplate etime</pre> <p>b. Use a text editor (such as vi) to change the lines for the modifications you want, and then save the file.</p> <p>c. To insert the record from the temp file into the pptemp_columns table, enter dbedit -u -f temp -t pptemp_columns -s ' '</p> <p>d. Ensure that the dbedit was successful, as you did in the previous step.</p> <p>Reference For what to put in each field of the pptemp_columns table, see "pptemp_columns Table" on page A-112.</p>
Done	

Procedure: Delete a Pattern Painter template Use this procedure to delete a Pattern Painter template.

Step	Action
1	<p>To make a template record for the pptemplate table, enter sui find source=pptemplate search=template_name=name noheader delim = " " > temp where <i>name</i> is the name of the template you want to delete.</p>
2	<p>To delete the record in the temp file from the pptemplate table, enter dbedit -d-f temp -t pptemplate -s ' '</p> <p>Note You do not have to delete the template from the pptempmap_fdc or pptemp_columns tables. The system does that automatically when you delete the template from the pptemplate table.</p>

Step	Action
3	If you receive a message ending with: <ul style="list-style-type: none"><li>■ “dbedit completed successfully”, go to the next step.<li>■ “Errors saved in file...”, see "Correct dbedit Errors" on page 4-33.
Done	

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Manage FDC Help Text

Edit FDC Help Text

Overview

GUI users can both access online help text that explains final disposition codes (FDCs) on any table that contains an FDC field. Help is also available via the **sui help** command.

NTP provides comprehensive FDC help text for numerous switches and FDCs. The information in the help text comes from standard switch documentation, for example, the *Domestic* and *International Call-Irregularity Maintenance Reference Handbooks* for the 4ESS and 5ESS switches.

NTP stores the online help in the fdchelp reference table. This table contains two fields, fdc and description.

Purpose

As system administrator, you can modify the fdchelp table to:

- Customize the help text on your system when FDCs are modified
- Create new help text for new FDCs
- Preserve changes or additions to the system default FDC help text when the NTP software is reinstalled

Note

Maintaining the FDC help is important. If no help is available for an FDC, a user sees the following message:

```
No help text is available for the following FDCs: fdc
```

Edit FDC Help Text (Continued)

Reference

- For information on the fdchelp table, see "[fdchelp Table](#)" on page A-59
- For a list of CIM types for Re's that NTP supports, see the section on where CIMs come from in the *GUI User's Guide*.
- To add or modify an FDC and for background information on FDCs, see "[Add or Modify FDCs](#)" on page 5-58. For information about the fdchelp table, see "[fdchelp Table](#)" on page A-51.
- To preserve any changes or additions you made to the system default FDC help text when the NTP software is reinstalled, see "[Preserve customized FDC help text during NTP installation](#)" on page 9-18 and "[Recover custom FDC help text after NTP update](#)" on page 9-23.

No field dependencies for FDC help text

There are no field dependencies between the fdchelp table and any other table. Therefore you must exercise caution when editing fdchelp. It is possible to enter help text for an FDC that is not in the fdchelp table. Also, NTP does not check to ensure that FDCs in the fdchelp table have help text in the fdchelp table.

fdchelp record separator

The FDC help text is stored in the description field in the fdchelp table. This field contains multiple lines since the help text can be extensive. (Normally, records in NTP database tables consist of only one line.) NTP distinguishes separate records based on the fact that each record consists of a separate line. Since the application cannot distinguish among records in the fdchelp table on a line-by-line basis, a special record separator is required.

Note

Single character. The record separator must be a single character that does not appear anywhere else in the table. We recommend you use the ^A (**Control A**) character (made by simultaneously pressing the **Control** key and the letter **A** key).

(Continued on next page)

Edit FDC Help Text (Continued)

dbedit record separator option

When editing the fdchelp table, you must use the **-r** option for the **dbedit** command to specify the record separator BETWEEN records. See ["Edit fdchelp" on page 9-20](#) for examples.

Note

Record separator vs. field delimiter. Do not confuse the fdchelp record separator with the field delimiter. The **-r** option is used only with **dbedit** on the fdchelp table to separate one record from the next. The **-s** option for field delimiters is used with **dbedit** on all tables to separate fields WITHIN a record. To use dbedit for the fdchelp table, you must specify BOTH the record separator AND the field delimiter.

Reference

See ["dbedit Command" on page 4-28](#).

sui find for fdchelp table

Normally, to modify reference tables you use **sui find** to extract records into a template file, edit the file, and use **dbedit** to insert the file back into the database. You can use this procedure for the fdchelp table, with the following exceptions. See ["Edit fdchelp" on page 9-20](#) for examples.

- **Field delimiter.** Since the description field in the fdchelp table contains spaces, you MUST use the **delim=** option to specify a field delimiter. You must select a delimiter that does not appear in the description text. We recommend you use the | (pipe or bar) character as the field delimiter.
- **Record separator.** The record separator option is not available for the **sui find** command. Any template file you generate with **sui find** on the fdchelp table lacks the necessary record separators. You must manually add them between the records before using **dbedit** to insert the file into the database (see ["fdchelp record separator" on page 9-15](#)).

Reference

See ["sui find for dbedit" on page 4-17](#) and ["Search Expressions in sui find" on page 4-20](#) for information on the normal use of **sui find**.

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Edit FDC Help Text (Continued)

Default fdchelp files and dbedit

To edit help text or add text for a new FDC, instead of using **sui find** to generate a template file for use with **dbedit**, you can use template files on the system.

- The \$APPLDIR/help/helpdir directory contains ASCII text files, one per switch type that NTP supports. These files are copies of the default help text initially installed on your system.
- The \$MODELDIR/fdchelp/FDCtext file contains examples of some fdchelp records as well as instructions for editing the fdchelp table.

Reference

See ["Edit fdchelp" on page 9-20](#) for an example of using one of the default files to make a template file.

Caution for deleting help text

The fdchelp table on your system may have been modified after installation so that the text no longer matches the text in \$APPLDIR/help/helpdir. Therefore, to delete help text, do NOT use a template file extracted from \$APPLDIR/help/helpdir. Use **sui find** instead (see ["sui find for fdchelp table" on page 9-16.](#)) Then use **dbedit** with the **-d** (delete) option to delete the help.

(Continued on next page)

Edit FDC Help Text (Continued)

Preserve customized FDC help text during NTP installation

The \$USERDIR/fdchelp/helpdir directory is provided for you to store copies of your customized fdchelp text. If NTP is reinstalled, for example during a migration to a new generic, the files you store will be preserved. Then you will have an opportunity to use either the system default help text in the new installation of the application or the help text you previously customized.

Therefore, when you edit help text for an FDC or add help text for a new FDC, save a copy in \$USERDIR/fdchelp/helpdir of the template file you use with the **dbedit** command. It doesn't matter what filename you use to store the changed FDC help text, but, we recommend you name the file after the FDC. For example, save the template file you used to **dbedit** help text for FDC xyz in a file named FDCxyz.

Caution

If you do not save copies of your customized FDC help text, it WILL BE LOST when the NTP software is installed.

Reference

For the procedure to edit FDC help text that contains a step for preserving a copy of the template file, see ["Edit fdchelp" on page 9-20](#). For the procedure to recover your customized help text, see ["Recover custom FDC help text after NTP update" on page 9-23](#).

Note

You must be logged on the NTP host as **ntp** to have write permission in the \$USERDIR/fdchelp/helpdir directory.

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Edit FDC Help Text (Continued)

fdchelp record format

This example shows the format of two records in the fdchelp template file in \$USERDIR/fdchelp/helpdir. (The example is for a DMS switch.)

- Each record contains:
 - The fdc name in the fdc field
 - Help text in the description field
- A field delimiter between the fdc and description fields (the | character in this example)
- The record separator between each two records (the ^A character in this example)

Note

Output from the **sui find** command resembles this example but lacks the record separators. You must insert the record separators before you use **sui find** output for **dbedit**.

Do NOT include a record separator at the beginning and end of a template file for use with **dbedit**. Use record separators only BETWEEN the records.

Example

```

[start of file]
[start of record]
Record for fdc f100p_1----> f100p_1| ACODE                FNAME
(fdc, field delimiter)    no ack circuit reset          c7up100

description                The ISDN User Part (ISUP) subsystem generates log report
                           C7UP100. The ISUP subsystem generates when the far-end
                           office fails to acknowledge the following messages:...
                           [end of record]
Record separator (^A)----> ^A
Record for fdc f100P_2----> [start of record]
(fdc, field delimiter)    100p_2| ACODE                FNAME
                           no ack grp ckt reset          c7up100

description                The ISDN User Part (ISUP) subsystem generates log report
                           1C7UP100. The ISUP subsystem generates when the far-end
                           office fails to acknowledge the following messages:...
                           [end of record]
                           [end of file]

```

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Edit FDC Help Text (Continued)

Procedure: Edit fdchelp

Use this procedure to:

- Insert new FDC help text
- Modify existing FDC help text
- Delete FDC help text

Note

There are no field dependencies between the fdchelp table and any other tables. You can insert, edit, or delete a record in the fdchelp table even if the FDC is not defined in NTP (see ["No field dependencies for FDC help text" on page 9-15](#)).

Step	Action
1	Log on NTP host as ntp . (You must be logged on at ntp to proceed.)
2	<p>Are you deleting an FDC help text record?</p> <ul style="list-style-type: none"> ■ If YES, go to Step 3. ■ If NO, which method do you prefer to make a template file for the fdchelp table? <ul style="list-style-type: none"> — To use sui find (see "sui find for fdchelp table" on page 9-16), go to Step 3. — To use a file in a template directory (see "Default fdchelp files and dbedit" on page 9-17), go to Step 4.
3	<p>Use sui find to make a template file for the fdchelp table.</p> <p>Examples</p> <ul style="list-style-type: none"> ■ To extract the record for fdc100p_1 and save it in a template file, enter sui find noheader so=fdchelp se=fdc=fdc100p_1 delim=" " > temp ■ To extract the records containing the string of characters OUTGCST in the description field, enter sui find so=fdchelp se=description="*OUTGCST*" delim=" " > temp <p>Response</p> <p>For the first example, the temp file contains one record (for fdc100p_1). For the second example, the temp file contains a record for every fdc that contains the string OUTGCST in its description field. The asterisks (*) are wild cards that indicate text before and after the string OUTGCST. For both examples, the fields in the record are delimited by the (pipe or bar) character. The temp file output by sui find does NOT contain any record separator(s).</p> <p>Reference</p> <p>See "sui find for fdchelp table" on page 9-16 for exceptions to the general usage of sui find for the fdchelp table.</p>

Step	Action
4	<p>Use a text editor (such as vi) to extract a template file from one of the fdchelp template directories in \$APPLDIR/help/helpdir.</p> <p>Note To do so, identify the first and last lines of an FDC help text record you want to extract, and copy the lines to a template file in \$USERDIR/fdchelp/helpdir/temp. Be sure you copy the entire record.</p>
5	<p>Are you deleting an FDC help text record?</p> <ul style="list-style-type: none"> ■ If YES, go to Step 6. ■ If NO: <ul style="list-style-type: none"> a. Go to the \$USERDIR/fdchelp/helpdir/temp directory. b. Use a a text editor (such as vi) to edit the template file, by adding FDCs and their help text or by modifying the help text for an existing FDC. Then save the file. <p>Note If you are editing more than one record, make sure there is:</p> <ul style="list-style-type: none"> ■ A field delimiter between each fdc field and its corresponding description field ■ A record separator between each two records. Do NOT insert a record separator at the beginning or end of the file. <p>Reference See "fdchelp record format" on page 9-19 for an example of a file containing a record separator.</p>
6	<p>Use dbedit to use the temp file to edit the fdchelp table.</p> <p>Examples</p> <ul style="list-style-type: none"> ■ To insert help text for one or more new FDC(s), enter dbedit -i -t fdchelp -f temp -s " " -r "^A" ■ To modify help text for one or more FDC(s) while inserting help text for one or more new FDC(s), enter dbedit -iu -t fdchelp -f temp -s " " -r "^A" ■ To remove help text for one or more FDC(s), enter dbedit -d -t fdchelp -f temp -s " " -r "^A" <p>Note You MUST specify both the field delimiter (-s option) AND the record separator (-r option). The field delimiter and record separator you specify MUST be the same ones that appear in the temp file.</p> <p>Reference See "dbedit record separator option" on page 9-16 for exceptions to the general usage of dbedit for the fdchelp table.</p>

Step	Action
7	If you receive a message ending with: <ul style="list-style-type: none"> ■ “dbedit completed successfully”, go to the next step. ■ “Errors saved in file...”, see "Correct dbedit Errors" on page 4-33.
8	To verify whether the help text is in the fdchelp table, enter sui find source=fdchelp search=fdc=<i>fdcname</i> noheader delim=" " where <i>fdcname</i> is the fdc for which you edited the help text.
9	Are you deleting an FDC help text record? <ul style="list-style-type: none"> ■ If YES, remove the temp file. ■ If NO, store the temp file in \$USERDIR/helpdir/fdchelp. If the file contains help for: <ul style="list-style-type: none"> — Only one FDC, store it under the FDC name so that you can easily identify it if needed. — Multiple FDCs, store it under a name that indicates its contents. <p>Reference See "Preserve customized FDC help text during NTP installation" on page 9-18 for an explanation of why you should store the file for future use.</p>
Done	

(Continued on next page)

Edit FDC Help Text (Continued)

Procedure: Recover custom FDC help text after NTP update

When to use

Use this procedure only if the NTP software is reinstalled on your system and you want to preserve any customized FDC help text you previously created.

Background

When NTP is installed, the system default FDC help text is placed in \$APPLDIR/help/helpdir. If any custom FDC help files have previously been stored in \$USERDIR/fdchelp/help, these are preserved. Then the system checks the \$USERDIR/fdchelp/help directory, as follows:

- **New FDCs.** Any help text in \$USERDIR/fdchelp/help for an FDC that is NOT in the system default help text is automatically inserted into the NTP database. This process ensures that any custom help text you created for new FDCs is carried forward.
- **Changed FDC help text.** If \$USERDIR/fdchelp/help contains any help text for FDCs that ARE in the system default help text, an error file is created in /tmp indicating that the system has detected duplicate help text for the FDC. This file is named in the format tmp/user_ *filename*.dbedit.error, where *filename* is the name of the file in which you preserved a copy of the FDC help text changes in \$USERDIR/fdchelp/help (see "[Preserve customized FDC help text during NTP installation](#)" on page 9-18). For example, the error file named /tmp/user_FDC123.dbedit.error corresponds with the template file \$USERDIR/fdchelp/help/FDC123.

The first line of the error file is a comment indicating that it applies to an FDC for which system default help text has been installed:

```
#A record matching key:fdc already exists for fdchelp table.
```

This process allows you to compare the system default help text and the preserved text in /tmp to decide which version you will bring forward (see [Step 3](#) in the following procedure).

Note

Complete this procedure for EACH FDC help error file in /tmp.

Step	Action
1	Log on the NTP host as ntp . (You must be logged on as ntp to proceed.)
2	Use sui find to extract from the NTP database the FDC help text record corresponding to the FDC in the error file in /tmp (see " Background " on page 9-23). Example sui find source=fdchelp search=fdc=<i>fdcname</i> noheader delim="'"> temp

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Step	Action
3	<p>Compare the output from sui find to the data in the user_<i>filename</i>.dbedit.error file and determine which version of the help text for this FDC you want to bring forward into NTP.</p> <p>Example In two separate windows on your terminal, use a text editor (such as vi) to open the file in /tmp and the output file generated by the sui find command.</p>
4	<p>Do you want to use the system default FDC help text?</p> <ul style="list-style-type: none"> ■ If YES, do nothing. The system will automatically use the default text. ■ If NO, use dbedit with the -u option to insert the contents of the error file into the database. <p>Example dbedit -d -t fdchelp -f /tmp/user_<i>filename</i>.dbedit.error -s " " -r "^A"</p> <p>Note Be sure to include a field delimiter (in the example above) and a record separator (^A in the example above) in the dbedit command. See "dbedit record separator option" on page 9-16 for more information.</p>
5	Repeat this procedure beginning with Step 2 for the next FDC help err file in /tmp.
Done	

Disable Alerting by Digits

Description

Overview

The disabledig feature disables generation of alert records on FDCs to known digit patterns so that analysts' Ascreen output is not cluttered. The feature is useful for disabling alerts on choke networks and disabling alerts for routine known blockages outside the choke networks. NTP continues to receive and store the CFIMs containing disabled FDC and digit pattern combinations. But the CFIMs containing FDCs and digits that match a combination in the disabledig table bypass the NTP thresholding and alerting system and are stored in the CFIM database table only.

Disabledig table

The disabledig table contains the following fields (both are key fields) used to administer this feature (see "[disabledig Table](#)" on page A-38).

- **fdc** —The FDC for which you want to disable alerting on this set of digits (must be defined in the fdc field of the fdc table. Values: 7-character alphanumeric string.
- **pattern** — The digit pattern for which you want to disable alerting on this FDC. Values: 4 to 50 characters (including metacharacters), such as a string of digits or a range.

Caution

- You **MUST** include an NPA (area code) in the digit pattern you disable. Otherwise, alerts will be disabled on this digit pattern coming from all other areas (which you may not want disabled). Though the Re only gives the seven digits of the De, NTP can find the home NPA of the De from the swarch table for the disabledig lookup.
- Use of this table can affect performance.

Example

This is a sample entry in the disabledig table:

```
63 80033[3-5]1111
63 8004441**1
63 800555&&11
63 8002221111
```

These entries disable alerting on fdc 63 for the given phone numbers.

Manage X-GUI and AUI Custom Reports

Overview

Background

X-GUI and AUI users can access customized scripts and executables. These scripts can be any shell executable. These executables can include application commands (using SUI syntax) such as **find** and **compute** for customized reports, or they can be SQL scripts that query against the system table data.

Note

Currently, custom reports are not available from the BB-GUI. The BB-GUI offers its own reports.

How user access reports

This table summarizes how users access custom reports.

User Interface	How to Provide Access to Customized Scripts
X-GUI	via Custom Reports
ASCII (AUI)	via restricted shell or unrestricted shell
AUI	via Uprog (see " AUI — UPROG " on page 9-30)

X-GUI users have a menu selection on the Main Window called Reports. When a user selects Custom Reports from the pulldown menu, the GUI displays a list of Custom Reports or scripts from which the user can select one to be run. The list can vary depending on the user's FDC group.

To provide this access, use **dbedit** to create a record in the reports table for each executable you want to make available.

Custom report scripts can run under shell or kshell. By default, the report is executed using **/bin/sh**. The first line of a script can specify the shell to be executed. Use the **#!** pathname syntax, as in the following example:

```
#! /bin/ksh
```

If NTP commands are to be executed by the Custom Report script, be sure to run setup the proper environment by executing **\$APPLDIR/init/snas_env**.

(Continued on next page)

Overview (Continued)

Reports table

The reports table has the following fields:

- **name** (key field) — The name of the report or executable, as it will appear on the Custom Reports menu. Values: Up to 30 printable case-sensitive characters.
- **command** — The full pathname of the command to be executed. By default, the command executes on the local machine, so you must include the connection to the host prior to the command path. Example: **rsh hostname 'command path'**

The executable can be located in any directory as long as you provide the path. We suggest you use \$USERDIR/rbin so AUI users can access the executables (\$USERDIR/rbin is preserved during system upgrades).

Note

An xterm window is automatically invoked on a user's terminal to display output. Do not invoke xterm in your script. The numrows and numcols fields of the reports table record specify the size of the xterm window by rows and columns. This command string can be up to 2000 printable case-sensitive characters.

- **numrows** — The number of rows to use when displaying the report. Values: Up to 5 digits from 1 to 65535, or a single dash (-) indicating the field does not apply or no data is available.
- **numcols** — The number of columns to use when displaying the report. Values: Up to 5 digits from 1 to 65535, or a single dash (-) indicating the field does not apply or no data is available.
- **help** — Help text telling how to use the report and what it does. A single dash (-) indicates the field does not apply or no data is available.
- **fdgroup** — The name of an FDC group to which this report is restricted. This group must be defined in the name field of the fdgroup table. Values: Up to ten printable characters, or single dash (-) indicating that this report can be available to any group.

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Overview (Continued)

Procedure: Create a custom report

Use this procedure to create an X-GUI custom report. Use the example in the procedure as a model.

Step	Action
1	<p>Create the executable on the NTP host. The following is an example script to print the load set periods (LSPs) defined in NTP. Assume this script is stored in the file \$USERDIR/rbin/listlsp.</p> <pre>. \$APPLDIR/init/snas_env lsp 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 actLSP=\$(ERR_MAP=0 lsp sed -e 's/^.*LSP=//' cut -d" " -f1) echo "\nPanther Time = `date +%H:%M %a %h %d`, Active LSP = \$actLSP\n" echo "Enter RETURN to end the command: " read ans</pre> <p>Note</p> <p>The read command at the end of the script is necessary to keep the GUI display on the users terminal until they are done viewing the output.</p>
2	<p>Test the executable on the host machine. Enter listlsp</p> <p>Response</p> <p>You should see the following output:</p> <pre>LSP 1: Mon Tue Wed Thr Fri 3:00 - 9:00 LSP 2: Mon Tue Wed Thr Fri 9:00 - 10:00 LSP 3: Mon Tue Wed Thr Fri 10:00 - 12:00 LSP 4: Mon Tue Wed Thr Fri 12:00 - 13:00 LSP 5: Mon Tue Wed Thr Fri 13:00 - 15:00 LSP 6: Mon Tue Wed Thr Fri 15:00 - 17:00 LSP 7: Mon Tue Wed Thr Fri 17:00 - 19:00 LSP 8: Mon Tue Wed Thr Fri 19:00 - 20:00 LSP 9: Mon Tue Wed Thr Fri 20:00 - 21:00 LSP 10: Mon Tue Wed Thr Fri 21:00 - 3:00 LSP 11: Sun Sat 3:00 - 11:00 LSP 12: Sun Sat 11:00 - 14:00 LSP 13: Sun Sat 14:00 - 17:00 LSP 14: Sun Sat 17:00 - 20:00 LSP 15: Sun Sat 20:00 - 3:00 NTP Time = 10:33 Thu Dec 05, Active LSP = 3 Enter RETURN to end the command:</pre>

Step	Action
3	<p>If the executable will run from remote workstations, verify that the executable can be executed from the remote workstations.</p> <p>Example Enter the following on the remote workstation (where <i>machine_name</i> is the name of the NTP host): rsh machine_name \$USERDIR/rbin/listlsp</p> <p>Note The output should be the same as the output when the command is executed from on the host machine.</p>
4	<p>Put the appropriate entry into the reports table. For example, use dbedit with the <i>lsmp</i> file as input.</p> <p>Note You must specify a field delimiter and a record separator for the reports table. This is because the report help text fields may be multi-line. For more information on the record separator, see the discussion under editing FDC help in "dbedit record separator option" on page 9-16.</p> <p>Example cat lsptmp List LSPs, rsh panther_hp /lucent/ntp/snas/user/rbin/listlsp,24,80,-,-</p> <p>Enter dbedit -i -t reports -f lsptmp -s "]" -r "^A"</p>
5	Test the custom report via the GUI.
Done.	

AUI — UPROG

Customize scripts

Uprog allows you to make customized scripts available to all or some AUI users. If a program is to be available to everyone, install it in the \$USERDIR/uprog/all directory.

Uprog scripts can run under **sh** or **ksh**. By default, the script is executed using **/bin/sh**. The first line of a script can specify the shell to be executed. Use the following syntax: `#! /bin/ksh`

When users use the **uprog** command from the AUI main menu, they can select from a set of commands installed in a common \$USERDIR/uprog/all directory and in an optional directory specific to the user's current FDC_GROUP (for example, \$USERDIR/uprog/svc). When the selected command resides in both the common and FDC_GROUP areas, the one in the FDC_GROUP area takes precedence. Upon termination of the program, the user returns to the main menu.

NTP is installed with only the \$USERDIR/uprog/all directory created. No default uprog programs are installed. The **ntp** login must create FDC_GROUP subdirectories under \$USERDIR/uprog. A directory name must match the corresponding FDC_GROUP. You can then create, test, and maintain programs in the **all** and **FDC_GROUP** areas as needed (assuming your NTP installation directory is /lucent/ntp/snas):

Example modes of uprog directories:

```
drwxr-xr-x  2 prod prod      /lucent/net/snas/user/uprog
drwxr-xr-x  2 prod prod      /lucent/net/snas/uprog/all
```

Example mode of **uprog** commands:

```
-rwxr-xr-x  1 prod prod lsp
```

When installing any directories or commands, change ownerships, groups, and permissions as illustrated.

Example

Caution

When installing new uprog commands, take care not to compromise system security (for example, installing commands that allow escape from the AUI to unrestricted kshell).

If at any time operating system or NTP files used by uprog commands are replaced or updated, you should validate that all commands continue to function and modify them if required.

Administer Referral Records

Background

The optional referral record feature enables analysts to assign alert cases and other problems to someone. Analysts can already assign alert cases by filling in the “owner” or “referred” field on alert cases, but the referral records feature enables analysts to assign non-alert case problems, and it enables them to track referrals even after the related alert cases have expired.

Note

Referral database. You may never need to view or update referral records, but if you do, you can do so from **sui find** on the referral database. For example, to look in the “referral” database for the referral record with ticket number 32, and to put that referral record into a file named x, enter **sui find source=referral search=ticket=32 noheader delim=“|” > x**

You administer MUGCs

Possibly the only administration you will ever perform for referral records is creating and updating the MUGC (maintenance unit grouping code) file. This section tells how to do this.

Note

Other fields. Other referral record fields need codes defined. However, for those fields, someone needs only to write down the list of codes to be used. You do NOT do this.

Purpose of MUGC

Most referrals pertain to a switch or other network element. Different sets of network elements may be assigned to different groups of persons commonly known as maintenance unit groupings.

When an analyst creates a referral record:

- He or she fills in the network element related to the problem.
- The MUGC field prompts the analyst with the appropriate MUGC code.
- The analyst can then accept that default MUGC code, or can type in a different MUGC code.

If you do NOT set up a MUGC:

- That code does NOT appear as a default any entity
- The analyst can NOT enter that code in the MUGC field (if it is entered, it is rejected).

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Administer Referral Records (Continued)

mugc_cli_file

You set up MUGCs in the \$USERDIR/rbintools/mugc_cli_file. In this file:

- Each line maps a MUGC to one of its CLLIs.
- The first field on each line is a CLLI, which is typically 11 characters but can be as many as 16 characters.
- The second field on each line is a MUGC, which is 8 characters or less.
- The two fields are separated by a space.

Example

The \$USERDIR/rbintools/mugc_cli_file resembles the following:

```
ogt1418sv0m abcgroup
sv01wa0604c westend
dn2176xy3aa 5es
ny4446xy2bb 5es
abc1211ab01 bobgroup
abc1211ab02 bobgroup
```

Procedure: Create or modify MUGC codes for referral records

Use this procedure to create or modify the list of codes analysts can use in the MUGC field on referral records.

Step	Action
1	Find out what MUGC codes analysts want to use.
2	Log on the NTP host.
3	Go to the \$USERDIR/rbintools directory where the mugc_cli_file file resides:
4	Use a text editor (such as vi) to edit the file and save the changes. Note The file should resembles the example above.
5	Make sure permissions on the file has group read permission by entering Example Use the operating chmod command with the group option: chmod g+r mugc_cli_file
Done	

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Overview

Purpose

This chapter tells how to archive CFIMs, alert cases, and other surveillance data (also called chronological data), as well as how to restore that data from tape. You do this using application commands:

- **arcwrite** — archive surveillance data to tape.
- **arcread** — restore surveillance data from tape to system tables.
- **acrestore** — restore surveillance data from tape to user file.

When to use

Archiving surveillance data to tape is NOT required. Do this only if you want to save surveillance data for future reference.

Note

Could you use **arcwrite** and **arcread -R** to restore surveillance data accidentally lost? Yes, but it would probably NOT be worth the trouble. NTP is most useful for current problems, and lost surveillance data quickly becomes old news.

Coordinate with O&M

Tasks in this chapter are typically used for saving data for historical analysis, and NOT for routine backup and recovery of lost data. Routine backup and restore is done for application reference data (NOT surveillance data). For information about backups made for the purposes or recovery, see [Appendix D, "Application Backup and Recovery"](#).

IF you decide to use **arcwrite**, and IF you want O&M persons to handle it for you, please make a copy of this chapter (or procedures from this chapter) and give them to O&M persons.

Surveillance Data

Background

Two types of data NTP data can be divided into two general types, which we can refer to as follows.:

Type of data	How saved	Reference
Surveillance — chronological data from network elements. Also data created from this data. Examples: CFIMs and alert cases.	Archive daily — There is too much of this to back up weekly. Instead, archive this data daily via cron .	This chapter
Reference — All other data, including: application software, executable commands, system tables you populate with thresholds and switch architecture, files users put in their home directories.	Back up weekly — Backed up weekly to tape and \$ORAEXPORT.	Appendix D, "Application Backup and Recovery"

Surveillance data

Surveillance data is in the following system tables:

- acase (only closed alert case from this table)
- alert
- cfm (when archived, each CFIM's CIM field is omitted)
- fdccount (optional, currently used by one customer only)
- linkalert (optional)
- otr (optional feature)

When you archive surveillance data, you archive all of these tables for the day you choose.

When you retrieve surveillance data, you can specify the system table you want. You can even specify which records you want from a table.

See What is Online or Archived

Procedure: Use `olstart` to see what is online in system tables

The `olstart` (online start time) command shows the earliest surveillance data that is still online in system tables (typically, this is several weeks in the past).

Before you decide to retrieve surveillance data from an archive tape, you can use this command to see if the data is already available online.

Enter `olstart`

Output resembles the following:

```
acase start time: 96/09/12 14:05
alert start time: 96/09/18 05:00
cfim start time: 96/09/17 22:25
linkalert start time: 96/09/18 08:00
fdccount start time: 96/09/01 06:00
```

Procedure: See when you archived data

Consult archive log files to see when you archived surveillance data.

- For a terse, long-term archive history, see `$LOGDATA/arcwrite.log`.
- For detailed output of the last `arcwrite` command execution, see `$WORKDIR/tmp/arcwrite.tmp`.

Procedure: See what is on an archive tape

To see what is archived on a tape, load it in a tape drive and enter `arcread -l`

This lists the tape's table of contents in a file at `$WORKDIR/tmp/toc.save`, which you can view with a text editor (such as `vi`) or the operating system `cat` command.

Reference

["Arcread example" on page 10-15.](#)

Change Oracle Passwords

Purpose

You need an archive (Oracle RDBMS) password to use **arcwrite** or **arcread** commands. When the application is installed, your NTP support organization gives you this password. You may want to change it periodically.

Procedure: Change the archive password

Use this procedure to change your archive password.

Step	Action
1	Log on the application host as ntp (you must be logged on as ntp to proceed).
2	Go into SQL*Plus. To do this, enter sqlplus /
3	When you get the SQL prompt (SQL>) enter the following lines, substituting the new password for the <i>pw</i> shown here: alter user archive\$ identified by <i>pw</i>; exit;
Done	

Commands Overview

Archive

The following command to archive surveillance data:

Command	Purpose	When to use
arcwrite	Archive surveillance data from system tables to tape.	Daily from cron , or manually if cron fails.

Retrieve

Both of the following commands to retrieve archived surveillance data:

Command	Purpose	When to use
arcread	Retrieve archived data from tape, into a user file (default user file is working set, named ws).	To see old surveillance data no longer on-line in system tables. Note Surveillance data typically remains on-line several weeks, depending on system capacity and how fast data accumulates.
arcread -R	Retrieve archived data from tape to the system table the data originally came from.	To replace data missing from a damaged on-line system table. Note If you arcread -R surveillance data (such as CIMs for CFIMs) that is older than the current retention period, then that data is purged.

Note

arcrestore. In previous generics, in place of **arcread -R** we used **arcrestore**. Both work the same.

Archive Surveillance Data

arcwrite Command

Purpose	The arcwrite command archives all of a period's surveillance data to tape.
Optional	Archiving is optional. Do it only if you want to preserve this data for future reference.
How often	How often you would archive depends on your data volume. Large RBOCs would probably archive daily, while customers with less data may archive weekly.
How long it takes	This depends on data volume. Typically, a large RBOC archiving daily would need between 20 minutes and 3 hours and 20 minutes.
Caution	This command overwrites any data on the tape. There is no option for overwrite protection for the arcwrite command.
Use cron	<p>If you choose to archive surveillance data, we recommend you use cron to set up your daily archives. With cron, the only operator intervention required is daily loading and labelling of a tape.</p> <p>Doing a large archive can slow system performance, so we suggest you schedule cron to archive during non-prime hours.</p> <p>Reference</p> <p>See your operating system documentation for how to set up daily archives via cron.</p>

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arcwrite Command (Continued)

Syntax

```
arcwrite [-d mm/dd[-mm/dd] | -D num_days_back] [-n 0|1] | [ -t dev|file|dir ] [-v]
```

Parameter	Function
-d mm/dd[-mm/dd]	Date. Selects the date or date-range for Surveillance records to be archived. mm and dd are two-digit month and day identifiers. The date must be yesterday's date or older. Omit if -D is used. If neither -d nor -D is used, default range is from last arcwrite to the present.
-D number	Days back. How many previous days of data to archive, NOT including today. For example, -D2 archives yesterday and the day before. Omit if -d is used.
-n device_number	Device number. (If omitted, and -t is not used, default is device 0—or 1 if you have only device 1.) Selects tape drive to write to; 0 or 1. Omit if -t is used.
-t dev file dir	Output path. A path to an tape drive or another output device, a file, or a directory. If you enter a directory (with no file), the system makes up a file name, using the Julian date. Omit if -n is used.
-v	Verbose (If omitted, default is non-verbose.) Runs arcwrite in verbose mode, which gives detailed output as the command progresses. Use -v to closely monitor archiving, such as when debugging or running tests.

Note

You can stop **arcwrite** at any time by pressing **Delete**.

Arcwrite examples

- :This command archives yesterday's surveillance data
arcwrite
- This command archives surveillance data for February 13 and February 14
arcwrite -d 02/13-02/14

(Continued on next page)

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arcwrite Command (Continued)

Procedure: Archive surveillance data

Use this procedure to manually archive surveillance data.

Note

When to use. If you schedule archiving via **cron**, you would need to use this procedure only if a cron archive failed for some reason — for example, because the tape drive was not available, or someone forgot to load a tape.

Step	Action
1	<p>Ensure you have the following:</p> <ul style="list-style-type: none"> ■ A high capacity DAT tape drive. ■ A sufficient number of tapes. For example, for a large RBOC archiving daily, one 90-meter tape in compressed mode may be sufficient. <p>Note The number of tapes necessary depends on the CIM rate.</p>
2	Log on the application host as ntp while the application is running (you must be logged on as ntp to proceed).
3	<p>Enter olstart</p> <p>Response Output resembles the following:</p> <pre>acase start time: 96/09/12 14:05 alert start time: 96/09/18 05:00 cfim start time: 96/09/17 22:25 linkalert start time: 96/09/18 08:00 fdccount start time: 96/09/01 06:00</pre>
4	<p>Is the data that you want to archive older than the date output in the previous step?</p> <ul style="list-style-type: none"> ■ If YES, stop. The data is no longer available on-line for archiving. ■ If NO, go to the next step.
5	<p>Are you already running the arcread or arcwrite command?</p> <ul style="list-style-type: none"> ■ If NO, go to the next step. ■ If YES, wait for that command to finish before proceeding.
6	Load the tape into the tape drive.

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Semi-Automate the Archive Using cron

Introduction

The archiving procedure can be semi-automated using **cron**. This would be done if the customer knew in advance what days should be archived (for example, Mother's Day).

Caution

Make sure that **cron** scheduled archives do not conflict with planned system down time or other operations such as weekly system backups.

O&M responsibility

O&M persons need to:

- Load and label a new archive tape each day
- Allow the **cron** to automatically execute **arcwrite** each night at the prescribed time
- Validate the archive (by checking \$LOGDATA/arcwrite.log, which lists when archives were done and if they were successful)

If an automatic archive is preempted or fails, a manual archive will need to be performed to fill the gap.

- Unmount, label, write-protect, and store tape according to local procedures.
-

Administrative responsibility

The administrator must set up the **cron** entry to:

- Set up the application environment
 - Execute **arcwrite** via the kshell
 - Redirect standard output and standard error to a viewable output file.
-

Example of cron entry

The following **cron** entry that runs **arcwrite** each night at 02:15am:

```
15 2 * * * /bin/ksh -c "export ORACLE_SID=dbms; . /lucent/ntp/snat/appl/init/snas_env;/lucent/ntp/snas/arcwrite > /lucent/ntp/snas/work/tmp/arcCron.out 2&1"
```

Retrieve Archived Surveillance Data

arcread Command

Purpose

Use the **arcread** command to retrieve old surveillance data to a user file (also called a working set). Users of the SUI and of the legacy X-GUI and AUI can then use that working set for Find/Analyze and Compute.

Note

Not for BB-GUI. Currently, BB-GUI users can NOT use retrieved surveillance data.

Background

User files (working sets) are databases that are created automatically or manually by users. For how, see "[How users create and remove databases \(user files\)](#)" on page 7-45.

The **arcread** command gives you a second way to manually create a user file (database), by downloading it from archive tape.

Time considerations

If you download a whole day's CFIMs into a user file, **arcread** could take several hours to execute. To save time, and preserve system performance, use the **-T** and **-e** options (see "[Syntax](#)" on page 10-14) to narrow the set of records you retrieve.

Caution

There are two ways you may end up missing data you thought you retrieved with **arcread**.

- **-s option.** If you do not use **-s** to name a user file, **arcread** downloads to the ws (working set) user file, where you may accidentally overwrite it.
- **-m option.** You can retrieve no more than 100,000 records into one user file, and you may find yourself retrieving fewer if you omit the **-m** option.

(Continued on next page)

arcread Command (Continued)

Syntax

```
arcread [-R] -r rectype -d [yy/mm/dd] [-T hh:mm-hh:mm] [-e search_expr] [-m size] [-s ws_name]
[-n 0|1] | [-t dev|file] [-l] [-v] [-o]
```

Parameter	Function
-R	<p>Restore surveillance data. Retrieves archived data into a surveillance database, instead of into a file or working set.</p> <p>Note arcread -R is the same as the arcrestore command used in previous generics.</p> <p>Reference To use arcread -R, see "arcread -R to a Surveillance Table" on page 10-18.</p>
-r <i>record_type</i>	<p>Record type. Specifies the database type to retrieve. Use ONE of the following: <i>acase</i>, <i>alert</i>, <i>cfim</i>, <i>fdccount</i>, <i>linkalert</i>, <i>otr</i></p>
-d [<i>yy/mm/dd</i>]	<p>Date. (Required, except with -l.) Specifies the date of records to be restored, <i>yy/mm/dd</i> format. Enter only one date. Date ranges are NOT valid, so you must do a separate arcread for each day needed.</p>
-T <i>hh:mm-hh:mm</i>	<p>Time. (If omitted, default is all day.) Gives the start and end time of records to be restored, in <i>hh:mm</i> format (for example, use 05:01, not 5:1).</p>
-e " <i>search_expression</i> "	<p>Expression. (If omitted, all records are retrieved for the specified date and time.) Provides a search expression used to retrieve records from the archive tape. The search expression must be enclosed in double quotation marks. Syntax is as used by the sui find command (see "sui find" on page 4-16.)</p> <p>Note</p> <ul style="list-style-type: none"> ■ It is much more efficient to narrow the date and time of a search with -d and -T, rather than by using <i>date=value</i>, <i>time=value</i>, or <i>datetime=value</i> in a search expression. If you do use <i>date=value</i>, <i>time=value</i>, or <i>datetime=value</i>, they will be "and'ed" with respective -d and -T options. ■ The 100,000 record limit does not apply with the -R option, but with that option you are NOT restoring to a user file.

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Parameter	Function
-m <i>size</i>	Working set maximum size. (If omitted, the default maximum is the value of your MAXSAVE variable.) Specifies the maximum number of records to be downloaded from the archive tape into your working set. Size must be a whole number greater than 0 and less than the value of your MAXSAVEMAX variable. Working set size is also limited by user space. Newest records are found first, so oldest records may be truncated.
-s <i>ws_name</i>	Working set name. (If omitted, ws is used.) Names the user file to which the retrieved records are to be written. If you use the name of an existing user file, you replace its records. If you use a new name: <ul style="list-style-type: none"> ■ Names can use only: A-Z and a-z. ■ Names are case-sensitive (XYZ and xyz are two distinct names).
-n <i>device_number</i>	Device number. (If omitted, and -t is not used, default is device 0—or 1 if you have only device 1.) Selects tape drive to write from; 0 or 1. Omit if -t is used.
-t <i>dev file</i>	Output path. A path to an tape drive or another output device, or a file. Omit if -n is used.
-o	Override overwrite protection. (If omitted, default is to retain overwrite protection.) Causes arcread to bypass its built-in system table overwrite protection feature. The protection feature exits if data for the requested archive date still exists in the on-line system table. This parameter is useful if you think there may be corruption or loss in the online data.
-l	List. If used, all other parameters are ignored. If omitted, default is to NOT list. Displays to your terminal the archive tape table of contents. This option negates all other options. Output is saved in the temporary file \$WORKDIR/tmp/toc.save.
-v	Verbose (If omitted, default is non-verbose.) Runs arcread in verbose mode, which gives detailed output as the command progresses. Use -v to closely monitor archiving, such as when debugging or running tests.

Arcread example

The following arcread example searches the archive tape for CFIMs that occurred between 10:20 and 10:40 AM on August 15, with the FDC “444003”. By default, this downloads those CFIM records into the “ws” user file.

```
arcread -r cfim -d 08/15 -T 10:20-10:40 -e “fdc=444003 and ds=sv02”
```

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arcread to a User File

Procedure: Copy old surveillance data from backup to user file

Use this procedure to download surveillance data no longer available in system tables. This copies data from backup tape to a user file.

Reference

This is **arcread** without **-R**. For **arcread -R**, see ["arcread -R to a Surveillance Table" on page 10-18](#).

Note

Before you begin. Before you use this procedure, you may want to ensure the data is NOT still available in a system table — -in which case there is no need to do this. To see if data is still available, enter **olstart** (see ["See What is Online or Archived" on page 10-5](#)).

Step	Action
1	Ensure you have the following: <ul style="list-style-type: none"> ■ A high capacity DAT tape drive. ■ The archive tape or tapes you want to restore from.
2	Log on the application host as ntp while the application is running (you must be logged on as ntp to proceed).
3	Are you already running arcwrite or arcread ? <ul style="list-style-type: none"> ■ If NO, go to the next step. ■ If YES, wait for that command to finish before proceeding.
4	Load the tape you will read from.
5	Enter arcread -l Response The tape's table of contents is saved in the temporary file /snas/work/tmp/toc.save.
6	Enter cat \$WORKDIR/tmp/toc.save Response The tape's table of contents is scrolled onto your screen.
7	Does the tape's table of contents list the data you want? <ul style="list-style-type: none"> ■ If NO, stop. The data is not available on this tape. You can try again with another tape. ■ If YES, go to the next step.

Step	Action
8	<p>Enter the arcread command.</p> <p>Response You see output resembling the following (in non-verbose mode): <pre>\$ arcread -r cfim-d 08/22 -T 13:50-14:52 -e "fdc=444000" -s myws -m 460 Starting arcread Wed Aug 24 16:29:47 EDT 1994. Enter <DELETE> key at anytime to abort this arcread. Enter archive password:</pre></p>
9	<p>Enter the archive (Oracle) password.</p> <p>Response You see output resembling the following (in non-verbose mode): <pre>Command in progress ... please wait. Importing archive export file 40 Wed Aug 24 16:30:59 EDT 1994 ... please wait. Doing find on archive CF_940822_1425. Doing find on archive CF_940822_1420. Doing find on archive CF_940822_1415. Doing find on archive CF_940822_1410. Doing find on archive CF_940822_1405. Doing find on archive CF_940822_1400. Importing archive export file 41 Wed Aug 24 16:34:04 EDT 1994 ... please wait. Doing find on archive CF_940822_1355. Doing find on archive CF_940822_1350. Warning: Max working set size reached before all applicable archive data examined. Wait for tape rewind. arcread complete Wed Aug 24 16:35:20 EDT 1994. Working set information: Table Type Size Last modified myws cfim 460 94/08/24 16:34</pre></p> <p>Note</p> <ul style="list-style-type: none"> ■ This may take minutes, or hours, depending on how much you are retrieving. ■ You can stop arcread at any time by pressing Delete. If a user file is created before you press Delete, it contains any records downloaded before you pressed the key.
10	<p>When arcread is finished, remove the tape from the tape drive, and store it according to local practice.</p>
Done	

arcread -R to a Surveillance Table

Purpose

The "arcread to a User File" on page 10-16 section tells how to **arcread** surveillance data from backup tape into a user file (also called a working set),.

You can also **arcread -R** data from backup tape into a surveillance database. This is useful to replace data accidentally lost from tables such as *acase*, *alert*, *cfim*, *fdccount*, *linkalert*, and *otr*. You will rarely, if ever, need to arcread surveillance data, but if you do so, you must ask your NTP support organization to reset the *cfim_start* variable to match the earliest time period on the tape.

Note

If you **arcread -R** surveillance data into a database, and that data is older than the database's retention period, the data is purged. This is not useful.

arcrestore Command

The **arcrestore** command is nothing more than **arcread -R**, which is how we explain it here.

Example

This command	Is the same as this command
arcrestore -r alert -d 03/28 -T 11:00-18:30	arcread -R -r alert -d 03/28 -T 11:00-18:30
arcrestore -r acase -d 03/28 -o -v	arcread -R -r acase -d 03/28 -o -v
arcrestore -r alert -d 03/28 -T 11:00-18:30	arcread -R -r alert -d 03/28 -T 11:00-18:30
arcrestore -r cfim -d 95/08/15 -T 10:20-10:40	arcread -R -r cfim -d 95/08/15 -T 10:20-10:40
arcrestore -l	arcread -R -l (or simply arcread -l)

Syntax

Recall that the syntax of **arcread** is:

```
arcread [-R] -r rectype -d [yy/mm/dd] [-T hh:mm-hh:mm] [-e search_expr] [-m size] [-s ws_name]
[-n 0|1] | [-t dev|file] [-l] [-v] [-o]
```

With **arcread -R**, you typically do NOT use the *[-e search_expr]*, *[-m size]*, or *[-s ws_name]* options.

(Continued on next page)

arcread -R to a Surveillance Table (Continued)

arcread -R option

- **Execute.** You can execute **arcread -R**:
 - While the application is running
 - From ksh
- **Terminate.** To terminate **arcread -R** at any time, press **Delete**. Termination may not be immediate because of internal cleanup processing. Termination does NOT unrestore any tables restored before termination.
- **Logs.** A log of the last **arcread -R** command execution is saved in the \$WORKDIR/tmp/arcrestore.log file.

Procedure: Replace missing surveillance data from backup

Use this procedure to use **arcread -R** to replace data missing from surveillance data tables.

Note

Your NTP support organization will need to check and may need to reset the cfm_start variable (see [Step 11.](#)).

Step	Action
1	Ensure the following: <ul style="list-style-type: none"> ■ You have a high capacity DAT tape drive. ■ You have the archive tape you want to restore from. ■ The application is running (otherwise, arcread -R will not work).
2	Log on the application host as ntp (you must be logged on as ntp to proceed.)
3	Are you already running arcread , arcwrite , or another arcrestore ? <ul style="list-style-type: none"> ■ If NO, go to the next step. ■ If YES, wait for that command to finish before proceeding.
4	Load the tape you will restore from.
5	Enter arcread -R -I Response The tape's table of contents is saved in the temporary file \$WORKDIR/tmp/toc.save.

Step	Action
6	<p>List the content of the tape.</p> <p>Example Use the operating system cat command to see the tape's table of contents scroll on your screen cat \$WORKDIR/tmp/toc.save</p>
7	<p>Does the tape's table of contents list the data you want?</p> <ul style="list-style-type: none"> ■ If NO, stop. The data is not available on this tape. You can go back to Step 4 and try another tape. ■ If YES, go to the next step.
8	<p>Enter the arcread -R command.</p> <p>Response</p> <ul style="list-style-type: none"> ■ Typically, a whole-day arcread -R will take from 20 minutes to approximately 3 hours. ■ You see output resembling the following (in non-verbose mode): <pre>\$ arcread -r cfim-d 08/22 -T 13:50-14:52 -n 1 Starting arcread Wed Aug 24 16:29:47 EDT 1994. Enter <DELETE> key at anytime to abort this arcread. Command in progress ... please wait. Importing archive export file 40 Wed Aug 24 16:30:59 EDT 1994 ... please wait. Importing archive export file 41 Wed Aug 24 16:34:04 EDT 1994 ... please wait. arcread complete Wed Aug 24 16:35:20 EDT 1994.</pre>
9	<p>Note the start and end times in the first line of the output (these times indicate the range of data on the tape).</p> <p>Example In the output in the previous step, the start time is 13:50 and the end time is 14:52s.</p>
10	<p>When arcread -R is finished, remove the tape.</p>
11	<p>Contact your NTP support organization and ask them to check the time set for the cfim_start variable, and If that time is LATER than the start time in the arcread -R output (Step 9), have them reset it to match the start time on the output.</p> <p>Caution If this variable is not set correctly, you cannot do Find/Analyze on the data from the tapes.</p>
Done	

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Overview

Background

NTP provides log files and other sources of information to help you monitor the system. This chapter explains most of these sources and refers to other parts of the documentation where other sources are explained.

In addition, the procedure to set up responsible parties to receive some types of event notification is included, as are some special corrective actions.

Note

Operating system logs. Logs discussed in this chapter are in addition to standard operating system logs, such as `/var/adm/syslog/syslog.log` or `/etc/rc.log`. See your operating system documentation for information on standard logs.

Task overview

This table gives minimum recommendations for monitoring:

What to monitor	When to monitor	Reference
System status via shell commands	At least weekly	"Monitor with Shell Commands" on page 11-5
System console messages	Continually	"Monitor System Console Messages" on page 11-6
Error status messages	When a system console message tells you to, or daily by viewing the <code>err_status</code> file.	"Monitor <code>err_status</code> File" on page 11-9
Oracle database size	When you receive output from the chk_space utility.	"Monitor Oracle Database Size" on page 11-10
Startup and shutdown logs	When the system is installed and after modifications	"Monitor NTP Startup and Shutdown" on page 11-11
Boot (initialization) logs	<ul style="list-style-type: none"> ■ If the runstat command fails to provide information about NTP or Oracle run status ■ For systems with a CP, if the application is not receiving data from switches for which the CP collects data ■ For more information than the startup and shutdown logs (see above) provide 	
master log	As needed	"master Log" on page 11-19

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What to monitor	When to monitor	Reference
admin log	As needed	"admin Log" on page 11-21
incon log	Daily	"incon Log" on page 11-22
Deletion of old BB-GUI table layouts, saved searches, and user history	As needed	"Monitor BB-GUI Cleanup" on page 11-30
RDS	Each morning (only if you have reference database synchronization, F6214)	"Monitor Synchronization" on page 15-5
Links to OneVision NFM sources	Daily or as needed	"Monitor Links" on page 14-50
CIM flow from CP (Communications Processor) sources	Daily or as needed	\$SCPDIR/run/INITLOG in "Monitor NTP Startup and Shutdown" on page 11-11
Links via the Inkpm log	As needed	"Inkpm Log" on page 11-24
Backup logs	After O&M does weekly backups	"backup Log" on page 11-29
CDR error files	Periodically (only if your system receives CDR CIMs), depending on how often you need to reprocesses CDRs for summarization	
User databases (user files), accumulation	Periodically and if a "max # extents" message in the master log indicates a space problem	"ptspace Command" on page 7-49 and "Remove User Databases" on page 7-47

Procedure: View logs and error files

To browse logs and error files, use the operating system **cat** command or a text editor (such as **vi**). Or where a log may be updated frequently, such as the master log, use the operating **system tail** (enter **Control-D** to stop the **tail**).

Example

This command shows the last 20 lines of a master log and any new lines, as they are logged in the file (where **###.##.##** is the log number).

```
tail -20f $LOGDATA/maste###.##.##
```

Monitor with Shell Commands

Shell monitoring commands

You can monitor the NTP host by entering operating system and NTP shell commands at the command line.

Examples

This table lists some of the commands you can use for monitoring.

The **root** and **ntp** logins can execute these commands, except for **whoall**, which only the **ntp** login can execute.

Enter:	Look for:	Reference
ps -ef	Processes that may be hung	Operating system command reference manual
sar	System performance problems	
bdf	File system space problems on the NTP host	
whoall wc -l	Users not properly exiting	"whoall command" on page 3-7
runstat	NTP processes that are running, or not running	"Verify that NTP is running" on page 3-4

Monitor System Console Messages

Console messages

The following types of messages come to the NTP system console:

- Operating system error messages
- NTP system initialization messages
- Critical and major software errors

Note

The system initialization and software error messages are sent with SOM (start of message) and EOM (end of message) characters at the beginning and end of the messages.

CompuLert

The system initialization and software error messages can also be sent to CompuLert or a similar computer monitoring system. You can control the volume of messages sent to the NTP host console via CompuLert control commands.

Set System Event Notification

Purpose

This procedure sets responsible parties to receive messages on their terminal screens when a hardware or software failure or other system event occurs.

Note

- Failures are logged in the \$WORKDIR/reports/err_status file (see ["Browse the err_status file" on page 11-9](#)).
- Other events produce output from the **chk_space** utility (see ["Monitor Oracle Database Size" on page 11-10](#)).

Procedure: Set system event notification

Use this procedure to **dbedit** the notify table to assign responsible parties to receive messages about system failures and events. The notify table has one field, sysuser, which holds the login IDs of persons to be notified.

Reference

See ["notify Table" on page A-95](#) for more information.

Step	Action
1	Log on the NTP host as ntp .
2	Enter sui find source=sysuser Response Output lists all NTP users.
3	Does the list contain the login ID you want notified of software or hardware failures or other events? <ul style="list-style-type: none"> ■ If YES, go to the next step. ■ If NO, the login ID has not been added as an NTP user. Create the NTP user, which adds the user's login ID to the sysuser table (see "Add NTP Users" on page 6-20 and "sysuser Table" on page A-146). Then return to this procedure.
4	Enter sui find source=notify Response Output lists login IDs of persons already receiving system messages. Sysuser johndoe smith

Step	Action
5	<p>Is the login ID listed?</p> <ul style="list-style-type: none"><li>■ If YES, stop. It is already on the list to be notified.<li>■ If NO, use dbedit to add the login ID to the notify table. <p>Example</p> <p>To add login ID xyz to the notify table, enter the following lines:</p> <pre>echo xyz > filename</pre> <pre>dbedit -i -t notify -f filename</pre>
Done	

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Monitor err_status File

Overview

When the system detects a hardware or software failure, people who have NTP administrative responsibilities can be notified by a message sent to their terminal screens. The following message appears on the screen, overlaying whatever else is running (similar to the operating system **write** command):

```
SYSTEM PROBLEM!!! Read the $WORKDIR/reports/err_status file.
```

The system also logs a error message in the \$WORKDIR/reports/err_status file. If you are not logged on the NTP host when an error message is generated, you will not see it, and it will not be forwarded to you later when you do log in.

- To see messages you missed, see ["Browse the err_status file" on page 11-9](#).
- To set the parties to receive system error notification, see ["Set system event notification" on page 11-7](#).

Examples

The following table contains a few examples of messages you might see in the err_status file.

If the err_status message is similar to this...	Then...
File system: <i>name</i> Overflowed!	Delete, move, or compress some files in the indicated area to create more free space. This problem is typical for the log files in the \$LOGDATA directory.
The following Hardware components are down: iop1 down	Contact your NTP support organization.
The following Mirrored file Logical Volume(s) are OFFLINE.: /dev/dsk/sc1d1s3 (33,19): OFFLINE	

Procedure: Browse the err_status file

Use the operating system **cat** command or a text editor (such as **vi**) to browse the err_status file.

Monitor Oracle Database Size

Overview

The **chk_space** utility runs out of **cron** (see "[NTP-related crontab files](#)" on [page 3-23](#)). It monitors the Oracle tablespaces and checks the data files associated with them. If a data file is getting too full, **chk_space** may do the following:

- Add a new data file for that tablespace. Maximum space allocated for each data file is 2 Gb.
- Log a message in the master log (see "[master Log](#)" on [page 11-19](#)).
- Send a message to the responsible parties set in the notify table (see "[Set System Event Notification](#)" on [page 11-7](#)). If nobody is specified in the notify table to receive messages, by default **chk_space** sends a message to the **ntp** login (\$APPLOWNER).

The message may include information on the amount of free disk space, the sizes of the various database files, and an indication if the size of any tablespace has been increased.

Corrective action

Take precautions to prevent the system from running out of space.

- If disk usage for chronological database files, such as cfims, cims, otr, and alert, etc.) is too great, contact your NTP support organization for help in reducing the retention interval for this type of data.
 - The system has many checks to clean out unnecessary data. As a general rule, whenever **chk_space** adds a new data file, you should determine why and if it is acceptable.
-

Monitor NTP Startup and Shutdown

Overview

Monitor system startup and shutdown to see if surveillance data was lost due to unscheduled shutdowns or if there are problems running the NTP and the **runstat** command does not provide output (see ["runstat command" on page 3-4](#)). You would probably monitor startup and shutdown weekly, or when you anticipate problems, such as during the first weeks after installation or NTP software updates.

- The monthly logs list shutdown and startup events.
- The boot (initialization) logs provide more detailed information. We recommend you do this before contacting your NTP support organization in the event of a problem running NTP. The boot log for CP processes may be useful if NTP is not receiving data from a switch for which the CP is a collector.

Monthly logs

For each of the last 12 months, the system has a monthly log file listing manual and automatic system startups and shutdowns. These log files are:

- In the \$WORKDIR/run directory.
- Named log.*mm*, where *mm* is the month (01 for January, and so on).

Format of monthly logs

Entries in the monthly log files resemble the following, and have two or three parts, as explained in the table:

```
09/09/97 13:45:47 MANUAL-STARTUP
09/09/97 13:46:00 MANUAL-SHUTDOWN elapsed seconds: 13
```

Part	Function
Date and time.	Tells when the system started up or shut down.
Either: <ul style="list-style-type: none"> ■ MANUAL-SHUTDOWN ■ MANUAL-STARTUP ■ AUTO-SHUTDOWN ■ AUTO-STARTUP 	Tells whether the applicaiton: <ul style="list-style-type: none"> ■ Was manually shut down with the ntpstop command ■ Was manually started up with the ntpstart command ■ Had an unrequested shutdown, due to a software failure ■ Started up automatically when the system was booted (from the boot program called ntpstart)
Elapsed seconds	Tells how many seconds the system was up prior to a shutdown (for MANUAL-SHUTDOWN or AUTO-SHUTDOWN entries only).

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Monitor NTP Startup and Shutdown (Continued)

Boot logs

Startup and shutdown messages are logged in the order shown here:

1. **\$WORKDIR/boot/BOOTOG** — for Oracle processes and NTP daemon processes
2. **\$WORKDIR/run/INITLOG** — for the NTP application
3. **\$SCPDIR/run/INITLOG** — (optional) for CP processes, if your system has a CP collector.

For a standalone CP, this log is on the CP machine as `/opt/scp/run/INITLOG` (see “CP Software, Files, and Databases” in Chapter 2 of *CP Administration and O&M*).

scp INITLOG

If your system has a CP, the `$SCPDIR/run/INITLOG` file logs messages for the last CP startup or shutdown. `INITLOG.old` logs messages for the startup or shutdown previous to that. This log may be helpful in cases where NTP is not receiving data from switches for which the CP collects data.

Note

On a standalone CP, this file is `opt/scp/run/INITLOG`.

Example for normal startup

For a normal startup, this file should show the system going to run level 4.

```
08/21 17:23:54 BEGINNING STARTUP SEQUENCE
08/21 17:23:54 Going to run level 4
RUNNING COMMUNICATION PROCESSOR SOFTWARE
LOGDAEMON RUNNING!
+ Starting autonomous processes
+ Autonomous processes started
```

Example for normal shutdown

For a normal shutdown, this file should resemble the example above with additional lines like the following:

```
08/21 16:55:50 SHUT-DOWN REQUESTED
08/21 16:55:50 BEGINNING SHUT-DOWN SEQUENCE: PLEASE WAIT...
08/21 16:55:50 Going to 'shut-down' run level
08/21 16:56:00 SHUT-DOWN SEQUENCE COMPLETED
08/21 16:56:00 Terminating!
```

(Continued on next page)

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Monitor NTP Startup and Shutdown (Continued)

Oracle BOOTLOG \$WORKDIR/boot/BOOTLOG logs messages for the last startup or shutdown.
BOOTLOG.old logs messages for the startup or shutdown previous to that.

Example for normal startup

For a normal startup, this file should show the system going to run level 5.

```
08/25 11:25:19 BEGINNING STARTUP SEQUENCE
08/25 11:25:19 Going to run level 5
RUNNING <application> BOOT PROCESSES
~~~~~
          Copyright c 1989-2000 Lucent Technologies
                Unpublished & Not for publication
                    All Rights Reserved
~~~~~
Oracle listener already started
LOGDAEMON RUNNING!
Oracle already started
+ Boot processes started
08/25 11:25:36 Going to run level 5
```

Example for normal shutdown

For a normal shutdown, this file should resemble the example above with additional lines like the following:

```
08/25 11:19:23 MANUAL-SHUTDOWN
08/25 11:19:23 BEGINNING SHUT-DOWN SEQUENCE: PLEASE WAIT...
08/25 11:19:23 Going to 'shut-down' run level
08/25 11:19:39 SHUT-DOWN SEQUENCE COMPLETED
Oracle listener stopped
Failed to stop Oracle

Oracle Server Manager Release 3.1.6.0.0 - Production
Copyright (c) 1997,1999 Oracle Corporation. All Rights Reserved.
Oracle8i Enterprise Edition Release 8.1.6.1.0 - Production
With the Partitioning option
JServer Release 8.1.6.1.0 - Production

SVRMGR> Connected.
SVRMGR> ORA-03113: end-of-file on communication channel
SVRMGR>
Server Manager complete.
08/25 11:21:10 Terminating!
```

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Monitor NTP Startup and Shutdown (Continued)

NTP INITLOG

\$WORKDIR/run/INITLOG logs messages for the last startup or shutdown.
INITLOG.old logs messages for the startup or shutdown previous to that.

Example for normal startup

For a normal startup, this file should show the system going to run level 5 and deleting cached database information so it can be refreshed later. If there are errors, you will see them as indicated in the example.

```
08/25 11:25:56 BEGINNING STARTUP SEQUENCE
08/25 11:25:56 Going to run level 5
RUNNING <application> SOFTWARE
~~~~~
      Copyright c 1989-2000 Lucent Technologies
      Unpublished & Not for publication
      All Rights Reserved
~~~~~
Deleting CcdInfo and l.CcdInfo

[more lines indicating deletions will appear here]

Threshold maps initialized.

[errors will appear here, if any]

+ Starting autonomous processes
ttIsql (c) TimesTen Performance Software. All rights reserved.
(Default setting AutoCommit=1)
Disconnecting... please wait.
Done!
RAM Residence Policy           : inUse plus grace period
RAM Residence Grace (Secs)     : 300
Manually Loaded In Ram         : False
Purge Logs for Data Store      : True
Logging Enabled                 : True
Replication Manually Started   : False
Oracle Agent Manually Started  : False
Oracle Agent Stop Pending      : False
+ Autonomous processes started
EXECUTION ENVIRONMENT RUNNING
08/25 11:36:54 Going to run level 5
```

(Continued on next page)

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Monitor NTP Startup and Shutdown (Continued)

NTP INITLOG (continued)

Example for normal shutdown

For a normal shutdown, this file should resemble the example above with additional lines like the following:

```
08/25 11:19:16 MANUAL-SHUTDOWN
08/25 11:19:16 BEGINNING SHUT-DOWN SEQUENCE: PLEASE WAIT...
08/25 11:19:18 Going to 'shut-down' run level
08/25 11:19:20 SHUT-DOWN SEQUENCE COMPLETED
08/25 11:19:22 Terminating!
```

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Monitor Application Logs (\$LOGDATA)

Overview

Application logs are chronological files automatically generated by the NTP application. They are flat files in ASCII format, stored in the \$LOGDATA directory.

Application logs

NTP maintains the following log files for application events.

\$LOGDATA file	Description
maste	Includes all application error and information messages
admin	Lists the most important error and information messages
incon	Records inconsistencies among incoming data and NTP reference tables
Inkpm	Lists errors from source links
rel_intern_err	Records internal errors logged by the event logger
sccs	Contains messages from NFMs (CIMS not in correct format)
backup	Contains backup logs for NTP
univlog	Messages from universal switches (CIMS not in correct format)
cln_bbgui	Lists expired BB-GUI saved searches, table layouts, and user histories that the system will delete

Note

The \$LOGDATA directory also contains the following files used by your NTP support organization. These files are created by the **err_log.sh** utility that runs out of cron (see "[ntp crontab File](#)" on page 3-27). You do NOT need to monitor these files.

- uniq_incon_hostname_err
 - uniq_maste_hostname_err
-

Retention interval

The logs are rolled over as new logs are generated. The system retains:

- Six Inkpm log files
 - Three files each of all other logs
-

Overview (Continued)

Log file naming

NTP logs, except `rel_intern_err`, have two parts in their names:

- The first part is a string, either: `maste`, `admin`, `incon`, or `lnkpm`.
- The second part is the date and time, in `NNN.HH.MM` format, when the file is created, where:
 - *NNN* is the julian date (Example: January 1 is 001).
 - *HH* is hour of the day, in 24-hour format, when the first event of the day was logged (Example: 4 p.m. is 16:00).
 - *MM* is the minute when the first event of the day was logged.

Example

If the master file logged its first event at 2:30 a.m. on August 22, the name of the file would be `maste234.02.30`.

Log message header example

Here is an example of a typical header on a message in an application log file.

```
Mon Jan 27 15:44:35 1997 HP-UX:9000/891:LOGDAEMON logdaemon.c:1104
LOG001 LG_START_LOG ** START OF LOGFILE '/logdat/maste027.15.44'
** openDest
```

(Continued on next page)

Overview (Continued)

Message headers

Each message in an NTP log file is preceded by a header identifying the message. The fields of the header typically include:

- Severity level of problem
- Day message was generated
- Date message was generated
- Time message was generated
- Year message was generated
- Machine address
- Operating system
- Process name
- User (login) that invoked the process
- Location of error in software (C file)

Severity levels

The severity levels in NTP logs are as follows:

Level	Indicated by this before time and date	Meaning
Critical	*C	The error may have caused the system to crash or become inoperable (for example, head crash, autonomous process initialization failure, autonomous process death). Failure to restart will halt some significant operations.
Major	**	Hardware or software failures that make the system partially inoperable (for example, corrupted shared memory table detected, important IPC message cannot be delivered). These inconsistencies are not serious enough to halt execution but are too important to be ignored. Such errors, if not corrected, make the system ineffective in future operations.
Minor	*	Errors that probably do not make the system inoperable and are usually made by users (for example, erroneous entries). The system responds by an error message.
Info	blank	Informational events (for example, the start of an autonomous process).

master Log

Purpose

This file (or files) is a chronological log of NTP critical, major, and minor errors and general informational events.

The files are named *mastejulian date.hour.minute*, for example:
maste283.14.16

Reference

See "[Application logs](#)" on page 11-16 for other files in \$LOGDATA.

Note

Errors generated by **dbedit** are logged in the master log.

Creation/ removal

A new master file is created when the current file reaches 100k bytes. Each file is automatically removed after 14 days.

Message format

Each message in the master log has two lines, with the following information:

Severity Date_Time Software_module File Line
Message_number Error_message

Message parts

This table lists the fields of the master log messages.

This part...	Tells you...
<i>Severity</i>	See " Severity levels " on page 11-18.
<i>Date_Time</i>	When the message occurred
<i>Software_module</i>	Where in the system the message was detected
<i>File line</i>	Program producing error and line number of code
<i>Message_number</i>	Application message number
<i>Error_message</i>	Text message

(Continued on next page)

master Log (Continued)

Examples

The following are examples of master log messages.

```
* Tue Jun 24 03:15:35 1997 HP-UX:9000/891:io_tsm1:ntp DataPort.C:202
ERR001 Source 'tsm1' link timed out. Closing port.
```

```
Tue Jun 24 03:18:45 1997 HP-UX:9000/891:io_tsm1:ntp Dkport.C:501
ERR002 EVENT Opening port for source 'tsm1'
```

```
* Tue Jun 24 04:46:11 1997 HP-UX:9000/891:io_tsm2:ntp DataPort.C:202
ERR001 Source 'tsm2' link timed out. Closing port.
```

```
Tue Jun 24 04:49:21 1997 HP-UX:9000/891:io_tsm2:ntp Dkport.C:501
ERR002 EVENT Opening port for source 'tsm2'
```

```
Tue Jun 24 07:59:47 1997 HP-UX:9000/891:io_tsm2:ntp CimPtr.C:435
ERR001 Length of 1122 truncated to 1024
```

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admin Log

Purpose The admin log is a chronological log of critical and major errors. It is a subset of messages in the master files. See ["Severity levels" on page 11-18](#) for severity levels.

Reference

See ["Application logs" on page 11-16](#) for other files in \$LOGDATA.

Creation/ removal A new admin file is created when the current file reaches 100 Kbytes. Each file is automatically removed after 14 days.

Message format Each message in the admin log has two lines, with the following information:

Severity Date_Time software_module file line
message_number error_message

Examples The following are examples of admin log messages.

```
Thu Jun 5 00:16:05 1997 HP-UX:9000/891:LOGDAEMON logdaemon.c:1104
LOG001 LG_START_LOG ** START OF LOGFILE '/logdat/admin156.00.16' **
openDest
** Thu Jun 5 00:16:05 1997 HP-UX:9000/891:io_cp1:ntp SendMsg.C:68
ERR001 queue='samp_rate_mon', type=1016, size=677, stat=1, (errno=11)

** Fri Jun 6 00:16:08 1997 HP-UX:9000/891:io_cp1:ntp SendMsg.C:68
ERR001 queue='samp_rate_mon', type=1016, size=515, stat=1, (errno=11)

** Sat Jun 7 00:16:16 1997 HP-UX:9000/891:io_cp1:ntp SendMsg.C:68
ERR001 queue='samp_rate_mon', type=1016, size=623, stat=1, (errno=11)

** Sun Jun 8 00:16:14 1997 HP-UX:9000/891:io_cp1:ntp SendMsg.C:68
ERR001 queue='samp_rate_mon', type=1016, size=677, stat=1, (errno=11)
```

Reference The incon log is a file located in \$LOGDATA. See ["Monitor Application Logs \(\\$LOGDATA\)" on page 11-16](#) for general information about \$LOGDATA.

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incon Log

Purpose

The incon (inconsistency) log is a chronological log of:

- Inconsistencies between NTP record bases and matrices
- Inconsistencies between CP record bases and NTP's (if your system uses CP sources)
- Invalid status messages received from NFM
- Problems with CIMs in files of CDR CIMS that might

Reference

- **Other files.** For other files in \$LOGDATA, see ["Application logs" on page 11-16](#)
- **Special procedures for GeoProbe.** If a log entry contains the word "geoprobe", see ["Fix GeoProbe Problems in incon Log" on page 11-38](#).

Creation/removal

All but the latest three files are removed each night.

(Continued on next page)

incon Log (Continued)

Examples

The first two incon messages below indicate that FDCs are undefined in the fdc table. These messages include the entire CIM. The last two messages indicate omissions from the dmsroute and swarch tables, respectively, and do not include the entire CIM.

```
Wed Apr 19 07:05:08 2000 HP-UX:9000/889:io_egh02:ntp Incon.C:125
ERR002 EVENT ORG_DMS "TRK352" RE london0400t FDC TRK352 not in "fdc" table. Msg discarded.
Msg=05 TRK 352 9044 INFO TUP TRK TRBL CKT      VIDESUPDM2W 446
      REPORTING CKT      VIDESUPDM2W 446
      REASON = INVALID SHP CPI COMB
      CIC = 446  SHP = 0  CPI=1
```

```
Sat Apr 22 08:10:12 2000 HP-UX:9000/889:io_egh02:ntp Incon.C:125
ERR002 EVENT ORG_DMS "LINE138" RE eghmen0100t FDC LINE138 not in "fdc" table. Msg discarded.
Msg=10 LINE138 1384 INFO TRMT CKT      VIBRASET2W 75
      TREATMENT SET = UNDT  CALLED NO = 31786151427
      CALLID= 3FA9 001F
```

```
Tue Jun 20 12:56:20 2000 HP-Utsm3X:9000/891:io_tsm3:ntp DeDms.C:439
ERR002 EVENT RE = svstohxxcg0, TGCLLI = ROTLTP not in "dmsroute" table.
```

```
Tue Jun 20 12:58:41 2000 HP-UX:9000/891:io_cpl:ntp Incon.C:121
ERR002 EVENT No HNPAs for "clmbohxxcg0" in swarch.
```

Note

The "tsm" in the messages above means NFM.

Corrective actions

This table references known corrective actions. :

Entry in incon log	Possible meaning	See
The FDC begins with lnp, and eqtype is 5ess or ewsd.	The FDC is not defined.	
For any configurable converter CDR CIM	You may want to reprocess the CDR	"Reprocess CDRs" on page 11-32

Inkpm Log

Purpose

The Inkpm log collects link status messages regarding CIM sources. They are useful for troubleshooting the links to new sources that you add to NTP and for determining the health of existing links.

Reference

- For more information about sources, see [Chapter 14, "CIM Source Administration"](#) and ["Data flow illustration"](#) on page 2-12.
- See ["Application logs"](#) on page 11-16 for other files in \$LOGDATA.

Creation/removal

All but the latest three files are removed each night.

Monitoring Inkpm

Rather than monitor Inkpm, it is better to use either of the following:

- **sui linkmon** (see ["sui linkmon Command"](#) on page 14-55)
- **sui find so=linkstatus se=status!=up** (see ["sui find"](#) on page 4-16 for a complete list of **sui find** options and arguments)

Example: General CIM messages

Messages with "CIM" following the date and time are 5-minute summaries of CIM activity on the link. The fields following "CIM" report the number of CIMS that NTP:

- Processed (received and recognized) in the past 5 minutes
- Dropped because the message queue in the CFIM converter was full.
- Could not convert to CFIMs and therefore discarded (due to a lack of either an re or FDC in the CIM)

```
Mon Jun 23 23:00:17 1997 HP-UX:9000/891:io_tsm2:ntp
IOStats.C:120
ERR002 EVENT 06/23/97 23:00 CIM tsm2 4 0 0
```

```
Mon Jun 23 23:00:17 1997 HP-UX:9000/891:io_tsm3:ntp
IOStats.C:120
ERR002 EVENT 06/23/97 23:00 CIM tsm3 7 0 0
```

(Continued on next page)

Inkpm Log (Continued)

Example: General link status messages

General link status messages report the name of the source sending the message and include the text string of the status message as received. Messages in this log include switch-source messages, source -NTP messages, and unrecognized messages.

This example shows messages for an NFM source (both “sccs” and “tsm” in the messages mean NFM).

```
Sun Jun 22 05:56:00 1997 HP-UX:9000/891:io_tsm3:ntp
LsmIfcSCCS.C:201
ERR002 EVENT SCCS_STATUS msg from `tsm3`:
  `CLMBOHXXCG0 57 REPORT LOG STATUS 120 Removed logging : SRC
wnc110c.mtc`
```

(link down assumed)

```
Sun Jun 22 05:56:04 1997 HP-UX:9000/891:io_tsm3:ntp
LsmIfcSCCS.C:201
ERR002 EVENT SCCS_STATUS msg from `tsm3`:
  `CLMBOHXXCG0 57 REPORT LOG STATUS 119 Restored logging : SRC
wnc110c.mtc`
```

(unrecognized)

Example: Datakit or TCP/IP messages

Messages with “DK” following the date and time are hourly summaries of activity on the Datakit or TCP/IP port. The fields following “DK” report the:

- Source name (from the name field of the source table)
- Total number of messages on the link in the past hour
- Total number of reframes in the past hour
- Number of times the Datakit or TCP/IP port was closed in the hour

This example shows a general Datakit or TCP/IP log message:

```
Sun Jun 22 06:00:17 1997 HP-UX:9000/891:io_tsm1:ntp IOStats.C:94
ERR002 EVENT 06/22/97 06:00 DK tsm1 3489 0 0
```

```
Sun Jun 22 06:00:18 1997 HP-UX:9000/891:io_tsm2:ntp IOStats.C:94
ERR002 EVENT 06/22/97 06:00 DK tsm2 2240 0 0
```

```
Sun Jun 22 06:00:19 1997 HP-UX:9000/891:io_tsm3:ntp IOStats.C:94
ERR002 EVENT 06/22/97 06:00 DK tsm3 578 0 0
```

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Inkpm Log (Continued)

Example: RE-CP link messages

Inkpm messages with “RE” following the date and time report the status of a switch-CP link. The fields following the “RE” show the:

- Reporting entity link this message is about
- CP reported to by this reporting entity
- Number of messages received from this reporting entity by this CP
- Percent of unreadable messages received
- Percent of messages received with lost data
- Number of link failures
- Status for the RE-CP link as received in link status message
- Link status as derived by the application from other data and the thresholds set in system variables.

```
Wed Oct 7 09:00:17 1992 wisvb:vax:lsm_c1s2 procMsgs.C:333
ERR002 EVENT 10/07/92 09:00 RE dllstxt134t kscyl 12 0 0 0 - -
```

```
Mon Jun 23 23:01:42 1997 HP-UX:9000/891:lsm:ntp ReCpLnk.C:267
ERR002 EVENT 06/23/97 23:01 RE clmbohxxcg0t cp1 81 0 0 0 up up
```

```
Mon Jun 23 23:01:42 1997 HP-UX:9000/891:lsm:ntp ReCpLnk.C:267
ERR002 EVENT 06/23/97 23:01 RE clmbohyycg0 cp1 101 0 61 0 up up
```

Example: CP-NTP link messages

Inkpm messages with a “CP” following the date and time report the status of a link between a CP and NTP (if your system uses a CP source). The fields following the “CP” show the:

- CP that sent this link status message
- Date and time the last message from the CP was received
- Number of messages dropped by the CP due to link overflow
- Number of messages dropped by the CP due to link error
- Status for the link
- Link status as derived by NTP from other data and the thresholds set in system variables.

```
Wed Oct 7 09:00:17 1996 wisvb:vax:lsm_c1s2 procMsgs.C:299
ERR002 EVENT 10/07/92 09:00 CP clmb1 10/07/96 09:31 0 0 - -
```

sccs Log

Purpose

The sccs log collects critical and major event messages from ems-type CIM sources regarding CIMS with incorrect format. Entries include the entire CIM. Entries in this log are a subset of the messages in the maste log.

Reference

- For more information sources, see [Chapter 14, "CIM Source Administration"](#) and ["Data flow illustration"](#) on page 2-12.
- See ["Application logs"](#) on page 11-16 for other files in \$LOGDATA.

Creation/removal

A new SCCS file is created when the current file reaches 100k bytes. Each file is automatically removed after 14 days.

Example

This example shows sccs messages.

```
Thu May 4 01:18:28 2000 HP-UX:9000/889:io_egh02:ntp SCCSMsg.C:303
ERR002 EVENT 'egh02' invalid msg: 01TOROONJYDS0
18 C7UP105 4367 INFO UNSUCCESSFUL CALL ATTEMPT
   CKT      TORNYC_IMT 1605
   REPORTED BY CKT      TORNYC_IMT 1605
   REASON = UNALLOCATED NUMBER
   ROUTESET =          C7RTTORONY
   CLDNO = 5042358874
```

```
Thu May 4 01:18:35 2000 HP-UX:9000/889:io_egh02:ntp SCCSMsg.C:303
ERR002 EVENT 'egh02' invalid msg: 01TOROONJYDS0
18 C7UP101 4468 FLT UNREASONABLE MSG RECEIVED
   ORIG CKT      TORNYC_IMT 1610 TERM
   REPORTED BY CKT      TORNYC_IMT 1610
   REASON = UNREASONABLE MSG ON IDLE CKT
   RECEIVED MSG 0130 SUBTYPE 0009
```

```
Thu May 4 01:18:57 2000 HP-UX:9000/889:io_egh02:ntp SCCSMsg.C:303
ERR002 EVENT 'egh02' invalid msg: 01TOROONJYDS0
19 TRKT212 5276 INFO TRMT CKT  HNGKNGIMTTOR 15
   TREATMENT SET = VCCT  CALLED NO = 011533355493
   CALLID = 426449
```

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univlog Log

Purpose

The univlog log collects messages regarding CIMS with incorrect format for univ-type sources and entities using the univ converter. Entries include the entire CIM.

Reference

- For more information about CIM collectors (sources), see [Chapter 14, "CIM Source Administration"](#) and ["Data flow illustration" on page 2-12](#).
- See ["Application logs" on page 11-16](#) for other files in \$LOGDATA.

Examples

The following are examples of univlog messages:

```
(Fri Apr 28 16:45:55 2000 HP-UX:9000/891:io_svun2:ntp
UNIVMsg.C:266
ERR002 EVENT 'svun2' invalid msg: ^A
SITE 00 26/09/94 08:19:50 DLLSTXTA03T
4010ss7 FCD Rec CallBfr: 272 Site 0
TS-SZ:26/09/94 07:55:38.9 TS-DISP:26/09/94 07:55:47.6
TimDur:00:24:02.1
CD: Ans CDflags: RB Op-CD:
Out Ans SS7 carrier:0000 IAR-CD:
PostDD:0.6 SZ->CarrWnk:0.0 SndrTime:0.0
CarrConn:00:24:10.7
Called: ISUP 6148607182 Calling: ISUP
UCRTraps
OPC:244-233-001 DPC:244-233-004 CIC:141
Fwd Call Ind: 20 00 Calling Party Cat:0a Nature of Conn
Ind:00
User Svc Info: 80 90 a2 00 00
Orig Line Info:00 Bkwd Call Ind:54 04 1st Cause Ind:80 90
Rel Msg Dir: Fwd

CIC:----- PC:---/---/--- Sig: ISUP:ss7 Mode: sor
Carr:0000 ST:on Cad I:0 0:0 DigRecon:---

^C^A
SITE 00 26/09/94 08:22:18 DLLSTXTA03T
.
.
.
```

backup Log

Purpose The backup logs record weekly backups of application files and databases. They are named backup.YY.MM.DD.log, for example: backup.990527.log

Note

Why check. Although backups are of interest chiefly to the operations and maintenance (O&M) persons who backup up the NTP application, it benefits system administrators to check them, since, if files or databases are lost, it is MUCH easier to restore them, rather than to repopulate them from scratch.

Reference

See ["Application logs" on page 11-16](#) for other files in \$LOGDATA.

Creation These logs are created when NTP is backed up with the **applbackup** or **db_backup** command — typically, weekly.

Message format

The backup log starts with:

```
Backup Log for Sat May 22 13:10:52 EDT 1999
0+1 records in
0+1 records out
Sat May 22 13:11:03 EDT 1999
message_number error_message
```

And after many lines, ends with:

```
Backing Up File Systems Completed
Remove Tape From /dev/rmt/0m
*****
*** Backups Completed ***
*****
```

Your main concern is that the last lines are there, telling you the backup completed. But also look for error reports throughout the log.

Reference See [Chapter D, "Application Backup and Recovery"](#) for information about backup commands.

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Monitor BB-GUI Cleanup

Purpose

The `cln_bbgui` logs record what is removed when old BB-GUI saved searches, table layouts, and user histories are purged from the system.

These logs, in `$LOGDATA`, are named `bbgui.logn`, where *n* is a number 0-6 corresponding to a day of the week.

You may wish to monitor these logs to ensure that the old records are being removed properly.

Reference

See ["Application logs" on page 11-16](#) for other files in `$LOGDATA`.

Creation

This log is created when the `cln_bbgui` utility executes nightly from `cron` (see ["ntp crontab File" on page 3-27](#)).

Message format

The `cln_bbgui` log starts with:

```
Log file for: Wed Aug 9 06:00:14 EDT 2000
```

Then sections of the log indicate the records that have expired and are being removed. The log includes the user who created the record, their permission, and the associated BB-GUI page.

```
The following bbguitable layout records have expired:
my ascreen layout      djd          user          ascreen
1 row deleted
The following bbguisavedsearch records have expired:
cto search             djd          user          ascreen
1 row deleted
```

Reference

See ["Customize BB-GUI Attributes" on page 9-5](#) for information on how your NTP support organization may customize the retention interval for these BB-GUI records.

Corrective Actions

Purpose

Purpose

If a monitoring procedure in this chapter requires a corrective action not covered elsewhere in this book, we put the corrective action in this section.

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Reprocess CDRs

Purpose

For the following conversions, NTP allows you to manually reprocess CDRs that have failed initial processing. Reprocessed CDRs are NOT used for thresholding and alerting. However, they ARE used for summarization. Since CDRs are not used for summarization until they are (re)processed, you will need the procedures in this section to ensure that the summarized data is as complete as possible.

- AXE10 (F6286)
- IPDR (F6305)
- Lucent Softswitch (F6314)
- AXE TRADO (F6313)
- Any consultant -configured installation (F6306)

When to use

The frequency with which you should reprocess CDRs depends on your requirements for data summarization.

CDR directories

CIMs from each source in a configurable conversion arrive at NTP in batches. When the CIMs are processed, NTP uses the following directories in the source's home directory on NTP, which was created when the source was added to NTP. Each source has its own home directory (see ["Add or Modify a Source for a Configurable Conversion" on page 14-38](#)).

Directory	Description
processed	Any records that can be processed are sent to the source's processed directory under the same name as the original file. This applies to a whole file or selected records. The processed directory is cleaned out periodically by a cron job (see "CDR processing and garbage cleanup" on page 3-30).
garbage	If a WHOLE FILE cannot be processed, the file is sent to the source's garbage directory. A CIM file may fail processing because it is the wrong file type, it is misnamed, it has the wrong permissions, and so forth. This directory is cleaned out periodically by a cron job (see "CDR processing and garbage cleanup" on page 3-30).
error	If NTP cannot process some records in a file it saves the records to the source's error directory under the same name as the original file. Messages for unprocessed CIMS are logged in the incon log (see "incon Log" on page 11-22). You can fix the problems that prevented processing, edit the records in the file if necessary, and submit the file for reprocessing (see "Reprocess CDRs" on page 11-32).

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Reprocess CDRs (Continued)

CDR error directories A CDR file appears in its source's errors directory if any of its records has one of the following problems. If you correct the problems, NTP can successfully reprocess the records in the file.

Problem	Solution
Re. The Re is not defined in the NTP reference data (or missing).	Add the Re to NTP. See "Add an Re" on page 5-14. Note When you add the Re, note its CLLI. You will need it when you select Re's for reprocessing.
FDC. The FDC is not defined in the NTP reference data (or missing).	Define the FDC in NTP. See "Add or Modify FDCs" on page 5-58. Note If the FDC was added to your system on a given date, note the date, as it may be useful when you select CDRs for reprocessing.
Event start and end. The start and end times for the event in this record are out of range or missing. An event cannot: <ul style="list-style-type: none"> ■ Be older than the CDR retention interval ■ Have a time stamp later than the current time (invalid) 	If the start and end times in the record have problems, the CDR cannot be successfully reprocessed. However, either (or both) can be used to filter CDRs for reprocessing.

Reference

For more information see the re, fdc, start_datime, and end_datime fields in the cfim table in Appendix A of the *GUI User's Guide*.

Error filename

The names of files in CDR error directories contain a time stamp. This time stamp indicates when NTP received the file. This time stamp is different from the time stamp of the individual records in the CDR file and different from the UNIX timestamp associated with the file.

The format of the timestamp is *.DYYJJJ.STTTTT, where YY is the year, JJJ is the Julian day, and TTTTT is the time in seconds when the file was placed on NTP.

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Reprocess CDRs (Continued)

Which CDRs can you reprocess?

You can reprocess any file in a CDR error directory after you have attempted to fix the problems that prevented initial processing (see the problem and solution descriptions in ["CDR error directories" on page 11-33](#)).

Reprocessing filters.

Within a CDR file, only records that match the criteria you specify are reprocessed. Other records are ignored. You first select a source and then filter by the following criteria:

- **Re** — The system reprocesses all records pertaining to this Re in all files.
 - **Time stamp in the error filename, as start or end filter**— As a start filter, all files are reprocessed that NTP received at that time or later. As an end filter, all files are reprocessed that NTP received before and including that time.
 - **Any combination of Re plus filename (as start or end filter)**
 - **All** (no Re or start/end time) — The system reprocesses all CDR error files if you do not specify a filter.
-

Multiple reprocessing

You can reprocess a CDR file multiple times. NTP processes the records it can, and returns the remainder of the file to the errors directory for subsequent reprocessing.

Deadline for reprocessing.

You can reprocess CDRs for the duration of the CDR retention interval.

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Reprocess CDRs (Continued)

Procedure: Reprocess CDRs This procedure uses the **cccmanager** command to select CDRs to reprocess.

Reference

See "[cccmanager Command](#)" on page 14-48 for complete information on this utility (which is also used to add sources to NTP).

Step	Action
1	<p>Determine where error directories reside by using sui find to view the <code>Dir_list</code> field in the <code>bildtscoll</code> table: sui find source=bildtscoll</p> <p>Response The <code>Dir_list</code> field lists each CDR source's home directory. Each source's errors directory resides in its home directory.</p> <p>Example This output indicates two error directories under <code>/home/</code>: <code>bdat1/error</code> and <code>/bdat2/error</code>:</p> <pre>Collector_name Conversion_name Dir_list Format bdat1 bill-ericsson /home/bdat1 delimval bdat2 bill-ericsson /home/bdat2 delimval</pre>
2	Log on the NTP host as ntp .
3	<p>Enter cccmanager</p> <p>Response You see the initial cccmanager menu resembling the following. Your menu may differ.</p> <pre>[1] Configure a new source. [2] Modify the configuration for an existing source. [3] Reprocess CDRs. [E] Exit. Enter your choice:</pre>
4	<p>Enter 3 (Reprocess CDRs).</p> <p>Response You see a list of currently configured sources:</p> <pre>Source ----- [<i>List of more sources</i>] [r] Return to previous menu. Select a source for reprocessing.</pre>

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Step	Action
5	<p>Enter the number corresponding to source whose CDRs you want to reprocess.</p> <p>Response You see a menu with choices for reprocessing filters. Reprocessing options for Collector ----- [1] Set start date/time filter [2] Set end date/time filter [3] Filter on Reporting Entity [s] Start Reprocess [c] Cancel Operation Enter your choice:</p>
6	<p>Set any combination of filters. To filter by:</p> <ul style="list-style-type: none"> ■ The event start date/time, go to Step 7. ■ The event end date/time filter, go to Step 8. ■ Re, go to Step 9.
7	<p>To set the start date/time filter:</p> <p>a. Enter 1 to select the start date/time filter option.</p> <p>Response Enter start date/time filter in the format <code>YYMMDD HHMMSS</code></p> <p>b. Enter a timestamp for event records you want to reprocess, in the format <i>year month day hour, minute second</i>).</p> <p>Example 010430 120000 includes all event records dated at noon April 30, 2001 or later.</p>
8	<p>To set the end date/time filter.</p> <p>a. Enter 2 to select the end date/time filter option.</p> <p>Response Enter end date/time filter in the format <code>YYMMDD HHMMSS</code></p> <p>b. Enter a timestamp for event records you want to reprocess, in the format <i>year month day hour, minute second</i>).</p> <p>Example 010430 120000 includes all event records dated at noon April 30, 2001 or earlier.</p>
9	<p>To filter on an Re:</p> <p>a. Enter 3 to select the Re filter option.</p> <p>Response Enter re filter value.</p> <p>b. Enter the CLLI of the Re.</p>

Step	Action
10	Enter s to start reprocessing. Response Are you sure you want begin reprocessing data for source [y/n]?
11	Enter y to continue.
12	Enter r to return to the cccmanager main menu, and enter e to exit cccmanager .
13	Check the source's CDR directory. <ul style="list-style-type: none">■ If a CDR file was reprocessed in its entirety, it appears in the processed directory.■ If some records in the file could not be reprocessed, the file remains in the error directory and new entries appear in the incon log. Try again to correct problems that prevent processing, and then repeat this procedure.
Done	

Fix GeoProbe Problems in incon Log

Overview

NTP can do CDR CIM conversion for ANY switch monitored by GeoProbe (F6272). If GeoProbe begins monitoring a switch NTP does not know about, conversion fails, and messages similar to this appear in the incon log (see ["incon Log" on page 11-22](#)):

```
Fri May 12 08:18:02 2002 HP-UX:9000/785:geoprobeintf_inet1:ntp GeoprobeParser .C:255
ERR002 EVENT DPC 00001600 and OPC 002018000 not in swarch/pc2ccli tables or CLLI not
in rearch table.
```

This type message means that NTP attempted to derive the CFIM's Re, or De (or both) from a DPC, or OPC (or both) on a CDR CIM, but could not:

- The CDR's DPC, OPC, or both, was not in any record's Pc field in the Swarch table.
- The Pc field was populated in Swarch, but the matching Ccli was not in any record's Re field in the Rearch table.

Corrective action

- **All.** Add missing point codes and CLLIs to the swarch table, and add CLLIs to the rearch table.
- **5ESS.** For 5ESS switches with multiple point codes, populate the pc2ccli table.

Reference

See ["Add an Re" on page 5-14](#).

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Overview

Scope

- **Not for BB-GUI.** This chapter applies only for the X-GUI and AU interfaces. It does NOT apply for the browser-based (BB-GUI). To set up printers for the BB-GUI, follow local practices at your worksite for web-based printing.
- **Not Datakit.** This chapter does not address printer configuration for Datakit connections. If you use Datakit, contact your NTP support organization.

Task overview

The following tasks are necessary to configure a printer to print from the X-GUI or AUI.

Task	Description	Procedures
Make physical connections	Physically connect the printer to the print server or to the network. The connections required differ depending on whether the printer is local, remote, or network.	"Physical Connections" on page 12-42
Configure the printer on the print server	Make the printer usable by the lp command and lpadmin interface. Typically this means specifying the printer type, printer name, and physical port (local) or IP address (network).	"Add a printer on the NTP host (HP)" on page 12-43
Configure a printer interface script	Copy and rename one of the model "pager" scripts to a user directory. A pager script is a printer interface file that pages output to the lp spooler process and allows some customization of the output. If desired, customize the script (but note the "Prerequisites" on page 12-47).	"Configure a new pager script" on page 12-45

Reference

See the vendor documentation for your platform and printer.

Physical Connections

Connection types

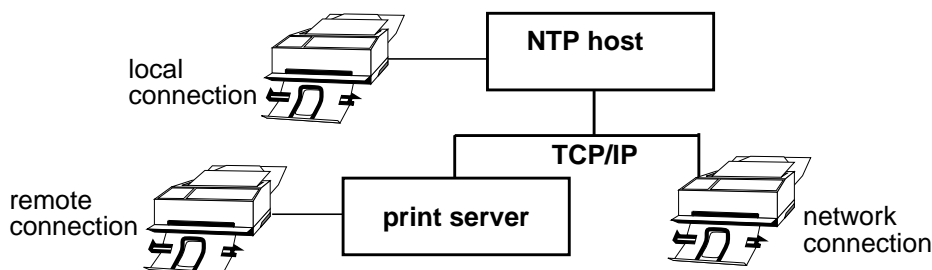
NTP can be configured for local, remote, and network printing (see "Illustration for printer connections" on page 12-42 for an illustration of these connection types).

Due to the number of possible environments, scenarios and printer types, we can give only general descriptions of what to do to make the physical connections.

Type	Description	Procedure
Local	Direct connection to the NTP host, which spools the print jobs.	Follow the instructions provided with the printer and the vendor-supplied documentation for the NTP host (HP documentation).
Network	Connection across a TCP/IP LAN to the NTP host, which spools the print jobs.	See the LAN administrator for connection details and administration for TCP/IP. Note Besides connecting the printer to the LAN, you must usually install software to control the printer. For example, JetDirect software for HP laser printers usually must be installed on the print server. Follow the vendor instructions to install the software and run the executable for the spooler.
Remote	Connection to any machine configured as a print server and accessible from the NTP host across a TCP/IP LAN.	See the administrator of the remote machine for connection details.

Illustration for printer connections

This illustration shows local, remote, and from the perspective of the NTP host.



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Add Printers

Overview

You must make each printer you add to a print server usable by the operating system **lp** command, which performs spooling functions, and the **lpadmin** interface.

Before you begin

Be sure the printer is physically connected and configured on your network before adding it to the print server (see ["Physical Connections" on page 12-42](#)).

Procedure: Add a printer on the NTP host (HP)

Add a printer on the NTP host. Then verify that the printer works when accessed via the operating system **lp** command.

Reference

See the vendor documentation for your platform. For example, for an HP platform, you can use the SAM utility.

Configure Pager Scripts

Background

When a job prints from the AUI or X-GUI, a shell script in the \$USERDIR/printer directory is invoked to provide the protocols and communication to the LP spooler. These shell scripts are known as printer interface files, or “pager” scripts. A pager script invokes a printer pager and automatically configures the printer to predetermined specifications. The printer pager formats output by:

- Putting a margin on the top and bottom of each page
- Repeating the NTP header line (if there is one) on each page
- Putting a page number and date on the bottom of each page.

There need not be a pager script for each printer, only a script for each printer type or variation in protocol settings of printers on the system. NTP provides several printer interface script files that you can use or customize (see ["Configure Pager Scripts \(Continued\)" on page 12-45](#)).

Note

A pager script file **MUST** have the same name as the printer. For example, for a printer named **lpusr1**, the pager script must be named **lpusr1**. Otherwise the dumbsys script file is invoked as a default.

Overview

NTP provides several pager scripts that you can copy, rename, and use. They are in the \$MODELDIR/printer directory on the NTP host.

You can also edit these scripts to configure your own customized versions, as explained in the rest of this chapter.

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Configure Pager Scripts (Continued)

Pager scripts provided

This table shows the pager scripts provided for various types of printers.

Note

You cannot use pager scripts until you copy them to the appropriate user directory. See ["Configure a new pager script" on page 12-45](#).

Script	Printer	Notes
hpsys	various HP	Normally used for HP and similar printers.
dumb	-	Generic local printer script. Assumes the output is to be 80 columns and 66 lines. It does not change the font size when there are long lines.
dumbsys	-	Generic system printer script.
5310	AT&T 5310	For the AT&T 5310 printer.
hpink	HP Inkjet.	-
hplaser	HP Laserjet II, III, and IV (150 dots per inch)	<ul style="list-style-type: none"> ■ When the text being printed is output from an NTP command containing a header line (for example, output from the find command) and the header is longer than 80 characters, a smaller font size (132 characters per line) is used. If the output does not contain a header line (for example, text created by the edit command) a default page size of 80 columns and 66 lines is used. ■ Headers and footers for hplaser printers are printed in bold where the printer supports it. (HP Laserjet II and III printers do not support bold in 132-column mode.)
hplaser100	HP Laserjet II and Laserjet III (100 dots per inch)	

Procedure: Configure a new pager script

Use this procedure to configure a printer interface script file.

Note

You can define the same printer multiple times using different names (for example, *lpsr1*, *lpsr2*) with different pager scripts to provide different output formats (for example, landscape or portrait).

Step	Action
1	Log on the NTP host, go to the \$MODELDIR/printer directory.
2	Copy an existing pager script to a file with the name of the new printer.
3	Edit the new pager script as needed, setting the LINES or COLUMNS variables if the printer differs by lines or columns.

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Step	Action
4	<p>Do you want to create a new terminfo description for the printer to further customize output as described in "Advanced customization" on page 12-47?</p> <ul style="list-style-type: none"> ■ If NO, you are done. ■ If YES, do the following: <ul style="list-style-type: none"> a. Copy an existing terminfo file. b. Use a text editor (such as vi) to edit the new file. c. Compile the new file. Enter tic newpr.ti where <i>newpr</i> is the new file you are creating. <p>Note Whenever you make a change to a terminfo file, you must run tic filename.ti to compile the file.</p> d. Verify that the TERM variable in the system printer script (the one you created in Step 2) is set to the new printer type, as follows: TERM=newpr
Done.	

Printer settings

The recommended settings between a local printer and terminals are:

- Parity: none
- baud: 9600
- character: 8 bits.

Note

See the printer or terminal owner's manual for details of terminal and printer settings.

Procedure: Customize lines and columns

If you want only to adjust the number of lines or columns output on a page, modify the LINES and COLUMN variables in the existing pager file for the respective printer type.

No further steps are required for basic customization of lines and columns.

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Configure Pager Scripts (Continued)

Advanced customization

To change characteristics of printer output besides the number of lines and columns (see "[Customize lines and columns](#)" on page 12-46), you must edit the terminfo file called by the TERM variable in the printer interface script. The terminfo files reside in \$USERDIR/printer directory on the NTP host. The terminfo files have a .ti suffix. For example, you can modify the pager scripts for output in specific fonts, or portrait or landscape mode. Or, you may want to incorporate information about user environments, such as by using the GROUP environment variable to set up a specific configuration for a user group.

Prerequisites

Anyone attempting to modify or create customized pager scripts needs experience with shell programming techniques. Another prerequisite is that you must understand **terminfo**. Run **man terminfo** for the system manual page on **terminfo**. Finally, you must also know the printer language if you are going to modify printer parameters.

terminfo variables

The following terminfo variables customize the printer output:

Variable	Type	Description
hc	boolean	Hard copy (always set)
xenl	boolean	Printer will not auto-wrap
cols	integer	Number of columns (overridden by COLUMNS variable in pager script)
lines	integer	Number of lines (overridden by LINES variable in pager script)
sgr	string	Set attributes (the only attribute used is #1 (bold), so the following would work for HP®-PCL: sgr=\E(s%?%p1%t3%e0%;B)
sgr0	string	Initialize attributes (normal mode)
is2	string	Enter 132-column mode
is3	string	Enter 80-column mode

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Overview

Caution

If you are unfamiliar with updating the gtspec table, we strongly suggest you contact your NTP support organization before you use this chapter.

Purpose

Special service calls, such as 800- INWATS data base calls or 900- service calls, have digit strings that do not contain the full routing information needed to route the call to the terminating entity.

Such information must be obtained from a database containing the routing instructions for the particular service type of the call. This type of digit string is called a global title, since the pattern of digits indicates that the call must first be directed to a global lookup location (usually an SCP) rather than to a specific final destination.

Network elements use global title (GT) digit strings to determine where to forward the call next through a process called global title translation (GTT). GTT (and by extension, NTP) distinguishes one type of service call from another by the pattern of digits in the string; this pattern is called the global title pattern. For example, 800- service calls are distinguished by their 800* digit pattern, and 900-service calls are distinguished by their 900* digit pattern.

When NTP receives a CIM with a digit string that is a global title for a network service, it may need perform a similar global title translation to determine the distant entity (De) to which the failed call was headed. NTP tries to match the digit string in the CIM with a known global title pattern to determine the service type, if possible a record base lookup, and from these and other data the De (if it is not specifically provided in the CIM). This information is then used to populate the fields of the CFIM for the message.

To populate the CFIM fields, NTP must be able to recognize global title patterns. Since this routing data is subject to change in the network, NTP must be kept updated so that it can continue to provide accurate tabulation and identification of trouble spots. For this purpose NTP provides a database table called gtspec (GTT specification) where you can enter new or change existing GT data. The following sections describe how to update the gtspec table.

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Overview (Continued)

Terms

Terms used in this chapter are:

- **Global title translation (GTT)** — The process of looking up a dialed string in an external database in order to find where to route the call.
- **Global title (GT) digit string** — A dialed digit string that must be sent to the external database for lookup.
- **Global title pattern** — A pattern that identifies a dialed string as GT.

Example

If you see a dialed string fitting the global title pattern 800 NXX XXXX, then you know the string is an IDB- or DSD-based 800 service, which means it is a GT-type digit string, which means it must be sent to an external database to determine where to route the call.

- **Service control point (SCP)** — The external database usually used for GTT.
-

gtspec Table

Overview

The "gtspec Table" on page A-61 table is used to tell NTP what global title patterns exist.

Records

Each record in the gtspec table defines a global title pattern. This means that each record tells NTP what it needs to know to:

- Recognize that a CFIM's digit string is a global title pattern
- Do a database lookup, to find a value for the CFIM's DE (distant entity) field

Fields

Fields in the gtspec table are as follows.

Note

- The pattern, digtype, st, and gk1 fields are used to calculate the service type (ST) and to find the distant entity (De) in the indicated routing database table.
- The fields starting with gk are used when a De lookup in a routing database table (rdb field) is required.
- The two fields starting with ck are used when a De lookup in a customer database table (cdb field) is required.
- All fields must have something in them, even if it is only a dash (-), which means that the value is unknown.

Field	Function	Value
pattern	The global title pattern. Note No two records can have the same pattern.	Up to 40 digits or characters. Reference See "Global Title Patterns" on page 13-7.
digtype	The type of digits in the pattern.	<ul style="list-style-type: none"> ■ called ■ calling
st	The service type associated with the global title pattern.	<ul style="list-style-type: none"> ■ Up to 5 mixed-case printable characters ■ - <p>This service type must be defined in the type field of the st table.</p>

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Field	Function	Value
gk1	The primary global title record key used for searching the database table specified in the rdb field.	Up to 30 digits or characters from the default character set. There must be a GT key specified in this field when a routing database table (rdb field) is specified.
gk2	The secondary global title record key used for searching the routing database table specified in the rdb field, when the primary lookup fails	Up to 30 digits or characters from the default character set. This field can be filled only if gk1 is filled.
gk3	The tertiary global title record key used for searching the routing database table specified in the rdb field, when the secondary lookup fails.	Up to 30 digits or characters from the default character set. This field can be filled only if gk2 is filled
rdb	The routing database table associated with the global title record key pattern specified in the gk1, gk2, or gk3 fields. This field must have a routing database table specified whenever these fields are specified.	<ul style="list-style-type: none"> ■ adjroute ■ scproute ■ -
ck1	The primary global title record key pattern used for searching the customer database table specified in the cdb field. There must be a GT key specified in this field when a customer database table (cdb field) is specified.	Not applicable
ck2	The secondary global title record key pattern used for searching the customer database table specified in the cdb field, when the primary lookup fails.	Not applicable
cdb	The name of the customer database table to which the ck1 or ck2 fields refer.	<ul style="list-style-type: none"> ■ custid ■ vpnid ■ -

Global Title Patterns

Purpose

In NTP, you see global title patterns in the first field of records in the gtspec table.

When a CFIM arrives, the application compares the calling number digits with global title pattern in the gtspec table. If NTP finds a match, it then uses that pattern as a reference into an external database, where a lookup is done to find the CFIM's De.

Parts

The following table gives the parts of each global title pattern. Parts and part order differ for each global title pattern.

Part	Example	Purpose
Digit pattern	800	Specifies digits.
Alphanumeric string	XXXX, Z(3)AF	Each character represents one digit from a set of valid digits.
Delimiter	(A dash.)	Improves readability.

Delimiters

A delimiter is either a:

- Space
- Tab
- Dash

Do NOT use delimiters within digit patterns, such as 800. Otherwise, you can use delimiters in global title patterns as follows:

You can...	Examples
Omit delimiters	800XXXXXXXX
Use delimiters between digit patterns and alpha-numeric strings	800-XXXXXXXX, 800 XXXXXXXXX
Use delimiters within alpha-numeric strings	800XXX-XXXX, 800XXX XXXX, 800-XXX-XXXX, 800 XXX XXXX,

(Continued on next page)

Global Title Patterns (Continued)

Alphanumeric string parts Alphanumeric strings are built from the following parts:

Part	Represents...	Example
A, F, V, W, X, Z, Y	0 - 9	NPA-XXX, which expands to [2-9][0-9][0-9][0-9][0-9]
N	2 - 9	
P	0 - 9	
J	(Valid only in the GT record key fields) Value of V divided by 2.	JV
Q	0 - 4	Q
R	5 - 9	R
~ (key field), - (non-key)	Delimiters (no value)	NPA-XXX
[] (brackets)	A range of digits you specify.	AF[0-4]Z, which expands to [0-9][0-9][0-4][0-9]
(d)	(Valid only in GT record key fields) The number found in a position in the dialed string.	(3), which represents the third digit in the dialed string.

Pattern example

1Z(3)AF means: take the dialed digits and interpret them as follows:

- 1 is a fixed value of 1 in the first position of the key (such as the 1 in the dialed 1-800...).
- Z, A, and F are whatever their value was in was in the pattern (in the second, fourth and fifth position in the dialed string).
- (3) means the value in the third position in the pattern is the value to substitute in this position in the key.

If a digit string in a CIM had digits 1234, the digit string would match the pattern definition. In the corresponding record key given in this example, those digits would translate as 14312.

Add a record to this table for each service type you want to collect data on, or for each GT pattern that requires a record base lookup for De determination. Without at least one of these two items of data in the record, there is no point in entering it in the specification.

(Continued on next page)

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Global Title Patterns (Continued)

Pattern variation

If a GT pattern represents a subset of a more general GT pattern in which the subset is included, it may be necessary to list each variation of the general pattern in order to set apart the specific subset. There can be no overlap or ambiguity in the patterns listed in the file or the processing of the associated data is guaranteed to be erroneous.

The network remote access VPN service example given in "[gtspec Examples](#)" on page 13-10 illustrates this point: the GT pattern 12X WXY XXXX indicates an SCPRoute record base lookup. A subset of this pattern, the GT pattern 128 WXY NPAZ, also indicates a specific service type (VPN) not applicable to the more general pattern. The following five records must be added to clearly express all the possible patterns associated with this scenario:

- Pattern: 12[0-7]-WXY-AAAA ST: – RDB: scproute

This pattern matches strings with 12X combinations less than 128.

- Pattern: 128-WXY-[0-1]AAA ST: – RDB: scproute

This pattern matches strings with 128-WXY combinations with less than N (N=2-9) in the 7th position.

- Pattern: 128-WXY-NPAZ ST: VPN RDB: scproute

This pattern matches strings with 128-WXY combinations in which the 7th digit is 2-9, the 8th digit is 0-9, the 9th digit is 0-9, and the 10th digit is 0-9. Note that a matching digit string would have to be restricted to 10 characters, since no provision is made in this pattern for more. This is the only one of the patterns in this set with an VPN service type.

- Pattern: 129-WXY-AAAA ST: – RDB: scproute

This pattern matches strings with 12X combinations greater than 128.

- Pattern: 12Z-WXY-AAAA-A ST: – RDB: scproute

This pattern matches strings with all 12X combinations containing more than 10 characters. The pattern 128-WXY-NPAZ would be a subset of this, but if the digit string had more than 10 characters it would match this pattern instead and would not be of an VPN service type.

All these five GT patterns have a global title record key pattern that is expressed as 12(3)-WXY. This record key will search the SCPRoute record base as a De lookup for all five cases. The processing is not dependent on the order of the GT patterns in the file; the result will be correct as long as all cases are covered.

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gtspec Examples

Overview

This section gives examples of entries in the gtspec table. Examples do NOT necessarily reflect actual global titles and patterns.

INWATS (IDB) 800 service example

The global title pattern that identifies the digit string of IDB- and DSD-based 800 services is:

```
800 NXX XXXX
```

The GT record key pattern for this pattern is 800-NXX-XXXX. The secondary GT record key pattern is 800-NXX. .

The gtspec record for this pattern is:

```
# pattern      digtype  st   gk1          gk2      gk3  rdb
800-NXX-XXXX  called   idb8 800-NXX-XXXX 800-NXX  -    -
```

Emergency 911 service example

The global title pattern that identifies the digit string of a 911 emergency service call is:

```
911
```

The length is 3 digits. There is no GT record key for this pattern, and there is no table lookup required. The service type is esc (for emergency service call.)

The gtspec record for this pattern is:

```
# pattern  digtype  st  gk1  gk2  gk3  rdb  ck1  ck2  cdb
9q -
```

(Continued on next page)

gtspec Examples (Continued)

ACCUNET SDS service example

The global title pattern that identifies the digit string of the ACCUNET SDS service is:

```
700 73X XXXX
```

This pattern can be matched by a digit string of length 10 digits. An extra record is needed to redirect longer patterns. The GT record key for this pattern is 700-73X.

The gtspec records for this pattern are:

#	pattern	digtype	st	gk1	gk2	gk3	rdb	ck1	ck2	cdb
	700-73X-XXXX	called	asds	700-73X-XXXX	700-73X	-	-	-	-	-
	700-73X-XXXX-X	called	-	700-73X-XXXX	-	-	-	-	-	-

Network remote access VPSDN service example

The global title pattern that identifies the digit string of the NRA VPSDN service is:

```
128 WXY NPAZ
```

This pattern can be matched by a digit string of length 10 digits. The length is 10 digits. The GT record key for this pattern is 128-WXY.

This example shows the specific VPSDN service pattern record embedded in the records for the more general pattern 12X-XXX-XXXX as described a few pages back. All five records shown here are necessary to delineate both the general and the specific GT patterns without fatal overlap.

#	pattern	digtype	st	gk1	gk2	gk3	rdb	ck1	ck2	cdb
	12[0-7]-WXY-AAAA	called	-	12(3)-WXY	-	-	-	-	-	-
	128-WX- [0-1]AAA	called	-	128-WXY	-	-	-	-	-	-
	128-WXY-NPAZ	called	vpn	128-WXY	-	-	-	-	-	-
	129-WXY-AAAA	called	-	129-WXY	-	-	-	-	-	-
	12Z-WXY-AAAA-A	called	-	12Z-WXY	-	-	-	-	-	-

(Continued on next page)

gtspec Examples (Continued)

Inbound global VPSDN service example

The global title pattern that identifies the digit string of the inbound global VPSDN service is:

```
198 WXY XXXX
```

This pattern can be matched by a digit string of length 10 or more digits. The GT record key for this pattern is 198-WXY. Reporting entities for these kind of calls are 4 ESS switches only.

The gtspec record for this pattern is:

#	pattern	digtype	st	gk1	gk2	gk3	rdb	ck1	ck2	ck3
	198-WXY-XXXX	called	gsdi	198-WXY	-	-	scpr	-	-	-

Adjunct-bound calls example

The global title pattern that identifies the digit string of adjunct-bound calls is:

```
NPA 0XX XXXX
```

This pattern can be matched by a digit string of length 10 or more digits. The GT record key pattern for this pattern is NPA 0XX. The gtspec record for this pattern is:

#	pattern	digtype	st	gk1	gk2	gk3	rdb	ck1	ck2	ck3
	NPA-0XX-XXXX	called	nsc	NPA-0XX	-	-	adjroute	-	-	-

DSD 900 service example

The global title pattern that identifies the digit string of DSD-based 900 services is:

```
900 NXX XXXX
```

The GT record key for this pattern is 900-NXX-XXXX. The secondary GT record key is 900-NXX. The gtspec record for this pattern is:

#	pattern	digtype	st	gk1	gk2	gk3	rdb
	900-NXX-XXXX	called	mult	900-NXX-XXXX	900-NXX	-	-

(Continued on next page)

gtspec Examples (Continued)

Killer trunk service example

The global title pattern that identifies the digit string of a specific “killer trunk” service is:

```
123 456 XXXX
```

This pattern can be matched by a digit string of exactly 10 digits. There is no GT record key for this pattern. This pattern is a POTS number that does not require a table lookup, but is a unique service on this pattern. The service type is SCS (for special customer services).

The gtspec record for this pattern is shown below. The second record line is included to specify that a digit string containing more than 10 digits (this pattern contains 11) is not an SCS service type.

```
#pattern          digtype st  gk1 gk2 gk3  rdb  ck1  ck2  cdb
123-456-XXXX     called  scs   -   -   -    -   -   -   -
123-456-XXXX-X   called  scs   -   -   -    -   -   -   -
```

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loadgt Command

Purpose Use the **loadgt** command (NOT the **dbedit** command) to update the gtspec table.

Note

Unlike **dbedit**, **loadgt** does not have parameters to specify inserts, updates, or deletes. Instead, you copy a complete gtspec table to an input file, edit the input file, and use **loadgt** to reload the specification in its entirety. For details on how to do this, see ["Update the gtspec table" on page 13-15](#).

Syntax **loadgt -f inputfile [-o outputfile] [-s separator]**

Option	Function
-f inputfile	(Required.) Specifies the ASCII input file containing the gtspec records to be loaded. This is a required parameter.
-o outputfile	(If omitted, defaults to gtspec.error .) Specifies the name of an output file where the command puts bad records or records not loaded.
-s separator	(If omitted, defaults to tabs and spaces.) Specifies a field delimiter character.

Example The following is an example of **loadgt** output. Note that **loadgt** runs **dbedit** as part of its process.

```
Verifying input file using 'dbedit' (the 'gtspec' table will not
be modified)...
*** 77 lines processed ***
    1 comment line
    76 records inserted
dbedit completed successfully.
All the above transactions have been rolled back.
Performing extra validation of patterns and keys...
*** 77 lines processed ***
    1 comment line
    76 record lines
Loading the 'gtspec' table using 'dbedit'...
*** 77 lines processed ***
    1 comment line
    76 records inserted
dbedit completed successfully.
loadgt completed successfully.
```


Update the gtspec Table

Caution!

Errors in gtspec can corrupt application output. If you are not a global title patterns expert, consult an expert before you change this table.

When to update

Update the gtspec table when the network changes global title translations, due to:

- Introduction of new services that use database lookup.
- Changes of routing for existing services.

Procedure: Update the gtspec table

Use this procedure to update the gtspec table.

Note

You can modify a copy of the gtspec table ahead of time ([Step 1](#) through [Step 3](#)), and later install the changed copy ([Step 4](#)).

Step	Action
1	<p>Use sui find to copy the existing gtspec table into a temp file</p> <p>Example Enter sui find so=gtspec delim="" "" > temp</p> <p>Note "" "" is single-quote, double-quote, space, double-quote, single-quote.</p>
2	<p>Make a backup copy of the temp file and save it in your home directory.</p> <p>Note We suggest you name the file gtspec.mmdd, where mmdd is the date, such as gtspec.0527.</p>
3	<p>Use a text editor (such as vi) to edit the temp file to update its global title translation patterns.</p> <p>Reference See "gtspec Table" on page 13-5 for gtspec fields. See "Global Title Patterns" on page 13-7 for global title translation patterns.</p>

Step	Action
4	<p>Implement the changes by using the loadgt command, with the appropriate options, to load the new gtspec table.</p> <p>Example Enter loadgt -f temp</p> <p>Reference See "loadgt Command" on page 13-14 for how to use loadgt. (The dbedit command will NOT work.)</p>
5	<p>View the master error log for messages telling you if loadgt failed. To do this, you can use a test editor (such as vi). The master error log is in the \$LOGDATA directory and is named maste####.##### where ####.##### is the julian date plus the military time when the file was first created.</p> <p>Example maste.141.0021</p> <p>Caution If loadgt puts an error into the master error file, then:</p> <ul style="list-style-type: none"> ■ The updated gtspec table did NOT load. ■ NTP continues to use the original version of the gtspec table UNTIL the system goes down for any reason. ■ When the system goes comes down for any reason, it will be unable to start up again, due to the faulty gtspec table. To prevent this from happening, use the next step.
6	<p>In the master error log, did you see any errors pertaining to your running of loadgt?</p> <ul style="list-style-type: none"> ■ If NO, you are done. ■ If YES, reload the backup copy of the gtspec table you made in Step 2. <p>Example If the backup copy is named gtspec0527, and if it is in your home directory, cd to your home directory and enter loadgt -f gtspec0527</p> <p>Note If you lost the last backup copy, use an earlier backup copy. If you have none, use the original backup copy saved from installation. It is at \$MODELDIR/data/ref/gtspec.data.</p>
Done	

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Introduction

Overview

Purpose

This chapter tells how to administer the NTP host interface to all CIM sources EXCEPT those defined through the universal interface ([Chapter 16, "Universal Interface"](#)) or custom-configured by the NTP support organization (F6306 — though procedures for these conversions are similar).

- When you add a source to NTP, you must update the NTP reference databases to define the source and establish a software link to it.
- For sources that send file-based CDR CIMs, you must add a user ID (login) on the NTP host with a directory dedicated to receive the files:
 - Geoprobe (F6272)
 - AXE10 (F6186)
 - IPDR (F6305)
 - Softswitch (F6314)
 - AXE TRADO (F6313)
- NTP reference data you update and procedures you use for administration differ by source type, and other specialized procedures may be required for the source link.

When to use

When NTP is installed, the NTP support organization helps you administer the sources and Re's in your network. Afterwards you may need to add new Re's and their sources unassisted, or modify the source definition.

- Many sources send NTP CIMS from multiple Re's. Unless your network adds a new source, you may never add a source, though you add Re's.
- For direct interfaces to Re's, you typically must define a unique source EACH TIME you add a new Re. Procedures here make clear when this is necessary, as does ["Description" on page 14-9](#).
- You may be able to use an existing source as an example when you administer a new source.

Coordination with other administrators

NTP source administration may require you to coordinate with the administrator of the source and the administrators of Re's that use the source to send data to NTP. This chapter covers only what you do on the NTP host.

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Task Overview

Description

Your NTP support organization will administer the sources in your network when your system is initially installed. However, if your network adds a source, you must add it to NTP and verify the link. This table lists the various tasks and procedures for sources on the NTP system.

Task.	Description	Procedures
Add a source	Select the appropriate procedure for the type of source to be added. In many cases, a source must be added only once and can collect data from many Re's. Exceptions include Succession SN02 interfaces (F6389).	<ul style="list-style-type: none"> ■ "Add a CP source" on page 14-24 and "Set CP-NTP link variables" on page 14-22 ■ "Add an NFM" on page 14-27 ■ "Add an SDM" on page 14-30 ■ "Add or Modify a Source for a Configurable Conversion" on page 14-38
Activate and deactivate a source	Once the source has been added, you can turn the CIM flow on or off. You can also modify the interface parameters, for example if a sources's name or address changes or you want to balance I/O processes on the NTP host.	<ul style="list-style-type: none"> ■ "Activate or deactivate a source interface with dbedit" on page 14-13 ■ For sources used in configurable conversions, you can also use the cccmanager utility.
Monitor source links	As a part of adding all sources, you verify that the addition was successful. Afterwards, you routinely monitor the integrity of the NTP-source links.	Select the appropriate procedure from "Methods for link monitoring" on page 14-50
Set thresholds for silent link failures	As part of adding switches, you dbedit the reach table to set thresholds that determine when link alerts indicate an NTP-source link is down or degraded. You can modify these thresholds at any time.	"Set thresholds for silent link failures" on page 14-52
Remove sources	You will seldom use this procedure — only if a source is physically removed from your network.	"Remove a source" on page 14-49

Background for Source Administration

Sources, Re's, and conversions

The ultimate source for CIMs is reporting entities Re's. What NTP calls a "source" is really an element that collects or forwards data from Re's to NTP. Once an entity is linked to a source, and the source is linked to NTP, that entity can appear as an Re in NTP. An entity can only report to NTP if it is linked to a source. Otherwise, it can be a distant or related entity only.

Part of adding an Re to NTP is telling NTP which source the Re will use. The source must be added to NTP before you can assign an Re to it. To assign an Re to a source you enter the name of the source in the source field of reach table record for the Re.

For Re's requiring specialized message parsers (converters), you define the converter with the value in the conv field of the reach table together with the value in the type field of the source table.

For configurable converter interfaces (CDR CIMs), the value in the type field of the source table is always "ccc". You must also define the appropriate converter logic in the conversion_name field of the bildtscoll table.

Reference

To add Re's to NTP, see [Chapter 5, "Add Network Elements"](#).

What can be a source?

Most sources exist separately from Re's, but in some cases a source can be a module on an Re, or even merely the definition in NTP of a direct interface to an Re. Broadly speaking, sources include the following types. (For another perspective on sources, see ["Sources" on page 2-16.](#))

Type	Description	Examples
mediation system	Can forward CIMs from multiple Re's. The mediation system may modify CIM record format before forwarding the CIM to NTP	BILLDATS, GeoProbe
EMS	(Element management system). These sources have a primary function of management of a network element or multiple elements, but they can forward CIMs from multiple Re's to NTP	CP, NFM, TMOS
direct interface	Typically a separate source must be defined for EACH interface to an Re because the Re's network ID (CLLI) cannot be determined unless it is associated with a unique source.	Custom-configured (F6306), TOPS module on DMS switch

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Background for Source Administration (Continued)

Source types

Sources are distinguished by whether they send CIMS in a:

- Data stream
- File-based format

Data stream sources

CIMs arriving at NTP in a data stream require specialized CIM-to-CFIM converters (message parsers). NTP provides converters for CIMS from a variety of Re's.

The specific conversion type must be specified in the conv field of the rearch table when you add an Re using a specialized converter to NTP.

File-based sources for configurable conversions

Most file-based CIMs are handled through the standard NTP configurable converter interface(except GeoProbe, F6272, which uses the universal converter). Typically, files are transferred via ftp over TCP/IP and require a dedicated storage directory defined as part of adding the source to NTP.

The configurable converter interface requires CIMs in one of three standard file formats. Any element that sends data in one of these formats can be an NTPsource:

- Delimited ASCII
- ASCII name-value pair
- XML

The specific interface type must be specified in the conv field of the rearch table when you add an Re using a configurable converter source to NTP. In addition, you must specify special rules applied to the configurable converter in the conversion_name field of the bildtscoll table.

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Background for Source Administration (Continued)

Source table required for all sources

A source must be named and its type defined in the source table before you can assign an Re to it or modify other tables required to administer the source. For a list of supported source types, conversions they are used for, and appropriate values for the type field, see ["source Table" on page A-137](#)

Note

- **Unique source name.** You must give each source a unique name in NTP. To verify that the name you plan to use is not already assigned to another source, use the following command to search for it in the source table: `sui find so=source | grep source`
- **ccc.** For all configurable conversion sources, the value in the type field of the source table is **ccc**.

Examples

This example shows an ems-type source named scs03 and a configurable conversion source named bdat1.

Name	Type	Bdrhost
scs03	ems	-
bdat1	ccc	-

Other tables for source administration

CIM I/O tables

For sources using specialized converters, you must define the source interface in the appropriate CIM I/O table, such as intcpdial for TCP/IP links. See ["I/O Tables for Data Stream Interfaces" on page 14-11](#) for more information

Configurable converter

Sources for configurable conversions require use of the following tables to further describe the source interface beyond the simple definition in the source table:

- bildtscoil
- collectors

Reference

For a fuller description of tables used for source administration, see ["Tables for Source Administration" on page 14-9](#).

Source Types and Re's

Which source to use for an Re?

To determine which source to use for an Re, see the summary below and ["Tables for Source Administration" on page 14-9](#). You can also:

- Determine what source a similar Re uses. Capacity allowing, you may be able to use the existing source for the new Re.
- Consult with your NTP support organization and local network configuration experts.

Summary

Sources include the following (see also ["Background for Source Administration" on page 14-5](#)).

Type	Source	Collects data from these Re's
File based	BILLDATS	AXE 10 (F6186) and Lucent Softswitch (F6186)
File based	GeoProbe	A variety of switches and other network elements (GeoProbe F6272), but N/A, since GeoProbe gets its data from SS7
File based	TMOS (and others)	AXE 10 TRADO (F6313) — can also use direct interface
File based	Navis (and others)	Gateways, probes, and other IP elements — IPDR (F6305)
File based	Any other source used with the configurable converter,	Other sources not specifically discussed here can send CIMs if the data is formatted for the standard configurable conversion interface. Your NTP support organization may custom-configure such an interface (F6306).
Data stream	CP (communications processor)	4ESS switches
Data stream	NFM (Network Fault Management) system (see "Other terms for an NFM source" on page 14-26)	Many switch types (typically traditional circuit switches), including: 1A ESS, 5ESS, 7R/E PLS, AUTOPLEX MSC, DMS, DMS MTX, EWSD, and OTR TOPS on DMS or OSPS on 5ESS switch modules (OTR can also use a direct interface)
Data stream	SDM (Nortel Succession Supernode Data Manager)	DMS and Succession SN02
Data stream	"Universal"	Sources not specifically discussed here can send CIMs, through the universal interface (see Chapter 16, "Universal Interface").

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Tables for Source Administration

Description

The following NTP reference database tables are required to administer new sources and changes source definitions. You **dbedit** these tables. For configurable converter sources, you use the **cccmanager** utility to add the source (**cccmanager** performs **dbedit** in the background.)

Legend

- **1** — A source can handle multiple Re's; modify the table to add the source before adding the FIRST Re the source will collect data from.
- **2** — EACH Re requires a separate source definition; modify the table to add a source for EACH Re.

Reference

For values in fields in these tables, see [Appendix A, "Reference Database Tables"](#). Also see procedures for your source type in this chapter.

Table	1AESS	4ESS	5ESS and 7R/E PLS (F6259)	5ESS AUTOPLEX MSC (F6234)	DMS MTX MSC (F6276)	^a OTR (direct) 5ESS OSPS, DMS TOPS	^a OTR (NFM) 5ESS OSPS, DMS TOPS	DMS	EWSD (F6171)	Succession SN02 (F6289)	GeoProbe (F6272)	AXE 10 (F6186)	AXE 10 TRADO (F6313)	Lucent Softswitch (F6314)	IPDRs (F6305)
bildtscoll	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1
collectors ^b	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1
indkdial ^b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
intcpdial ^b	-	1	-	-	-	2	2	-	-	2	-	-	-	-	-
outdkdial ^b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
outtcpdial ^b	1	-	1	1	-	-	-	1	1	2	1	1	-	-	-
source	1	1	1	1	1	2	1	1	1	2	1	1	1	1	1
univconfig	-	-	-	-	-	-	-	-	-	2	2	-	- ^c	-	-
Related table, reach — conv field for each Re must specify appropriate conversion for source type															
reach	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

a. TOPS (module on a DMS switch) or OSPS (module on a 5ESS switch).

b. Only ONE of these tables is used for a source interface: intcpdial or outtcpdial (TCP/IP); indkdial or outdkdial (Datakit); or collectors, with bildtscoll (configurable converter interfaces). Typical usage is shown here, but in some cases the interface may be either incoming or outgoing. Datakit is not supported on all host platforms. A Datakit-to-TCP/IP interface may be required between the host and the source.

c. In previous releases, the univconfig table was required for AXE10 (F6186), which used the universal interface (univ). Currently, AXE10 switches use the configurable converter interface, and univconfig is NOT required.

Host TCP/IP Administration

Overview

For NTP interfaces to sources over TCP/IP, there must be a standard entry for the source in the NTP /etc/hosts file. See ["Update the NTP /etc/hosts file" on page 14-10](#).

Note

Data stream interfaces over TCP/IP. For data stream interfaces only, where NTP listens for data (administered in the ["intcpdial Table" on page A-67](#)), the /etc/services file on the host must have an entry corresponding to the source type as defined for the appropriate TCP_PORT_X variable. See ["Assign a service for intcpdial" on page 14-16](#).

Procedure: Update the NTP /etc/hosts file

Use this procedure to administer the NTP /etc/hosts file for a new source interface.

Step	Action
1	From the source administrator or your network administrator, get the machine name and IP address of the source.
2	Log on the NTP host as root .
3	Use a text editor (such as vi) to add to the NTP /etc/hosts file an entry that includes the source's TCP/IP address and machine name, separated by a tab character. Example <pre>555.5.55.55 abcsim</pre> Reference See your NTP host reference documentation for information on administering the /etc/hosts file.
4	If you are adding a data stream interface, note the machine name, as you will need it to dbedit the intcpdial or outtcpdial table.
Done	

I/O Tables for Data Stream Interfaces

Description

You define the source links for data stream interfaces by using the **dbedit** command on the appropriate CIM I/O table. You use these tables when you:

- Add a source to NTP or change its name,
- Change the source's name or TCP/IP address (or Datakit dialstring)
- Want to balance I/O processes to the host.

To tell NTP to...	Put a source in this CIM I/O table
LISTEN for the source to send data over Datakit	"indkdial Table" on page A-65
REQUEST the source to send data over Datakit	"outdkdial Table" on page A-100
LISTEN for the source to send data over TCP/IP	"intcpdial Table" on page A-67
REQUEST the source to send data over TCP/IP	"outtcpdial Table" on page A-102

Activate. Typically, you first add a source but leave the source links in an inactive state until administration is done for the Re's that will use the source. See [Step 3 in "Activate or Deactivate a Source Link" on page 14-12](#).

Which I/O table to use?

Consult with the source administrator and your NTP support organization to select the appropriate connection method for a given source. This table lists typical usage. Other configurations may be possible for a given source.

This source...	For this Retype...	Typically uses...
CP	4ESS	intcpdial
NFM ^a	1A ESS, 5ESS (not using the TCP feature), DMS, EWSD or AUTOPLEX MSC	intcpdial (but one customer has an NFM feature called TIPS, that enables use of outtcpdial.)
	5ESS (using the TCP feature)	outtcpdial (sometimes intcpdial, not both)
SDM	Succession SN02 ^b , or DMS using an SDM as a source. One source per Re.	intcpdial (sometimes outtcpdial, not both)
None (that is, Re a source)	TOPS (module on a DMS) or OSPS (module on a 5ESS). One source per Re.	indkdial (or outdkdial, not both)

a. Consult with your NTP support organization to have the NFM administrator build the pattern file for capturing EWSD CIMs (see [Chapter C, "Set Up OneVision NFM"](#)).

b. **Succession via NFM.** To use NFM as a source for Succession SN02 switches, consult with your NTP support organization and the NFM administrator to build the pattern file for capturing Succession SN02 CIMs (see [Appendix C, "Set Up OneVision NFM"](#)).

Activate or Deactivate a Source Link

Purpose

Once a source has been added to NTP, you can turn CIM flow on or off for that source. Doing this affects data for all Re's that use the source.

Reference

Re's. For how to initially assign an Re to a source, see [Chapter 5, "Add Network Elements"](#).

Tables with an "active" field for source I/O

All sources require definition in ONE of the following NTP reference tables (see ["Tables for Source Administration" on page 14-9](#)). Each of these tables contains an active y/n field that activates (**y**) or deactivates (**n**) the source link.

- ["indkdial Table" on page A-65](#)
 - ["outkdial Table" on page A-100](#)
 - ["intcpdial Table" on page A-67](#)
 - ["outtcpdial Table" on page A-102](#)
 - ["collectors Table" on page A-27](#)
-

Subdirectories for configurable conversion sources

The first time you activate a newly-added source for a configurable conversion (collectors table), three empty subdirectories are created in the directory you made in the procedure to add the source. NTP uses these subdirectories to process CDR CIMS, and you use the errors directory in the manual procedure to reprocess CDRs that could not be initially processed.

- errors
- processed
- garbage

Reference

See ["Add or Modify a Source for a Configurable Conversion" on page 14-38](#) for procedures to add the source. See ["Reprocess CDRs" on page 11-32](#) for information on the role of these directories in procedures you perform to reprocess CDRs.

(Continued on next page)

Activate or Deactivate a Source Link (Continued)

Task overview

There are two ways to turn CIM flow from a source on or off:

- **dbedit**. You can use **dbedit** for all sources. See ["Activate or deactivate a source interface with dbedit" on page 14-13](#).
- **cccmanager**. For sources used in a configurable conversion interface, you can use the **cccmanager** command. These sources all use the collectors table. See [Step 6 in "Modify a configurable converter source definition" on page 14-44](#).

Procedure: Activate or deactivate a source interface with dbedit

Use this procedure to start or stop CIM flow from a source, for ALL Re's that use the source.

Before you begin

You must know the name of the source, from the name field in the ["source Table" on page A-137](#) and the table used to define the source interface (see ["Tables with an "active" field for source I/O" on page 14-12](#)).

Reference

For steps using **dbedit**, see ["Dbedit" on page 4-24](#). For field values in database tables, see [Appendix A, "Reference Database Tables"](#). For how to use the **vi** editor, see ["Edit \(vi\) ASCII Files" on page 4-12](#).

Step	Action
1	<p>Use sui find to copy into a temporary file (temp) the record for the source you want to modify from the appropriate database table (either indkdial, outkdial, intcpdial, outtcpdial, or collectors) .</p> <p>Example To copy the collectors record for the source named bdat1 (note that the key field is Source, enter): sui find source=collectors search=collector_name=bdat1 noheader delim='";"' > temp</p> <pre>Collector_name Collector_type Active bdat1 billdates y</pre>
2	<p>Edit the temp file with a text editor (such as vi), and save the file.</p> <ul style="list-style-type: none"> ■ To stop data flow from the source, change y to n in the Active field. ■ To start data flow from the source, change n to y in the Active field.

Step	Action
3	Use dbedit with the -u (update) option to move the change from the temp file to the table you want to modify. Example To modify the collectors table, enter dbedit -u -t collectors -f temp -s";"
4	Use sui find to check your changes. Example To check the change to the bdat1 source enter sui find source=collectors search=collector_name=bdat1 noheader delim='";"'
Done	

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TCP_PORT_X Variables (for intcpdial)

Background for TCP_PORT_X variables

For TCP/IP links defined in the intcpdial table, NTP TCP_PORT_X variables name the local port numbers that the NTP host listens on for data from CIM sources. All sources of the same type normally use the same port. These port numbers:

- Are used in the Origin1 and Origin2 fields of the NTP ["intcpdial Table" on page A-67](#) for a specific source.
- Must be assigned in the /etc/services file on the NTP host (see ["Assign a service for intcpdial" on page 14-16](#))

Note

- **When to use.** You may never need to set TCP_PORT_X variables. Your NTP support organization does this during system installation. But you must know what port to use when you add a new NTP source.
- **For incoming only.** These variables are NOT used for outgoing (request) TCP/IP links administered in the outcpdial table.

Reference

For a complete description of the TCP_PORT_X variables, see the lists of NTP variables in ["System Variable Defaults" on page 8-83](#) and ["System Variable Definition" on page 8-87](#). The system default variables are:

- TCP_PORT_EMS (for ems-type sources)
- TCP_PORT_ESS4 (for CPs)
- TCP_PORT_OSPS (for OSPS)
- TCP_PORT_TOPS (or TOPS)
- TCP_PORT_UNIV1 through TCP_PORT_UNIV5 (can be customized)

Procedure: View or set TCP_PORT_X variables

Use sui setsys to view or set the TCP_PORT_X variables (see ["sui setsys Command" on page 8-81](#)).

Example

All CPs normally use the port number assigned to TCP_PORT_ESS4 (the CP is the source for 4ESS switch data). This example of **sui setsys** output shows TCP port 3002 assigned to the CP links.

Name	Value	Defval	Type
TCP_PORT_ESS4	3002	0	integer

(Continued on next page)

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TCP_PORT_X Variables (for intcpdial) (Continued)

Procedure: Assign a service for intcpdial

Use this procedure to edit the /etc/services file and the appropriate TCP_PORT_X variable for an incoming TCP/IP link to a new data stream-type source.

Note

You will seldom use this procedure. When your NTP support organization installs your NTP system, they normally set up the TCP_PORT_X variables and the etc/services file for the various types of sources.

Step	Action
1	Log on the NTP host as ntp .
2	Enter sui setsys , and look in the output for the definition of the TCP_PORT_X variable for your source type. Does the variable definition include a port number for this source type? <ul style="list-style-type: none"> ■ If YES, note the port number for use when you administer the "intcpdial Table" on page A-67, and then return to the procedure that brought you here. ■ If NO, go to Step 3
3	Log on the NTP host as root .
4	Use a text editor (such as vi) to open the /etc/services file. <ol style="list-style-type: none"> a. Find a port number that is unassigned that you can use for the TCP/IP connection this type of source. b. Edit the file to assign the port. c. Note the port number you assigned. You will need it later when you administer the "intcpdial Table" on page A-67. d. Define the appropriate TCP_PORT_X variable to use this port number. See Step Procedure. <p>Reference</p> <ul style="list-style-type: none"> ■ See the reference documentation for your operating system for information on the /etc/services file. ■ See "Background for TCP_PORT_X variables" on page 14-15 for information on the relationship between the NTP TCP_PORT_X variables and entries in the /etc/services file.
Done	

Add a Directory for File-Based Sources

Overview Each source that sends file-based CIMs to NTP — usually CDR CIMs — must have its own login ID and directory on the NTP host. You create these by using standard operating system procedures for your platform.

Procedure: Add a directory for a file-based source Use these guidelines to create a login and directory for a file-based source.

Step	Guideline
1	<p>Use standard administrative procedures for your operating system (such as the SAM utility on HP systems) to add a user ID (login) and directory on the NTP host. Follow the guidelines.</p> <ul style="list-style-type: none"> ■ An entry should be created in the <code>/etc/passwd</code> file, and the ID (UID) should be unique. ■ Assign the sh shell to the login. ■ Assign the directory the permissions 7-5-5 (full permissions for self and read-execute for self and other). ■ If you already have a source of the same type in your network, we recommend you assign the same user group as the existing source. To determine this, do the following: <ol style="list-style-type: none"> 1. Use sui find so=bildtscoll noheader delim=";" to find the source in the bildtscoll table. This sample output shows a BILLDATS source of collector_name bdat1 and conversion_name bill-ericsson. <pre>#Collector_name;Conversion_name;Dir_list;Io_name bdat1;bill-ericsson;/susr/bdat1;/bdat1</pre> 2. Look at the Collector_name's entry in the <code>/etc/passwd</code> file, and note the number for its user group. In the example above for bdat1 the entry the user group is 20 (fourth field). The same value appears in the <code>/etc/group</code> file for bdat1. <pre>bdat1:*:106:20:BILLDATS User#1:/susr/bdat1:/usr/bin/sh</pre>
2	<p>Give the login (and password) to the source administrator and ask him or her to set up the same login as a user on the source.</p>
3	<p>Note the following items, as you will need them for to add the source to NTP in "Add or Modify a Source for a Configurable Conversion" on page 14-38:</p> <ul style="list-style-type: none"> ■ The login you created, which you will use it in the: <ul style="list-style-type: none"> — Name field of the source table — Source field in the univconfig table and outtcpdial tables (if used) — Collector_name field in the collectors table and the bildtscoll table ■ The directory you created (for example <code>/home/bdat1</code>), which you will use in the Dir_list field in the bildtscoll table

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TCP_PORT_X Variables (for intcpdial)

Background for TCP_PORT_X variables

For TCP/IP links defined in the intcpdial table, NTP TCP_PORT_X variables name the local port numbers that the NTP host listens on for data from CIM sources. All sources of the same type normally use the same port. These port numbers:

- Are used in the Origin1 and Origin2 fields of the NTP ["intcpdial Table" on page A-67](#) for a specific source.
- Must be assigned in the /etc/services file on the NTP host (see ["Assign a service for intcpdial" on page 14-16](#))

Note

- **When to use.** You may never need to set TCP_PORT_X variables. Your NTP support organization does this during system installation. But you must know what port to use when you add a new NTP source.
- **For incoming only.** These variables are NOT used for outgoing (request) TCP/IP links administered in the outtcpdial table.

Reference

For a complete description of the TCP_PORT_X variables, see the lists of NTP variables in ["System Variable Defaults" on page 8-83](#) and ["System Variable Definition" on page 8-87](#). The system default variables are:

- TCP_PORT_EMS (for ems-type sources)
- TCP_PORT_ESS4 (for CPs)
- TCP_PORT_OSPS (for OSPS)
- TCP_PORT_TOPS (or TOPS)
- TCP_PORT_UNIV1 through TCP_PORT_UNIV5 (can be customized)

Procedure: View or set TCP_PORT_X variables

Use sui setsys to view or set the TCP_PORT_X variables (see ["sui setsys Command" on page 8-81](#)).

Example

All CPs normally use the port number assigned to TCP_PORT_ESS4 (the CP is the source for 4ESS switch data). This example of **sui setsys** output shows TCP port 3002 assigned to the CP links.

Name	Value	Defval	Type
TCP_PORT_ESS4	3002	0	integer

(Continued on next page)

TCP_PORT_X Variables (for intcpdial) (Continued)

Procedure: Assign a service for intcpdial

Use this procedure to edit the /etc/services file and the appropriate TCP_PORT_X variable for an incoming TCP/IP link to a new data stream-type source.

Note

You will seldom use this procedure. When your NTP support organization installs your NTP system, they normally set up the TCP_PORT_X variables and the etc/services file for the various types of sources.

Step	Action
1	Log on the NTP host as ntp .
2	Enter sui setsys , and look in the output for the definition of the TCP_PORT_X variable for your source type. Does the variable definition include a port number for this source type? <ul style="list-style-type: none"> ■ If YES, note the port number for use when you administer the "intcpdial Table" on page A-67, and then return to the procedure that brought you here. ■ If NO, go to Step 3
3	Log on the NTP host as root .
4	Use a text editor (such as vi) to open the /etc/services file. <ol style="list-style-type: none"> a. Find a port number that is unassigned that you can use for the TCP/IP connection this type of source. b. Edit the file to assign the port. c. Note the port number you assigned. You will need it later when you administer the "intcpdial Table" on page A-67. d. Define the appropriate TCP_PORT_X variable to use this port number. See Step Procedure: <p>Reference</p> <ul style="list-style-type: none"> ■ See the reference documentation for your operating system for information on the /etc/services file. ■ See "Background for TCP_PORT_X variables" on page 14-15 for information on the relationship between the NTP TCP_PORT_X variables and entries in the /etc/services file.
Done	

CP Sources

Overview of CP Sources

Purpose This section explains administration you do on the NTP host for a CP source.

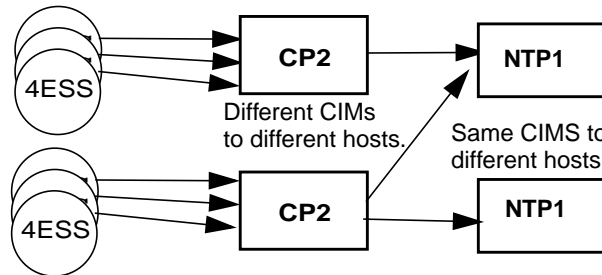
Reference

For CP administration you do on CPs and for detailed information on CP configurations, see *CP Administration and O&M*.

CP configurations

CPs collect data from 4ESS switches and forward it to NTP. A switch can send data to only one CP, but a CP can integrate with many switches, and NTP can integrate with multiple CPs. A configuration may have multiple NTPs.

- **Multiple switches.** Up to 75 4ESS switches can be linked to one CP. (A switch can send its data to only one CP.)
- **Multiple CPs.** If you have more than 75 4ESS switches reporting to NTP, you must have at least two CPs.
- **Multiple hosts.** A CP can send data to as many as four NTP hosts. Typically, each host receives the same data. For example, you could have NTP running on one CP in New York (NTP 1), and another in Albany (NTP 2) and users could log on either.



The CP can run either on its own machine (standalone) or on the NTP host. The CP and the NTP host communicate over TCP/IP. A Datakit-TCP/IP interface is required between the Re's and a CP on host since the host platform does not support Datakit connections. For standalone CPs, communication between the switches and the CP is over Datakit links. Two-way communication is supported, but data flow is from the switch to NTP. The CP calls the NTP machine to initiate a connection over one of its TCP/IP ports.

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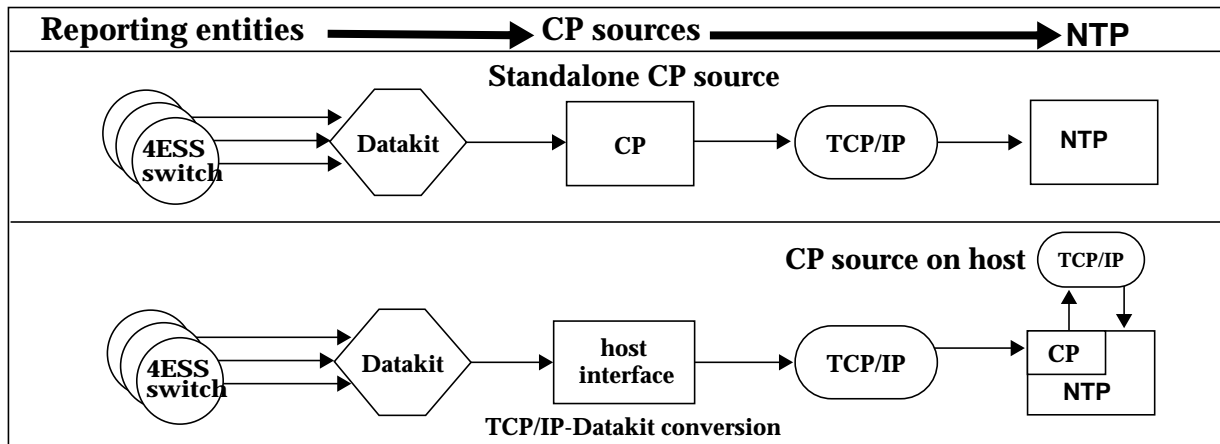
Overview of CP Sources (Continued)

Illustration of CP data flow

This illustration summarizes the basic configurations, the links, and the data flow for CPs. For administrative purposes, you can usually proceed as if a CP on host is really a standalone CP. Illustrations and procedures in the rest of this section are for standalone CPs, but they also apply to CPs on host.

Note

Multiple links. For multiple links, use relevant procedures multiple times.



Coordination

This table shows who to coordinate with for administering CP links for 4ESS switches.

This person	Does this...	Reference
CP administrator	Adds, deletes, modifies, and monitors 4ESS-CP and CP-host links, from the CP viewpoint.	<i>CP Administration and O&M</i>
TCP/IP-Datakit interface administrator	Administers the customer-installed TCP/IP-Datakit interface required between the switch and the CP for some configurations.	Appendix D in the <i>NTP CP Administration and O&M</i> book.
Datakit administrator	Provides Datakit dialstrings for 4ESS switches, CPs, and the host.	Datakit manuals
4ESS administrator	Installs or removes 4ESS switches.	4ESS manuals
NTP support organization	Initially installs the CP or CPs. Solves CP and NTP problems not covered in manuals.	None

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Add or Modify a CP Source

Overview

Rarely, you may need to modify the CP-NTP link variables set on the NTP host. You may do this when the first CP is added to NTP, or as necessary. System variables control how NTP determines the status of a CP-NTP link and reports it in link alert messages. These variable are set when NTP is installed. See ["Set CP-NTP link variables" on page 14-22](#).

Otherwise, the procedure below contains all the necessary administrative steps to add a CP.

Procedure: Set CP-NTP link variables

You use the **sui setsys** command to view or modify the CP-NTP variables that define link alerts. The following table describes the CP-NTP variables.

Consult with your NTP support organization before modifying these variables.

Reference

For how to set the variables, see ["sui setsys Command" on page 8-81](#).

Note

The link status message also has a field reporting the status of the switch-CP Datakit link. This status indicator is not a variable.

Variable	Description	Reference
ZM (zero message interval)	<p>ZM determines the 4ESS-CP link status and specifies how many ZM intervals can occur before NTP generates a link alert message. Each CP records the number of messages received on each link in its link status message. When NTP receives a link status message reporting zero messages received, it counts the 5-minute interval since the last link status message as a zero message interval for that switch-CP link.</p> <ul style="list-style-type: none"> ■ Down. When the count of zero message intervals exceeds the value of ZM, the switch-CP link is "down" and NTP generates a link alert message. For ZM of 3, the switch-CP link is down if the CP reports no messages received from the Re for the last three intervals (15 minutes). <p>Default value: 2 (two link status messages report no messages received from the same switch in 10 minutes). Range: 0 to 120. When ZM is 0, the switch-CP link status is not determined by the number of messages received.</p>	"ZM" on page 8-89

Variable	Description	Reference
UM(1, UM2 (percent unreadable messages)	<p>UM1 and UM2 determine the 4ESS-CP status. NTP divides the value of the Number of Messages Unreadable field in the link status message by the value of the Number of Messages Received field in the link status message to derive a percentage.</p> <ul style="list-style-type: none"> ■ Down (UM1). The link is “down” if the percentage of unreadable messages equals or exceeds the UM1 threshold. Default: 70 (70% of link status messages unreadable). Range: any integer value greater than UM2 and no greater than 100. ■ Degraded (UM2). The link is “degraded” if the percentage of unreadable messages equals or exceeds the UM2 threshold. Default: 30 (30% of link status messages unreadable). Range: any value greater than 0 and less than the value of UM1. ■ Up. The Switch-CP link status is “up” if the percentage of unreadable messages is less than UM2, the number of zero messages is less than ZM, and the number of link failures is less than LF2. 	"UM1, UM2" on page 8-88
LF(1, LF2 (number of link failures)	<p>LF1 and LF2 control the link status information used in generating link alert messages by determining how many times the CP detects switch-CP link failures in each 5-minute interval.</p> <ul style="list-style-type: none"> ■ Down. The switch-CP link is “down” if the number of link failures detected equals or exceeds the threshold set for LF1. Default: 2 (two link failures detected). Range: any integer value greater than the value of LF2 (the default is 1) and no greater than 255. ■ Degraded. The switch-CP link is “degraded” if the number of link failures detected equals or exceeds the threshold set for LF2. Default: 1 (one link failure detected). Range: any integer value greater than zero and less than the value assigned to LF1. ■ Up. If the number of link failures is less than LF2, the number of zero messages is less than ZM, and the percentage of unreadable messages is lower than UM2, the link is “up.” If either LF1 or LF2 exceeds 3, the switch-CP link status is not determined by the number of link failures. 	"LF1, LF2" on page 8-87

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Add or Modify a CP Source

When to use You do NOT need to do this each time a you add an Re. Many Re's can be integrated through a single CP.

Procedure: Add a CP source Use this procedure to add a CP source to NTP.

- **Before you begin.** Administration is also required on the CP. For what to do on the CP, see *CP Administration and O&M*.
- **When to use.** You do NOT need to do this each time you add an Re. Once the CP is added, you can administer many Re's to send data to NTP through it.

Reference

For steps requiring **dbedit**, see "[Dbedit](#)" on page 4-24. For information on values for fields in database tables, see [Chapter A, "Reference Database Tables"](#).

Step	Action
1	Add an entry for the CP in the NTP /etc/hosts file. Reference See " Update the NTP /etc/hosts file " on page 14-10.
2	Log on NTP as ntp .
3	If you have not already done so, dbedit the rearch table, adding or modifying records for each 4ESS switch that sends its CIMs to the CP. Note The tag in the rearch table must match the link number defined on the CP, (which is the link number in the CP's LINK database table). See " rearch Table " on page A-114, and Chapter 3, "4ESS-CP Links" (LINK database table in <i>CP Administration and O&M</i>).
4	dbedit the source table to add a record for the new CP. This names the CP as a new source. Reference See " source Table " on page A-137 and " Host TCP/IP Administration " on page 14-10 for details.

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Step	Action
5	<p>dbedit the "intcpdial Table" on page A-67 to add a record defining the TCP/IP port number the CP uses to call NTP.</p> <ul style="list-style-type: none"> ■ The machine name in the Origin1 field must match the entry for the source in the /etc/hosts file (see Step 1). ■ The port number in the Origin1 field must be the one defined by the system variable TCP_PORT_ESS4 by use of the sui setsys command. (See "TCP_PORT_X Variables (for intcpdial)" on page 14-15.) ■ Set the Active field to n until later in this procedure. <p>Note Origin2 backup connection. You can also configure a backup (secondary) connection by entering another machine name and port number in the Origin2 field (<code>cpnorth1:3333</code> in the example). You would do this if the CP has multiple Ethernet LAN cards configured on different networks. The secondary machine must be defined in the NTP /etc/hosts file, and the port number must be the same one used for the primary link (Origin1 field). See Chapter 4, "CP-NTP Links," in <i>CP Administration and O&M</i> for more information.</p>
6	<p>Set CP-host link variables.</p> <p>Reference See "Set CP-NTP link variables" on page 14-22.</p>
7	<p>dbedit the intcpdial table again, this time to change the CP's Active field to y.</p> <p>Example</p> <pre>Source Active Origin1 Origin2 cpn1 y cpnorth:3333 cpnorth1:3333</pre>
8	<p>Use one of the link monitoring methods to verify CIMs are moving from switches through the CP to NTP.</p> <p>Reference See "Monitor Links" on page 14-50.</p>
9	<p>Tune the link, if needed.</p> <p>Reference See Administer Silent Link Failure Detection on page 14-52.</p>
10	<p>Modify the CP-NTP link variable settings, if necessary.</p> <p>Reference See "Set CP-NTP link variables" on page 14-22 for the procedure.</p>
Done	

NFM Sources

Overview of NFM Sources

Purpose

This section explains administration you do on the NTP host for NFM sources.

Reference

Pattern files. NFM administrators install pattern files on NFM machines to define which CIMs to send to NTP. For how this and other NFM administration is done, see [Appendix C, "Set Up OneVision NFM"](#).

Other terms for an NFM source

In references, messages, or file or directory names, NFM may be referred to by the following terms:

- **TNM** (Total Network Management) — The former name for NFM.
- **NOC1** — A scaled-down version of NFM.
- **TSM** (TNM Surveillance Module) — The TNM module that collects CIMs from switches.
- **SCCS** (Switching Control Center System) — What TNM evolved from.

Switch types

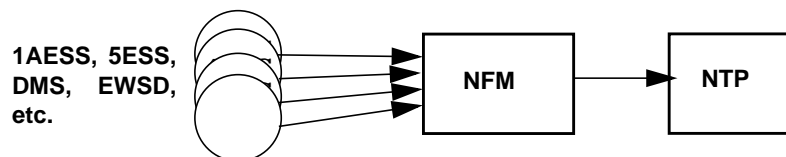
NFMs can collect data from many of the switch types NTP supports (see ["Source Types and Re's" on page 14-8](#)). Each NFM can only collect from one switch TYPE, however, as defined by its conversion type. (This is true of all sources of type "ems", as defined in the source table.

Illustration of NFM data flow

This illustration shows the simplest configuration for NFM sources. Links can be multiple (see the illustration in ["Overview of CP Sources \(Continued\)" on page 14-21](#)).

Note

Multiple links. For multiple links, use relevant procedures multiple times.



Add or Modify an NFM Source

When to use You do NOT need to do this each time a you add an Re. Many Re's can be integrated through a single NFM.

Before you begin Before you can add an NFM on NTP, the NFM administrator must administer the NFM machine.

- **Pattern files.** An NFM NTP distribution pattern file must be installed on the NFM machine to define which DIMs to send to NTP.
- **Interface.** The Datakit or TCP/IP interface must be configured on NFM. NTP will be originating calls over Datakit or TCP/IP to establish a virtual connection over fiber or ethernet to communicate with the NFM machine.

Reference

See [Appendix C, "Set Up OneVision NFM"](#) for information on NTP pattern files for NFM and other NFM administration.

Procedure: Add an NFM Use this procedure to add an NFM source to NTP (along with procedures in [Appendix C, "Set Up OneVision NFM"](#)).

Reference

dbedit. For steps requiring **dbedit**, see ["Dbedit" on page 4-24](#). For information on values for fields in database tables, see [Chapter A, "Reference Database Tables"](#).

Step	Action
1	Log on the NTP host as ntp .
2	If you have not already done so, dbedit the rearch table, adding or modifying records for each switch that sends its CIMs to the NFM.

Step	Action
3	<p>dbedit the source table to add a record for the new NFM. This names the NFM as a new source.</p> <p>Example For a new NFM to be named nfm1, add this record. If you do not have the optional RDS feature (6214, refsynch), put a dash (-) in the Bdrhost field.</p> <pre>Name Type Bdrhost nfm1 ems -</pre> <p>Reference See "source Table" on page A-137 for information about the source table.</p>
4	<p>Determine the appropriate interface method and NTP reference table (see "I/O Tables for Data Stream Interfaces" on page 14-11) to use for this source.</p>
5	<p>Are you using a TCP/IP interface (intcpdial or outtcpdial)?</p> <ul style="list-style-type: none"> ■ If NO, go to the next step. ■ If YES, use the procedure in "Update the NTP /etc/hosts file" on page 14-10 to add an entry for the NFM source in the /etc/hosts file. ■ If YES, and you are using the intcpdial table, see "View or set TCP_PORT_X variables" on page 14-15 for information on administering the appropriate TCP_PORT_X variable.
6	<p>dbedit the appropriate I/O table to add a record for this NFM that defines the Datakit dialstring or TCP/IP address that NTP software to interface with this NFM unit.</p> <p>Note Set the Active field to y.</p> <p>Reference For explanations of the fields in these tables, see the individual table descriptions: "intcpdial Table" on page A-67, "outdkdial Table" on page A-100, or "outtcpdial Table" on page A-102.</p>
7	<p>Use one of the link monitoring methods to verify CIMs are moving from switches through the CP to NTP.</p> <p>Reference See "Monitor Links" on page 14-50</p>
8	<p>Tune the link, if needed.</p> <p>Reference See Administer Silent Link Failure Detection on page 14-52.</p>
9	<p>Edit the reach table, adding or modifying records for each switch that sends its CIMs to the NFM.</p>
Done	

SDM Sources

Overview of SDM Sources

Background

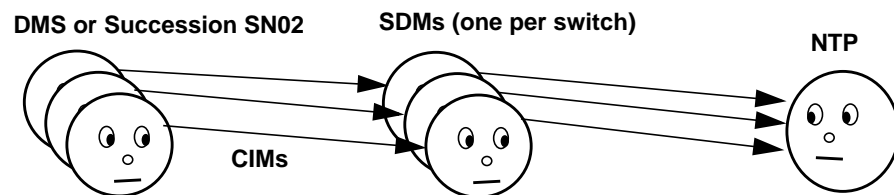
In the past, NTP collected CIMs from DMS switches only through NFM sources.

Now (F6289), NTP can receive CIMs from a DMS and Succession SN02 switch directly from a supernode data manager (SDM).

For this type of interface to NTP, a separate SDM source is required for EACH DMS or Succession switch.

Illustration of SDM I/O

This illustration shows a high-level view of the direct SDM interface, with one SDM per switch.



Note

SDM to NFM. CIMs can also be routed through SDMs to an NFM source. In that case the SDMs are invisible to NTP. You would simply add the NFM source to NTP (see ["Add or Modify an NFM Source" on page 14-27](#))

Add or Modify an SDM Source

Purpose

Use this procedure if you have a new DMS or Succession SN02 switch and you want NTP to receive its CIMs directly from an SDM. This procedure:

- Adds an SDM to NTP as a CIM source
- Establishes CIM flow between the SDM and NTP

Administration on the SDM

The SDM can be configured as either a client that establishes a connection to NTP or server that listens on a specified port for an NTP-initiated connection. (In either case, the flow of messages is one-way from the SDM to NTP.)

Setup is required on the SDM if it is to act as a server. See information on adding a log device, using Logroute, in the vendor-supplied *Fault Tolerant User Guide*, 297-5061-906. Follow the directions for connecting to a TCP-in device and specifying which port the SDM is to listen on.

Note

This procedure assumes the SDM is configured as a client (but see [Step 6](#)).

Procedure: Add an SDM

Be sure to add a separate SDM source for EACH DMS or Succession SN02 switch (see "[Overview of SDM Sources](#)" on page 14-29).

Reference

dbedit. For steps requiring **dbedit**, see "[Dbedit](#)" on page 4-24. For information on values for fields in database tables, see [Appendix A, "Reference Database Tables"](#).

Step	Action
1	Log on NTP as root .
2	Add an entry for the SDM in the NTP /etc/hosts file. Reference See " Update the NTP /etc/hosts file " on page 14-10.
3	Log on NTP as ntp .
4	If you have not already done so, dbedit the rearch table, adding or modifying the record for the switch that sends its CIMs to the SDM. Note Enter dms as the value in the conv field.

Step	Action
5	<p>Use dbedit to add the SDM to the source table.</p> <p>Note Enter univ as the value in the type field.</p>
6	<p>Use dbedit to add new SDM to the intcpdial table (but see the note below).</p> <ul style="list-style-type: none"> ■ The machine name in the Origin1 field must match the entry for the source in the /etc/hosts file (see Step 2). ■ The port number in the Origin1 field must be defined by a system variable (see "TCP_PORT_X Variables (for intcpdial)" on page 14-15). ■ Set the Active field to n until later in this procedure. <p>Reference See "intcpdial Table" on page A-67 for more information on values for these fields. (A link using outtcpdial is also supported. See "Administration on the SDM" on page 14-30.)</p>
7	<p>Use dbedit to create a record in the univconfig table for the SDM to specify the values the switch uses for start of message (som field, typically 31) and end of message (eom) field, typically -).</p> <p>Note Characters for start and end of message can be configured on the switch. Consult the switch administrator to determine the correct values. You must determine the numeric value for control characters. Values for commonly-used characters are: 31 for Control-_ (unit separator), 25 for Control-Y (end of medium), and 3 for Control-C (end of text). See your local documentation on the ASCII character set to determine the numeric value for any other control characters.</p> <p>Example</p> <pre>Source Config Som Eom sdm01 - 31 -</pre>
8	<p>dbedit the intcpdial table (or outtcpdial table, see Step 6) again, this time to change the Active field to y.</p>
9	<p>Use a link monitoring methods to verify CIMs are moving from the switch through the SDM to NTP.</p> <p>Reference See "Monitor Links" on page 14-50.</p>
10	<p>Tune the link, if needed.</p> <p>Reference See Administer Silent Link Failure Detection on page 14-52.</p>
Done.	

OTR Sources

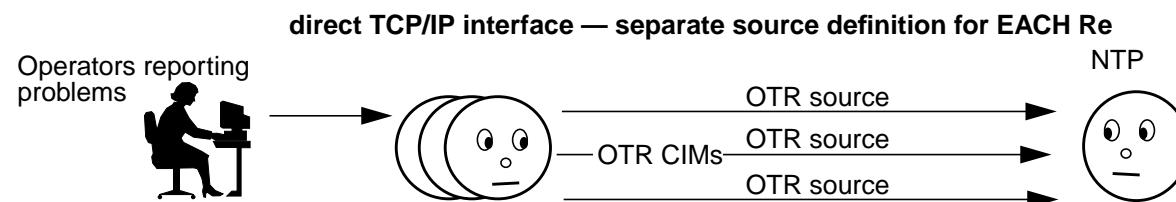
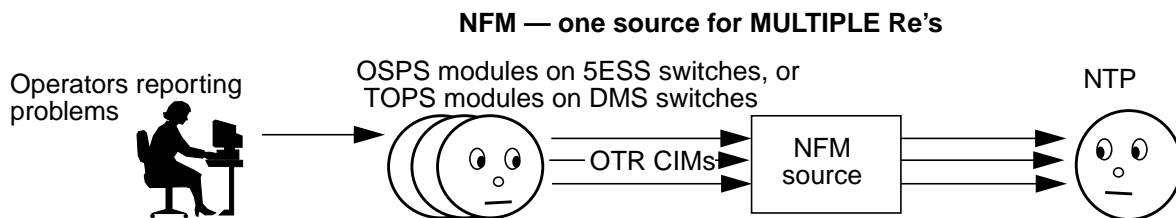
Overview of OTR Sources

Purpose

OTR Re's include OSPS modules on 5ESS switches and TOPS modules on DMS switches. OTR CIMs can come to NTP either through NFM OR through a direct interface. This section explains how to define the OTR source in NTP for the two configurations.

Illustration of OTR (OSPS, TOPS) I/O

This illustration shows a high-level view of the two configurations for OTR CIM flow — through NFM or through direct interface. With NFM, multiple OTR Re's can use the same NFM source. But a direct interface, a SEPARATE source must be defined in NTP for EACH Re. This is because NTP can only derive the Re's CLLI by association with a unique source.



Background — OTR Re's

The conversion type you select in the search table for OTR Re's depends on what source will be used.

In the conv field of the search table:

- For an NFM source, use **ems**
- For a direct interface, use **osps** (for 5ESS OSPS) or **tops** (for DMS TOPS)

Add or Modify an OTR Source

Procedure: Add an OTR (OSPS, TOPS) source

- **NFM.** To define an NFM as a source, follow the steps to add an NFM source in "[NFM Sources](#)" on page 14-26.
 - Use **ems** in the type field of the source table:
 - **Direct interface.** To define a direct interface as a source, add a SEPARATE and unique source for EACH OTR Re. Use the following values:
 - For OSPS, use **osps** in the type field of the source table
 - For TOPS, use **tops** in the type field of the source table.
-

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GeoProbe Sources

Overview of GeoProbe Sources

Background

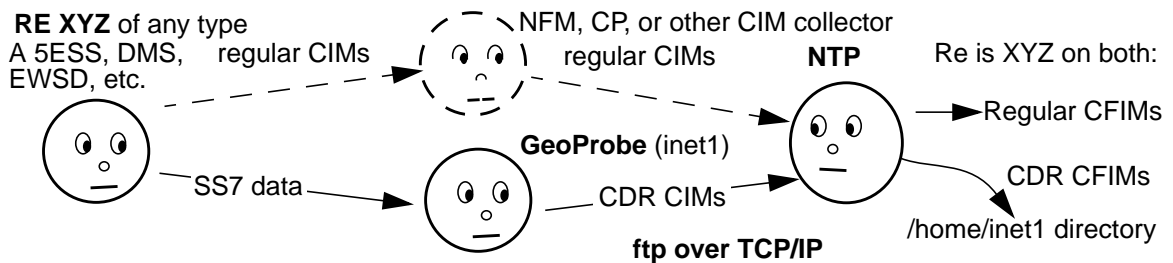
GeoProbe is a network monitoring system. For NTP, it is a source for CDR CIMs. Typically the CIMs are in file-based format and reach to NTP via ftp over TCP/IP. Each GeoProbe system has a separate directory.

Note

The same Re may also send non-CDR CIMs through another source.

Illustration of GeoProbe I/O

This illustration shows a high-level view of CDR CIM I/O for GeoProbe. A directory on the NTP host, GeoProbe inet1 to put its CDRs in the /home/bdat1 directory.



Purpose

Use the following procedure if you have a new GeoProbe system and you want it to send CIMs to NTP. This procedure does the following:

- Adds a GeoProbe system as a CIM source.
- Establishes CIM I/O between GeoProbe and NTP.

Before you begin

Before using this procedure, coordinate with GeoProbe and TCP/IP administrators to establish a TCP/IP connection between the GeoProbe system and NTP.

(Continued on next page)

Add or Modify a GeoProbe Source

Procedure: Add a GeoProbe source

If you have more than one new GeoProbe, repeat this procedure for each.

Reference

dbedit. For steps requiring **dbedit**, see ["Dbedit" on page 4-24](#).

Step	Action
1	<p>Use standard administrative procedures for your operating system to create a login ID and directory on the NTP host for the source to use for ftp transmission of CDR CIM files.</p> <p>Reference See "Add a directory for a file-based source" on page 14-17 for guidelines.</p> <p>Note You will need information from this step to continue.</p> <ul style="list-style-type: none"> ■ The login ID, which you will use it in the: <ul style="list-style-type: none"> — Name field of the source table — Source field in the univconfig AND outtcpdial tables — Collector_name field in the collectors AND bildtsroll tables ■ The directory path (for example /home/inet1), which you will use in the Dir_list field in the bildtsroll table
2	<p>Use dbedit to add the new GeoProbe to the source table. (The Type field must be univ.)</p> <p>Reference See "source Table" on page A-137 for information about the source table. See also the note in Step 1.</p>
3	<p>Use dbedit to add the new GeoProbe to the univconfig table.</p> <p>Reference See "univconfig Table" on page A-150. See also the note in Step 1.</p>
4	<p>Use dbedit to add the new GeoProbe to the outtcpdial table.</p> <p>Note dest1 field is a local port on the NTP host.</p> <p>Reference See "outtcpdial Table" on page A-102. See also the note in Step 1</p>

Step	Action
5	<p>Use dbedit to add the new GeoProbe to the collectors table.</p> <p>Note</p> <ul style="list-style-type: none"> ■ The value in the collector_name field must match the value in the name field of the source table. This should match the login ID you created in Step 1. ■ The value in the collector_type field must be geoprobe. ■ Leave the active field set to n until you want to test the link. See "Activate or Deactivate a Source Link" on page 14-12 <p>Reference See "collectors Table" on page A-27.</p>
6	<p>Use dbedit to add the new GeoProbe to the bildtscoll table.</p> <p>Note</p> <ul style="list-style-type: none"> ■ The value in the collector_name field must match the value in the name field of the source table. This should match the login ID you created in Step 1. ■ The value in the conversion_name field must be inet-geoprobe. ■ The value in the dir_list field must be the fully qualified path to the directory you made in Step 1. ■ The value in the format field must be delimval (the default). <p>Reference See "bildtscoll Table" on page A-16.</p>
7	<p>Use a link monitoring methods to verify CIMs are moving from the switch through the GeoProbe to NTP.</p> <p>Reference See "Monitor Links" on page 14-50.</p>
8	<p>Tune the link, if needed.</p> <p>Reference See Administer Silent Link Failure Detection on page 14-52.</p>
Done	

Sources for Configurable Conversions

Overview of Sources for Configurable Conversions

Purpose

This section explains administration you do on NTP for sources that send CDR CIMs to NTP using the configurable converter interface. These include:

- AXE 10 (F6186)
- 6305, IPDR (F6305)
- AXE TRADO (F6313)
- Softswitch (F6314)

Note

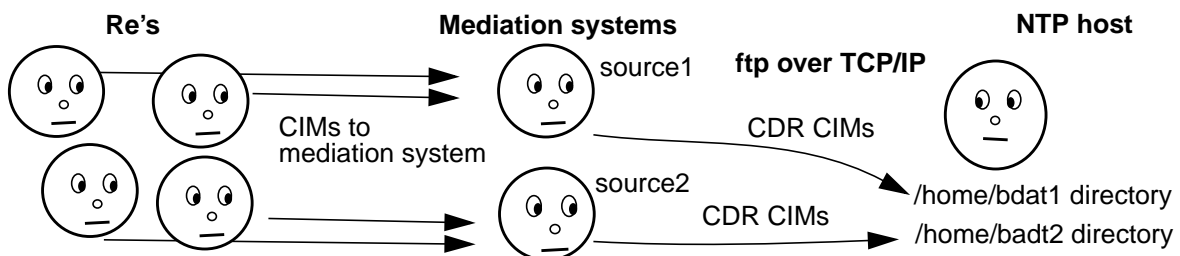
Procedures for consultant-configured conversions are similar (F6306).

CDR (IPDR) sources

Currently, all configurable conversion integrations are file-based interfaces for CDRs. The source sends CDR CIMs in file format over an ftp link to a directory on the NTP host that has been created as part of adding the source. The source is typically a mediation device, though it can be a direct interface, or any element that sends files in acceptable format (see "[What can be a source?](#)" on page 14-5). Examples include BILLDATS, TMOS, and Navis. To administer NTP for these sources, however, you only need to know the directory, the file format, and the conversion based on the file format.

Illustration of configurable conversion source data flow

In this illustration, NTP receives data from two mediation systems, bdat1 and bdat2. Directories on the NTP host, enable bdat1 to put its CDRs in the /home/bdat1 directory, and bdat2 to put its CDRs in the /home/bdat2 directory.



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Add or Modify a Source for a Configurable Conversion

Purpose

The procedures in this section tell how to define for a file-based sources used in con conversions (see below for a list of conversions).

- ["Add a file-based configurable converter source" on page 14-39](#)
- ["Modify a configurable converter source definition" on page 14-44](#)

In these procedures you:

- Create a login on the NTP host for the source so data files transferred from the source can be stored in the source's home directory.
- Define the source in the NTP reference tables

Note

GeoProbe (F6282) also sends CDR CIMs, but the conversion is done through the universal interface, NOT through the configurable conversion interface

ccmanager utility

You use the **ccmanager** command to add and modify the NTP reference data that defines configurable converter sources. This utility makes the necessary modifications to the source, bildtscoll, and collectors tables automatically, without you having to use **dbedit**:

Reference

This utility is explained fully in ["ccmanager Command" on page 14-48](#)

Before you begin

Before you begin, do the following:

- Consult with the source administrator and your network administrator to determine the machine name and IP address of the source.
- Be sure to, **dbedit** the rearch table to define each Re that sends its data to the source (see ["Add to Rearch Table" on page 5-48](#)). The value in the conv field should be:
 - AXE 10 (F6186) — **axe10**
 - IPDR (F6305) — **ipdr**
 - AXE TRADO (F6313) — **axetrado**
 - Lucent Softswitch (F6314) — **softsw**

(Continued on next page)

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Add or Modify a Source for a Configurable Conversion (Continued)

Procedure: Add a file-based configurable converter source Use this procedure to add a new source to NTP with **cccmanager**.

Note

If you have more than one new source, complete this procedure for each.

Reference

For steps requiring **dbedit**, see ["Dbedit" on page 4-24](#). For information on values for fields in database tables, see [Chapter A, "Reference Database Tables"](#). For the **cccmanager** command, see ["cccmanager Command" on page 14-48](#). For an overview of reference tables required for various conversions, see ["Tables for Source Administration" on page 14-9](#).

Step	Action
1	<p>Use standard administrative procedures for your operating system to create a login ID and directory on the NTP host for the source to use for ftp transmission of CDR CIM files.</p> <p>Reference See "Add a directory for a file-based source" on page 14-17 for guidelines.</p> <p>Note You will need information from this step to continue.</p> <ul style="list-style-type: none"> ■ The login ID, which you will use it in the: <ul style="list-style-type: none"> — Name field of the source table — Source field in the univconfig table — Collector_name field in the collectors table and the bildtsroll table ■ The directory path (for example /home/bdat1), which you will use in the Dir_list field in the bildtsroll table
2	Log on the NTP host as ntp . (You must be logged on as ntp to proceed.)
3	<p>Enter cccmanager</p> <p>Response You see the initial cccmanager menu (see "cccmanager Command" on page 14-48).</p>
4	<p>Enter 1 (configure a new source).</p> <p>Response You see the following prompt: Enter source name:</p>

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Step	Action										
5	<p>Enter a name for the new source (maximum of 8 characters).</p> <p>Note</p> <ul style="list-style-type: none"> ■ This name identifies the source in NTP and will appear in: <ul style="list-style-type: none"> — The name field of the "source Table" on page A-137, the collector_name field of the "collectors Table" on page A-27, and the collector_name field of the "bildtscoil Table" on page A-16 — The source field in CFIM output (for end users) ■ If the source name already exists in the system, or exceeds 8 characters, you see an error message: <pre>Source with this name already exists. Source name is too long.</pre> <p>Enter an appropriate source name and continue.</p> <p>Response</p> <p>You see a list of conversion types, followed by a prompt to select one.</p>										
6	<p>Enter the number corresponding to the appropriate conversion type.</p> <p>Note</p> <p>The menu choices you see may differ from this example, but the menu will resemble this example.</p> <table border="1"> <thead> <tr> <th>Type</th> <th>Use for these conversions</th> </tr> </thead> <tbody> <tr> <td>[1] axe-tradofile</td> <td>AXE TRADO (F6313)</td> </tr> <tr> <td>[2] bill-ericsson</td> <td>AXE 10 (F6186)</td> </tr> <tr> <td>[3] ipdr-voip</td> <td>IPDR (F6305)</td> </tr> <tr> <td>[4] luss3.1</td> <td>Softswitch (F6314)</td> </tr> </tbody> </table> <p>Note</p> <p>This value will appear in the conversion_name field in the "bildtscoil Table" on page A-16.</p> <p>Response</p> <p>A prompt asks you to enter the directory where CIMS for this source will be stored, Enter working directory:</p>	Type	Use for these conversions	[1] axe-tradofile	AXE TRADO (F6313)	[2] bill-ericsson	AXE 10 (F6186)	[3] ipdr-voip	IPDR (F6305)	[4] luss3.1	Softswitch (F6314)
Type	Use for these conversions										
[1] axe-tradofile	AXE TRADO (F6313)										
[2] bill-ericsson	AXE 10 (F6186)										
[3] ipdr-voip	IPDR (F6305)										
[4] luss3.1	Softswitch (F6314)										

Step	Action										
5	<p>Enter a name for the new source (maximum of 8 characters).</p> <p>Note</p> <ul style="list-style-type: none"> ■ This name identifies the source in NTP and will appear in: <ul style="list-style-type: none"> — The name field of the "source Table" on page A-137, the collector_name field of the "collectors Table" on page A-27, and the collector_name field of the "bildtscoll Table" on page A-16 — The source field in CFIM output (for end users) ■ If the source name already exists in the system, or exceeds 8 characters, you see an error message: <pre>Source with this name already exists. Source name is too long.</pre> <p>Enter an appropriate source name and continue.</p> <p>Response</p> <p>You see a list of conversion types, followed by a prompt to select one.</p>										
6	<p>Enter the number corresponding to the appropriate conversion type.</p> <p>Note</p> <p>The menu choices you see may differ from this example, but the menu will resemble this example.</p> <table border="1"> <thead> <tr> <th>Type</th> <th>Use for these conversions</th> </tr> </thead> <tbody> <tr> <td>[1] axe-tradofile</td> <td>AXE TRADO (F6313)</td> </tr> <tr> <td>[2] bill-ericsson</td> <td>AXE 10 (F6186)</td> </tr> <tr> <td>[3] ipdr-voip</td> <td>IPDR (F6305)</td> </tr> <tr> <td>[4] luss3.1</td> <td>Softswitch (F6314)</td> </tr> </tbody> </table> <p>Note</p> <p>This value will appear in the conversion_name field in the "bildtscoll Table" on page A-16.</p> <p>Response</p> <p>A prompt asks you to enter the directory where CIMS for this source will be stored, Enter working directory:</p>	Type	Use for these conversions	[1] axe-tradofile	AXE TRADO (F6313)	[2] bill-ericsson	AXE 10 (F6186)	[3] ipdr-voip	IPDR (F6305)	[4] luss3.1	Softswitch (F6314)
Type	Use for these conversions										
[1] axe-tradofile	AXE TRADO (F6313)										
[2] bill-ericsson	AXE 10 (F6186)										
[3] ipdr-voip	IPDR (F6305)										
[4] luss3.1	Softswitch (F6314)										

Step	Action								
7	<p>Enter the fully qualified path to the directory, from system root (for example, /home/tmos1).</p> <p>Note The system checks to verify that this directory exists and returns an error message if it does not: The directory you entered does not exist.</p> <p>Exit cccmanager, add the directory, and return to this procedure.</p> <p>Response You see a list of file formats, followed by a prompt to select one.</p>								
8	<p>Enter the number corresponding to the message format for your interface.</p> <table border="1"> <thead> <tr> <th>Type</th> <th>Use for these conversions</th> </tr> </thead> <tbody> <tr> <td>[1] Fixed Format Delimited Value</td> <td>AXE 10 (F6186), Softswitch (F6314), AXE TRADO (F6313)</td> </tr> <tr> <td>[2] Name Value Pair</td> <td>IPDR (F6305)</td> </tr> <tr> <td>[3] XML</td> <td>Custom applications</td> </tr> </tbody> </table> <p>Note These value you select will appear in the format field in the "bildtscoil Table" on page A-16 as "delimval" (Fixed Format Delimited Value), "delimnameval" (Name Value Pair), or "xml" (XML).</p> <p>Response A prompt asks if you want to start data collection for the new source. Activate source [y/n]?</p>	Type	Use for these conversions	[1] Fixed Format Delimited Value	AXE 10 (F6186), Softswitch (F6314), AXE TRADO (F6313)	[2] Name Value Pair	IPDR (F6305)	[3] XML	Custom applications
Type	Use for these conversions								
[1] Fixed Format Delimited Value	AXE 10 (F6186), Softswitch (F6314), AXE TRADO (F6313)								
[2] Name Value Pair	IPDR (F6305)								
[3] XML	Custom applications								
9	<p>Enter n to keep the source inactive at this time.</p> <p>Note</p> <ul style="list-style-type: none"> ■ Normally you activate the source only when you are ready to troubleshoot the source interface or have added all Re's that use the source and are ready to receive CIMs. To activate the source at a later time after you have completed the procedure here to add it, see "Activate or Deactivate a Source Link" on page 14-12. Note that when you activate a configurable converter source for the first time, subdirectories are automatically created in the source's directory (see "Subdirectories for configurable conversion sources" on page 14-12). ■ This value will appear in the Active field in the "collectors Table" on page A-27. <p>Response A prompt asks if you want to add the new source you just configured to NTP. Submit new source information to database [y/n]?</p>								

Step	Action
10	<p>Enter y to add this source (or n to abort the addition) and return to the initial menu.</p> <p>Response If the addition is successful, you see a message resembling the following (where <i>source_name</i> is the name of the source): Adding <i>source_name</i> to source table Adding <i>source_name</i> to collectors table Adding <i>source_name</i> to bildtscoll table</p> <p>If the system could not add the source, you see messages including the following: Failed to insert new source. Successfully rolled transaction back.</p>
11	Enter e to exit the initial menu.
12	<p>Use sui find on the source table to verify that the new source exists.</p> <p>Example sui find so=source grep source_name</p>
13	<p>Use one of the link monitoring methods to verify data is moving through the source to NTP.</p> <p>Note Be sure the link is activated (the value in the active field of the collectors table is set to y). See "Activate or Deactivate a Source Link" on page 14-12 for the procedure.</p> <p>Reference See "Monitor Links" on page 14-50</p>
14	<p>Tune the link, if needed.</p> <p>Reference See Administer Silent Link Failure Detection on page 14-52.</p>
Done	

(Continued on next page)

Add or Modify a Source for a Configurable Conversion (Continued)

Procedure: Modify a configurable converter source definition

This procedure allows you to modify the parameters for the connection between the source and the NTP host. You can modify one parameter or multiple parameters before submitting the change(s). You might do this

- To correct errors you made in the initial configuration
- If the source's name or the directory used to receive CIMs changes

Reference

For steps using **dbedit**, see ["Dbedit" on page 4-24](#). For information on values for fields in database tables, see [Chapter A, "Reference Database Tables"](#). For the **cccmanager** command, see ["cccmanager Command" on page 14-48](#).

Step	Action
1	Log on the NTP host as ntp . (You must be logged on as ntp to proceed.)
2	Enter cccmanager Response You see the initial cccmanager menu (see "cccmanager Command" on page 14-48).
3	Enter 2 (modify the configuration for an existing source). Response You see a numbered list of currently configured sources resembling this example: Currently configured sources ----- <i>[List of sources]</i> [r] Return to previous menu. Enter your choice:

Step	Action
4	<p>Enter the number corresponding to the source you want to modify.</p> <p>Response You see the parameters for the source you selected, as in the following example, followed by a menu listing parameters you can modify.</p> <pre>Configuration for source - source_name ----- Source is currently active [or inactive] Conversion Type is set to: type Working Directory is set to: directory_path Format Type is set to: format [1] Enable/Disable Collector [2] Change Conversion Type [3] Change Working Directory [4] Change Format Type [S] Submit Changes [C] Cancel Operation Enter your choice:</pre>
5	<p>Do one of the following. To:</p> <ul style="list-style-type: none"> ■ Activate or deactivate the source, go to Step 6. ■ Change the conversion type, go to Step 7. ■ Change the directory path for CIM storage, go to Step 8. ■ Change the file format for messages received, go to Step 9.
6	<p>To activate or deactivate the source:</p> <ol style="list-style-type: none"> a. Enter 1 <p>Response You see one of the following prompts, depending on the current status of the source:</p> <pre>Enable source [y/n]? Disable source [y/n]?</pre> b. Enter y or n, as appropriate to the status of your source. c. Go to Step 10.

Step	Action
7	<p>To change the conversion type for the source:</p> <ul style="list-style-type: none"> a. Enter 2 <p>Response You see a list of conversion types.</p> <ul style="list-style-type: none"> b. Enter the number corresponding to the appropriate conversion type. <p>Caution Be sure to assign the appropriate conversion type for the source. Refer to Step 6 in "Add a file-based configurable converter source" on page 14-39 for more information.</p> <ul style="list-style-type: none"> c. Go to Step 10
8	<p>To change the directory for CIM storage:</p> <ul style="list-style-type: none"> a. Enter 3 <p>Response You see the following prompt: Enter new working directory:</p> <ul style="list-style-type: none"> b. Enter the fully qualified path to the directory, from system root (for example, /home/tmos1). <ul style="list-style-type: none"> c. Go to Step 10
9	<p>To change the message format definition:</p> <ul style="list-style-type: none"> a. Enter 4 <p>You see a list of formats.</p> <ul style="list-style-type: none"> b. Enter the number corresponding to the message format for your interface. <p>Caution Be careful to assign the appropriate c message format for the source. Refer to Step 8 in "Add a file-based configurable converter source" on page 14-39 for more information</p> <ul style="list-style-type: none"> c. Go to Step 10
10	<p>The list of parameters for the source is displayed again, showing the change you just made (see Step 4).</p>
11	<p>Make additional changes to the source configuration, if desired, by returning to Step 5.</p>
12	<p>Enter s to submit all changes you made.</p> <p>Response You see the following prompt: Are you sure you want to submit changes [y/n]?</p>

Step	Action
13	<p>Enter y to submit the modification to the reference database(s).</p> <p>Response</p> <p>You see a message indicating the updates to the parameter(s) you changed, followed by the list of currently configured sources.</p> <pre>Updating [active flag] [conversion type] [working directory] [format]</pre>
14	Enter R to exit the cccmanager initial menu, and then enter E to exit the cccmanager utility.
Done	

cccmanger Command

Purpose

The **cccmanger** command runs a utility for you to configure the CDR CIM sources used in configurable conversion. This utility automatically makes modifications to the NTP reference databases that you would otherwise have to make manually by using the **dbedit** command.

The **cccmanger** command provides an interface through which you can:

- Add a new source interface (see ["Add a file-based configurable converter source" on page 14-39](#))
- Modify parameters for an existing standard source interface (see ["Modify a configurable converter source definition" on page 14-44](#))
- Reprocess CDRs (see ["Reprocess CDRs" on page 11-32](#))

You must be logged on NTP as **ntp** to run **cccmanger**. The interface requires only simple entry of responses to prompts.

Syntax

cccmanger

There are no arguments or options for this command.

cccmanger initial menu

You see the initial **cccmanger** menu. This menu is the starting point for all functions of **cccmanger**.

```
[1] Configure a new source.  
[2] Modify the configuration for an existing source.  
[3] Reprocess CDRs.  
[E] Exit.  
Enter your choice:
```

cccmanger submenus may differ

Most **cccmanger** menu options display submenus.

Note

Options on submenus may be customized for your installation.

Remove a Source

Overview

Purpose

This section provides a high-level procedure to remove a source from NTP. Basically, you must undo the steps taken to add the source.

Reference

The source administrator may also need to remove NTP from the source. For NFM, see [Appendix C, "Set Up OneVision NFM"](#). For CPs, see *CP Administration and O&M*. Contact your NTP support organization to work with the source administrator.

Procedure: Remove a source

Contact your NTP support organization, if necessary, to help in using this procedure to remove a source from your NTP system.

Reference

dbedit. For steps requiring **dbedit**, see "[Dbedit](#)" on page 4-24.

Step	Action
1	For incoming sources, use a text editor (such as vi) to remove the entry from the: <ul style="list-style-type: none"> ■ /etc/opt/dk/dksrvtab file if I/O is over Datakit ■ /etc/hosts file if I/O is over if TCP/IP
2	Use dbedit to remove (or modify) records for the source in the reach table (source field), and any routing database records, if they exist.
3	Use dbedit to remove records for the source from the other reference database tables: <ul style="list-style-type: none"> ■ File-based sources — bildtsroll and collectors ■ Data stream-type sources — appropriate CIM I/O table, either indkdial, intcpdial, outdkdial, or outtcpdial ■ Universal sources — univconfig table
4	Use dbedit to remove the source from the source table.
5	(File-based sources only) Use the appropriate procedure for your operating system to remove the login and home directory that were created for the source on the NTP host.
6	Inform the administrator of the source that NTP is no longer using the source.
Done	

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Monitor Links

Overview

Purpose Links connect Re's to sources, and sources to the NTP host. This section lists the methods for monitoring those links.

Reference

See also [Chapter 11, "Routine Monitoring"](#).

Methods for link monitoring Use the following methods to monitor links.

Method	Description	Reference
Use the sui trapcfim command.	Lists CFIMs as they arrive.	"Example: trapcfim output" on page 14-51
Use the sui linkmon command	Monitors links between Re's and sources.	"sui linkmon Command" on page 14-55
Use the sui find command with the following options: sui find so=linkstatus se=status!=up	Shows which links are currently up.	None
Use a text editor to view the appropriate log in \$LOGDATA:	-	<ul style="list-style-type: none"> ■ "lnkpm Log" on page 11-24 ■ "sccs Log" on page 11-27 ■ "univlog Log" on page 11-28
Use the audit.re , audit.link , and audit.de	-	Consult your NTP support organization.
Have CIMs rerouted to a file where you can verify they are arriving.	Your NTP support organization typically does this when a source is first added. Otherwise, this is a last resort, since it disrupts normal CIM processing.	
Use a text editor to view the \$SNASDIR/DKIO.nn.stat file	Link setup information is sometimes logged.	None.

(Continued on next page)

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Overview (Continued)

Example: trapcfim output

- To see data arriving at NTP from a reporting entity, enter **sui trapcfim se=re=re_name** (where *re_name* is the value in the Re field in the search table, typically a CLLI code)
- To see all data arriving at NTP from a source, such as CP cpn1, enter **sui trapcfim se=source=sourcename** (where *sourcename* is the source as administered on NTP, for example cp1 for CP1)

This example shows output from the **sui trapcfim** command.

Date	Time	Fdc	Tc	Re	Rs	Ds	De	D	Related	R	Tgn	Ict
97/01/24	13:52	311	nca	sv0mca0404t	sv0i	sva3	sv0nmloftot	o	sv0mnybw55t	i	-	2104
												- 6037918005
97/01/24	13:52	942	bnf	sv0onv0344t	sv0h	sva3	sv0onv1274t	i	-		-	6529
												- 8004413576

Your interest in this output is the Re field, since, if an Re is in this field, you know that the links through which its CIMs reach NTP are up.

Administer Silent Link Failure Detection

Overview

Though a link to an Re may be up, NTP may receive little or no data because of a problem at the Re. This is called a “silent link failure”. If little data arrives, NTP assumes the link between the Re and the source is degraded. If no data arrives, NTP assumes the link is down.

Thresholds set for a predefined interval for each entity type determine when a link is declared down or degraded. In both cases, NTP generates a link alert. When you check the source field of the link alert, its value will be “cims”. You can also use the **sui linkmon** command to see which links between reporting entities and sources are degraded and down.

Note

Up. When the count of CIMs received in an interval from an Re exceeds these thresholds, the link is declared to be up.

When to use

Consult with your NTP support organization before modifying the system defaults for detection of silent link failures.

Procedure: Set thresholds for silent link failures

You can adjust the detection of silent link failures by using **dbedit** to change the link down threshold, the link degraded threshold, and the 5-minute interval count for each Re. These values are defined in the following fields in the rearch table record for each entity.

- down
- degraded
- interval

Note

For special cases where an Re sends CIMs to multiple sources at different rates, you may also need to modify the following field:

- calc

Reference

See ["rearch Table" on page A-114](#) for full information on these fields.

Verify Link Integrity

Procedure: Verify link integrity

Use the following procedure to verify the integrity of the links between a source and NTP. This procedure also does some data analysis.

Step	Action
1	Connect a source to NTP and allow it to send data for 24 hours.
2	<p>Run sui find to collect the data that was received from that source during the 24 hour period (specify a source field in the search expression, as in the example below).</p> <p>Example</p> <pre>sui find source=cfim se=source=trado1 and datime=12/10 00:00 - 12:00 maxsave=100000 save=cfims1</pre> <pre>sui find source=cfim se=source=trado1 and datime=12/10 12:00 - 23:59 maxsave=100000 save=cfims2</pre> <pre>sui join from=cfim2 to=cfim1 maxsave=100000</pre> <p>Note You may have to use smaller segments of time ranges and more find commands, if more than 10000 cfims are being produced for source in a 12-hour range.</p>
3	<p>Run compute to determine which FDCs were collected during the 24-hour period (specify fdc in the row field). You should see a majority of the possible FDCs for the switch types connected to the source.</p> <p>Example</p> <pre>sui compute row=re,fdc file=cfims</pre>
4	<p>Check the incon log and maste log, as well as other appropriate log(s) for the source type: Inkpm event log, SCCS log, or "garbage" files (for Geoprobe and configurable conversion sources).</p> <p>Note Some typical errors seen in the "maste" logs are the following: ERR001 Source 'trado1' link timed out. Closing port. ERR### Can't connect to "DK_dialstring" for Source.</p> <p>Reference See "incon Log" on page 11-22, "master Log" on page 11-19, "Inkpm Log" on page 11-24, and "Administer Silent Link Failure Detection" on page 14-52 for information on these logs.</p>

Step	Action
5	Other ways to verify link integrity with Find/Analyze and Compute. <ul style="list-style-type: none"> ■ Run a find on CFIMs for yesterday's date: ■ Run compute on FDCs: compute row=fdc
Done	

Note

It is also good to make sure that you have a good mix of fdc's on a per-switch basis. The mix should be obvious from the **compute** command listed above on **row=re,fdc**.

For NFM, for example, this verifies that the pattern file is appropriate. For a CP, for example this verifies that the FHC databases on the CP are correctly defined. If there is not a good mix of FDCs, you should have the pattern files or databases verified.

sui linkmon Command

Purpose

The **sui linkmon** command is for daily monitoring of the links between reporting entities (listed in reach table) and sources (see "[Sources](#)" on page 2-16). Sources collect CIMs from the reporting entities in the network and forward them to the NTP host. The **sui linkmon** command enables you to check how reliably the communications links between switches and sources and between the sources and NTP are supplying NTP with data.

Description

The **sui linkmon** command displays link alert records listing the status of data links between NTP and sources and between sources and the reporting entities in their respective domains. NTP determines that a link is degraded or down based on messages (or lack of them) from the source, and generates a link alert record when a link becomes degraded or fails. The NTP database that triggers the status level of the "link" is based on three fields in the reach table: down, degraded, and calc. A link may be listed as down or degraded because:

- The switch-source link is down or degraded
- The source-NTP link is down
- The CIM count for the specified interval (in reach database table record for the type of switch that is reporting) is below either the degraded or down threshold for the type of switch that is reporting.

Syntax

sui linkmon

sui linkmon runs continuously, refreshing the screen every minute (unless there are no new messages), until you press the **Delete** key to terminate.

Note

To see a static display and to get additional information from the NTP linkstatus database by entering **sui find source=linkstatus se=status=up**

Output

This example shows output from the **sui linkmon** command.

Datetime	Re	Source	Status	Type	Reason	Cims
01/02/21 13:21	sva12	-	degraded	sccs	reframed	253
01/02/23 15:03	sva16	-	degraded	sccs	reframed	10

(Continued on next page)

sui linkmon Command (Continued)

sui linkmon output fields This table lists sui linkmon output fields.

Field	Purpose
Datetime (date and time)	Combines the data in the date and time fields in the format YY/MM/DD hh:mm. This field exists in the linkalert table record, but is not displayed unless specified in your LINKALERT_FORM variable. <ul style="list-style-type: none"> ■ Date — The date on which the link alert was generated and stamped by the NTP system clock. It is an 8-character field in the format yy/mm/dd ■ Time — The time at which the link alert was generated and stamped by the NTP system clock. It is a 5-character field in the format hh:mm, where hh can be 0-23 and mm can be 00-59
Re (reporting entity)	ID of the Re or source reported on.
Source	Names the source that collects CIMs from the Re. It shows "-" for "Not Applicable" when the source itself is the Re.
Status	Gives the status (down, degraded, or unknown) of the link reported on.
Type	The types of sources for the link alert status. Values for this field are: <ul style="list-style-type: none"> ■ sw (switch) — If the Re-to-source link is down or degraded ■ cp (communications processor) - If the CP-to-NTP link is down, and the Re-to-CP status is unknown. ■ ems — If the EMS source-to-NTP link is down, and the Re-to-NFM status is unknown. ■ cim — If the status is determined based on low CIM counts
Reason	The reason (code) for the link status. See " sui linkmon reason codes " on page 14-57.
Cims	Number of CIMs in the current interval (as defined in the rearch table for the entity type of this Re). If the Re is not a source, this is the number of total messages received in the last 5-minute interval.

(Continued on next page)

sui linkmon Command (Continued)

Sui linkmon troubleshooting

Look on **sui linkmon** output at all rows for the source you are troubleshooting. You are interested in any rows that show tallies of 0 (zero).

Rows with tallies of 0...	Guidelines
NO rows	The links are most likely healthy
SOME rows	You must find out why some switches are not sending CIMs to the source. Be sure you administered the reach table for each switch from which the source collects data.
ALL rows	Either: <ul style="list-style-type: none"> ■ Switches are not sending CIMs to the source. Be sure you administered the reach table for each switch from which the source collects data. ■ Switches are sending CIMs to the source, but the source is not forwarding them to NTP.

sui linkmon reason codes

This table lists codes you may see in the Reason field of **sui linkmon** output.

Code	Meaning
carrier	The carrier from the entity to the NFM is dropped.
closed	The NTP port to the source is closed.
down	The source is down.
lf1	The link failure down threshold has been exceeded.
lf2	The link failure degraded threshold has been exceeded.
logging	The NFM reports that it is not logging a particular entity.
no lsm	No link status message received from the CP.
no record	No record for a specific entity, either because no entity record existed in the link status message or no link status message was received.
reframed	Framing is out of sequence in the source to NTP link.
rhst	The link to the remote host is down.
status bit	The link status message reports the switch to CP link is down.
startup	Due to recent startup (or interval increase), the messages received are below the down or degraded thresholds.
timed out	Have not received a message from the source in the interval specified.

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Code	Meaning
um1	The unreadable messages "down" threshold has been exceeded.
um2	The unreadable messages "degraded" threshold has been exceeded.
no io proc	The io process needs to be restarted (via the indkdial or outkdial tables).
zm	The zero messages interval has been exceeded.

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Overview

Purpose

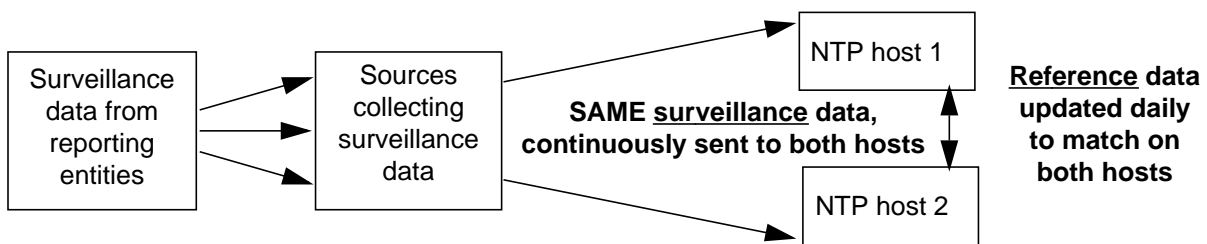
RDS (reference database synchronization — F6214, refsynch) duplicates reference data on pairs of NTP hosts, so if one host fails or is cut off from CIMs, users can log on the other host.

Description

Recall that data can be classified into three groups:

- **Reference data.** Data telling the system how to run
- **Surveillance data.** Data from Re's, and data created from that data (such as cim, acase, alert, cfim, fdccount, otr, and linkalert tables).
- **Thresholds.** Thresholding databases (the threshold matrix).

This illustration shows how RDS works in relation to these data types.



Both hosts create the same thresholds, since both have the same reference and surveillance data

What data is synchronized for RDS?

RDS synchronizes reference database tables on two hosts. The list of tables synchronized for your system is in the `bdrsyclist` table. (This is an internal table that only your NTP support organization can update.)

Tables that can NOT be synchronized are:

- `source`, `destination`, `indkdial`, `outdkdial`, `intcpdial`, `outtcpdial`, `sysuser`
- Surveillance data tables. But these are the same on both hosts, since both hosts collect the same data.
- Threshold matrix tables. But these are also the same, since they are generated from identical reference and surveillance data.

Note

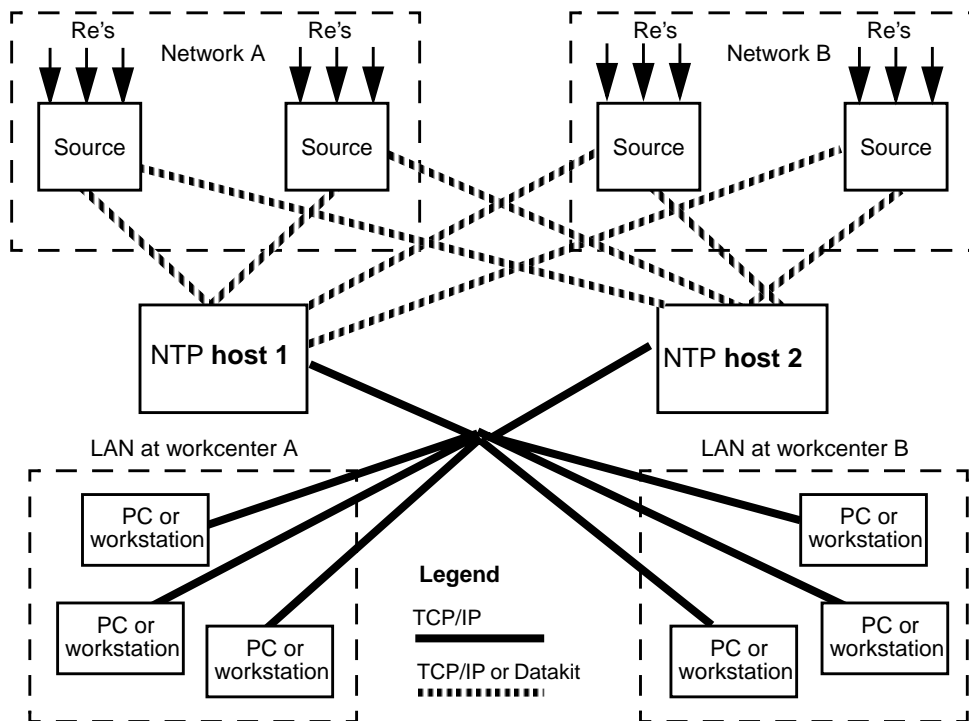
Commands. Synchronized tables are used by the `bdr_syncref` and `bdr_auditref` commands (see "[bdr_syncref](#)" on page 15-8 and "[bdr_auditref](#)" on page 15-10).

Connections for RDS

Description Before RDS could be installed on your system, the following had to be done to establish connections.

Task	Who does	Note
Set up TCP/IP between pairs of NTP hosts.	You and TCP/IP administrator	See your TCP/IP administrator and Chapter 14, "CIM Source Administration" .
Set up duplicate CIM feeds from each source to NTP host pairs.	You and source administrator	Note For NFM sources, also see Chapter C, "Set Up OneVision NFM" . For CP sources see <i>CP Administration and O&M</i> .

Connections for RDS This example shows connections among components involved with RDS.



Note

CP. A CP source may reside on its NTP host. Data is routed the same.

Monitor Synchronization

RDS task overview

To maintain reference database synchronization, you must monitor systems messages as they arise, and well as do routine checks. The following tables tell what to do.

- ["Check often for RDS" on page 15-5](#)
- ["Check occasionally for RDS" on page 15-6](#)

Check often for RDS

Check the following often:

Check	When	What to do	Reference
Did bdr_syncref put a message in <code>\$LOGDATA/bdrlogjulian_date</code> saying it found a reference data record changed on BOTH the local and remote host?	Each morning	Decide which record to use, or whether to combine them, and use dbedit to modify the record on either or both hosts.	<ul style="list-style-type: none"> ■ "bdr_syncref" on page 15-8 ■ "Monitor Application Logs (\$LOGDATA)" on page 11-16 ■ "dbedit Command" on page 4-28
Did bdr_syncref put a message in <code>\$LOGDATA/bdrlogjulian_date</code> saying the command failed?		You missed a day's update. Run bdr_syncref manually.	<ul style="list-style-type: none"> ■ "bdr_syncref" on page 15-8. ■ "Monitor Application Logs (\$LOGDATA)" on page 11-16 ■ "master Log" on page 11-19
Did bdr_linkchk find failed links between a host pair?	When the message comes to your console.	See your LAN administrator or NTP support organization, as needed. Run bdr_auditref to see if the host pair's reference data is unsynchronized.	<ul style="list-style-type: none"> ■ "bdr_linkchk" on page 15-13 ■ "bdr_auditref" on page 15-10

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Monitor Synchronization (Continued)

Check occasionally for RDS Check the following occasionally or when troubleshooting RDS.

Check	Reference								
<p>Cron. Ensure that the ntp crontab file has entries for:</p> <ul style="list-style-type: none"> ■ bdr_syncref —default daily at 00:30 ■ bdr_linkchk — default every minute ■ bdr_cleanup — default daily at 02:30 	<p>Sections in "ntp crontab File" on page 3-27</p>								
<p>Notify. Ensure that the notify table lists login IDs to be automatically notified if the bdr_linkchk command detects host-to-host link failure.</p>	<p>"bdr_linkchk" on page 15-13</p>								
<p>bdrhost. Ensure that the bdrhost table is populated so each NTP host sees itself as local, and its paired NTP host as remote.</p> <p>Example</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">On NTP host1:</td> <td style="width: 50%;">On NTP host2:</td> </tr> <tr> <td>Name;Location;Description</td> <td>Name;Location;Description</td> </tr> <tr> <td>host1;local;Local host</td> <td>host1;remote;Remote host</td> </tr> <tr> <td>host2,remote;Remote host</td> <td>host2,local;Local host</td> </tr> </table>	On NTP host1:	On NTP host2:	Name;Location;Description	Name;Location;Description	host1;local;Local host	host1;remote;Remote host	host2,remote;Remote host	host2,local;Local host	<p>"bdrhost Table" on page A-15</p>
On NTP host1:	On NTP host2:								
Name;Location;Description	Name;Location;Description								
host1;local;Local host	host1;remote;Remote host								
host2,remote;Remote host	host2,local;Local host								
<p>Source. Ensure that the bdrhost fields in the Source table are correct (NOT "-"), so each host sees itself as Bdrhost.</p> <p>Example</p> <p>On host1:</p> <pre>Name;Type;Bdrhost nfm1;ems;host1 nfm2;ems;host1 cpl;cp;host1</pre>	<p>"source Table" on page A-137</p>								
<p>Dual user logins. When adding or deleting user logins, ensure that each user has identical logins on both NTP hosts in a host pair.</p>	<ul style="list-style-type: none"> ■ "Add NTP Users" on page 6-20 ■ "Delete NTP Users" on page 6-26 								
<p>Tables. Ensure that the correct tables are being synchronized.</p>	<p>"What data is synchronized for RDS?" on page 15-3</p>								

RDS Commands

Commands Overview

Hosts and command syntax — local and remote

The syntax of RDS commands refers to a pair of NTP hosts as local and remote. Either host can be local or remote, depending on where you run the command:

- **Local** — The NTP host where you run the command
- **Remote** — The other NTP host

Note

Tables. In the `bdrhost` table, and in the source table's `bdrhost` field, each host calls itself local, and the other remote.

RDS command summary

The following commands are used to maintain or check RDS.

Note

ntp crontab. By default, all but the `bdr_auditref` command are run from the `ntp crontab` file. See "[ntp crontab File](#)" on page 3-27 for more information.

Command	Run from crontab?	Run on both hosts?	Purpose
<code>bdr_syncref</code>	Yes, daily at 00:30 (default)	Yes	Gets reference data changes from the remote NTP host and puts them on the local host.
<code>bdr_linkchk</code>	Yes, every minute (default)	Yes	Checks data links between NTP hosts.
<code>bdr_auditref</code>	No, use only for troubleshooting.	No. Only one host needs to run it.	Compares reference data between NTP hosts. Puts discrepancies into files you can <code>dredit</code> (see " dredit Command " on page 4-28) to manually synchronize the local host.
<code>bdr_cleanup</code>	Yes, daily at 02:30 (default)	Yes	Deletes synchronized records listed in the <code>rec2bsyncd</code> table.

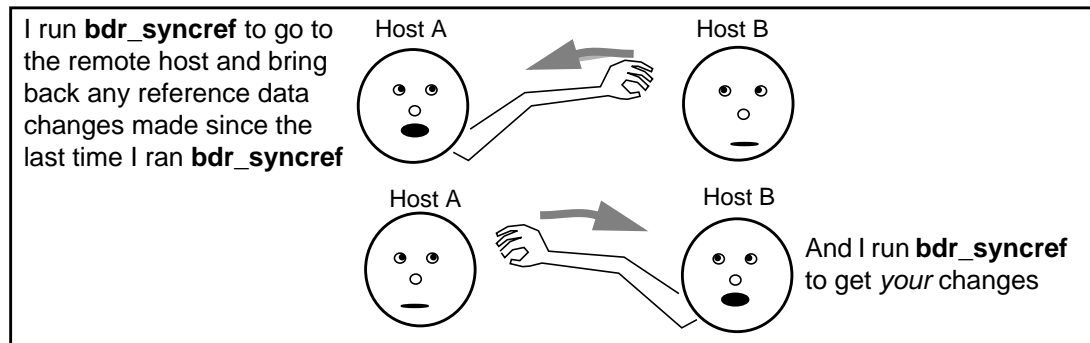
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bdr_syncref

Purpose

The **bdr_syncref** command synchronizes reference data tables between two NTP hosts (see "[What data is synchronized for RDS?](#)" on page 15-3). This illustration shows why this command must be run on BOTH hosts in a host pair.



When to use

Run the command:

- Daily, automatically from ntp crontab on BOTH NTP hosts (see "[RDS \(refsynch\) cleanup, check, and synchronization](#)" on page 3-29 for a crontab example). Default is 00:30.
- Manually, if a message in \$LOGDATA/bdrlogjulian_date tells you **bdr_syncref** failed when run from crontab.

Note

Once a day only. Once it runs successfully, if you try to execute **bdr_syncref** a second time in the same day, it will fail (until the **bdr_cleanup** command runs from cron at 2:30 a.m.).

Syntax

bdr_syncref [-o]

Where the optional **-o** override parameter causes this command to run when the host state is not "normal". Typically, do not use this.

(Continued on next page)

bdr_syncref (Continued)

Response and output No screen message tells you of successful execution.

- **bdr_syncref** success or failure is logged in the `$LOGDATA/bdrlogjulian_date` file (see ["Monitor Application Logs \(\\$LOGDATA\)" on page 11-16](#) for how to read log files).
- If **bdr_syncref** updates any tables affecting thresholds, it automatically runs **modmat** on the local host to update the threshold matrix.
- **bdr_syncref** fails if the hosts cannot communicate, or if NTP is down on either host.
- If **bdr_syncref** finds a record changed on the remote host, that was also changed on the local host, it does NOT update the record, but instead reports the problem in `$LOGDATA/bdrlogjulian_date` for you to resolve. See the example, below.

Example

IF this happens:

<p>I run bdr_syncref and find you changed a record that I ALSO changed. So I:</p> <ul style="list-style-type: none">■ Do NOT change my record again■ Log the problem in <code>\$LOGDATA/bdrlog/julian_date</code> so the NTP administrator can decide what to do	<p>Host A</p> <p>Host B</p>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------

THEN the NTP administrator reads `$LOGDATA/bdrlogjulian_date` and decides which record to use. Maybe combine both records. Use **dbedit** (see ["dbedit Command" on page 4-28](#)) to manually synchronize.

bdr_auditref

Purpose

The **bdr_auditref** command reports discrepancies between reference database tables on two NTP hosts. It checks the same tables flagged for **bdr_syncref** synchronization. See ["What data is synchronized for RDS?" on page 15-3](#) for the list of tables.

When to use

Run **bdr_auditref** on EITHER of the NTP hosts when troubleshooting. Remember that changes you make to either host's reference data show up as discrepancies until they are synchronized by **bdr_syncref** at 00:30.

Syntax

bdr_auditref [-t *tablename*] [-o]

Parameter	Description
-t <i>tablename</i>	This optional parameter, followed by a table name, specifies a single table to audit. Omit this to audit ALL synchronized reference tables.
-o	Override. Use with caution. With this optional parameter, the command runs even if it detects that either host has updates not yet synchronized by bdr_syncref (see "bdr_syncref" on page 15-8).

(Continued on next page)

bdr_auditref (Continued)

Response and output A message tells you of successful execution.

- Command success or failure is also logged in the \$LOGDATA/bdrlogjulian_date file (see ["Monitor Application Logs \(\\$LOGDATA\)" on page 11-16](#) for how to read log files).
- Discrepancies found are saved in ASCII files you can use as **dbedit** input files for updating databases. These ASCII files are of three types:

File type	In the \$WORKDIR/bdr directory	Purpose
Delete	tablename.del	Records found on the LOCAL host (where you ran the bdr_auditref command) but NOT on the remote host are logged.
Insert	tablename.ins	Records found on the REMOTE host but NOT on the local host are logged.
Update	/tablename.upd	Records found on BOTH hosts if the records have different values (in fields that are not key fields) are logged.

Note

- Do NOT automatically make the **dbedits** offered by the files. Instead, study the differences between the hosts, decide which host is correct for each record, and do **dbedits** as needed.
- If you make a **dbedit** correction using output files from one host, do NOT do the same using output files from the other host. In other words, you need run **bdr_auditref** on only one host.

Caution

If you plan to use **dbedit** on the fdchelp table, see ["dbedit the fdchelp table with bdr_auditref output" on page 15-12](#). Correct procedures are necessary to synchronize the fdchelp table.

(Continued on next page)

bdr_auditref (Continued)

Procedure: dbedit the fdchelp table with bdr_auditref output

If you plan to use a **bdr_auditref** output file as a **dbedit** input file for updating the fdchelp table, you must first manually edit the file to remove the default field delimiter and to insert the required field delimiter(s) AND record separator(s). Otherwise the dbedit operation will fail. Use **vi** or another ASCII text editor to do this.

In the output files from **bdr_auditref** run on the fdchelp table, the fields are delimited by a tab character. Do the following

- In each record, REPLACE the tab character field delimiter with a | (pipe character) field delimiter.
- Between each record, ADD a record separator. Control-A is recommended (^A).

Caution

If you add a field delimiter instead of replacing the tab character, the **dbedit** will succeed, but **bdr_syncref** will not synchronize the fdchelp table.

Reference

For detailed information on the field delimiter and record separator required for **dbedit** on the fdchelp table, see ["Edit FDC Help Text" on page 9-14](#).

bdr_linkchk

Purpose

The **bdr_linkchk** command process reports link failures and recoveries between the NTP host pair.

Reference

Linkmon. For checking links between switches and sources (such as NFM and CPs) and between the sources and NTP, see "[sui linkmon Command](#)" on [page 14-55](#).

When to use

Run **bdr_linkchk** from ntp crontab on BOTH hosts (see "[RDS \(refsynch\) cleanup, check, and synchronization](#)" on [page 3-29](#) for a crontab example). Default is once a minute.

Syntax

bdr_linkchk

There are no arguments or options for this command.

Response and output

No message tells you of successful execution.

If **bdr_linkchk** detects that the host-to-host link is down, it sends a message to:

- \$LOGDATA/bdrlogjulian_date (see "[Monitor Application Logs \(\\$LOGDATA\)](#)" on [page 11-16](#) for how to read log files).
- Login IDs in the notify table.

Note

Troubleshooting. When troubleshooting link failures, you may want to run **bdr_auditref** (see "[bdr_auditref](#)" on [page 15-10](#)) and correct any discrepancies found.

bdr_cleanup

Purpose The **bdr_cleanup** command deletes synchronized records listed in the rec2bsyncd table

When to use Run **bdr_cleanup** from crontab daily on BOTH hosts (see "[RDS \(refsynch\) cleanup, check, and synchronization](#)" on page 3-29 for a crontab example). Default is 02:30.

Syntax **bdr_cleanup**

There are no arguments or options for this command.

Response and output No message tells you of successful execution.

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Overview

Purpose

The universal interface enables you to create Re-to-NTP or source-to-NTP interface channels and to translate CIMs to CFIMs for either:

- Entities not supported by NTP
- New CIM formats for entity types that ARE supported by NTP

The second case above is for new CIM FORMATS, not for merely a new FDC for an existing format. The difference is as follows:

- If a supported entity has a new CIM (a new FDC), add it as explained in [Add or Modify FDCs on page 5-58](#). The existing channel is used.
- If a supported entity has a new CIM FORMAT (or a new channel), add it as explained in this chapter.

Note

For administration on sources for the universal interface, see the source's documents.

Reference

For a high-level view of tasks associated with data flow from Re's to NTP, see ["Data Flow" on page 2-12](#).

(Continued on next page)

Overview (Continued)

NCIMs, UCIMs

The CIMs from unsupported entities are called (in NTP terminology) native call information messages (NCIMs). NCIMs can be in any format.

NCIMs are fed to the NTP universal interface in a special predefined format called universal call information messages (UCIMs).

Some entities issue CIMs that are already in an acceptable UCIM format. Those CIMs can be collected and forwarded directly to the universal interface.

The NCIMs not already in a UCIM format must be converted to it by means of a filter. The filter is a program executed on the NTP host or another host in your local network. Guidelines in this chapter tell how to write your own NCIM-to-UCIM filter. (You may also contract with Lucent Technologies to develop a filter.)

The universal interface combines UCIMs with a set of predefined rules to enable the NTP converter to produce CFIMs from them. The UCIMs are ASCII messages with fields presented in two parts, a name and a value — called a name-value pair — that you specify.

You also define rules that instruct the converter how to determine other CFIM field values by using information in the NTP reference database tables.

You map UCIM names to known NTP standard names and rules to NTP functions in a UCIM names definition file, with one definition file per universal link.

You associate the definition file with a source channel by a record in the univconfig table.

For unsupported entities, you can define trunk group routing by entries in the univrout table.

Set Up a Universal Interface

Procedure: Set up a universal interface

These are the steps for establishing a link to a universal (non-supported entity type) reporting entity for each universal link:

Step	Action
1	Gather information about the call information messages that can be collected from the reporting entity: <ul style="list-style-type: none"> ■ What are the fields in the NCIM and what information do they contain? ■ What is the format of the data in the NCIM? Is it in name-value pair format? ■ What are the start of message (SOM) and end-of-message (EOM) delimiter characters?
2	Determine if the NCIM is in acceptable UCIM format. It must have: <ul style="list-style-type: none"> ■ Space-separated name value pairs ■ Recognizable value formats ■ Delimiter(s) separating each NCIM in a stream If it does not, a conversion filter must be created to receive the NCIMs, convert them to UCIM format, and forward them to the universal interface.
3	Define UCIM translation rules in a UCIM Names Definition file.
4	Set up the universal interface link, following the standard procedure for establishing links, and add a record for the universal link in the univconfig table.
5	Define any trunk group routing from the universal entity to a distant entity via records in the univroute table.
Done.	

NCIMS And Filters

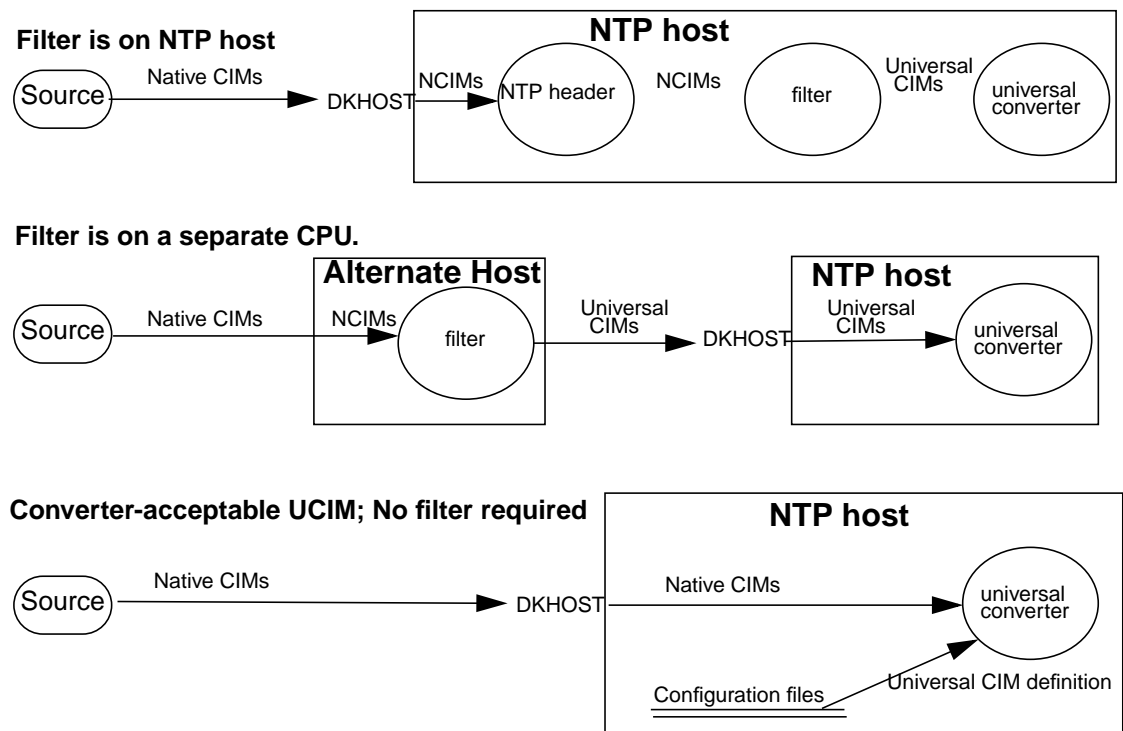
UCIM criteria

For a native CIM (NCIM) from an unsupported entity to be acceptable to the NTP universal interface as a UCIM, it must conform to UCIM format. The NCIMs may be received in any format, but if they do not meet the following UCIM criteria, they must be adapted or converted into UCIMs by means of a filter:

- Space-separated name-value pairs
- Control delimiter(s) between CIMs
- Unique recognizable names (no repeat in CIMs)
- Recognizable value formats — see "[Table: UCIM field names](#)" on page 16-13

NCIM-UCIM options diagram

The following diagram illustrates several options for NCIM-UCIM filters.



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NCIMS And Filters (Continued)

Filters

A filter can be a computer program in any language or a UNIX shell script running on the NTP host or on another host in your network. Lucent Technologies can develop a filter for alternative data on a value-added service basis, or you can develop one yourself. Note that NTP does not provide compilers; a compiler must be ordered separately from your UNIX supplier as an add-on.

NTP maintains and monitors direct communication channels to the alternative data source and passes received NCIMs to a local filter or received UCIMs to the universal interface. If the filter is located on a remote host, NTP has no knowledge of the communications between the alternative data source and the remote filter, only the link from the remote host as the data source.

If you choose to write your own filters, support for them will be your responsibility. You must ensure that local filters do not impact resources required by NTP application software.

On the NTP host, NTP can receive NCIM data and forward it to a filter via stdout. The universal interface converter will accept UCIMs from the filter via stdin. Filter programs resident on the NTP host must be located in the \$USERDIR/univ directory, and have the same base name as the configuration file with a .filter extension (for example, univtrans.filter).

A filter must be able to accept raw NCIMs from stdin and convert them into UCIMs that meet the above criteria and write them to stdout. The following examples show some sample NCIMs and a simple filter that reformats the NCIMs by adding an SOM character, inserting names in front of values, and replacing colons with spaces. The filter calls three **awk** scripts in succession, piping the output of each to the next one. The output is the sample UCIMs in ["Sample NCIMs" on page 16-8](#).

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NCIMS And Filters (Continued)

Sample NCIMS

```

SITE 00 26/09/94 08:19:50 DLLSTXTA03T
4010ss7 FCD Rec CallBfr: 272 Site 0
  TS-SZ:26/09/94 07:55:38.9 TS-DISP:26/09/94 07:55:47.6
TimDur:00:24:02.1
  CD: Ans CDflags: RB Op-CD:
  Out Ans SS7 carrier:0000 IAR-CD:
  PostDD:0.6 SZ->CarrWnk:0.0 SndrTime:0.0 CarrConn:00:24:10.7
  Called: ISUP 6148605555 Calling: ISUP
  UCRTraps
  OPC:244-233-001 DPC:244-233-004 CIC:141
  Fwd Call Ind: 20 00 Calling Party Cat:0a Nature of Conn Ind:00
  User Svc Info: 80 90 a2 00 00
  Orig Line Info:00 Bkwd Call Ind:54 04 1st Cause Ind:80 90
  Rel Msg Dir: Fwd

```

```

CIC:----- PC:---/---/--- Sig: ISUP:ss7 Mode: sor
Carr:0000 ST:on Cad I:0 0:0 DigRecon:---

```

```

SITE 00 26/09/94 08:23:04 DLLSTXTA03T
4010ss7 FCD Rec CallBfr: 280 Site 0
  TS-SZ:26/09/94 08:22:20.6 TS-DISP:26/09/94 08:22:33.6
TimDur:00:00:30.0
  CD: RBans CDflags: RB Op-CD:
  In Ans SS7 carrier:0000 IAR-CD:
  PostDD:0.0 SZ->CarrWnk:0.0 SndrTime:0.0 CarrConn:00:00:43.6
  Called: ISUP 6148334538 Calling: ISUP 8009322273
  UCRTraps
  OPC:244-233-007 DPC:244-233-001 CIC:7440
  Fwd Call Ind: 20 00 Calling Party Cat:0a Nature of Conn Ind:00
  User Svc Info: 80 90 a2 00 00
  Orig Line Info:00 Bkwd Call Ind:04 01 1st Cause Ind:82 90
  Rel Msg Dir: Bwd

```

```

CIC:----- PC:---/---/--- Sig: ISUP:ss7 Mode: sor
Carr:0000 ST:on Cad I:0 0:0 DigRecon:---

```

(Continued on next page)

NCIMS And Filters (Continued)

Filter example 1

```
#!/bin/sh
# Univtrans Filter
# Install in $USERDIR/univ

cd $USERDIR/univ/

awk -f ucim.awk0 | nawk -f ucim.awk1 | nawk -f ucim.awk2
```

Awk script #0 (ucim.awk0)

The first **awk** script removes blank lines that occur within each NCIM.

```
# Removes blank lines within the NCIM.

BEGIN { RS = "" }
{ print }
```

Awk script #1 (ucim.awk1)

The second **awk** script adds the event time (ETIME) token to the first line of each NCIM to locate the Etime value, then changes every colon to a space on all other lines.

```
# Adds the ETIME token in the 1st line and substitutes blanks for
# colons in
# the remaining lines of the CIM.

{
if (($1=="SITE") && (NF == 5))
    print $1, $2, $3, "ETIME", $4, $5
else
    {
    gsub(/:/, " ")
    print
    }
}
```

(Continued on next page)

NCIMS And Filters (Continued)

Awk script #2 (ucim.awk2)

The third **awk** script adds the SOM character (Control-b) to each NCIM, changes **In** to **D I** to set the D field in the CIM, and changes **Out** to **D O** to set the D field. The FAILURE token is added to locate the fname value (see the example in ["UCIM names definition files" on page 16-20](#)).

```
# Separates the CIMs, adds the Cntl-B SOM character, substitutes
"D I" for
# "In" and "D O" for "Out", and adds the FAILURE token.
```

```
BEGIN { RS = ""
        ORS = "\n\n\n\02"
        printf("\02")
        }

{
  gsub(/4010ss7/, "FAILURE 4010ss7")
  gsub(/In/, "D I")
  gsub(/Out/, "D O")
  print
}
```

UCIM Formats

UCIM attributes

Universal CIMs have the following general attributes:

- They may contain any number of name-value pairs and any number of rule keywords.
- Name-value pairs and rule keywords must be separated from each other by one or more white space characters.
- No more than 600 characters total can be stored or displayed.
- Name-value pairs and rules can occur in any order.
- All information is processed in the order it appears in the UCIM.

You specify a priority to the way CFIM field values are determined by ensuring that name-value pairs and rules appear in the UCIM in the order of priority you want them processed. Processing is performed on a first-come, first-served basis: the universal converter will find a value for a CFIM field based on the first name-value pair or rule in the UCIM that enables that CFIM field to be determined, and subsequent values or rules affecting the value of that field are ignored.

Name-value pairs

Name-value pairs are two-part fields in the UCIM that consist of the name of the field and its value. The names (left) can be up to 10 keywords separated by spaces, totaling less than 60 characters. Names are separated from the values (right) by a space. Values with spaces are not accepted by the converter unless their format is defined as such. (See the format column of "[Table: UCIM field names](#)" on page 16-13.) The following are examples of name-value pairs that can be found in the example UCIMs:

```
CD Ans
CDflags RB
CIC 141
Calling ISUP 8009322273
```

(Continued on next page)

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UCIM Formats (Continued)

Standard field names The following table lists the standard field names and the tables where you can find their formats for name-value pairs in UCIMs. If there is no Name Definition file, the converter uses these names. They are provided here to provide a guideline for writing your own UCIM names definition files. In most cases the field name is the same as the CFIM field. Remember that the function defined for the UCIM field name in the UCIM names definition file must be one of the known cfim fields and must be in lower case. The format of the field is as described in the reference database field descriptions in [Chapter A, "Reference Database Tables" and "Fields" on page 4-7](#). All CFIM field names may be any mixed case. The CFIM values will always be converted to lowercase characters.

The converter writes database inconsistency errors to the incon log file.

Note

The ERROR field name; this provides the filter with a way to log errors in the master log. Design your filter to insert the ERROR field name into UCIMs that cannot be satisfactorily translated; the converter will write the entire UCIM in the Master error log.

The CFIM contains six miscellaneous fields (MISC1 - MISC6) that are available to be populated with any printable ASCII characters that may be informative or useful to the analysis of universal CIMs. They are optional fields. These fields are of varying sizes; see MISC1 through MISC6 in this table for their format.

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UCIM Formats (Continued)

Table: UCIM field names This table lists standard UCIM field names.

ACODE	acode	Actual Code	One line of text, up to the end of the line in the CIM; see acode2fdc
ACT	act	Number of Active Trunks	CFIM
CCD	ccd	Country Code	CFIM
CIC	cic	Carrier Identification Code	CFIM
CIM	cim	Call Irregularity Message	CFIM
CAUS	caus	CCS Error Number	CFIM
CPDIGITS	cpdigits	Calling Party Digits	CFIM
CT	ct	Call Type	CFIM
CUST	cust	Customer ID	CFIM
D	d	Call Direction	CFIM
DE	de	Distant Entity	CFIM
DIGITS	digits	Received Digits	CFIM
DL	dl	Data Loss	CFIM
DOMI	domi	Domain	CFIM
DPC	dpc	Destination Point Code	CFIM
DS	ds	Distant Entity Home STP	CFIM
ERROR	-	Log Error Message	Entire UCIM
ETIME	etime	Event Time	CFIM
FDC	fdc	Final Disposition Code	CFIM
FNAME	fname	Event Name	acode2fdc
ICT	ict	Incoming Trunk	CFIM
ITRKID	ict	Incoming Trunk Group ID	tgcli (dmsroute) followed by ict (CFIM)
MISC1	misc1	Miscellaneous #1	CFIM. May be used for any purpose.
MISC2	misc2	Miscellaneous #2	CFIM. May be used for any purpose.
MISC3	misc3	Miscellaneous #3	CFIM. May be used for any purpose.
MISC4	misc4	Miscellaneous #4	CFIM. May be used for any purpose.
MISC5	misc5	Miscellaneous #5	CFIM. May be used for any purpose.

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MISC6	misc6	Miscellaneous #6	CFIM. May be used for any purpose.
NTC	ntc	Numeric Transport Capability	CFIM
NUMD	numd	Number of Digits	CFIM
OGT	ogt	Outgoing Trunk	CFIM
OPC	-	Origination Point Code used by RE_USE_DPC rule	See DPC field in CFIM
OTRKID	ogt	Outgoing Trunk Group ID	CFIM
P	p	Pegging status	CFIM (see also disabledig)
PSN	psn	Previously Stored Number	CFIM
R	r	Related Direction	CFIM
REASON	-	Trouble Reason Code	One single word; see acode2fdc
RE	re	Reporting Entity	CFIM
RS	rs	Reporting Entity Home STP	CFIM
RELATED	related	Related Entity	CFIM
S	s	Status	CFIM
SCTN	sctn	Service Circuit Trunk Number	CFIM
SERVDIG	servdig	Service Digits	CFIM
SIG	sig	Signaling Type	CFIM
ST	st	Service Type	CFIM
TC	tc	Trouble Category	CFIM
TGID	tgcli	Trunk Group Identification	dmsroute
TGN	tgn	Trunk Group Number	dmsroute
TRB	trb	Trouble Code	CFIM

(Continued on next page)

UCIM Formats (Continued)

Universal conversion rules

Universal conversion rules are denoted by a single keyword for each rule, contained in the UCIM. A keyword is one of a set of special reserved words known to the universal converter that indicates to it a specific action to be taken in converting a name-value pair or otherwise filling in CFIM fields based on available information.

These universal conversion rules are used to determine CFIM fields that are not directly available in raw CIMs. Since different methods may be required depending on the nature of the data in the UCIM, you can set up the rules for each universal interface to specific a priority to the way in which the rules are put into effect, or have their use restricted to specific situations.

Rules keywords

The following table lists the keywords for the instructions to the universal converter to follow in filling in CFIM fields from information to be found elsewhere than in the direct name-value pairs of the UCIM (such as in Reference database table lookups). Since rules are not inherently a part of native CIMs, you must append them to UCIMs via a filter or a defaults file.

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UCIM Formats (Continued)

Table: Universal conversion rules

This table lists universal conversion rules.

Keyword	Instructions
RE_USE_REARCH	RE is assigned the CLLI value of the Reporting Entity.
RE_USE_CPDIGITS	RE is assigned the NE value of the potsroute record corresponding to CPDIGITS.
RE_USE_OPC	RE is assigned the NE value corresponding to the Originating Point Code (OPC).
DE_USE_GTT	DE is assigned the NE value obtained from applying Global Title Translation to the RE and DIGITS fields.
DE_USE_TGN	DE is assigned the DE value of the route5e record corresponding to RE and TGN.
DE_USE_TGID	DE is assigned the DE value of the univrout record corresponding to RE and TGID.
DE_USE_TGCLLI	If D is incoming, DE is assigned the DE value of the dmsroute record corresponding to RE and Incoming Trunk Group CLLI (ITGCLLI.) If D is outgoing, DE is assigned the DE value of the dmsroute record corresponding to RE and Outgoing Trunk Group CLLI (OTGCLLI.)
DE_USE_ITGCLLI	DE is assigned the DE value of the dmsroute record corresponding to RE and ITGCLLI.
DE_USE_OTGCLLI	DE is assigned the DE value of the dmsroute record corresponding to RE and OTGCLLI.
DE_USE_DIGITS	DE is assigned the NE value of the potsroute record corresponding to DIGITS.
DE_USE_DPC	DE is assigned the NE value corresponding to DPC.
D_USE_FDC	D is assigned the value corresponding to FDC.
R_USE_D	R is assigned the opposite value of D, or "-".
REL_USE_TGCLLI	If R is incoming, RELATED is assigned the DE value of the dmsroute record corresponding to RE and ITGCLLI. If R is outgoing, RELATED is assigned the DE value of the dmsroute record corresponding to RE and OTGCLLI.
REL_USE_ITGCLLI	RELATED is assigned the DE value of the dmsroute record corresponding to RE and ITGCLLI.
REL_USE_OTGCLLI	RELATED is assigned the DE value of the dmsroute record corresponding to RE and OTGCLLI.

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Keyword	Instructions
REL_USE_REARCH	RELATED is assigned the value of the Reporting Entity.
REL_USE_TGID	RELATED is assigned the DE value of the univroute record corresponding to RE and TGID.
FDC_USE_ACODE	FDC is assigned the FDC value of the acode2fdc record corresponding to event Name (fname) and acode. See acode2fdc table description.
FDC_USE_REASON	FDC is assigned the FDC value of the acode2fdc record corresponding to fname and reason.
FDC_USE_FNAME	FDC is assigned the value of fname.
FDC_USE_TRB	FDC is assigned the FDC value of the otr2fdc record corresponding to the Trouble Code.
SIG_USE_FDC	SIG is assigned the value corresponding to FDC.
SIG_USE_DMSROUTE	SIG is assigned the value of the SIG field of the dmsroute record used to determine the DE field. Valid only when used with a DE_USE_XXXCLLI rule (where xxx is TGC, ITC, or OTG).
SIG_USE_UNIVROUTE	SIG is assigned the value of the SIG field of the univroute record used to determine the DE field. Valid only when used with DE_USE_TGID rule.
ST_USE_DOMI	ST is assigned the ST value from the domain table.
ST_USE_GTT	ST is assigned the ST value obtained from applying Global Title Translation to DIGITS.
ST_USE_FDC	ST is assigned the ST value corresponding to FDC.
TGN_USE_DMSROUTE	TGN is assigned the value of the TGN field of the dmsroute record used to determine the DE. Valid only when used with a DE_USE_XXXCLLI rule (where xxx is TGC, ITC, or OTG).
TGN_USE_UNIVROUTE	TGN is assigned the value of the TGN field of the univroute record used to determine the DE. Valid only when used with DE_USE_TGID rule.
NUMD_USE_DIGITS	NUMD is assigned the number of digits in the DIGITS field.
DIGITS_USE_CPDIGITS	If DIGITS contains 7 digits and CPDIGITS contains 10 digits, prepend the first three digits from CPDIGITS to DIGITS.

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UCIM Formats (Continued)

Sample UCIMs

```

^B
SITE 00 26/09/94 ETIME 08:19:50 DLLSTXTA03T
FAILURE 4010ss7 FCD Rec CallBfr 272 Site 0
TS-SZ 26/09/94 07 55 38.9 TS-DISP 26/09/94 07 55 47.6 TimDur 00
24 02.1
CD Ans CDflags RB Op-CD
D O Ans SS7 carrier 0000 IAR-CD
PostDD 0.6 SZ->CarrWnk 0.0 SndrTime 0.0 CarrConn 00 24 10.7
Called ISUP 6148607182 Calling ISUP
UCRTraps
OPC 244-233-001 DPC 244-233-004 CIC 141
Fwd Call D Id 20 00 Calling Party Cat 0a Nature of Conn D Id 00
User Svc D Ifo 80 90 a2 00 00
Orig Line D Ifo 00 Bkwd Call D Id 54 04 1st Cause D Id 80 90
Rel Msg Dir Fwd
CIC ----- PC ---/---/--- Sig ISUP ss7 Mode sor
Carr 0000 ST on Cad I 0 0 0 DigRecon ---

^B
SITE 00 26/09/94 ETIME 08:23:04 DLLSTXTA03T
FAILURE 4010ss7 FCD Rec CallBfr 280 Site 0
TS-SZ 26/09/94 08 22 20.6 TS-DISP 26/09/94 08 22 33.6 TimDur 00
00 30.0
CD RBans CDflags RB Op-CD
D I Ans SS7 carrier 0000 IAR-CD
PostDD 0.0 SZ->CarrWnk 0.0 SndrTime 0.0 CarrConn 00 00 43.6
Called ISUP 8008607182 Calling ISUP 6148334538
UCRTraps
OPC 244-233-007 DPC 244-233-001 CIC 7440
Fwd Call D Id 20 00 Calling Party Cat 0a Nature of Conn D Id 00
User Svc D Ifo 80 90 a2 00 00
Orig Line D Ifo 00 Bkwd Call D Id 04 01 1st Cause D Id 82 90
Rel Msg Dir Bwd
CIC ----- PC ---/---/--- Sig ISUP ss7 Mode sor
Carr 0288 ST on Cad I 0 0 0 DigRecon ---

```

Define UCIM Translation with Configuration Files

UCIM configuration files

Further instructions for the universal interface converter on how to handle UCIM data is necessary even for UCIMs passed to the converter from an NCIM filter. You can use a default file to append information to the UCIMs that is not included in the native CIMs, and a UCIM names definition file to instruct the universal converter how to determine the legal name-value pairs for the associated universal link. The UCIM names definition file defines the rules for the converter to use in determining an unknown CFIM field value from one or more known values in the UCIM and/or by searching the NTP database.

The default file, the UCIM names definition file, and the filter (if resident on NTP) are grouped together (in a single directory) and collectively called configuration files. They are made known to the Universal converter by the config field of the univconfig table.

The default file, the UCIM names definition file, and the filter (if resident on NTP) must all be installed in the directory \$USERDIR/univ. The naming convention for these is:

- Default file — filename.default
- UCIM names definition file — filename.names
- Filter — filename.filter

Define these files in the univconfig table only by their single common filename.

Reference

See "[Customize the Universal Source Channel](#)" on page 16-27.

Defaults file

Use a defaults file to append name-value pairs and rules to every UCIM received on the associated universal link. Name-value pairs and/or rules that always apply to UCIMs on this link or that should be used as defaults can be defined here. Note that since the contents of this file are appended to the UCIM, if the same name-value pairs or rules already appear in the UCIM, those are given the first priority.

(Continued on next page)

Define UCIM Translation with Configuration Files (Continued)

Defaults file example

The following is an example defaults configuration file named `univtrans.default`. It adds six rules and one name-value pair to every UCIM passed to the universal converter on this link.

```
RE_USE_OPC          DE_USE_DPC          REL_USE_RE
FDC_USE_ACODE      R_USE_D
ST_USE_GTT          SvcType wats
```

The `ST_USE_GTT` rule in this example defines the service type. If there is none in the CIM, `SvcType wats` is included as a default.

UCIM names definition files

The universal converter looks at the UCIM names definition file to know how to translate the names of name-value pairs in the UCIMs, and to know what rules to use and in what order of precedence to use them. Names defined in a UCIM names definition file override system default names.

The UCIM names definition file defines the names in name-value pair fields in the UCIM for the converter, and the rules that may be used in determining CFIM field values. Define the names and rules as a keyword (or a set of keywords) and the function invoked by the occurrence of the keyword in a UCIM. The function must be a known NTP field or rule (see ["Standard field names" on page 16-12](#)).

The format of the file is one definition per line with keywords and functions separated by white space. The keywords are the name or rule exactly as they appear in the UCIM, and the function must be one of the known NTP functions, and must be in lower case. The names of fields in a name-value pair can be whatever the field is named in the UCIM, but the value (function) must be a field or rule listed in either of the two preceding tables and cannot be changed. Converted values are displayed in lower case in the CFIM.

Note that it is acceptable for different name-value pairs in the UCIM names definition file to identify the same values. This is to allow for situations where if a CFIM field cannot be determined from one name-value pair source, it can be obtained from another. The converter will use the first value to be processed that works.

(Continued on next page)

Define UCIM Translation with Configuration Files (Continued)

UCIM names definition files (continued)

Unrecognized words not defined in a UCIM names definition file are not employed by the converter in creating a CFIM. Such fields are just dropped in the conversion process.

There is a model UCIM names definition file — called `ucim.names` — in the `$MODELDIR/univ` directory. The model file is used by the universal converter as a default, when no other UCIM names definition file is supplied. Any other UCIM names definition file overrides this default file. This one is primarily intended to be used by you as a model of keyword-to -function definitions.

Procedure: Create a UCIM names definition file

The easiest way to create your own UCIM names definition file is to perform the following steps:

Step	Action
1	Copy <code>\$MODELDIR/univ/ucim.names</code> to wherever and whatever you want it to be.
2	Delete the lines (especially rules) you do not want to apply in your conversion. You can delete rules, but do not modify the value (right half of the pair).
3	Change or add any keywords necessary to include all UCIM field names and rules you want to apply.
Done.	

(Continued on next page)

Define UCIM Translation with Configuration Files (Continued)

UCIM names definition file example

The following is a sample UCIM names definition file (univtrans.names), written to define the keywords and their functions in UCIMs, such as those in sample UCIMs in this chapter. Note that pound sign (#) at the beginning of a line denotes a comment line.

```
# FILE: univtrans.names Example Names Definition File
# Install in $USERDIR/univ.

# Format: KEYWORD1 [ KEYWORD2 [ ... KEYWORDn ] ] value_id
# (Example: in the first line, Calling ISUP is the field name from
# the CIM. cpdigits is the CFIM value to which it is being mapped.

Calling ISUP cpdigits
Carr cic
D d
Called ISUP digits
Sig sig
DPC dpc
OPC opc
CD tc
FAILURE fname
# both the CDflags and IAR-CD names map to an acode field
CDflags acode
IAR-CD acode
SvcType st
ETIME etime

# the following is the rules list. You can change the names for
# brevity, but do not change the values
FDC_USE_ACODE fdc_use_acode
RE_USE_OPC re_use_opc
DE_USE_DPC de_use_dpc
REL_USE_RE rel_use_rearch
R_USE_D r_use_d
ST_USE_GTT st_use_gtt
```

(Continued on next page)

Define UCIM Translation with Configuration Files (Continued)

Procedure: Convert UCIMs to CFIMs

This subsection describes the steps the converter follows to convert UCIMs to CFIMs. All CFIM field formats stated in and ["Fields" on page 4-7](#) are enforced. If the format of the value is incorrect, it is ignored (no fields are populated).

Step	Action
1	All CFIM fields are assigned the default value of -.
2	The converter parses the UCIM. Name-value pairs and rules are processed in the order that they appear. A field is populated by the first value obtained from either the value following its name in the raw UCIM or by following the instructions for each rule keyword that appears in the UCIM.
3	For fields that are still "-", the converter attempts to determine values by applying the rules and default values specified in defaults file for that link in the order that they appear.
4	If the FDC cannot be determined, an error is logged (in the incon log) and no CFIM record is created.
5	The remaining fields are populated based on the default rules listed below.
Done.	

Internal field conversion

These fields in the CFIM are populated as described by default unless overridden. Those with an asterisk (*) can be overridden by use of the keywords in the universal conversion rules table (see ["Table: Universal conversion rules" on page 16-16](#)).

Field	Conversion
Date	The Date field is obtained from the system clock.
Time (time)	The Time field is obtained from the system clock.
Date/Time (datetime)	The Datime field combines the data in the Date and Time fields.
Reporting Entity Type (retype)	The retype will be populated with the eqtype of the swarch record corresponding to the re field.
Distant Entity Type (detype)	The detype will be populated with the eqtype of the swarch record corresponding to the de field.
Reporting Entity STP (rs) *	If the field is not already populated via the name-value pairs, then same as NTP STP determination algorithm.
Distant Entity STP (ds)*	If the field is not already populated via the name-value pairs, then same as NTP STP determination algorithm.

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Field	Conversion
Pegging Status (p) *	<p>If the p field is not already set via its name-value pair, then it is set according to the following conditions. If the digits field of the CFIM is:</p> <ul style="list-style-type: none"> ■ 10 digits long: <ul style="list-style-type: none"> — y if the FDC/DIGITS were not in the disabledig table — n if the FDC/DIGITS were in the disabledig table ■ 7 digits long: <ul style="list-style-type: none"> — y if the FDC (DIGITS with prepended HNPA from swarch) was not in the disabledig table — n if the FDC (DIGITS with prepended HNPA from swarch) was in the disabledig table <p>When the p field is set to n, the entities represented by the CFIM are not pegged by the thresholding algorithm. The HNPA is derived from swarch by looking up the HNPA of the DE that was determined. If the DE cannot be determined or has not been populated, the HNPA of the RE is the default. When both of these fail, the system provides an appropriate error message (such as when the HNPA has not been populated).</p>
Front-End Source (source)	Source is assigned the name value from the source table.
Trouble Category (tc) *	If the tc field is not set directly via its name-value pair, the tc field is obtained from the tc field of the fdc table.
Status (s) *	If the s field is not set directly via its name-value pair, the s field is obtained from the s field of the fdc table.
Call Type (ct) *	If the ct field is not set directly via its name-value pair, ct is assigned the value of the OWNER of the swarch record corresponding to DE.
Customer (cust) *	<p>If the cust field is not set directly via its name-value pair, the cust field is obtained from the digit pattern to customer digits mapping in the gtspec table using the called digits. If the digit pattern of the called digits is found in the mapping, NTP uses the customer digit string to look up the custid table. If there is a match, the cust field of the CFIM is assigned the value of the custname field of the custid record. If there is not a match, the cust field of the CFIM is assigned the customer digit string. If the digit pattern is not found in the mapping (the digits in the CFIM do not identify a service customer) then the cust field of the CFIM is -.</p>
Call Irregularity Message (cim) *	If the CIM keyword is present in the UCIM, the CIM field is assigned all of the text after the CIM keyword. Otherwise, CIM is assigned the entire UCIM text.

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Establish a Universal Link

Universal links

NTP communicates with all universal data sources via Datakit or TCP/IP. The source, whether an originating entity, an intermediate collector, or another host with a filter, must connect to Datakit through DKHOST software or TCP/IP through TY6 or TY12 interfaces.

Note

The DMS switch uses separate channels for TRK-type messages, OTR messages, and other message types that may use the universal interface.

Procedure: Define a universal link

On NTP, you must set up the link in the reference database tables as you would for any new source.

Reference

For steps that use **dbedit**, see **dbedit** in [Chapter 4, "Reference Data Tables"](#):

Step	Action
1	Add the entity to the NTP host database. Reference For how, see "Add an Re" on page 5-14 .
2	Create a name for the source in the source table. Enter univ as the type of source.
3	If TCP/IP, add one entry for each source in the /etc/hosts file.
4	Create a record for the new Re reporting via this source in the swarch table.
5	For each new Re, create a record in the rearch table that maps the Re to the source.
6	Create a record in either the: <ul style="list-style-type: none"> ■ indkdial table if the source is dialing in to NTP over Datakit. ■ intcpdial table if the source is dialing in to NTP over TCP/IP. ■ outdkdial table if NTP is dialing out to the source over Datakit. ■ outtcpdial table if NTP is dialing out to the source over TCP/IP. Reference See "indkdial Table" on page A-65 and "outdkdial Table" on page A-100
7	Create a record in the univconfig table for each universal link.

Step	Action
8	Make a note to monitor the \$LOGDATA/univlog file, where problems with the links will be logged. Reference For how to read files in the \$LOGDATA directory, see " Monitor Application Logs (\$LOGDATA) " on page 11-16.
Done.	

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Customize the Universal Source Channel

univconfig table

The universal interface link configuration (univconfig) table enables the system administrator to custom configure universal interface links.

Reference

See ["univconfig Table" on page A-150](#).

Note

The univconfig record for the example UCIMs in this chapter will look like this:

Source	Config	SOM	EOM
dllsl	univtrans	2	-

Define Routing for Universal Sources

univroute table

Entities on the universal link probably have trunk groups to distant entities too, so a routing record must be added to the univroute table for DE determination for each trunk group on a new universal entity.

Reference

See ["univroute Table" on page A-151](#).

Note

The example UCIMs in this chapter have point codes not trunk groups so, for that source type, this table will not be used.

Test UCIMs

Considerations

It is important to test the validity of the converted CFIMs before starting thresholding and automatic analysis on unsupported entities.

Procedure: Test UCIM filter

First, test the filter to verify that your data is being filtered into acceptable UCIMs:

Step	Action
1	Capture raw NCIM data to a file. For NCIMs see "NCIMS And Filters" on page 16-6 .
2	Pipe the NCIMs through your filter.
3	Verify that the UCIMs created by the filter meet the qualities specified in UCIM formats. For UCIMs, see "UCIM Formats" on page 16-11 .
Done.	

Procedure: Test UCIM conversion

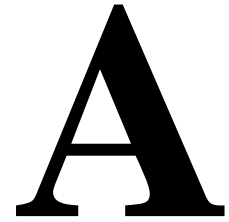
Once the UCIMs look good, test the effectiveness of the configuration files on the UCIM conversion to CFIMs:

Step	Action
1	Run trapcfim on to verify that messages from the universal source are being received and converted.
2	Run find to create a user file (working set) of CFIMs from the universal source.
3	Perform a compute on the RE to verify that the fields in the CFIMs are populated correctly and completely, as per your requirements.
4	In the \$LOGDATA directory, check the master, incon, and univlog error logs for problems. Reference For how to read files in the \$LOGDATA directory, see "Monitor Application Logs (\$LOGDATA)" on page 11-16 .
Done.	

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Overview

Purpose

This appendix describes the user-modifiable database tables that hold NTP reference data.

Internal (“hidden”) tables

Not described here. NTP has many tables that are modified by internal processes but that are seldom, if ever, manually modified. You may have occasion to view data in internal tables (with the **sui find** command), but you do not modify them. For example, in procedures to monitor links, you may view the internal linkstatus table. This appendix does NOT describe internal tables.

Reference

See ["menutable Table" on page A-87](#) for more information on how to tell if a table is internal or user-modifiable.

Reference

- **Introduction.** For how to see and modify these tables, see [Chapter 4, "Reference Data Tables"](#).
 - **Output data.** Database tables that hold output (surveillance) data are in Appendix A of the *GUI User's Guide*. However, they are referenced here as well.
-

List of Tables and Fields

acase (v-acase, f-acase) Table

This is an output table, not a reference table. See Appendix A in the *GUI User's Guide*.

access_rpts Table

This is an output table, not a reference table. See Appendix A in the *GUI User's Guide*.

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acode2fdc Table

Purpose

Used if Re is as follows(

If a CIM is from conversion	Acode value is in CIM's	Fname value is in CIM's	Note
1AESS	NA. (Use "ess1a2fdc Table" on page A-46.)		
4ESS	NA. (Use the CIM's FHC code.)		
5ESS MDII's	NA.		
5ESS DSE	DSE field		See "ASP Messages" on page A-9
7R/E PLS (F6259)	DSE field		
AUTOPLEX MSC (F6234)			
DMS MTX MSC (F6276)			
OTR			
DMS	See "DMS 100, 200, 250, and 500 Messages" on page A-9		
EWSD (F6171)			
Succession SN02 (F6289)			
GeoProbe (F6272)	See "Any switch type using caus codes." on page A-9		
AXE 10 (F6186)		Always "billdats"	
AXE 10 TRADO (F6313)			
Lucent Softswitch (F6314)			
IPDRs (F6305)	Disconnnet_Reason field		
Consultant added for BILLDATS (F6306)			

The "actual code to FDC" (acode2fdc) table contains a fdc translations. A tilde, "~", in any key field means "don't care" or match anything.

Example: A DMS message with a single message name (for example, LINE138, TRK113, C7UP123, or TCAP101) can represent many different call failure or event types. Detailed call event data is contained in the message's reason/trouble code, which can be up to 40 characters in length and can be used to represent different problems in different CIMs.

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To uniquely identify an SCP, DMS or 5ESS DSE CIM as a specific FDC on which NTP can perform counts, thresholding, and alerting, each message name must be associated with each reason/trouble code or treatment set and assigned an FDC identifier. You must therefore build a record for each message name/reason code combination, and give each combination an FDC. FDCs must be defined in the `fdc` table before they can be used here.

Reference

See [Step 13](#) in "Add or modify an FDC" on page 5-60 for when this table is used.

Field dependencies

In table...	Before you put a value in field...	That value must be in field...	In table...
<code>acode2fdc</code>	<code>fdc</code>	<code>fdc</code>	<code>fdc</code>

Special considerations

■ DMS 100, 200, 250, and 500 Messages

The different message types from DMS switches are denoted by their keynames, such as: LINE138, TRK113, C7UP123, or TCAP101. In `acode2fdc` records, these keynames map to the `fname` field. The actual trouble code or treatment set maps to the `acode` field. Some trouble/reason codes contain a variable (usually numeric) at the end of the text, as in "OUTAGE ON CARR n". Since the NTP CFIM converter reads Acodes on a "best match" basis, it is not necessary to include the variable in `acode` strings. The `acode` string OUTAGE ON CARR will match all occurrences of this reason code and find the appropriate FDC.

■ ASP Messages

5ESS Advanced Services Platform (ASP) DSEs (direct signalling events) report Advanced Intelligent Network (AIN) call failures on 5ESS switches. In `acode2fdc`, map the ASP D field to the `acode` field and the ASP B field to the `fname` field. If there is no D field in a received ASP CIM, the converter performs a lookup on the B field.

■ Any switch type using caus codes.

For some switch types NTP does a secondary (`fname`) lookup on `caus` codes, to assign `Fdc`'s matching cause codes. For these, use:

- `Acode` of the `caus` code (this you must do)
- `Fname` of `ss7` (this you must do)
- FDC of `ccsx` where `x` is `caus` code (these are suggested names—must be predefined in the `Fdc` table)

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Example:

```
#Acode; Fname; Fdc
1; SS7; ccs1
2; SS7; ccs2
3; SS7; ccs3
etc.
```

For a complete list of caus codes see “cause indicators” in the “ISUP Formats and Codes” chapter in Bellcore document GR-246-CORE.

acode

(Key field) The code in a CIM that determines what FDC to assign. Field type: String of 40 printable characters. Acodes are as follows:

- **5ESS.** In 5ESS messages, they are DSEs.
- **DMS.** In DMS logs:
 - In TRK messages, they follow keywords TRBCOD=, TROUBLE=, TRBCODE=, and TROUBLE:.
 - In C7UP and TCAP messages they keywords REASON=, ADDITIONAL INFO=, TREATMENT SET=, and TRBCODE=.
 - In LINE messages, they are called treatment sets.

fname

(Key field) An failure (event) name (fname) that triggers a second lookup to be made (along with the first lookup of the acode value) to assign an FDC. Examples showing switch type, and what you may put in fname are:

- DMS — TRK138, C7UP123, TCAP101, TOPS100
- 5ESS — DSE, ASP
- AXE10 — billdats
- Any switch that uses caus codes to assign FDCs, including GeoProbe — ss7

A tilde, "~", means “any”. A dash (“-”) is not valid. Field type: String of 15 printable characters.

fdc

The FDC defined for this message in the FDC table. The FDC defined here becomes the identifier for this specific problem type. This field is the customer-defined FDC for 5ESS DSE, and DMS messages. It is often a unique combination of the TCAP, TRK, LINE, and C7UP message number and an associated trouble/reason code. This value must be defined by the fdc field in the fdc table, or it can be a “-”. If you use “-”, the message will be pegged as the message name for the FDC if it is defined as such in the fdc database table. Field type: String of 7 printable characters.

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error_origin

For each FDC (currently, for Lucent Softswitch, F6314, and consultant added, F6306) enter an SS7 location code matching acode and fframe. Values:

- lln — Local local network
- lpn — Local private network
- tn — Transit network
- intl — International network
- rln — Remote local network
- rpn — Remote private network
- u — User
- ing — VOIP Ingress side
- egr — VOIP Egress Side
- “-” meaning either:
 - The converter does not use this field. (Currently only the Lucent Softswitch, F6314, uses this field, so make this “-” for all FDCs for all other conversions.)
 - Fframe and acode are not specific to an error_origin.
 - The fdc does not represent an error.

Field type: 4-character.

adjarch Table

Purpose

Only one customer uses this table. The adjunct architecture (adjarch) table defines the network elements that are adjunct to switches.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
adjarch	swcli	cli	swarch
	stp	ne	stparch

adjcli

(Key field) The Adjunct ID, which is the CLLI of the switch where the adjunct resides. Field type: String of 16 printable characters.

dpc

Destination point code (dpc) that uniquely identifies an entity within a network. (Actually, pc is a better name, since dpc for destination, or opc for origin, makes sense in the Cfm table only.) A dpc must be unique among the adjarch, swarch, scparch, and lrarch tables. See "[dpc](#)" on page A-143 in the swarch table. Field type: 1-to-9 digit number.

type

The adjunct type. Values:

- cld - Consumer Long Distance
- cvis - Conversant Information System
- nscx - Network Services Complex
- ssa - Small Scale Adjunct
- - - unknown

swcli

The CLLI code of the switch associated with the adjunct. This value must exist in the cli field of the swarch table. Field type: String of 16 printable characters.

stp

The STP that the adjunct switch is homed on. This value must exist in the ne field of the stparch table. "-" means not applicable or no data available. Field type: String of 4 printable characters.

ai

(This field is ignored by flexible alerting, F6268.) The alerting indicator (ai) that determines whether the system maintains thresholds and generates alerts for the adjunct. Values: "on" or "off". Field type: Set Field (set of name values).

adjroute Table

Purpose

Only one customer uses this table. This table identifies distant entities for each reporting adjunct entity. It contains digit based routing of the adjunct to switches.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
adjroute	adjcli	adjcli	adjarch
	signet	name	signet

digits

(Key field) The digits pattern of the called number for this adjunct. Leading zeroes are not allowed. The digit pattern entered here must be consistent with Global Title Patterns defined in the gtspec table. Field type: String of 6 printable characters.

signet

(Key field) The name of the signaling network to which the adjunct belongs. This value must exist in the name field of the signet table. Field type: String of 10 printable characters.

adjcli

The adjunct ID. This value must exist in the adjcli field of the adjarch table. Field type: String of 16 printable characters.

alert (v-alert, f-alert) Table

This is an output table, not a reference table. See Appendix A in the *GUI User's Guide*.

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bdrhost Table

Purpose

The bdrhost table names hosts in the host pair for the RDS (reference data synchronization — F6214, refsynch). No entries are needed in this table unless you use RDS.

Note

Records for only two hosts (the RDS host pair) can be entered in this table.

Field dependency

There are no fields in this table whose values must be defined in other tables.

Reference

- See [Chapter 15, "Reference Database Synchronization \(RDS\)"](#) for a full explanation of RD.
- See also the bdrhost field in the ["source Table" on page A-137](#).

name

(Key field) A host name. Field type: String of 11 printable characters.

location

The location of the NTP host named in the name field. Values: "local" or "remote". Each host where you are logged in has Location of local, and its paired host has Location of remote. Field type: Set Field (set of name values).

Example for an RDS host pair host1 and host2:

On host1

```
Name;Location;Description
host1;local;local host
host2;remote;remote host
```

On host2

```
Name;Location;Description
host1;remote;remote host
host2;local;local host
```

description

A description of the host. "-" means not applicable or no data available. Field type: String of 50 printable case-sensitive characters.

bildtscoll Table

Purpose

The bildtscoll table, along with the ["collectors Table" on page A-27](#), selects internal processes to translate CDR and IPDR CIMs to CFIMs for the NTP configurable converter interface. (It is also used for some universal conversions). Use this table for:

- GeoProbe (F6272)
- AXE 10 (F6186)
- AXE 10 TRADO (F6313)
- Lucent Softswitch (F6314)
- IPDR (F6305)

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
bildtscoll	collector_name	collector_name	collector
	conversion_name	conversion_name	bildtsrec (internal table)

collector_name

(Key field) A unique source name. This value also appears in the collector_name field of the collectors table and the name field of the source table. Field type: String of 50 printable characters.

conversion_name

Name of the conversion. This value must be in the conversion_name field of the bildtsrec table. Although bildtsrec is an internal table, you can enter **sui find so=bildtsrec** to list values. Field type: String of 50 printable characters. Values:

- bill-ericsson — AXE 10 (F6186)
- inet-geoprobe — GeoProbe (F6272)
- ipdr-voip — IPDR (F6305)
- luss3.1 — Lucent Softswitch (F6314)
- axe-tradofile — AXE TRADO (F6313)

dir_list

Fully qualified path to the directory where the interface manager process finds data files, for example /home/bdat1 or /susr/trado2. This directory is created as part of the procedure to add the source interface to NTP (see [Chapter 14, "CIM Source Administration"](#)). Field type: String of 250 printable characters.

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Reference

"Garbage" subdirectories in the directories listed in this field are automatically cleaned out by a script that runs out of the ntp crontab file. See ["CDR processing and garbage cleanup" on page 3-30](#).

format

The format of the incoming CDRs or IPDRs accepted by the configurable converter interface.

Format	Description	Use for..
delimval (default)	Delimited ASCII (Default)	<ul style="list-style-type: none"> ■ AXE 10 (F6186) ■ AXE 10 TRADO (F6313) ■ Lucent Softswitch (F6314) ■ GeoProbe (F6282) <p>Note For GeoProbe (F6282), technically this field is NOT needed, but you must enter the default.</p>
delimnameval	Delimited ASCII name-value pair	IPDR (F6305)
xml	XML formatted records	For custom CDR-type installations (F6306).

Do NOT use "-" (use the default of delimval instead). Field type: Set Field (set of name values).

callterm_prof Table

This is an output table, not a reference table. See Appendix A in the *GUI User's Guide*.

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carrier Table

Purpose

Maps a service carrier name (such as MCI), to a cic code. Cic codes are defined here, so they can be used in the ixcarrier table, which maps multiple cic codes to one customer (see "[ixcarrier Table](#)" on page A-70). Cic codes appear in several summary reports (if additional traffic analysis is implemented on your system).

Field dependency

There are no fields in this table whose values must be defined in other tables.

cic

(Key field) The carrier identifier. For North American interexchange carriers, this is equivalent to the acna (access carrier name abbreviation). Equivalent to the cic field in carrier, cfim and owner.

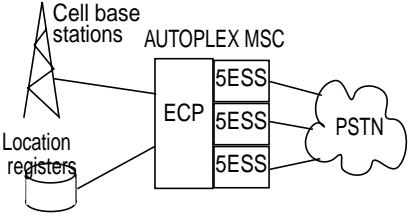
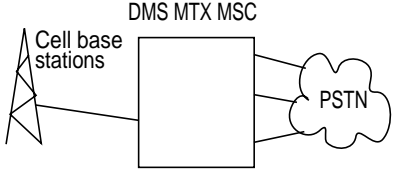
name

The carrier name. This field is equivalent to the name field in owner. "-" means the field is not applicable or there is no data available. Field Type: String of 50 mixed case printable characters.

cellroute Table

Purpose

Use if an Re is AUTOPLEX MSC (F6234) or DMS MTX MSC (F6276). This table defines distant entities (De's), when the Re is a mobile switching center (MSC). In detail:

If the Re is:	Cellroute table defines the De's that are...	And OTHER De's may be...
AUTOPLEX MSC (F6234)	<ul style="list-style-type: none"> ■ Cell base stations <p>Note Cell base stations are groupings of radios and other equipment, usually near an antennae.</p> <ul style="list-style-type: none"> ■ 5ESS switch modules in the AUTOPLEX MSC (actually, these are internal to the MSC) <p>Illustration.</p>  <p>The diagram shows a central box labeled 'AUTOPLEX MSC' containing 'ECP' and three '5ESS' modules. To the left, 'Cell base stations' and 'Location registers' are connected to the ECP. To the right, the 5ESS modules are connected to a cloud labeled 'PSTN'.</p>	<ul style="list-style-type: none"> ■ Location registers, defined in the "lrarch Table" on page A-74. (De thresholding is turned on or off here, via the Ai field.) ■ PSTN switches, defined in the "route5e Table" on page A-122. (De thresholding is turned on or off here, via the Ai field.)
DMS MTX MSC (F6276)	<ul style="list-style-type: none"> ■ Cell base stations <p>Illustration</p>  <p>The diagram shows a central box labeled 'DMS MTX MSC' connected to 'Cell base stations' on the left and a cloud labeled 'PSTN' on the right.</p>	<ul style="list-style-type: none"> ■ PSTN switches, defined in the "dmsroute Table" on page A-39. (De thresholding is turned on or off here, via the Ai field.)

Thresholding

Other route tables (dmsroute, etc.) have a corresponding "arch" table (with an Ai field where you turn thresholding on or off. There is NO cellarch table. Instead, use the Ai field in the swarch table. In the swarch table, see records that have, in the Eqtype field, either:

- base — For AUTOPLEX MSCs (F6234)
- dms-mtx — For DMS-MTX MSCs (F6276)

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Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
cellroute	cli	re	rearch
	de	cli	swarch

cli

(Key field) The CLLI of the AUTOPLEX MSC. This value must exist in the re field of the rearch table. Field type: 16-character string.

cell

(Key field) The cell number of the De. Field type: 6 character. Range 0-999.

detype

(Key field) The type of equipment at the De. Field type: Set Field; set of name values, "cell" or "dcs", as follows:

- For records defining De's when the Re is a DMS MTX MSC (F6276), use "cell".
- For records defining De's when the Re is an AUTOPLEX MSC (F6234) use:
 - "cell" if the record defines a cell base station as a De.
 - "dcs" if the record defines a 5ESS switch module within the AUTOPLEX MSC as a De (it would be distant WITHIN the MSC, because it could not be reached by the MSC's ECP module).

de

The cell number of the De (cell). This value must exist in the cli field of the swarch table. Field type: 16-character string.

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cfim Table

This is an output table, not a reference table. See Appendix A in the *GUI User's Guide*.

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city Table

Use this table if the Re is a Lucent Softswitch, F6314.

Recall that the CFIM's city_npa field shows a city code (international numbering plans) or NPA (North American Numbering Plan).

If city code or NPA is found in CDR field 46, NTP puts that value in the CFIM's city_npa field, and the city table is NOT used.

But if field 46 is blank, NTP uses the CDR's dsdigits (digits, if dsdigits is not available) and the city table to derive the CFIM's city_npa.

This derivation sometimes uses the following two swarch fields, which you need to populate:

- ccd
- hnpa

(All the above also applies to deriving the CFIM's cpcity_npa field, if not available in CDR field 45.)

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
city	ccd	ccd	country

ccd

(Key field.) Country code. Field Type: 3 digit numeric.

city_npa

(Key field.) City code (international numbering plans) or NPA (North American Numbering Plan). NPAs are 3 digits. City codes may be up to 5 digits. Field Type: 5 digit numeric.

cityname

Name of the geographic area serviced by the city_npa. "-" means not applicable or no data available. Field Type: 20 character string.

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cim Table

This is an output table, not a reference table. See Appendix A in the *GUI User's Guide*.

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cmdgroup Table

Note

This table does NOT affect the BB-GUI. It affects only the SUI and the legacy X-GUI and AUI.

Purpose

The command group (cmdgroup) table lists command groups so that you can then use the ["cmdgroupmap Table" on page A-26](#) to define a set of commands in each command group. Then you can assign users to command groups to restrict user access to the NTP system.

Reference

For procedures to define command groups, see ["Define Command Groups" on page 7-10](#).

Field dependency

There are no fields in this table whose values must be defined in other tables.

name

(Key field) The name for the command group. Field type: String of 10 printable characters.

description

A description of the command group. "-" means not applicable or no data available. Field type: String of 50 printable case-sensitive characters.

cmdgroupmap Table

Note

This table does NOT affect the BB-GUI. It affects only the SUI and the legacy X-GUI and AUI.

Purpose

The command group map table defines the commands in command groups listed in the "[cmdgroup Table](#)" on page A-25. You can then assign users to command groups to restrict user access to the NTP system.

Note

Command groups are used in the AUI and X-GUI interfaces only. They are NOT used in the BB-GUI.

Reference

For procedures to define command groups, see "[Define Command Groups](#)" on page 7-10.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
cmdgroupmap	cmdgroup	name	cmdgroup
	command	name	command

cmdgroup

(Key field) The command group name. This value must exist in the name field of the cmdgroup table. When the entry to which this field refers is deleted, this record is also deleted. Field type: String of 10 printable characters.

command

(Key field) A command to be included in this command group. This value must exist in the name field of the command table. When the entry to which this field refers is deleted, this record is also deleted. Field type: String of 10 printable characters.

collectors Table

Purpose

Use if you have Re's from any of the following conversions:

- GeoProbe, F6272
- AXE 10, F6186
- AXE TRADO, F6313
- Lucent Softswitch, F6314
- IPDR, F6305

The collectors table, along with the ["bildtsroll Table" on page A-16](#), selects internal process to translate and CDR and IPDR CIMs to CFIMs.

Field dependency

See collector_type field, below.

collector_name

(Key field) The name of the collector. This value must be in the name field in the source table before you can use it here, and it must be here before you can use it in the collector_name field of the bildtsroll table. Field type: String of 50 printable characters.

collector_type

(Key field) The collector type. Field type: Must be in the collector_type field of the collectloc table (a hidden table). Field type: String of 8 maximum printable characters. Values:

- geoprobe — GeoProbe (F6272)
- billdats — any of the following:
 - AXE 10 (F6186)
 - AXE TRADO (F6313)
 - Lucent Softswitch (F6314)
 - IPDR (F6305)

active

Tells if the collector is active (collecting CIMs) or inactive. Field type: Set Field (set of name values). Values: "y" or "n".

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command Table

Note

This table does NOT affect the BB-GUI. It affects only the SUI and the legacy X-GUI and AUI.

Purpose

The command table lists commands in the system. Users of the X-GUI and AUI interfaces can be assigned to command groups that depend on this table to be created.

Field dependency

There are no fields in this table whose values must be defined in other tables.

name	(Key field) The command name. Field type: String of 10 printable characters.
auimenu	Tells whether the command can be listed on the AUI main menu. Values: "y" or "n". Field type: Set Field (set of name values). Note: Do not change this field. Only a predetermined set of commands are executable from the AUI, and no new AUI commands will be added.
description	A description of the command. "-" means not applicable or no data available. Field type: String of 50 printable case-sensitive characters.

cos Table

Purpose

Use the cos (class of service) table if you have 4ESS switches, and want to see their St fields populated more accurately, using F6292. This table more accurately populates the St field on 4ESS CFIMs as follows:

- NTP takes the SII (service indicator index) from the 4ESS CIM and looks it up in this cos table, to find the matching St value.
- If the SII is not found in the cos table, use the old method to derive St.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
cos	st	type	st

orig	(Key field) The type of origination (orig) from a 4ESS switch. Range: 0 to 127. Field type: 3-digit numeric.
dest	(Key field) The destination (dest) of the call from a 4ESS switch. Range: 0 to 127. Field type: 3-digit numeric.
sst	(Key field) The 4ESS switch signaling service type (sst) values. Range: 0 to 127. Field type: 3-digit numeric.
dnst	(Key field) The 4ESS dialed number service type (dnst) of the call. Range: 0 to 127. Field type: 3-digit numeric.
sii	The service indicator index (sii). Range: 0 to 255. "-" means not applicable or no data available. Field type: 3-digit numeric.
st	The service type (st) indicated by this class of service. This value must exist in the type field of the st table. Field type: String of 4 printable characters.

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country Table

Purpose

To populate the CFIM's ccd field, where the Re is:

- 4ESS. (Improved ccd derivation, F6262)
- Any from GeoProbe (F6272)
- Lucent Softswitch (F6314)

NTP users can also use this table as a reference, to see which country codes represent which countries.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
country	npt	npt	npt

ccd

(Key field) Country code of an international De. 1, 2 or 3 digits.
Field Type: 3-digit numeric.

npt

Numbering plan type. . (This field is referenced by 4ESS switches only.) NTP uses this to derive each 4ESS CFIM's country code (Ccd) from its dialed digits. For initial npt values, see note at "[npt Table](#)" on page A-96. Field Type: 3-character string.

cname

Optional. Country name matching the ccd. Field Type: 25-character string.

ctcode2ct Table

Purpose

Use this table if Re is from:

- IPDR (F6305)
- Lucent Softswitch (F6314)
- Custom added (F6306).

The ctcode2ct (call type code to call type) table identifies call types based on service or feature codes, or other unique identifiers. Specifically, NTP takes a code from a CDR or IPDR, looks it up the ctcode field of this table, and places the record's matching ct value in the CFIM's ct field.

Field dependency

There are no fields in this table whose values must be defined in other tables.

ctcode	(Key field.) Call type code. A service or feature code or other unique identifier found in the CDR or IPDR. Field type: String of 10 printable characters.
ctname	(Key field.) The name or descriptive text for the call type. Field type: String of 25 printable characters.
ct	The call type to be put in the CFIM's ct field. "-" means not applicable or no data available. Field type: String of 6 printable characters.

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custcode Table

Purpose

It is nice to see the customer's name in the CFIM's Cust field, but the name is not on CIMs. But CIMs give other information, which you can map to a name, to populate the Cust field. Map in the following tables (different conversions use different sets of these tables):

- ["custcode Table" on page A-32](#) — Use this if you get Re's from IPDRs, F6305. Maps each customer's name to account codes, subscriber ids, or other unique identifiers. Populates both Cpcust and Cust fields on CFIM's.
- ["custid Table" on page A-33](#) — maps each IDB/DSD or other non-VPN customer's name to a phone number. If no match is found, the CFIM's Cpdigit's value is placed in Cust.
- ["vpnid Table" on page A-152](#) — maps each VPN customer's name to a VPN. If no match is found, the VPN is placed in Cust.
- ["custip Table" on page A-34](#) — maps each customer's name to an IP address.

Field dependency

There are no fields in this table whose values must be defined in other tables

id

(Key field.) Account code, subscriber id, or other unique identifier found in the CDR (IDPR). Field Type: 15-character string.

cust

The customer id, to be seen in the cust and cpcust fields of CFIMs. Field Type: 10-character string.

custid Table

Purpose

Not yet used for standard conversions, but available for CDR-type installations (F6306).

It is nice to see the customer's name in the CFIM's Cust field, but the name is not on CIMs. But CIMs give other information, which you can map to a name, to populate the Cust field. Map in the following tables (different conversions use different sets of these tables):

- ["custcode Table" on page A-32](#) — Use this if you get Re's from IPDRs, F6305. Maps each customer's name to account codes, subscriber ids, or other unique identifiers. Populates both Cpcust and Cust fields on CFIM's.
- ["custid Table" on page A-33](#) — maps each IDB/DSD or other non-VPN customer's name to a phone number. If no match is found, the CFIM's Cpdigit's value is placed in Cust.
- ["vpnid Table" on page A-152](#) — maps each VPN customer's name to a VPN. If no match is found, the VPN is placed in Cust.
- ["custip Table" on page A-34](#) — maps each customer's name to an IP address.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
custid	custname	cust	customer

digits

(Key field) The digit pattern assigned to the customer. It can be up to ten digits. (You can enter the last four digits in the digit pattern as a range, which **dbedit** will expand to create a record for every consecutive digit pattern in that range. For example, instead of entering every record from 123456789 to 123456795, you can enter 123456789-6795, which **dbedit** will expand to 7 records. The range format must be 10 digits, dash (-), 4 digits (as in the example). This range expansion is valid only in the last four digits of the digits field in custid and vpnid records.

custname

The non-VPN service customer. The format is a string of up to ten printable characters. Metacharacters cannot appear in the name except for use in search expressions. This table does not recognize upper-case and lower-case differences in this field.

custip Table

Purpose

Not yet used for standard conversions, but available for CDR-type installations. (F6306).

It is nice to see the customer's name in the CFIM's Cust field, but the name is not on CIMs. But CIMs give other information, which you can map to a name, to populate the Cust field. Mapping uses the following tables (different conversions use different sets of these tables):

- ["custcode Table" on page A-32](#) — Use this if you get Re's from IPDRs (F6305). Maps each customer's name to account codes, subscriber ids, or other unique identifiers. Populates both Cpcust and Cust fields on CFIM's.
- ["custid Table" on page A-33](#) — maps each IDB/DSD or other non-VPN customer's name to a phone number. If no match is found, the CFIM's Cpdigit's value is placed in Cust.
- ["vpnid Table" on page A-152](#) — maps each VPN customer's name to a VPN. If no match is found, the VPN is placed in Cust.
- ["custip Table" on page A-34](#) — maps each customer's name to an IP address.

Field dependency

There are no fields in this table whose values must be defined in other tables

ipaddress

Originating IP address associated with this customer. This is a key field in the custip table. Field Type: 15 character string.

cust

Customer id (corresponds to the cust field in customer and cfim, and the custname field in custid and vpnid). Field Type: 10 mixed case character string.

customer Table

Purpose

Not yet used for standard conversions, but available for custom installations (F6306). Identifies customers.

Field dependency

There are no fields in this table whose values must be defined in other tables.

cust

Customer ID. The entry in this field corresponds to the:

- cust field in the cfim table (see Appendix A, "Output Tables," in the GUI User's Guide).
- custname field in the ["custid Table" on page A-33](#) and ["vpnid Table" on page A-152](#)

Field type: 10 characters.

name

A descriptive name for the customer. Field type: 25 characters.

dcode2d Table

Purpose

Use if you get Re's from AXE 10 (F6186). Derives CFIM's D (direction) field.

This is one of four tables (dcode2d, scode2sig, stcode2st, id2ne) used to translate BILLDATS CIMs to CFIMs. Tables fdc and acode2fdc are also used.

Reference

See [Step 13](#) in "[Add or modify an FDC](#)" on [page 5-60](#) for when this table is used.

Field dependency

There are no fields in this table whose values must be defined in other tables.

dcode

(Key field) The actual code of the call direction that appears in a BILLDATS CIM. Field type: String of 1 printable character.

dname

(Key field) The field name of BILLDATS CIM that, in combination with a dcode, defines a unique call direction. Field type: String of 40 printable characters.

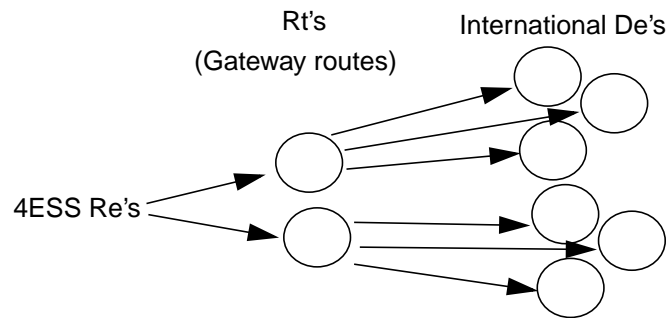
direction

The direction of the call, at the point where it was detected. Values: "i" - incoming, "o" - outgoing, or "-" unknown. Field type: Set Field (set of name values).

de2route Table

Purpose

Use if you have 4ESS Re's, and you want to populate the Rt field (country gateway route, F6263) on 4ESS CFIMs. This table tells which Rt's go to which international De's, as illustrated below.



Rtarch and De2route tables define the Rt field for 4ESS switches only. (Lucent Softswitch, F6314, also populates the CFIM Rt field, but does NOT use Rtarch and De2route tables.)

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
de2route	rt	rt	rtarch

Note

NEMOS. One customer only can update this table from a NEMOS database. See your NTP support organization for how.

Reference

Updating this table is explained at ["Correct Wrong or Missing Rt Values" on page 5-41](#).

de

(Key field.) Distant entity. An international switch to which your Re was attempting to send a call. (Since 4ESS CFIM's name De's, you do not have to define this in swarch, but it will not hurt to do so, and might be handy for reference.) Field type: 16-character string.

rt

International gateway route between your Re and an international De. Field type: 16-character string.

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disabledig Table

Purpose

The disabled digit (disabledig) table tells our system which FDC and digit patterns to ignore for alerting.

That is, if an FDC and digit pattern is listed in this table, then CFIMs with that FDC and called digit pattern are NOT tallied into CFIM counts (CFIM counts are compared to thresholds, and when thresholds are exceeded, an alert case is created.)

Network Entities represented in the CFIM (RO and DE) are not pegged if the corresponding FDC and digits if the CFIM matches the FDCs and digit patterns in this table.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
disabledig	fdc	fdc	fdc

fdc

(Key field) The final disposition code (fdc) specifies the FDC on which alerting is to be disabled. This value must exist in the fdc field of the fdc table. Field type: String of 7 printable characters.

pattern

(Key field) The digit pattern for which alerting is to be disabled on this FDC. The digit pattern may consist of standard meta-characters. You can enter an exact matching string of digits, a range, asterisks and ampersands, or a combination of these. Field type: String of 30 printable characters.

dmsroute Table

Purpose

This table identifies distant entities for each reporting DMS entity. It matches DMS trunk groups with distant entities. Use this table if an Re is:

- DMS
- DMS MTX (F6276)
- Succession SN02 (F6389)

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
dmsroute	cli	re	rearch
	de	cli	swarch
	sig	type	signaling

cli

(Key field) The CLLI code of the DMS switch. Must be in rearch. Field type: String of 16 printable characters.

tgcli

(Key field) The trunk group CLLI code to the De. Field type: String of 16 printable characters. (Get this from the trkid field of the TRKNAME database on the DMS switch.)

tgn

The trunk group to the De. Range: 0 to 9999. Field type: 4-digit numeric. (Get this from the TRKNAME database on the DMS switch.)

de

The CLLI code of the Distant Entity. This value must exist in the cli field of the swarch table. Field type: String of 16 printable characters.

sig

The type of signaling indicated by the type of trunk. This value must exist in the type field of the signaling table. "-" means not applicable or no data available. Field type: String of 6 printable characters.

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domain Table

Purpose

The table maps 4ESS domains to service types. Update only if 4ESS vendors change these. Use this table only if you have 4ESS Re's.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
domain	npt	npt	npt
	st	type	st

domi

(Key field) The domain (domi) field represents the domain of the switch issuing the CIM. Field type: 3-digit numeric.

description

The description field describes the domain. "-" means not applicable or no data available. Field type: String of 40 printable case-sensitive characters.

npt

Numbering plan type. Determines how the country code (ccd) is derived from the dialed digits of a 4ESS CIM. Used for F6262 (country code on 4ESS CFIMs). For initial npt values, see note at "[npt Table](#)" on page A-96. Field Type: 3-character string.

st

The service type (st) indicated by this domain. This value must exist in the type field of the st table. Field type: String of 5 mixed-case printable characters.

vpnbound

Tells whether the call is vpnbound. Values: "y" or "n". If the domain is 88, 89, 99, 105, 106, or 107 the value for this field is "y"; otherwise, it is "n".

ecosarch Table

Purpose

Only one customer uses this table for ECOS (F6244). ECOS (end-to-end Class of Service) is a way to group calls by some criteria, so NTP can treat each grouping (called an “area”) as if it were a De. Each “area” can be domestic or international. The ecosarch table turns De thresholding on or off for ECOS areas. (There is no Re thresholding for ECOS.)

Field dependency

There are no fields in this table whose values must be defined in other tables.

Reference

NEMOS. One customer only can see NEMOS documents for an explanation of ECOS. Update the Ecosarch table when the NEMOS ECOSREF table changes, as follows:

Get this value for the Ecosarch table...	From this column in the ECOSREF table in NEMOS...
area	tid

area

(Key field) This is an 16-character code naming an ECOS area. Field type: String of 16 printable characters. NTP treats this as a De. For domestic ECOS (DECOS), this is the CLLI of the switch that serves as the door to the ECOS area. For international ECOS (IECOS), this field consists of:

- city (4 characters)
- country code (2 characters)
- carrier (3 characters)
- area number (2-digits)

ai

(This field is ignored by flexible alerting, F6268.) The alerting indicator (ai) decides if NTP thresholds the area, as a De. Field type: Set Field (set of name values).

- on — thresholding on
- off — thresholding off

ecosroute Table

Purpose

Only one customer uses this table for ECOS (F6244). This table identifies distant entities for each Re. ECOS (end-to-end class of service) is a way to group calls so NTP can treat each grouping (called an "area") as if it were a De. Each area can be domestic or international.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table
ecosroute	re	re	rearch
	area	area	ecosarch

Reference

NEMOS. One customer only can see NEMOS documents for an explanation of ECOS. Update ecosroute when the NEMOS ECOSREF table changes, as follows:

Get this value for the ecosroute table...	From this column in the ECOSREF table in NEMOS...
re	fid
re	exid
area	tid

re (Key field) Each re-areaid pair must be unique. This holds the CLLI of a 4ESS switch that knows the ECOS area in the next field. Example: Switch A knows 100 ECOS areas. Put switch A in the re field of 100 records, each record with a different areaid. Type: String of 16 printable characters.

areaid (Key field) Each re-areaid pair must be unique This is the code the switch in the re field uses to identify an ECOS area. Range is 1 to 1024. Field type: 4-digit numeric.

area This is an 16-character code matching the areaid—for a given re. Note that different re's may have different areaid's for different areas. Field type: String of 16 printable characters.

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eoA Table

This is an output table, not a reference table. See Appendix A in the *GUI User's Guide*.

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eqtype Table

Purpose

The equipment type table lists and describes equipment types. You must define an eqtype here before you can enter it in the eqtype field of the swarch table, so it can appear in the Re and De fields of CFIMs. (You are NOT required to define an eqtype here before using it in the eqtype field of the Fdc table. But it is a good thing to do, to document each type's description.)

You can define any equipment type you need. NTP prepopulates this table at installation time with recommended values for common types. We recommend you use the appropriate prepopulated value, when available. (You may see a eqtype of univ. We suggest you do not use it. See ["eqtype" on page A-144.](#))

Field dependency

There are no fields in this table whose values must be defined in other tables.

type

(Key field) The name of the equipment type. Appears in the CFIM Retype and Detype fields. Field type: String of 8 printable characters. You need types for ANYTHING in your network you can see as either Retype OR Detype. The recommended values for various conversions are listed below.

For these conversions...	eqtype is
1AESS	1aess
4ESS	4ess
5ESS	5ess
7R/E PLS (F6259)	7re_pds
AUTOPLEX MSC (F6234)	autoplex
DMS MTX (F6276)	dms-mtx
OTR — DMS TOPS module	other or customer designated
OTR — 5ESS OSPS module	osps
DMS	dms100, dms200, dms250, dms500
EWSD (F6171)	ewsd

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For these conversions...	eqtype is
Succession SN02 (F6289)	succ Note It is important to use "succ" so analysts can distinguish between Succession cfims and other DMS cfims.
GeoProbe (F6272)	anything that can be an Re
AXE 10 (F6186)	axe10.
AXE10 TRADO (F6313)	axe10
Lucent Softswitch (F6314)	softsw
IPDR (F6305)	ip
CDR-generating entity in installations customized through consultation with your NTP support organization	cdr

description

A description of the equipment type. "-" means not applicable or no data available. Field type: String of 50 printable case-sensitive characters.

ess1a2fdc Table

Purpose

The 1A ESS FDC (ess1a2fdc) table defines which FDCs appear on 1A ESS CFIMs.

Unlike CIMs from 4ESS, and 5ESS switches, the 1A ESS TN08 does not provide a single field describing the failure or event type. The TN08 is a cryptic message that requires an examination of several fields to determine the type of failure or event that occurred.

This table takes this combination of TN08 fields and converts them into an FDC to populate the CFIM and to use for thresholding. With this table, you can control how the FDCs are named and grouped for 1A ESS switches. This table is also used for translating CCS7 MESSAGE RTN, CCS7 UNKNOWN POINT CODE, and SCP ALERT messages from 1A ESS switches.

Reference

See [Step 13](#) in "Add or modify an FDC" on page 5-60 for when this table is used.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
ess1a2fdc	fdc	fdc	fdc
	sig	type	signaling

Key fields

A tilde (~) used in any key field means:

- To fill in a field which doesn't apply to the message type in this record
- To act as a "wildcard" meaning match any value in this field, including a missing value. This makes it unnecessary to have a record exactly matching every possible message. The tilde will match a record where the field has no value. For example, the q, r, and s fields of TN08 messages do not exist in every TN08 message.

Use tildes in fields that you do not consider significant enough to translate uniquely. However, beware of introducing ambiguity into the ess1a2fdc database table by too generous use of wildcards. For example, certain TN08s could match either of the following records:

```
Type  f  q  g  e  h  r  s  d  a  FDC  TC  Dir  Sig
Failinfo
```

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tn08	1	~	5	3	1	~	~	~	~	tgf	oto	o
mf	tgf,rvr,ddf,2st,eoh											
tn08	1	2	5	3	1	~	~	~	~	xst	oto	o
mf	icto											

A precedence rule in this situation selects the record with an exact match in the highest priority key fields to be the one used in a translation. Priority is determined by field order; the first field is highest priority. In the example, the second record would be used for a translation of a message with a value of 2 in the q field.

(A dash (-) in non-key fields means “no value” or “don’t know”.)

For explanations of 1A ESS messages and fields, refer to the *1A ESS Output Manual (OM-6A001-01)*, May 1993 or later.

Note

The CCS7 UNKNOWN POINT CODE message is indicative of one specific failure or event type only; for this reason, it has only one record in this table.

type

(Key field) The type of 1A ESS message the record will translate. Field type: Set field (set of name values). Values:

- tn08 (tn08)
- cmsr (ccs7 message rtn)
- cupc (cs7 unknown point code)
- scpa (scp alert)

f

(Key field) The actual value in the f field of the TN08, which names signaling and/or direction used in the failed call. Field type: String of 1 printable case-sensitive character.

q

(Key field) The actual value in the q field of the TN08, which names miscellaneous call failure or event information. Field type: String of 2 printable case-sensitive characters.

g

(Key field) The actual value in the g field of the TN08, which names signaling used in the failed call or miscellaneous call failure or event information. Field type: String of 1 printable case-sensitive characters.

e

(Key field) The actual value in the e field of the TN08 or the e field of the CCS7 MESSAGE RTN, which names miscellaneous call failure or event information. Field type: String of 1 printable case-sensitive characters.

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h	(Key field) The actual value in the h field of the TN08, which provides miscellaneous call failure or event information. Field type: String of 2 printable case-sensitive characters.
r	(Key field) The actual value in the r field of the TN08, which provides prime indications on the last start digit. Field type: String of 1 printable case-sensitive character.
s	(Key field) The actual value in the s field of the TN08, which provides miscellaneous call failure or event information. Field type: String of 1 printable case-sensitive character.
d	(Key field) The actual value in the d field of the TN08, which provides miscellaneous call failure or event information. Field type: String of 1 printable case-sensitive character.
a	(Key field) The actual value in the a field of the SCP ALERT, which provides miscellaneous call failure or event information. Field type: String of 1 printable case-sensitive characters.
fdc	The final disposition code (FDC) for the 1A ESS CIMs, indicated by the contents of the previous fields. This value must exist in the fdc field of the fdc table. Field type: String of 7 printable characters.
tc	The encoded trouble/reason code (tc). "-" means not applicable or no data available. Field type: String of 6 printable characters.
sig	The signaling type indicated by the combination of the preceding key fields. This value must exist in the type field of the signaling table. "-" means not applicable or no data available. Field type: String of 6 printable characters.
dir	The direction of the call involved in the event, at the point where it was detected. Field type: Set Field (set of name values). <ul style="list-style-type: none">■ o (outgoing from the Re)■ i (incoming to the Re)■ - (unknown)
failinfo	Miscellaneous information indicated by the combination of the preceding key fields. "-" means not applicable or no data available. Field type: String of 25 printable characters.

ewsdroute Table

Purpose

This table identifies distant entities for each EWSD Re (F6171). The EWSD route table shows how other switches are connected to your EWSD switches. When NTP receives a CIM from an EWSD Re, NTP reads it to get the trunk group used, and then uses this table to determine the De. NTP then puts that De in the De field of the CFIM it create from the CIM. (Otherwise, the De field will say "?".)

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
ewsdroute	cli	re	rearch
	de	cli	swarch

cli

(Key field) The CLLI of the Re.

tgn

(Key field) The trunk group number on the Re.

de

The De at the other end of the trunk group in the tgn field.

fcause Table

Purpose

The failure (event) cause (fcause) table defines reason codes so system users can enter those codes in the Fcause field of alert cases. They would enter these codes to classify Alert Cases, if desired.

Field dependency

There are no fields in this table whose values must be defined in other tables.

reason

(Key field) The failure or event cause reason. Field type: String of 10 printable characters.

description

A description for the reason field. "-" means not applicable or no data available. Field type: String of 60 printable case-sensitive characters.

fdc Table

Purpose

The final disposition code (fdc) table defines FDCs. For 4ESS and 5ESS CIMs, this is a straight mapping of 4ESS FHCs and 5ESS MDIIs. For some types of switches, call failure or event information from switch messages must be put together and mapped to FDCs via intermediate database tables such as `acode2fdc`. The FDCs to which they are mapped must be defined in the `fdc` table before they can be used in the intermediate tables.

Reference

See "[acode2fdc Table](#)" on page A-8, for more about creating FDCs.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
fdc	sig	type	signaling
	st	type	st

Note

CCS FDCs. For conversions that map FDCs to caus codes, including GeoProbe (F6272), we pre-loaded records similar to these listed below. These FDCs are named "ccs..." with Sig of `ccitt7`, and with the same FDC in `acode2fdc`. Codes are defined for "cause indicators" in the "ISUP Formats and Codes" chapter in Bellcore document GR-246-CORE. Updates these if the reference changes.

```
#Fdc; Tc; Eqtype; Al; S; D; Sig; St; Tm; Ai; Mc;
ccs1; ccs; -; mi; f; o; ccitt7; -; p; on; n
ccs2; ccs; -; mi; f; o; ccitt7; -; p; on; n
ccs3; ccs; -; mi; f; o; ccitt7; -; p; on; n
etc.
```

fdc (Key field) The final disposition code (fdc) defines the type of call failure or event indicated in a CIM. Field type: String of 7 characters.

tc The trouble category (tc) of the FDC. "-" means not applicable or no data available. Field type: String of 6 printable characters.

eqtype Names the equipment type that generates this fdc. This field is informational only and is useful for categorizing or searching for FDCs based on their equipment type. This value is NOT required to exist in the type field of the `eqtype` table. "-" means not applicable or no data available. Remember that

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mediation systems create CFIMs where Re can be any switch type, so you may want to use a general eqtype, such as cdr, with their FDCs. Field type is string, 8 characters.

- al** Names the alert level of an event. Set Field (set of name values):
- Cr (Critical)
 - Ma (Major)
 - Mi (Minor)
- s** The status (s) field names the status of a call event being reported. Values: "f" - fatal, "n" - non-fatal, "b" - both, or "-". Field type: Set Field (set of name values).
- f (fatal)
 - n (nonfatal)
 - b (both)
 - - (unknown)
- d** The call direction (d) field names the direction of the call involved in the event, at the point it was detected. Field type: Set Field (set of name values).
- o (outgoing from the Re)
 - i (incoming to the Re)
 - - (unknown)
- sig** Names the type of signaling specified by the FDC. This value must exist in the type field of the signaling table. "-" means not applicable or no data available. Field type: String of 6 printable characters.
- st** The valid service type. This value must exist in the type field of the st table. "-" means not applicable or no data available. Field type: String of 5 mixed-case printable characters.
- tm** Thresholding method. Indicates the thresholding method used on CFIMs with this FDC. Values:
- p - standard periodic (5-minute and hourly threshold periods). This is the default if you do not use the system day thresholding feature.
 - d - system day (only if system day alerting is activated for your system)
- ai** (This field is ignored by flexible alerting, F6268.) The alerting indicator (ai) that tells whether the system maintains thresholds and generates alerts for this FDC. Values: "on" or "off". Field type: Set Field (set of name values).

mc

(This field is activated only if your system uses MCAscreen, which shows mass call alerts, as explained in Chapter 5 of the *GUI User's Guide*. But whether MCAscreen is activated, you must still enter a value.) A mass call flag (mc) field. What you put in this field (beside each FDC) determines whether CFIM's with the FDC are thresholded for mass call alerts. Values:

If MCAscreen is NOT activated for your system:

- - or n for all FDCs

If MCAscreen is activated for your system:

- y (threshold CFIM's with this FDC)
- n (ignore CFIM's with this FDC)
- - (not yet edited by you, treated as n)

Field type: Set Field (set of name values).

fdc2tn Table

Purpose

The FDC to trouble number (fdc2tn) table maps 4ESS FDCs to trouble numbers (IF you have trouble number grouping turned on). This table contains FDC mappings for TN grouping to be done automatically by the system. All fields in this table are key fields. A tilde, "~", in any key field causes the associated pair to be ignored. This table is pre-loaded with 4ESS FDCs. You could add other types of FDCs, if desired.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
fdc2tn	fdc1-fdc7	fdc	fdc

Key fields

A tilde, "~", in any key field causes the record's fdc-tn pair is to be ignored.

fdc1	(Key field) An FDC defined in the FDC table. This field is paired with the "type1" field. This value must exist in the fdc field of the fdc table. Field type: String of 7 printable characters.
type1	(Key field) The type of network entity alerted with fdc1. Values: "re" - reporting entity, "de" - distant entity, or "~" - fdc/type pair not applicable. Field type: Set Field (set of name values).
fdc2	(Key field) An FDC defined in the FDC table. This field is paired with the "type2" field. his value must exist in the fdc field of the fdc table. Field type: String of 7 printable characters.
type2	(Key field) The type of network entity alerted with fdc2. A tilde, "~", in any key field causes the associated pair to be ignored. Values: "re" - reporting entity, "de" - distant entity, or "~" - fdc/type pair not applicable. Field type: Set Field (set of name values).
fdc3	(Key field) An FDC defined in the FDC table. This field is paired with the "type3" field. This value must exist in the fdc field of the fdc table. Field type: String of 7 printable characters.
type3	(Key field) The type of network entity alerted with fdc3. Values: "re" - reporting entity, "de" - distant entity, or "~" - fdc/type pair not applicable. Field type: Set Field (set of name values).

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fdc4	(Key field) An FDC defined in the FDC table. This field is paired with the "type4" field. This value must exist in the fdc field of the fdc table. Field type: String of 7 printable characters.
type4	(Key field) The type of network entity alerted with fdc4. Values: "re" - reporting entity, "de" - distant entity, or "~" - fdc/type pair not applicable. Field type: Set Field (set of name values).
fdc5	(Key field) An FDC defined in the FDC table. This field is paired with the "type5" field. This value must exist in the fdc field of the fdc table. Field type: String of 7 printable characters.
type5	(Key field) The type of network entity alerted with fdc5. A tilde, "~", in any key field causes the associated pair to be ignored. Values: "re" - reporting entity, "de" - distant entity, or "~" - fdc/type pair not applicable. Field type: Set Field (set of name values).
fdc6	(Key field) An FDC defined in the FDC table. This field is paired with the "type6" field. A tilde, "~", in any key field causes the associated pair to be ignored. This value must exist in the fdc field of the fdc table. Field type: String of 7 printable characters.
type6	(Key field) The type of network entity alerted with fdc6. A tilde, "~", in any key field causes the associated pair to be ignored. Values: "re" - reporting entity, "de" - distant entity, or "~" - fdc/type pair not applicable. Field type: Set Field (set of name values).
fdc7	(Key field) An FDC defined in the FDC table. This field is paired with the "type7" field. This value must exist in the fdc field of the fdc table. Field type: String of 7 printable characters.
type7	(Key field) The type of network entity alerted with fdc7. Values: "re" - reporting entity, "de" - distant entity, or "~" - fdc/type pair not applicable. Field type: Set Field (set of name values).

fdccount Table

This is an output table, not a reference table. See Appendix A in the *GUI User's Guide*.

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fdcgroup Table

The FDC group (fdcgroup) table lists FDC groups so that you can then use the ["fdcgroupmap Table" on page A-58](#) to define the set of FDCs in each FDC group. Then you can assign users to FDC groups to help limit the output users see.

Reference

For procedures to define FDC groups, see ["Define FDC Groups" on page 7-17](#).

Field dependency

There are no fields in this table whose values must be defined in other tables.

name	(Key field) Provides a name for the fdc group. Field type: String of 10 printable characters.
description	A description of the fdc group. "-" means not applicable or no data available. Field type: String of 50 printable case-sensitive characters.

fdcgrouppmap Table

Purpose

The FDC group map (fdcgrouppmap) table defines the FDCs in each FDC group listed in the ["fdcgroup Table" on page A-57](#). You can then assign users to FDC groups to help limit the output users see.

Reference

For procedures to define FDC groups, see ["Define FDC Groups" on page 7-17](#).

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
fdcgrouppmap	fdcgroup	name	fdcgroup
	fdc	fdc	fdc

fdcgroup

(Key field) The user fdc group name. This value must exist in the name field of the fdcgroup table. When the entry to which this field refers is deleted, this record is also deleted. Field type: String of 10 printable characters.

fdc

(Key field) The FDC to be mapped to this FDC group. This value must exist in the fdc field of the fdc table. When the entry to which this field refers is deleted, this record is also deleted. Field type: String of 7 printable characters.

fdchelp Table

Purpose

The FDC help (fdchelp) table provides descriptions of final disposition codes. NTP displays these descriptions when GUI users access on-context help for entries in the FDC field.

Reference

A special procedure is required to **dbedit** this table because the description field can contain multiple lines, the records must be separated by a record separator, and an end-of-record designator may be used.

- For the procedure to **dbedit** the fdchelp table, see "[Edit FDC Help Text](#)" on page 9-14.
- For information about the end-of-record designator, see the **-r** option in "[dbedit Command](#)" on page 4-28.

Field dependency

There are no fields in this table whose values must be defined in other tables.

fdc

(Key field) The fdc. (This does NOT have to be defined in the Fdc table.) Field type: String of 7 printable characters.

description

The help text for the fdc. "-" means not applicable or no data available. Field type: String of 4000 mixed-case characters.

fdcp permit Table

Note

This table does NOT affect the BB-GUI. It affects only the SUI and the legacy X-GUI and AUI still used by some customers.

FDC assignments for the BB-GUI are handled separately through the Web User Information page. See "[Assign a BB-GUI user's FDC groups](#)" on page 6-41.

Purpose

The FDC permit (fdcp permit) table defines which FDC groups users can see. This table is modified when a new user is added and assigned to an FDC group other than "all". It is also modified when a user who has been assigned to all FDC groups is given a particular FDC group assignment.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
fdcp permit	fdcgroup	name	fdcgroup

sysuser

(Key field) A user login. This value must have been a login entry in the sysuser table. When the entry to which this field refers is deleted, this record is also deleted. Field type: String of 10 printable characters.

fdcgroup

(Key field) Names an FDC group that the user may belong to. The current FDC group is specified by the fdcgroup field in the sysuser table. This value must exist in the name field of the fdcgroup table. When the entry to which this field refers is deleted, this record is also deleted. Field type: String of 10 printable characters.

gtspec Table

Purpose

The global title specification (gtspec) table attempts to determine a CFIM's De (and sometimes Related) value if all else fails (such as when the De is not found in a routing table). It applies to all Retypes.

Caution

If you modify this table, do so ONLY with assistance from your NTP support organization. Also, Review [Chapter 13, "Update the gtspec Table"](#), before attempting to make changes to this database table.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
gtspec	st	type	st

pattern

(Key field) The global title pattern. Digits received from the CIM are matched against the pattern in this field in order to locate the appropriate gtspec record. Field type: String of 40 printable characters.

digtype

(Key field) The type of digits in the pattern. Values: "called" or "calling". Field type: Set Field (set of name values).

st

The service type associated with the pattern. This value must exist in the type field of the st table. "-" means not applicable or no data available. Field type: String of 5 mixed-case printable characters.

gk1

The primary global title record key used for searching the table specified in the rbd field. There must be a GT key specified in this field when a routing table is specified. "-" means not applicable or no data available. Field type: String of 30 printable characters.

gk2

The secondary global title record key used for searching the routing table specified in the rbd field, when the primary lookup fails. This field can be filled only when the gk1 field is filled. "-" means not applicable or no data available. Field type: String of 30 printable characters.

gk3

The tertiary global title record key used for searching the routing table specified in the rbd field, when the secondary lookup fails. This field can be filled only when the gk2 field is filled. "-" means not applicable or no data available. Field type: String of 30 printable characters.

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rd	The routing table associated with the global title record key pattern specified in the gk1, gk2, or gk3 fields. This field must have a routing table specified whenever these fields are specified. Values: adjroute, scproute, vproute or "-". Field type: Set Field (set of name values).
ck1	The primary global title record key pattern used for searching the customer table specified in the cdb field. There must be a GT key specified in this field when a customer table (cdb field) is specified. "-" means not applicable or no data available. Field type: String of 30 printable characters.
ck2	The secondary global title record key pattern used for searching the customer table specified in the cdb field, when the primary lookup fails. "-" means not applicable or no data available. Field type: String of 30 printable characters.
cdb	The customer table to which the ck1 or ck2 fields refer. Values: "custid", "vpnid", or "-". Field type: Set Field (set of name values).

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homedigits Table

Purpose

Not yet used for standard conversions, but available for CDR-type installations (F6306).

The homedigits table is used to identify the local or wireless service provider using the called or calling party digits.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
homedigits	ccd	ccd	country
	cic	cic	carrier

ccd

(Key field.) The country code for the country in which the service provider has been assigned the block of numbers specified in assigndigits. This is a key field in the homedigits table. This value must exist in the ccd field of the country table. Field Type: 3-digit numeric.

assigndigits

(Key field) Contains the digit block belonging to the service provider. This field is matched against the beginning digits in either the digits or cpdigits to determine the calling or called party's service provider. For example, if a service provider is assigned the block of numbers 6148603000 to 6148603999, the entry for this service provider in assigndigits should be 6148603. This is a key field in the homedigits table. Field Type: String of 18 printable characters.

cic

The carrier (service provider) identifier. Equivalent to the cic field in the cfim and owner tables. This value must exist in the cic field of the carrier table. Field Type: String of 6 printable characters.

id2ne Table

Purpose

Use if an Re is an AXE 10 (F6186).

Derives each CFIM's Re (reporting entity) field or De (distant entity) field from BILLDATS call detail records (CDRs).

That is, if the CDR identifies an Re or De with a code other than a traditional 11-character CLLI, this table converts that code to a CLLI. Specifically, if the code on the CDR is not found in swarch (Re field), then NTP brings the code to the id2ne table to map the code to a CLLI.

This is one of four tables (dcode2d, scode2sig, stcode2st, id2ne) dedicated to telling how to translate BILLDATS CIMs to CFIMs. Existing tables fdc and acode2fdc are also used.

Reference

See [Step 13](#) in "Add or modify an FDC" on page 5-60 for when this table is used.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
id2ne	ne	cli	swarch

id

(Key field) ID of the network element or route to the network element, as found on CDR CIMs. Field type: String of 15 printable characters.

ne

CLLI of the network element. Field type: String of 16 printable characters.

indkdial Table

Purpose

The incoming Datakit dial (indkdial) table defines all incoming Datakit interfaces to CIM sources. Sources in this table cannot appear in the intcpdial, outtcpdial, or outdkdial table. This table is used to tell NTP to LISTEN for the source to send data over Datakit.

Reference

To tell NTP to REQUEST the source to send data over Datakit, see ["outdkdial Table" on page A-100](#).

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
indkdial	source	name	source

Note

- **Refsynch.** This table is not synchronized by refsynch (see ["Reference Database Synchronization \(RDS\)" on page 15-1](#)).
- **Sources.** Consult with your NTP support organization to determine which table to use for a given CIM source. See [Chapter 14, "CIM Source Administration"](#) for guidelines.

Example

```
Source Active Origin1 Origin2
svcp0 y servcp00 -
```

source	(Key field) The name of the source dialing in to this interface. This value must exist in the name field of the source table. Field type: String of 8 printable characters.
active	Indicates whether this interface to this source is currently active (able to receive data from the source). Values: "y" or "n". Field type: Set Field (set of name values).
origin1	The primary dialstring used by the source to dial into the host. Format is a Datakit service name, which is a file name at /etc/opt/dk/srvtab. Field type: String of 30 printable characters.

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origin2

The secondary dialstring used by the source to dial into the host, if the primary is unsuccessful. Format is the same as for origin1. "-" means not applicable or no data available. Field type: String of 30 printable characters.

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intcpdial Table

Purpose

The incoming TCP dial (intcpdial) table defines all incoming TCP/IP interfaces to CIM sources. Sources in this table cannot appear in the outtcpdial, outdkdial, or indkdial table. This table is used to tell NTP to LISTEN for the source to send data over TCP/IP.

Reference

To tell NTP to REQUEST the source to send data over TCP/IP, see ["outtcpdial Table" on page A-102](#).

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
intcpdial	source	name	source

Note

- **Refsynch.** This table is not synchronized by refsynch (see ["Reference Database Synchronization \(RDS\)" on page 15-1](#)).
- **Sources.** Consult with your NTP support organization to determine which table to use for a given CIM source. See [Chapter 14, "CIM Source Administration"](#) for guidelines.

Example

In this example, the NTP host listens over its TCP port 3011 for data from a source with host name source sim0, which is known to NTP by the source name source02. (You must get the source host name and port number from the source administrator.)

```
Source Active Origin1      Origin2
source02  y           sourcesim0:3011 -
```

source

(Key field) Associates the incoming interface with an entry in the source table. This value must exist in the name field of the source table. Field type: String of 8 printable characters.

active

Indicates whether this interface to this source is currently active (system has been instructed to accept a connection from the source). Values: "y" or "n". Field type: Set Field (set of name values).

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origin1

The primary of two IP origin addresses for the CIM data source. Format is:
host_name:port where:

- Host name is the machine name of the data source (NOT an IP address). It must correspond to a host name in the NTP /etc/hosts file for translation into a valid IP address.
- Port is a value you defined for the listener port using **setsys** for a TCP_PORT_X variable, such as TPC_PORT_TOPS. To see what is defined, enter **sui setsys | grep TCP**

For this output, for example, you could use 3004 as a listener port:

```
TCP_PORT_TOPS          3004          0          integer
```

See "[System Variable Definition](#)" on page 8-87 for more information on the TCP_PORT_X variables.

Field type: String of 30 mixed-case printable characters.

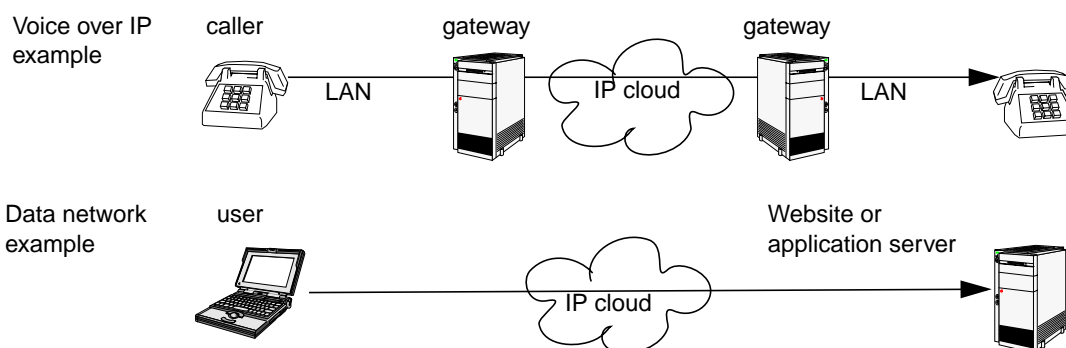
origin2

The secondary of two IP origin addresses for the CIM data source. Field format is the same as for origin1. "-" means not applicable or no data available. Field type: String of 30 mixed-case printable characters.

iparch Table

Purpose

Use if you have IPDR (internet protocol detail record) Re's (F6305). IPDRs report on data networks. NTP can process IPDR's as CIMs. This illustration shows typical networks monitored by a mediation system that creates IPDRs.



Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
iparch	owner	id	owner

ipaddress

(Key field.) IP address of the application server or web site. Field type: 15-character string.

servername

(Key field.) Name at the ipaddress. There can be more than one servername per ipaddress, so ipaddress-and-servername together are the key to this table. Field type: 50-character string.

servertype

Server type for what is at the ipaddress-and-servername. Field type: 20-character string.

owner

Owner for what is at the ipaddress-and-servername. This value must exist in the name field of the source table. Field type: 6-character string.

ai

(This field is ignored by flexible alerting, F6268.) The alerting indicator (ai) tells whether the system maintains thresholds and generates alerts for the ipaddress-and-servername. Values: "on" or "off". Field type: Set Field (set of name values).

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ixcarrier Table

Purpose

Use if you have Re's from Lucent Softswitch (F6314). Lucent Softswitch CIMs normally provide a CIC only if the call is routed through a transit (inter-exchange) carrier, such as MCI.

Use this to map multiple cic's to one carrier. For example, if carrier MCI (cic of 111111) has three IDs (aaaaaa, bbbbbb, and cccccc), enter the following in this table:

Ixcic	Cic
aaaaaa	111111
bbbbbb	111111
ccccc	111111

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
ixcarrier	cic	cic	carrier

ixcic (Key field.) Inter-exchange carrier id. More than one of these can map to one cic (next field) Field Type: 6-character string.

cic A service provider (carrier) identifier. For North American inter-exchange carriers. Equivalent to acna (access carrier name abbreviation). Equivalent to the cic field in carrier, cfim and owner tables. Field Type: 6-character string.

latacode Table

Note

Not table is yet used for standard conversions, but is available for CDR-type installations (F6306).

Purpose

The lata (local access and transport area) table identifies calling and called party LATAs. This table can be used in CDR-type installations to derive LATAs and areas.

Field dependency

There are no fields in this table whose values must be defined in other tables.

city_npa

(Key field.) The geographic city code or area code (Numbering Plan Area [NPA]). Field type: 5 characters.

coc

(Key field.) The central office code that, along with the value of the city_nap field, is used to route the call. Field type: 6 characters.

lata

The geographic local exchange region to which the routing number belongs. Field type: 5 characters.

lata2lata Table

This is an output table, not a reference table. See Appendix A in the *GUI User's Guide*.

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linkalert Table

This is an output table, not a reference table. See Appendix A in the *GUI User's Guide*.

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lrarch Table

Purpose

Use to define location registers, so they can be De's, for Re's that are either:

- An OSPS module on a 5ESS AUTOPLEX (F6234).
- An OTR module on a DMS MTX MSC (F6276, and LNP F6223)

This table is also used for Lucent Softswitch (F6314).

This table defines location register De's. Location registers are not switches, but are databases used to authenticate wireless calls. They can not be Re's.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
lrarch	cli	cli	swarch

cli

(Key field) The CLLI of the home or visitor location register. Field type: 16-character string.

dpc

Destination point code (dpc) uniquely identifies an entity within a network (actually, pc is a better name, since dpc for destination [or opc for origin] makes sense in the Cfm table only). Field type is 1-to-9 digit number. A dpc must be unique among the adjarch, swarch, scparch, and lrarch tables. See "[dpc](#)" on page A-143, in the swarch table, for more explanation.

ai

Alert indicator. (This field is ignored by flexible alerting, F6268.) Determines whether the system thresholds the switch. Values: "on" or "off". (If you change this field, you must run **sui modmat** to implement your change.) Field type: set values.

lrn2ne Table

Purpose

Used to derive the CFIM's Lrne field value, if an Re is:

- An OTR module on a DMS MTX MSC (F6276, and LNP F6223)
- From Lucent Softswitch (F6314)

The location routing number to network element (lrn2ne) table maps a location routing number to a network entity. If you see a "?" or an incorrect switch in a CFIM's Lrne field you may need to update this table.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
lrn2ne	ne	cli	swarch
		scpccli	scparch
		ne	stparch
		adjcli	adjarch
		area	ecosarch

Note

Field dependency NOT enforced. That is, even if you violate the rules in the table above, a dbedit update to the lrn2ne table's ne field WILL succeed. NTP leaves field dependency unenforced because you could also use a remote entity CLLI (in the lr2ne table's ne field), and there is no way to validate remote entity CLLIs. Even though field dependency is not enforced, you SHOULD ensure any CLLI used in the lrn2ne table's ne field is a valid CLLI--either according to the table above, or as a valid remote entity CLLI.

lrn

(Key field) The location routing number digits for each switch used to route LNP calls to the switch. Only digits (0 - 9) are permitted in this field. Field type: 10-character string.

ne

The CLLI of the switch corresponding to the LRN. Field type is string, up to 16 characters.

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lspcalendar Table

Purpose

This table is used for flexible alerting. The lsphours table assigns LSPs to each hour of each weekday, and each hour of Saturday and Sunday. But what if, for example, you want to threshold Labor Day (a Monday) as if were a weekend? Use this table to override. You could also create a special day type (such as h for holiday) in the lspdays table, and assign it here.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
lspcalendar	datatype	datatype	lspdays

Reference

Flexible alerting. See ["Flexible Thresholding and Alerting" on page 8-94.](#)

Example

Here is a record saying to use weekend LSPs on Labor Day:

```
20000904 W Use weekend LSPs
```

yyyymmdd

Date to which you are assigning the datatype to override the normal datatype. Field Type: String of 8 printable characters.

datatype

The datatype you are assigning to the yyyymmdd. Must be defined in the lspdays table. Field Type: String of 3 printable characters.

description

Description field. Field Type: String of 40 mixed case printable characters.

lspdays Table

Purpose

This table is used for flexible alerting to decide which days of the week are b (business), w (weekend), or other types you may create here. b and w are initial default types. You can have up to seven types.

Field dependency

There are no fields in this table whose values must be defined in other tables.

Reference

Flexible alerting. See "[Flexible Thresholding and Alerting](#)" on page 8-94.

dayweek

Either mon, tue, wed, thu, fri, sat or sun. Field type: Set of named values.

daytype

Type of day. Used in the lsphours table. Initial default is b (business) for mon to fri, and w (weekend) for sat and sun. You can have up to 7 daytypes. Field type: 1 to 3 characters.

lsphours Table

Purpose

This table is used for flexible alerting. It pairs each daytype with each hour, and assigns an ID to each pair. IDs are then used to create automatic thresholds for each period (in the `mean_xx` tables), or to assign a manual threshold (in the `man_thresh_xx` tables). In those tables, each Lspid actually consists of the pair of values in the first and last fields of this table.

Example

Since you have two initial default daytypes (b and w), and there are always 24 hours in a day (0 to 23), you must have 48 records, with the first two fields filled in as shown below. The third field you can fill in as shown, with a different Lspid for each "b" hour and for each "w" hour. This generates a different set of thresholds for each hour of "b" days, and each hour or "w" days.

```
Day Ho Lspid
b    0 0
b    1 1
b    2 2
b    3 3
(and so on, up to "b 23 23")
w    0 0
w    1 1
w    2 2
w    3 3
(and so on, up to "w 23 23")
```

In the Lspid field, you can reuse a number within the "b" hours, or separately within the "w" hours. For example, if you do this:

```
b    0 1
b    1 1
b    2 1
b    3 1
(and so on, up to "b 23 1")
w    0 1
w    1 1
w    2 1
w    3 1
(and so on, up to "w 23 1")
```

This generates just two sets of thresholds: A b1 set for all b hours, and a w1 set for all w hours.

In addition to all the *bnumber* and *wnumber* records, there will be one plain b record for the weekday daily mean, and one plain w record for the weekend daily mean.

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Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
lsphours	datatype	datatype	lspsdays

Reference

Flexible alerting. See "[Flexible Thresholding and Alerting](#)" on page 8-94.

daytype

Type of day you are pairing with each hour in the next field. You must use each datatype found in the lsphours table. Initial default is b (business) for mon to fri, and w (weekend) for sat and sun. Field type: 1 to 3 characters.

hour

For each datatype, you must have a record for each hour, 0 to 23. Field Type: 2 digit numeric.

lspid

Identifier (0, 1, 2, etc.) telling which LSP this daytype/hour is using for thresholding. (The mean_xx and man_thresh_xx tables use this in their lspid fields, but they ALWAYS includes the daytype. So if this lspid is 0, 1, 2, etc., lspid in those tables may be b0, b1, b2, etc. or w0, w1, w2 etc.) Note that with initial defaults, lspid and hour are always the same, but you can use the same lspid in multiple records to have fewer LSPs. Field Type: String of 5 printable characters.

man_thresh_xx Tables

Purpose

"Man_thresh_xx" refers to multiple tables, where xx is a flexible alerting FQ. For example, for flexible alerting on the cc FQ, there is a man_thresh_cc table. See "FQ fields" on page A-82 for the name of each table.

Use this table to override NTP's automatically created thresholds, if desired. Initially, this table holds no records. You add or change records as follows:

To do this	Use this procedure	To put these values in thr, max and min
Set manual threshold to replace automatically created thresholds	"Set a manual threshold" on page 8-28	A threshold value in thr. Max and min are ignored (so use "-" to remind you).
Limit how far a threshold can automatically adjust	"Limit LSP threshold adjustment" on page 8-100	A value in max, min, or both, in the same, or two records. You MUST put "-" in thr.
Turn off thresholds	"Turn off thresholds" on page 8-104	A "-" in thr, max and min.

Wildcards

In key fields, you can use "-" as a wildcard (NOT the "~" used in key fields in other tables). A wildcard means "match all values".

Wildcards in key fields in different records may overlap. For example, in man_thresh_cc you could see two records with the following values:

- at=5m, lspid=-, fdc=abc, ccd=-, thr=99, min=-, max=-
This means, for 5 minute intervals, for ALL LSPs, for FDC of abc, for all ccds, use a threshold of 99
- at=5m, lspid=1, fdc=abc, ccd=-, thr=11, min=-, max=-
Similar to above, but use threshold of 11 for LSP 1 ONLY.

So, the first record assigns threshold 99 to ALL LSPs, while the second assigns threshold 11 to LSP 1. And this is an overlap, assigning both 11 and 99 to LSP 1.

In this case, it is likely you really want to assign threshold of 99 to all BUT LSP 1, and threshold 11 to ONLY LSP 1—and that is how NTP interprets this overlap—as explained in the next table.

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Precedence

For how NTP interprets overlaps, see the rules of precedence in the following table. Our example is for the cc FQ.

Key Fields (“-” is wildcard) at lspid fdc ccd	Non-key fields (“-” is a null) thr min max	Precedence
5m 10 abc 99	Anything	First, since there is no wildcard in a key field.
A wildcard (“-”) in one or more fields.	- - -	Second, since “-” in all three is special, meaning no threshold.
	10 - -	Third, since a value in thr means any value in max or min is ignored. If more than one record is like this, use the smallest thr.
	- 5 10	Fourth. If more than one record is like this, use the smallest max and smallest min.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
man_thresh_xx	lspid	each unique pairing of values in the daytype and lspid fields, such as b0, b1, b2...w0, w1, w2...	lsphours
	FQ fields	See "FQ fields" on page A-82	

Note

- **buildthresh.** If you **dbedit** this table, for each lspid in records you edit, enter: **buildthresh** *lspid* If you fail to do this, manual thresholds you added will eventually take affect, but only AFTER the end of each affected LSP. Typically, this means waiting a week for a manual threshold to take affect.
- **Key fields.** Key fields are: at, lspid, and all FQ fields. You can assign a different manual threshold for each unique combination of values in these fields.
- **LSP.** Changes to this table take affect on LSP boundaries. See ["LSPs" on page 8-96](#)
- **Features.** different man_thresh_xx tables are from different features. For example, mean_cc and mean_rt are from F6268.

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Reference

- **mean_xx.** For each FQ there is a man_thresh_xx table and a mean_xx table (such as man_thresh_cc and mean_cc). See "[mean_xx Tables](#)" on page A-84.
- **Flexible alerting.** See "[Flexible Thresholding and Alerting](#)" on page 8-94.

at	(Key field.) Alert interval type. Either: <ul style="list-style-type: none"> ■ 5m — 5-minute alerts. ■ 1h — hourly alerts ■ 1d — system day alerts — used with daily lspd's — b and w (use only if system day alerting is activated for your system) <p>Field Type: Set values.</p>
modified	Date and time. The modified field format is YY/MM/DD HH:MM. Field Type: date/time.
lspid	(Key field.) Use each unique pairing of values in the daytype and lspd fields of the lsphours table (such as b0, b1, b2...w0, w1, w2...), plus a b alone for the daily business day, and w alone for daily weekend. A "-" in this field is a "match everything" wildcard. Field Type: String of 5 printable characters.
thr	Threshold for this FQ and lspd. If you put a value here, min and max are ignored. Field Type: 10 digit numeric.
min	Recall that NTP automatically adjusts thresholds at the end of each LSP. This sets a minimum value, below which an automatic threshold cannot be adjusted for this FQ. If you put a value in thr, min and max are ignored. Field Type: 10 digits.
max	Recall that NTP automatically adjusts thresholds at the end of each LSP. THIS sets a maximum value, above which an automatic threshold cannot be adjusted for this FQ. If you put a value in thr, min and max are ignored. Field Type: 10 digit numeric.
FQ fields	(Key fields.) A "-" in any of these fields is a "match everything" wildcard.

Table	Has these FQ fields
man_thresh_vol	re — The reporting entity that forwarded the CIM or the switching office determined to be the origination of the call. A "?" in this field indicates an unknown entity. This field must be a valid network entity. Field Type: String of 16 printable characters.

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Table	Has these FQ fields
man_thresh_cc	ccd — Country code (ccd) of calls. Range: 0 to 999. Field Type: 3 digit numeric. Each ccd must be in the country table.
	fdc — The type of call event . This value must have an fdc entry in the fdc table. Field Type: String of 7 printable characters.
man_thresh_rt	ccd — Same as above.
	fdc — Same as above.
	rt — The gateway switch used for the call. Field Type: String of 16 printable characters. Rt must be in the de2route and rtarch tables.

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mean_xx Tables

Purpose

"Mean_xx" refers to multiple tables, where xx is a flexible alerting FQ. For example, for flexible alerting on the cc FQ, there is a mean_cc table. See "[\(FQ fields\)](#)" on page A-86 for the name of each table.

NTP uses this table to automatically create thresholds for flexible alerting. That is, it accumulates a CFIM count in the count field, which NTP uses to create thresholds. (Thresholds are NOT shown here, but are in tables not visible to you.) For more details, see "[Soaks](#)" on page 8-101.

Records in this table are automatically created, but you might **dbedit** the following fields in this table:

- **accum** — Enter a bigger value (up to maximum) to shorten a soak in progress. See "[Shorten a soak in progress](#)" on page 8-103.
- **accum and count** — Enter 0 in both fields, to re-soak a threshold. See "[Re-soak](#)" on page 8-102.
- **frozen** — After a soak is complete, thresholds are still adjusted at the end of each LSP. Edit the frozen field, to freeze or unfreeze adjustment. See "[Freeze LSP threshold adjustment](#)" on page 8-100.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
mean_xx	lspid	each unique pairing of values in the daytype and lspid fields, such as b0, b1, b2...w0, w1, w2...	lsphours
	FQ fields	See " (FQ fields) " on page A-86	

Note

- **No wildcards.** Wildcards are not used in this table. For what we mean by wildcards, see "[Wildcards](#)" on page A-80.
- **Key fields.** Key fields are lspid and "[\(FQ fields\)](#)" on page A-86.
- **No "at" field?** Each corresponding man_thresh_xx table has the same key fields, plus the "at" (alert interval type) key field. Why is "at" missing from mean_xx? Because, mean_xx does NOT show thresholds for each "at". Instead, mean_xx shows only the count, from which the thresholds are automatically created. Those thresholds (for each "at") are in tables not visible to you.
- **Where are automatic thresholds?** Not here. See previous item.

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- **Features.** different mean_xx tables are from different features. For example, mean_cc and mean_rt are from F6268.

Reference

- **man_thresh_xx.** For each FQ there is a man_thresh_xx table and a mean_xx table (such as man_thresh_cc and mean_cc). See ["man_thresh_xx Tables" on page A-80](#).
- **Flexible alerting.** See ["Flexible Thresholding and Alerting" on page 8-94](#).

lspid

(Key field.) You see each unique pairing of values in the daytype and lspid fields of the lsphours table (such as b0, b1, b2...w0, w1, w2.). Field Type: String of 5 printable characters. In this field you see either:

- b — Weekday daily mean
- b0-b23 — Weekday hourly means.
- w — Weekend mean.
- w0-23 — Weekend hourly means

accum

Number of 5-minute intervals this FQ has soaked, from 0 up to a maximum. By default, maximum is 120, but may vary by FQ. To shorten a soak in progress, **dbedit** this table to set accum to maximum (see ["Shorten a soak in progress" on page 8-103](#)). To re-soak, **dbedit** this table to set both count and accum to 0 (see ["Re-soak" on page 8-102](#)). Field Type: 10 digit numeric.

frozen

You can **dbedit** this field to stop/start automatic updating of thresholds. Values:

- "y" — Freeze.
- "-" — Un-freeze.
- "u" — (You would NOT normally assign this value manually.) Flagged to show update is complete, telling NTP to create new thresholds, either at the next occurrence of this LSP, or when you enter the command **buildthresh lspd** (for example, for LSP1, **buildthresh 1**).

Field Type: Set Field (set of name values).

count

Average count per 5-minute interval. This is NOT the threshold, but is used to create thresholds in tables not visible to you. In those tables NTP creates different thresholds for each alert interval type (corresponding to the "at" field in the man_thresh_xx table). Field Type: 14 digit numeric.

fdc

The type of call event. This value must have an fdc entry in the fdc table. Field Type: String of 7 printable characters.

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(FQ fields)

(Key fields.) Each table is for a different FQ. For example, "man_thresh_cc" means there is a cc FQ.

This table	Has these FQ fields
mean_thresh_vol	re —The reporting entity that forwarded the CIM or the switching office determined to be the origination of the call. A "?" in this field indicates an unknown entity. This field must be a valid network entity. Field Type: String of 16 printable characters.
man_thresh_cc	ccd — Country code (ccd) of calls. Range: 0 to 999. Field Type: 3-digit numeric. Each ccd must be in the country table.
	fdc — The type of call event. This value must have an fdc entry in the fdc table. Field Type: String of 7 printable characters.
man_thresh_rt	ccd — Same as above.
	fdc — Same as above.
	rt — The gateway switch used for the call. Field Type: String of 16 printable characters. Rt must be in the de2route and rtarch tables.

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menutables Table

Purpose

The menu tables (menutables) table causes menu tables to appear in user interface menus.

The menutables table lists:

- Surveillance (output) tables, described in the *GUI User's Guide*.
- User-modifiable reference tables, described in this appendix

Note

Internal (“hidden”) tables. If a table is NOT listed in menutables, you can assume it is modified by internal processes and is not meant to be user-modifiable. See "[Internal \(“hidden”\) tables](#)" on page A-5 for more information on these tables.

Field dependency

There are no fields in this table whose values must be defined in other tables.

tablename

(Key field) Names tables that appear on the user interface menu listing table choices. Tables not listed here are still accessible but are not displayed as a choice. This value must exist in the tablename field of the tableschema table. Field type: String of 30 printable characters.

mcalert Table

This is an output table, not a reference table. See Appendix A in the *GUI User's Guide*.

netgroup Table

Purpose

The network group (netgroup) table lists network groups so that you can then use the ["netgroupmap Table" on page A-90](#) to define the network segments in the groups. You can then assign users to network groups to help limit the output they see.

Reference

For procedures to define network groups (and segments), see ["Define Network Groups and Segments" on page 7-27](#).

Field dependency

There are no fields in this table whose values must be defined in other tables.

name

(Key field) Assigns any name you want to give to a network group. Field type: String of 10 printable characters.

description

Provides a description of the network group. "-" means not applicable or no data available. Field type: String of 50 printable case-sensitive characters.

netgroupmap Table

Purpose

The network group map (netgroupmap) table lists the network segments in the network groups listed in the ["netgroup Table" on page A-89](#). You can then assign users to network groups to help limit the output they see.

Reference

For procedures to define network groups (and segments), see ["Define Network Groups and Segments" on page 7-27](#).

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
netgroupmap	netseg	name	netseg

netgroup

(Key field) The network segment group name. This value must exist in the name field of the netgroup table. When the entry to which this field refers is deleted, this record is also deleted. Field type: String of 10 printable characters.

netseg

(Key field) The name of a network segment to be mapped to this group. This value must exist in the name field of the netseg table. Field type: String of 10 printable characters.

netpermit Table

Note

This table does NOT affect the BB-GUI. It affects only the SUI and the legacy X-GUI and AUI still used by some customers.

Network group and segment assignments for the BB-GUI are handled separately through the Web User Information page. See ["Assign a BB-GUI user's network groups" on page 6-42](#).

Purpose

The network permit (netpermit) table defines which network groups and segments users can see. This table is modified when a new user is added and assigned to a group or segment other than "all". It is also modified when a user who has been assigned to all groups is given a particular segment or group assignment.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
netpermit	sysuser	login	sysuser
	netseg	name	netseg or netgroup

sysuser

(Key field) A user login. This value must have been a login entry in the sysuser table. When the entry to which this field refers is deleted, this record is also deleted. Field type: String of 10 printable characters.

netseg

(Key field) Specifies a network segment or network segment group that may be accessed by this user login. This field must be a valid network segment from the netseg table or network group from the netgroup table. When the entry to which this field refers is deleted, this record is also deleted. Field type: String of 10 printable characters.

netseg Table

Purpose

The network segment (neseq) table lists network segments so that you can then use the ["netsegmap Table" on page A-93](#) to define the Ne's in each segment. You can combine network segments into network groups and assign users to groups to help limit the output they see.

Reference

For procedures to define network segments (and groups), see ["Define Network Groups and Segments" on page 7-27](#).

Field dependency

There are no fields in this table whose values must be defined in other tables.

name

(Key field) Assigns any name you want to a network segment. Field type: String of 10 printable characters.

description

Provides a description of the network segment name. "-" means not applicable or no data available. Field type: String of 50 printable case-sensitive characters.

netsegmap Table

Purpose

The network segment map (netsegmap) table defines which network elements (Ne's) are in the network segments listed in the ["netseg Table" on page A-92](#). You can then group network segments into network groups and assign users to groups to help limit the output they see.

Reference

For procedures to define network segments (and groups), see ["Define Network Groups and Segments" on page 7-27](#).

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
netsegmap	netseg	name	netseg
	ne	cli	swarch
		scpccli	scparch
		ne	stparch
		adjcli	adjarch
		cli	lrarch (AUTOPLEX)
		area (one customer only)	ecosarch (one customer only)

netseg

(Key field) A network segment name. This name must be in the name field of the netseg table. If you delete the name from the netseg table, it is automatically deleted here too. Field type: String of 10 printable characters.

ne

(Key field) A network element belonging to the network segment. The entity must be a cli defined in swarch, an scpccli in scparch, an ne in stparch, or an adjcli in adjarch. A "?" in this field names the unknown entity. The "?" entity can be assigned to network segments so users can see alerts and cfims with a "?" in a network element field. The network segment "all" contains "?" by default. This field must be a valid network entity. When the entry to which this field refers is deleted, this record is also deleted. Field type is string, up to 16 characters.

type

Assigns a name to the type of network element named in the ne field. Values:

- sw - switch

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- stp - Signal Transfer Point
- scp - Service Control Point
- adj - adjunct
- ecos - ECOS area (one customer only)
- cell - cell base station, use this for AUTOPLEX reporting entities, which are entities in the rearch table that have autoplex in the Conv field.
- lr - location register, use this for location register distant entities, which are entities in the lrarch table. These are distant entities for AUTOPLEX reporting entities only (location registers are cellular database lookups, similar to SCPs for regular calls).
- "-" - null

Field type: Set Field (set of name values).

notify Table

Purpose

The notify table contains the list of responsible parties who are notified in the event of certain system failures and events. See ["Monitor err_status File" on page 11-9](#) and ["Monitor Oracle Database Size" on page 11-10](#) for information on the types of system events for which these parties will receive notification.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
notify	sysuser	login	sysuser

sysuser

(Key field) The user login of someone to be notified of system failures and events. This value must have been a login entry in the sysuser table. When the entry to which this field refers is deleted, this record is also deleted. Field type: String of 10 printable characters.

npt Table

Purpose

Use if you have 4ESS Re's. This table defines npt's (numbering plan types), so that:

- They can appear in the Npt field of 4ESS CFIMs.
- You can use them in the Npt field of the country table, which NTP uses to derive the Ccd (country code) field of 4ESS CFIMs.

Field dependency

There are no fields in this table whose values must be defined in other tables.

Note

Initially the npt table holds these records.

```
NPT;CIM_NPT;DESCRIPTION
nan;0;North American Numbering Plan
apn;1;Action Point Numbering Plan
int;-;International Numbering Plan
```

npt

(Key field.) Names a numbering plan types, so they can be used in the npt fields of cfim, country, and domain tables. Field Type: 3-character string.

cim_npt

This is an npt code as seen on 4ESS CIMs. F6262 maps this code to a value in the npt field, and uses that value in the npt field in the cfim and domain tables. Values:

- "0" - North American Numbering Plan
- "1" - Action Point Numbering Plan
- "-" - Unknown

Field Type: Set Field (set of name values).

description

Describes the npt. Field Type: 50-character string.

oline2st Table

Purpose

This table maps ISUP originating line codes to service type, to populate the CFIM's St (service type) field and is used if you have the Re's from the following conversions:

- EWSD switches(F6171)
- GeoProbe (F6272)
- IPDR (F6305)

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
oline2st	st	type	st

Note

GeoProbe. For GeoProbe (F6272), the following records must be in the oline2st table:

```
#oline; St
1; oper
2; oper
3; oper
4; oper
5; oper
10; pots
12; data
15; coin
224; emerg
225; emerg
```

oline

(Key field) An ISUP originating line code. Field type: 3 digits.

st

A service type code. Field type: 5 characters.

otr Table

This is an output table, not a reference table. See Appendix A in the *GUI User's Guide*.

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otr2fdc Table (optional)

Purpose

OTRs (operator trouble reports) can be mapped to FDCs and used in thresholding and alerting just as are any call failure or event messages. You can control how FDCs for OTRs are named and grouped. The otr2fdc table is installed with trouble codes 00-99 pre-installed.

Some OTR FDCs provided by TOPS LNP (F6223) do not have to be defined in this table, but put them here anyway, if you want them to appear in the optional OTR table. You can recognize which TOPS FDCs to put here—they are the ones that use the CFIM's Opn and Opid fields.

Reference

See [Step 13](#) in "Add or modify an FDC" on page 5-60 for when this table is used.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
otr2fdc	fdc	fdc	fdc

trb

(Key field) The actual value of the trouble code field in the OTR. Field type: String of 7 printable characters.

fdc

The FDC indicated by the trouble code. This value must exist in the fdc field of the fdc table. Field type: String of 7 printable characters.

oc

Tells whether an operator or customer encountered the problem. To determine which to put here, look at the trb field and decide if it indicates an operator or customer would have found the problem. Set Field (set of name values).

- c (customer encountered)
- o (operator encountered)

outdkdial Table

Purpose

The outgoing Datakit dial (outdkdial) table defines all outgoing Datakit interfaces to CIM sources. Sources in this table cannot appear in the intcpdial, outtcpdial, or indkdial table. This table is used to tell NTP to REQUEST the source to send data over Datakit.

Reference

To tell NTP to LISTEN for the source to send data over Datakit, see ["indkdial Table" on page A-65](#).

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
outdkdial	source	name	source

Note

- **Refsynch.** This table is not synchronized by refsynch (see ["Reference Database Synchronization \(RDS\)" on page 15-1](#)).
- **Sources.** Consult with your NTP support organization to determine which table to use for a given CIM source. See [Chapter 14, "CIM Source Administration"](#) for guidelines.

Example

```
Source Active Primary Dest1          Dest2 Redialmin Timeoutmin
src03  y          1          prodsim1.27.22 -      3          15
```

source	(Key field) The name of the CIM source this interface is dialing out to. This name must be defined in the name field of the source table. Field type: String of 8 printable characters.
active	Indicates whether this interface to this source is currently active (able to dial out). Values: "y" - yes or "n". Field type: Set Field (set of name values).
primary	Which of the two Datakit interface boards is to be used first in an attempt to dial out. Specify either 1 or 2; use 1 if there is only one board. "-" means not applicable or no data available. Field type: 1-digit numeric.
dest1	The first of two possible Datakit destination addresses (dialstrings) to be used in a try to reach the source. Field type: String of 30 printable characters.

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dest2	The second of two possible Datakit destination addresses (dialstrings) to be used in a try to reach the source. "-" means not applicable or no data available. Field type: String of 30 printable characters.
redialmin	The time (in minutes) to wait before redialing if the current dial attempt fails. Range: 1 to 120. "-" means not applicable or no data available. Field type: 3-digit numeric.
timeoutmin	The time (in minutes) that the source is to wait before closing the dial port if no messages of any kind are received. If set to "-", then the value of 15 minutes is used. Range: 5 to 120. "-" means not applicable or no data available. Field type: 3-digit numeric.

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outtcpdial Table

Purpose

The outgoing TCP dial (outtcpdial) table defines all outgoing TCP/IP connections to CIM sources. Sources in this table cannot appear in the intcpdial, outdkdial, or indkdial table. This table is used to tell NTP to REQUEST the source to send data over TCP/IP.

Reference

To tell NTP to LISTEN for the source to send data over TCP/IP, see ["intcpdial Table" on page A-67](#).

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
outtcpdial	source	name	source

Note

- **Refsynch.** This table is not synchronized by refsynch (see ["Reference Database Synchronization \(RDS\)" on page 15-1](#)).
- **Sources.** Consult with your NTP support organization to determine which table to use for a given CIM source. See [Chapter 14, "CIM Source Administration"](#) for guidelines.

Example

In this example, the NTP host requests data from a source with host name source02 over that machine's port 18762. This source is known to NTP by the source name nts02. (You must get the source host name and port number from the source administrator.)

```
Source Active Dest1          Dest2 Redialmin Timeoutmin
nts02  y      source02:18762 -      3          15
```

source

(Key field) The name of the CIM source for this interface. This value must exist in the name field of the source table. Field type: String of 8 printable characters.

active

Indicates whether this interface to this source is currently active (system has been instructed to establish a connection to the source). Values: "y" or "n". Field type: Set Field (set of name values).

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dest1

The first of two possible addresses to be used in trying to reach the CIM data source. This field must be of the format `host_name:port_id`, where:

- `host_name` is the machine name of the data source (NOT an IP address). For translation into a valid IP address, the `host_name` must correspond to a host name in the `/etc/hosts` file on the NTP host.
- `port_id` is the port number associated with the I/O.
 - For internal calls, it is a local port on the NTP host (set in the NTP `/etc/services` file).
 - For external calls, it is a port on the CIM data source that NTP calls to request data (obtained from the source administrator).

Field type: String of 30 mixed-case printable characters.

dest2

The second of two possible addresses to be used in trying to reach the CIM data source. The details are the same as for the `dest1` field.

Field type: String of 30 mixed-case printable characters.

"-" means not applicable or no data available. Field type: String of 30 mixed-case printable characters.

redialmin

The time (in minutes) to wait before retrying to connect to a CIM source if the current connection attempt fails. If there is no entry in this field, a default value of 1 minute is used for the wait time. Range: 1 to 120. "-" means not applicable or no data available. Field type: 3-digit numeric.

timeoutmin

The time (in multiples of 5 minutes) that the NTP host is to wait before closing the dial port if no messages of any kind are received. If there is no entry in this field, a default value of 15 minutes is used for the timeout period. Range: 5 to 120. "-" means not applicable or no data available. Field type: 3-digit numeric.

owner Table

Purpose

This table identifies the owner of a network element, whether Re or De. In other tables, such as swarch and iparch, you put owners in the owner field (to tell who owns what). Here the "id" field names each owner and the other fields define who each owner is.

Example

There should be a record in this table for your company. If your company is North East Telephone, the record would look like this:

```
id      name                      type      cic
NET     North East Telephone      owner     123
```

There would also have to be a record for each interexchange carrier that your network interfaces to. A record for one customer would look like this:

```
id      name                      type      cic
XYZ     XY&Z                      ic        288
```

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
ixcarrier	cic	cic	carrier

id (Key field) A code identifying an owner of network entities. Field type: 6-character string.

name The network entity owner name. "-" means not applicable or no data available. Field type: String of 50 printable case-sensitive characters.

type The classification of the owner. Values in this field are used in converting a CIM message into a CFIM record. This is a restricted list that the converter knows about. These values are converted to the corresponding call type and displayed in the Ct field of CFIMs. Field type: Set Field (set of name values). Values:

- int7 -- internationally owned entities that are CCS7 compatible
- intl -- internationally owned entities
- owner -- This is your company. Only ONE record has this value.
- cpe -- customer premises equipment
- dc -- direct connect entities

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- ic -- interexchange carrier owner entities
- itc -- independent telephone company owned entities
- - -- unknown

cic

The carrier identification code of the carrier. Range: 0 to 9999. Field type: 4-digit numeric.

Currently the cic field is not used. (The optional CIC field on Find Cfm Output gets its data directly from the CIM, without checking here.) You could populate this field for reference, to see which cic codes belong to which carriers.

pc2cli Table

Purpose

Some CIMs identify network elements by point codes (PCs), so NTP needs to know how to translate PCs to CLLIs. If there is just one PC per CLLI, you can add the CLLI to swarch, with the PC in swarch's Dpc field. But if there are multiple PC's per CLLI, you would need to use this table. Currently this table is required for:

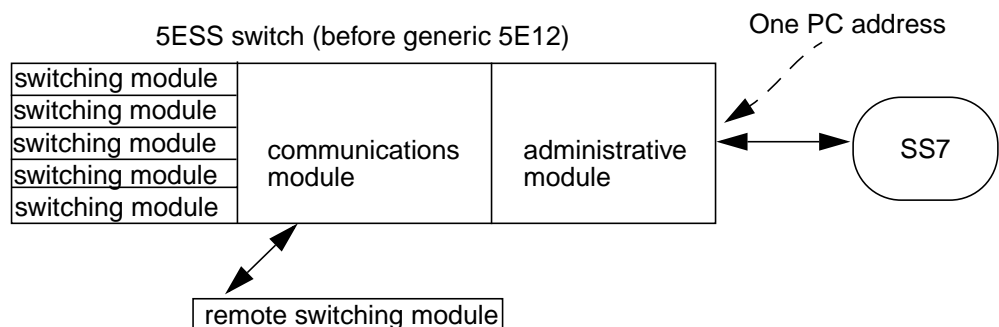
- GeoProbe (F6272)
- 5ESS. Only 5ESS switches in generic 5E12 or later can have multiple PCs. The 5E12 multiple PC feature is called "SS7 PSU on SM/ EXM2000"

If a switch has just ONE PC, we recommend you do NOT put the switch and its PC in this table. Instead, use the Dpc field of the swarch table.

But, if a switch has multiple PCs, put all of the switch's PCs in this table. (If you do this, what do you use in the Dpc field of the swarch table? Use a dash, or repeat a PC. You could even put one PC in Dpc of the swarch table, and remaining PCs in the pc2cli table, but that would be cumbersome.)

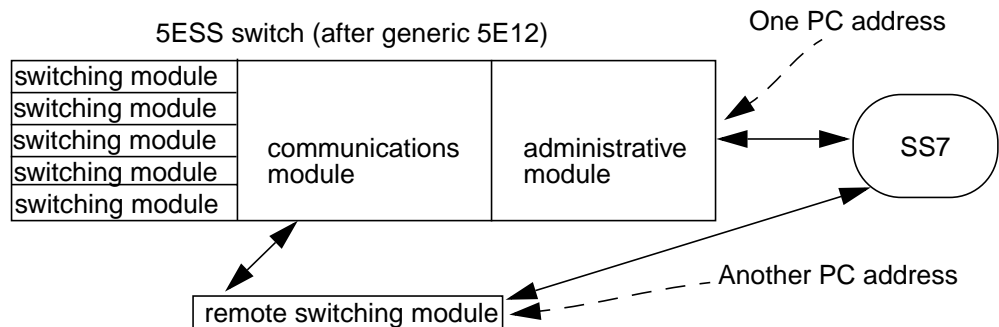
5ESS Illustration

This illustration shows a 5ESS Re with one PC address.



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This illustrates a 5ESS Re with multiple PC address. The switch can have a PC address for each remote switching module.



Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
pc2cli	cli	cli	swarch

pc

(Key field) Point code address for either:

- A De for GeoProbe (F6272)
- A 5ESS switch for one of the switch's remote switching modules.

Field type is 9-digits number. Format is three triplets for North American ANSI, padded with 0's as needed. For example, 002125202 means 002-125-202, means 2-125-202. The three parts are:

- Network indicator
- Cluster
- Cluster member

. See "[dpc](#)" on page A-143, in the swarch table, for more about point codes.

cli

CLLI code of a:

- A De for GeoProbe (F6272).
- 5ESS switch (that has one or more remote switching units with a separate PC).

Field type: String of 16 printable characters.

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potsroute Table

Purpose

Use if an Re is an:

- OSPS module on a 5ESS AUTOPLEX (F6234).
- OTR module on a DMS MTX MSC (F6276, and LNP F6223)

The POTS route (potsroute) table contains the association of a 10-digits plain old telephone service (POTS) to a network entity (NE). The first six digits (NPA_NXX) are used to uniquely identify an end office. In some cases, the seventh digit is used to identify an end office.

This works on a best-match algorithm. For example: A potsroute record with the six digits 614860 specifies an area code and exchange; another record with the digits 6148607 might specify a specific PBX within that exchange. Use two or more records to specify such distinctions. A CIM with the digit string 6148607465 would point to the record with the PBX as the network entity. A CIM with the digit string 6148604487 would match a record for the exchange network entity but not the PBX.

Reference

See [Step 13](#) in "[Add or modify an FDC](#)" on [page 5-60](#) for when this table is used.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
potsroute	ne	cli	swarch

digits

The first six or seven digits of POTS numbers necessary to identify the network entity. It can be up to 10-digit characters. Note that this is an actual digit string (from the called or calling number). This is NOT a pattern, and does NOT need to be specified as a pattern in the gtspec table. Field type: String of 10 printable characters.

ne

The CLLI code of the switching office associated with these digits. This value must exist in the cli field of the swarch table. Field type: String of 16 printable characters.

pptemplate Table

Note

This table affect Pattern Painter only.

Purpose

The pptemplate table is one of three tables that define templates that determine the graphical information displayed on Pattern Painter pages. (See also "[pptempmap_fdc Table](#)" on page A-111 and "[pptemp_columns Table](#)" on page A-112.) Pattern Painter runs in association with the BB-GUI) The graphics include two pie charts and a parabox.

Each entry in this table defines a template name. The entry also specifies the cfim field that Pattern Painter displays in each of the two pie charts, as well as the cfim field that Pattern Painter uses to select colors in the display. (For the cfim fields that Pattern Painter displays in the parabox, see "[pptemp_columns Table](#)" on page A-112.)

Background

Default template. The system provides a default template that Pattern Painter uses if no other templates are defined. (You cannot modify the default template.) Pattern Painter also uses the default template to display Finds involving multiple FDCs. But for Finds involving one FDC only, Pattern Painter uses whatever template you define for that FDC (see "[pptempmap_fdc Table](#)" on page A-111).

Reference

- See "[Customize Pattern Painter Displays](#)" on page 9-8 for when this table is used.
- For information on the cfim table, see Appendix A in the *GUI User's Guide*.
- See Chapter 7 of the *GUI User's Guide*. for information on Pattern Painter pages.

Field dependency

There are no fields in this table whose values must be defined in other tables.

template_name

(Key field) A template name. Field type: String of 20 printable characters.

l_piechart_key

The field from the cfim table that Pattern Painter displays in the left pie chart. (The default template uses the digits field. See "[Background](#)" on page A-109.) Field type: String of 30 printable characters.

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r_piechart_key	The field from the cfim table that Pattern Painter displays in the right pie chart. (The default template uses the cpdigits field. See " Background " on page A-109.) Field type: String of 30 printable characters.
color_key	The cfim field that Pattern Painter uses as the primary color field for both the parabox and pie charts. Field type: String of 30 printable characters.
description	This field is provided to include a description of the template. "-" means not applicable or no data available. Field type: String of 80 mixed-case printable characters.
last_modified_by	The user ID of the last person to modify the template. Field type: String of 20 printable characters.

pptempmap_fdc Table

Note

This table affect Pattern Painter only.

Purpose

The pptempmap_fdc table is one of three tables that define templates that determine the graphical information displayed on Pattern Painter pages. (See also "[pptemplate Table](#)" on page A-109 and "[pptemp_columns Table](#)" on page A-112.) Pattern Painter runs in association with the BB-GUI.

This table maps an FDC to a template. It defines the data Pattern Painter displays if a Find involves only one FDC.

Reference

- See "[Customize Pattern Painter Displays](#)" on page 9-8 for when this table is used.
- See Chapter 7 of the *GUI User's Guide* for information on Pattern Painter pages.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
pptempmap_fdc	fdc	fdc	fdc
	template_name	template_name	pptemplate

fdc

(Key field) The final disposition code (fdc) field contains an fdc defined in the fdc field of the fdc table. Field type: String of 7 printable characters.

template_name

A template name. This template must exist in the template_name field of the pptemplate table. If the entry to which this field refers is deleted, this record is also deleted. Field type: String of 20 printable characters.

pptemp_columns Table

Note

This table affect Pattern Painter only.

Purpose

The pptemp_columns table is one of three tables that define templates that determine the graphical information displayed on Pattern Painter pages. (See also "[pptemplate Table](#)" on page A-109 and "[pptempmap_fdc Table](#)" on page A-111.) Pattern painter runs in association with the BB-GUI.

This table lists all the cfim fields Pattern Painter displays in the parabox for a particular template.

Background

Default template. Currently, the default template (see "[Background](#)" on page A-109 for the pptemplate table) includes the following cfim fields: cpdigits, re, de, tgn, digits, etime.

Reference

- See "[Customize Pattern Painter Displays](#)" on page 9-8 for when this table is used.
- For information on the cfim table, see Appendix A in the *GUI User's Guide*.
- See Chapter 7 of the *GUI User's Guide*. for information on Pattern Painter pages.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
pptemp_columns	template_name	template_name	pptemplate

template_name

(Key field) A template name. This template must exist in the template_name field of the pptemplate table. If the entry to which this field refers is deleted, this record is also deleted. Field type: String of 20 printable characters.

parabox_col

(Key field) A field from the cfim table to be displayed in the parabox on the Pattern Painter page. Field type: String of 30 printable characters.

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recipagree Table

This is an output table, not a reference table. See Appendix A in the *GUI User's Guide*.

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rearch Table

Purpose

The reporting entity architecture (rearch) table defines network entities that send CIMs to NTP. These must also be in the swarch table.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
rearch	re	cli	swarch
	source	name	source

Note

Key fields. The re and source fields are both key, which means each record's re-source combination must be unique. Typically, you see no more than two records with the same re, and only if:

- One Re is has a regular source (NFM, CP, etc.). CIMs are regular.
- One Re is has a GeoProbe source (F6272). CIMs are CDRs.

re	(Key field) The network element ID of the Re, such as a CLLI code, a switch ID, or a server name. This value must exist in the cli field of the swarch table. Field type: String of 16 printable characters. If the switch is an OSPS module (on a 5ESS) or TOPS module (on a DMS), you probably already have a record for the 5ESS or DMS, using its CLLI. In that case, make up a fake CLLI for the module and use it here. See note, above.
source	(Key field) The ID interface where CIMs are collected. This value must exist in the name field of the source table. Field type: String of 8 printable characters. See note, above.
tag	When adding a record to this table: If Source is CP (meaning, the Re is a 4ESS switch) get this from the CP's LINK_STAT table. If Source is NOT CP, use dash. A tag that the CP maps to a 4ESS CLLI, so 4ESS CLLIs could use tags instead of CLLIs. (To save bandwidth, from the days when baud rates were much less, 4ESS's could use tags instead of CLLI codes). The tag field is required if the source type value is "CP". Get this value from a CP's LINK_STAT table (use the 4ESS link number in the link field). Range: 1 to 255. Field type: 3-digit numeric.
conv	The type of converter required to translate messages from the Re into a CFIM. Appears as CFIM's Retype. For configurable converter conversions, the standard NTP interface is used, rather than a specific converter.

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Nonetheless, the value in this field is important for interpreting Cfm output.
Values: :

For this type of Re Conversion	Conv is
1A ESS	1aess
4 ESS	4ess
5ESS	5ess
7R/E (F6259)	7re_pds
AUTOPLEX MSC (F6234)	autoplex
DMS-MTX (F6276)	dms-mtx
OTR (5ESS OSPS module)	osps
OTR (DMS TOPS module)	tops
DMS	dms ^a
EWSD (F6171)	ewsd
Succession SN02 (F6289)	dms
Any Re monitored by GeoProbe (F6272)	geoprobe
AXE 10 (F6186) ^b	axe10
AXE 10 TRADO (F6313)	axetrado
Lucent Softswitch (F6314)	softsw
Re's monitored by any mediation system creating IPDRs (internet protocol detail records) for data or voice-over-IP networks (F6305)	ipdr
Consultant- implemented configurable converter for the NTP standard interface (see your Lucent technologies support organization)	typically, ccc
<ul style="list-style-type: none"> ■ GeoProbe (F6272) ■ Any Re integrated through a converter you write for the universal interface (see Chapter 16, "Universal Interface"). 	univ
Currently not used.	gtd5
	s1240

a. **dms**. If dms in the Conv field means DMS conversion, then the source field will contain an EMS type source (to see if a source is EMS, look up the source in the source table, and see if Type is ems). If dms in the Conv field means Succession (F6289) conversion, then the source field will contain an SDM type source (to see if it is SDM type, look up the source in the source table, and see if Type is univ).

b. Previously, the value in the conv field for F6186 was "univ" (universal interface). Now, F6186 uses the configurable converter instead.

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Note

CFIM Retype. Many values above are seen in the CFIM's Retype and Detype, which come from the swarch table's Eqtype field. But, those values are NOT tied to this Conv field. In other words, if you put the wrong value in swarch, the wrong value appears in the CFIM's Retype or Detype, but otherwise, conversion is NOT affected — since conversion is tied to this Conv field.

Some values in this field are the same as the values in the type field in the ["source Table" on page A-137](#), and other tables and this can lead to confusion. The conv field here designates the software module NTP uses to translate data into a CFIM, and NOT the type of interface through which NTP receives the data.

down

When adding a record to this table, put a dash here. The down threshold. When the number of CIMs received from this Re via this source within the specified interval is equal to or lower than this threshold, then the status of the link is declared "down". The "down" value set must be less than or equal than the "degraded" value. System default: 0. Range: 0 to 999. Field type: 3-digit numeric.

degraded

When adding a record to this table, put a dash here. The degraded threshold. When the number of CIMs received from this Re via this source in the specified interval is equal to or lower than this threshold, then the status of the link is declared "degraded". The "degraded" value set must be greater than or equal to the "down" value. Default value: 2. Range 0 to 999. Field type: 3-digit numeric.

interval

When adding a record to this table, put a dash here. The interval in which CIMs are counted, for purposes of determining whether the count is at or below down or degraded thresholds. Intervals are in minutes and must be in increments of 5. For example, if an interval is 30 minutes (this field is set to 30), the count of CIMs includes all CIMs received in the last six five-minute blocks. In this way the count is being measured at the end of each five-minute block for the past 30 minutes, instead of starting a new count every 30 minutes. System default: 30. Range: 5 to 9995. Field type: 4-digit numeric.

calc

For basic alerting only. Identifies this re/source combination as the link that the automatic thresholding algorithm uses to suspend adjusting of the background noise threshold. Automatic thresholding keys on the re cli. Since the same re may send CIMs at diverse rates via different sources, use these guidelines for setting this field:

- When the rates for the same re via different sources are similar, each record should have this field set to 'yes'.
- When the rates for the same re via different sources vary significantly, only the record for the re/source expected to send the LARGEST volume of CIMs should have this field set to 'yes'.

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- Set this field to “no” if the record is for a source link delivering a low volume of CIMs (such as an OSPS module on a 5ESS sending manually-entered OTRs) and there is another link from the same source delivering a high volume of CIMs (such as common MDII and DSE messages from the 5ESS switch itself).

The historical mean used in thresholding is calculated based on the CLLI code of an Re. When there are two source links from a single entity, such as a 5ESS switch with an OSPS module, the count of CIMs from both sources is used in the calculation of the mean. The calc field indicates whether automatic threshold mean calculation should be suspended when the link from this source is determined to be down or degraded. In almost all cases it should.

Set field values: “y” or “n”. Field type: Set Field (set of name values, y or n, default y).

sampling

For CDR-type CIMs (F6306), set the CDR sampling percentage for the Re. For example, a value of 10 represents a sampling rate of 10%. A value of 100 represents a 100% sampling rate (no sampling). If the sampling rate is less than 1%, then sampling is set to 1. Range: 1 to 999. “-” means not applicable or no data available. Field Type: 3 digit numeric.

tz

For CDR-type CIMs (F6306) Re’s timezone. Use UNIX codes, such as:

- EST5EDT — Eastern Standard Time, Easter Daylight Time.
- EST5CDT — Eastern Standard Time, Central Daylight Time (Indiana)
- CST6CDT — Central Standard Time, Central Daylight Time.
- MST7MDT — Mountain Standard Time, Mountain Daylight Time.
- PST8PDT — Pacific Standard Time, Pacific Daylight Time.

Codes are found at:

- Sun — Some of the codes are file names at /usr/share/lib/zoneinfo, and some codes are in files there, such as in the asia, europe, southamerica, and northamerica files.
- HP — In the /usr/lib/tztab file.

. Field Type: String of up to 15 characters.

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referral Table

Purpose

This table is used by network managers (normally NOT by system administrators) to keep track of problem referrals.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
referral	ne	cli, scpccli, ne, adjcli, or area	swarch, scparch, stparch, adjarch or ecosarch
	fdc	fdc	fdc

ticket

(Key field) The ticket number (ticket) given by the analyst to the individual or support organization to whom the trouble has been referred. The ticket number identifies the referral. Type: String of 10 printable characters

refnum

The referral number (refnum) assigned to referral records (from 1 to 999,999) as they are created. Range: 1 to 999999. "-" means not applicable or no data available. Field type: 6-digit numeric

tn

The trouble number (tn) this record belongs to. Range: 1 to 65535. "-" means not applicable or no data available. Field type: 5-digit numeric

acn

The acase record number (acn) of the acase this referral record belongs to. Range: 1 to 65535. "-" means the field is not applicable or there is no data available. Field type: 5-digit numeric

ne

The CLLI of the network element (ne) this referral record applies to. A "?" in this field names an unknown entity. This field must be a valid network entity. "-" means not applicable or no data available. Field Type is string, up to 16 characters

type

The entity type (type) field defines the type of network element (ne). Values: "de" - distant entity, "re" - reporting entity, or "-". Field type: Set Field (set of name values).

mugc

The maintenance unit grouping code (mugc) identifies the maintenance force(s) responsible for the network element (ne). "-" means not applicable or no data available. Field type: String of 8 printable characters.

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fdc	The final disposition code (fdc) field contains the fdc obtained from the acase this referral record belongs to. This value must exist in the fdc field of the fdc table. "-" means not applicable or no data available. Field type: String of 7 printable characters.
rafting	The create date/time (reftime) field contains the combination of the date and time the referral record was created. The reftime field format is YY/MM/DD HH:MM. "-" means not applicable or no data available. Field type: date/time.
refto	The referred to (refto) field is for the name of the individual or support organization to whom the trouble has been referred. "-" means not applicable or no data available. Field type: String of 6 printable characters.
refby	The referred by (refby) field is for the name of the individual who made the referral and created the referral record. "-" means not applicable or no data available. Field type: String of 6 printable characters.
priority	The priority field names the category of importance of the problem. Range: 0 to 9. "-" means not applicable or no data available. Field type: 1-digit numeric.
resptime	The response date/time field contains the combination of the date and time the response was received. The resptime field format is YY/MM/DD HH:MM. Field type: date/time.
found	The trouble found (found) field contains information about the trouble found as reported by the maintenance forces. "-" means not applicable or no data available. Field type: String of 8 printable characters.
response	The response received from the maintenance forces. "-" means not applicable or no data available. Field type: String of 6 printable characters.
duration	The duration field contains the number of whole minutes that a referral record was open. The duration field can rang from 0 to 65535. "-" means not applicable or no data available. Field Type: 5-digit number.
comments	The comments field provides space for any notes entered by the person who created the referral record on the type of trouble found. "-" means not applicable or no data available. Field type: String of 50 printable characters

roaming Table

This is an output table, not a reference table. See Appendix A in the *GUI User's Guide*.

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route1a Table

Purpose

Use this if you have 1A ESS Re's. This table identifies distant entities for each reporting 1A ESS entity. The 1AESS route (route1a) table associates 1A ESS trunk groups with Distant Entities in order to support the 1A ESS switches as reporting entities (Re's).

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
route1a	cli	re	rearch
	de	cli	swarch

cli

(Key field) The CLLI code of the 1A ESS switch. This value must have been a re entry in the rearch table. Field type: String of 16 printable characters.

tgn

(Key field) The trunk group to the Distant Entity. Range: 0 to 9999. Field type: 4-digit numeric.

de

The CLLI code of the Distant Entity. This value must exist in the cli field of the swarch table. Field type: String of 16 printable characters.

route5e Table

Purpose

Maps an Re to its Des. Use if an Re is:

- 5ESS
- 7R/E PLS
- (5ESS) AUTOPLEX MSC (F6324)

For CFIMs from 5ESS switches (and other Re types that use the Route5e table, NTP uses this table to find the Re's De. Specifically, NTP looks in this table for the Re's CLLI and the CFIM's Tgn, and takes the corresponding De.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
route5e	cli	re	rearch
	de	cli	swarch

cli

(Key field) The 5ESS switch cli. This value must have been a re entry in the rearch table. Field type: String of 16 printable characters.

tgn

(Key field) The trunk group number (tgn) field identifies the trunk group to the De. (For 7R/E PLS Re's this is a "virtual" Tgn, for reference only. In reality, calls from a 7R/E PLS Re to a 7R/E PLS De are broken into packets and sent over various routes.) Range: 0 to 9999. Field type: 4-digit numeric.

de

The CLLI code of the De. This value must exist in the cli field of the swarch table. Field type: String of 16 printable characters.

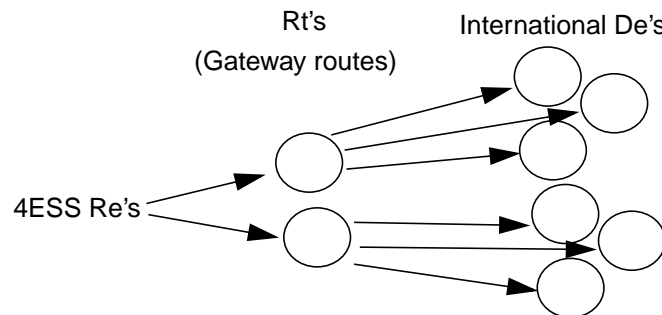
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rtarch Table

Purpose

Use this if you have 4ESS Re's, monitoring Rt's (country gateway route).

An Rt (from F6263) is a field on CFIMs. This table names international gateway routes (Rt's) so they can be mapped to De's in the de2route table. Rt-to-De routing is illustrated below.



Rtarch and De2route tables define the Rt field for 4ESS switches only. (Softswitch F6314 also populates the Rt field, on CFIMs, but does NOT use Rtarch and De2route tables.)

Field dependency

There are no fields in this table whose values must be defined in other tables.

Reference

Updating this table is explained at ["Add an Rt" on page 5-44](#).

rt

(Key field.) International gateway route between your Re and an international De. Field type: 16-character string.

samplingrate Table

Purpose

Use if you have 4ESS Re's. The sampling rate (sampling rate) table contains the sampling rate for all 4ESS reporting entities and the 4ESS CPs. The records for this table are automatically created by the system. This applies to 4ESS switches only.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
samplingrate	re	re	rearch
	fdc	fdc	fdc

re (Key field) The Re for which this samplingrate record applies. This value must have been a re entry in the rearch table. When the entry to which this field refers is deleted, this record is also deleted. Field type: String of 16 printable characters.

fdc (Key field) An fdc. This value must exist in the fdc field of the fdc table. When the entry to which this field refers is deleted, this record is also deleted. Field type: String of 7 printable characters.

rate The overall sampling rate of the reporting entities. The overall sampling rate for 4ESS switches is determined by multiplying the switch sampling rate with the CP sampling rate. For all other switches, it is just the CP sampling rate. Values: "0", "0.39", "0.78", "1.56", "3.125", "6.25", "12.50", "25.00", "50.00", "100.00". Field type: Set Field (set of name values).

cp rate The cp sampling rate. Values: "0", "6.25", "12.50", "25.00", "50.00", "100.00". Field type: Set Field (set of name values).

nerate For 4ESS reporting entities, this field reports the sampling rate in the 4ESS sampling message. For other switches, it is 100 (%). Values: "0", "6.25", "12.50", "25.00", "50.00", "100.00". Field type: Set Field (set of name values).

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scode2sig Table

Purpose

Use if you have Re's from AXE 10 (F6186). Derives CFIM's signaling type (sig field) from BILLDATS call detail record (CDR) CIMs.

This is one of four tables (dcode2d, scode2sig, stcode2st, id2ne) dedicated to telling how to translate BILLDATS CIMs to CFIMs. Existing tables fdc and acode2fdc are also used.

Reference

See [Step 13](#) in "Add or modify an FDC" on page 5-60 for when this table is used.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
scode2sig	signaling	type	signaling
	ne		

scode

(Key field) Signaling code as it appears in a BILLDATS CIM. Field type: String of 1 printable character.

sname

(Key field) BILLDATS CIM field that, in combination with an scode, defines a unique signaling type. Field type: String of 40 printable characters

signaling

Type of signaling defined for BILLDATS CIMs in the signaling table. The type of signaling defined here becomes the identifier for this specific signaling type. This field is the customer-defined signaling type for BILLDATS CIMs. It is often a unique combination of the actual code of the type of signaling and an associated field name. This value must exist in the type field of the signaling table. Field type: String of 6 printable characters

scparch Table

Purpose

Use this if you have 4ESS or DMS Retypes. The SCP architecture (scparch) table enables NTP to correctly fill in CFIM Rs and Ds fields, and enable's SCPs to be Re's.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
scparch	stp	ne	stparch

scpcli

(Key field) CLLI code of the SCP application. Note that several applications can be on the same SCP host (see scphost field). Field type is string, up to 16 characters.

matecli

CLLI code of the mate (secondary) SCP application. Field type is string, up to 16 characters.

scphost

CLLI of the SCP machine where one or more SCP applications run (see scpcli field). Field type is string, up to 16 characters.

pc2c

Destination point code (dpc) uniquely identifies an entity within a network (actually, pc is a better name, since dpc for destination [or opc for origin] makes sense in the Cfim table only). Field type is 1-to-9 digit number. A dpc must be unique among the adjarch, swarch, scparch, and lrarch tables. See ["dpc" on page A-143](#), in the swarch table, for more explanation.

As Global Title Translation for SDN traffic in the network transitions from STPs to the 4ESSs, it becomes necessary for NTP to identify SCP-related call events. Some 4ESS CIMs may include the identity of the NSCP that the switch was trying to query when the call event occurred. This enables NTP to identify the SCP as a Distant Entity in situations where the switch is attempting to query the SCP and before it has received a route command from the SCP. Note that once a call reaches a state where the 4ESS has received the route command, the SCP would no longer be the DE and the SCP identity is no longer needed in the CIM.

The CIM contains the NSCP identity in a field called the Destination Point Code (DPC). NTP looks up the DPC in the scparch database table to get the CLLI code of the SCP indicated by DPC as the DE. For this to work, you must populate the DPC fields in the scp arch records. If the CIM contains a DPC that is not matched by a record in scparch, an entry is logged in the incon log file.

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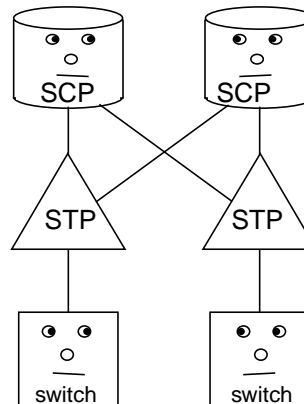
stp	The STP the SCP is homed on. Field type string, 4 alphanumeric characters. This stp must be in the ne field of a record in the stparch table before it can be used here.
ai	(This field is ignored by flexible alerting, F6268.) Alerting indicator (ai) that tells whether the system maintains thresholds and generates alerts for this network entity. Values: "on" or "off".
description	SCP type. Field type is string, up to 50 characters.

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scproute Table

Purpose

Use this if you have 4ESS or DMS Re's. The SCP route (scproute) table maps digits to SCPs, so NTP can identify SCPs as De's to 4ESS or DMS Re's. An SCP is actually a pair of databases, used by a pair of STPs (signal transfer points), which supply signalling (SS7) data to network elements such as switches.



Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
scproute	scpccli	scpccli	scparch
	signet	name	signet

Note

SNAP. With 4ESS switches, if you have access to SNAP (signaling network architecture platform, formerly called CINTAS), you can have SNAP send you periodic updates, in the form of 3 and 6-digit GTRK mapping data. Once you receive this SNAP data, run this script to use the data to update 4ESS entries in scproute:

```
$APPLBIN/Snap input_filename
```

You can also run this script from cron. In \$LOGDATA, updates are logged in snlog and errors in snerr.

digits

(Key field) The global title digits pattern of the called number for this SCP application. Field type: String of 10 printable characters.

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signet	(Key field) The name of the signaling network to which the SCP belongs. This value must exist in the name field of the signet table. Field type: String of 10 printable characters.
scpcli	The scpcli field contains the SCP machine CLI code. This value must exist in the scpcli field of the scparch table. "-" means not applicable or no data available. Field type is string, up to 16 characters.

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sdthresh Table

Note

This table is used only if system day thresholding is activated for your system.

Purpose

The system day threshold (sdthresh) table contains individual system day thresholds overriding the system day default threshold. Putting an Re or FDC in this table does NOT cause it to use system day thresholding (in place of normal 5-minute and hourly thresholding). To do that, you would go to the FDC table and put d in the tm field. Then, if you want to set system day thresholds for the FDC (in place of the default system day threshold), use this table.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
sdthresh	fdc	fdc	fdc
	ne	cli, scpcli, ne, adjcli, or area	swarch, scparch, stparch, adjarch, or ecosarch

ne

(Key field) A "~" in this field is a "match everything" wildcard. Contains the network entity that can be alerted on. A "?" in this field names the unknown entity. The "?" entity can be assigned to network segments so users will see alerts and cfims with a "?" in a network element field. The network segment "all" contains "?" by default. This field must be a valid network entity. Field type: String of 16 printable characters.

fdc

(Key field) A "~" in this field is a "match everything" wildcard. The final disposition code (fdc) defines the type of call event detected. This value must exist in the fdc field of the fdc table. Field type: String of 7 printable characters.

rethresh

The system day threshold value for the entity type RE. Range: 0 to 65535. "-" means not applicable or no data available. Field type: 5-digit numeric.

dethresh

The system day threshold value for the entity type DE. Range: 0 to 65535. "-" means not applicable or no data available. Field type: 5-digit numeric.

sdtttype Table

Purpose

Use if you have 4ESS Re's. The segmentation directory transition type table (sdtttype) translates a CIM's 1- or 2-digit SDTT ID code into the CFIMs 10-character sdtt name.

Example: One customer is moving call routing and servicing from 4ESS switches to a separate processor. There calls are routed or serviced using the Segmentation Directory (SD). On 4ESS CIMs, a 1- or 2-digit code labelled SDTT (Segmentation Directory Transition Type) identifies the routing or servicing the SD did for the call. On 4ESS CFIMs, instead of a 1- or 2-digit SD code, NTP gives a name in a 4-character field named sdtt. If users need an explanation for an sdtt, they can look up its description in the sdtttype table.

Services under (or scheduled to be under) SDTT include:

- SDN — Software defined network
- USDS — Universal subscriber data structure
- POTS — Plain old telephone service
- PCPC — Positive call processing cellular
- SDS — Switched digital services
- IPCC — True Voice ANI indicator controlling True Voice ANI individual per Call Control (formerly in the 4ESS switch ANI trigger table)
- CSRO — True Voice ANI indicator controlling Customer Specific Routing Option for switched access direct customers (formerly in the 4ESS switch ANI trigger table)
- DL — 1+Directory Link Blocking indicator for directory assistance calls (formerly in the 4ESS switch ANI trigger table)
- QuiteHear indicator for 1-800-ATT calls (formerly in the 4ESS switch ANI trigger table)
- CPPA — Calling party pays airtime indicator for EasyReach 500 calls (formerly in the 4ESS switch ANI trigger table)

Field dependency

There are no fields in this table whose values must be defined in other tables.

sdttid

(Key field) An ID code, 0 to 99, standing for the call processing done at the SD. This field's value is from the SDTT field of the CIM. See 4ESS systems engineers for these codes. Field type: 2-character digits.

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sdttname	The name of the sdttname that appears on the sdtt field of the CFIM. Field type: 4 character alphanumeric.
description	A description of the sdttid. Field type: 40-character alphanumeric.

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searchalias Table

Purpose

The search alias (searchalias) table lists the 4-character aliases for the network entities (except STPs). Network administrators can use aliases in place of CLLIs.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
searchalias	ne	"cli" type fields (this has different names in the tables at right)	swarch, scparch, ecosarch, or adjarch

nealias

(Key field) A 4-character abbreviation for a network entity. This field cannot contain meta-characters. Field type: String of 4 alphanumeric characters. (exactly 4 characters)

ne

The CLLI of the network entity. Field type: String of 16 printable characters.

type

The type of the network entity. Values: "scp", "sw", "adj". Field type: Set Field (set of name values).

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service Table

This is an output table, not a reference table. See Appendix A in the *GUI User's Guide*.

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signaling Table

Purpose

You may edit this when you implement any conversion (1AESS, 4ESS, IPDR, etc.), since when you add a new Retype, you also add its FDCs, and you can map any FDC to a signalling type—in the FDC table's sig field—and what you put in that field must first be defined here. What you put in that field is output to the signaling field of any CFIM with the FDC.

Signaling types must be defined here in the type field before they can be used in the:

- dmsroute table's sig field
- ess1a2fdc table's sig field
- fdc table's sig field
- scode2sig table's signalling field
- univroute table's sig field

This table is populated with standard signaling types at installation.

Field dependency

There are no fields in this table whose values must be defined in other tables.

type	(Key field) Names the type of signaling involved in the event . It is used by the system to indicate whether to peg an STP for event with inband and other non-SS7 signaling. Field type: String of 6 printable characters. Type "-" means data is unavailable.
stpinv	Tells whether an stp is involved in the signaling. Values: "y" or "n". Field type: Set Field (set of name values). For type "-", stpinv is "y".
description	A description of the signaling. Field type: String of 60 printable case-sensitive characters.

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signet Table

Purpose

Use this if you use the multiple signaling networks feature to identify SCPs as De's although they are in different signaling networks.

Signaling networks must be defined in the name field here before they can be used in the signet field in these tables:

- stparch
- adjroute

Without this feature, determining SCP-De's can be problematic, since calls with the same digit string may have different translations and may be routed to different SCPs, depending on which network is the location of the originating Service Switching Point (SSP).

For example, an 800 number that can be called by customers in two signaling networks may be translated by a different SCP pair, depending on where the call originates. NTP can determine the correct SCP pair by identifying the signaling network of the originating call in the stparch table, and using that as a key for a lookup in a routing table. This feature is necessary if the same translation may be performed by different SCPs—that is, if NTP is monitoring more than one signalling network (including disaster recovery schemes in which NTP monitors a secondary network).

If you do not use this feature, still leave the preloaded values in the table. This table can have up to 4 records, for 4 supported networks.

Field dependency

There are no fields in this table whose values must be defined in other tables.

name	(Key field) The signaling network name. Field type: String of 10 printable characters.
description	A description of the signaling network name. "-" means not applicable or no data available. Field type: String of 50 printable case-sensitive characters.

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source Table

Purpose

The source table names and identifies the CIM sources (collectors, interfaces) connected to NTP through which NTP receives data for Re's. Sources include element management systems, mediation systems, and direct interfaces.

Field dependency

- For customers who do NOT use RDS (reference data synchronization — F6214, refsynch), there are NO field dependencies.
- For customers who DO use RDS, the following field dependency applies for this table.

In table...	Before you put a value in field...	That value must be in field...	In table...
source	name	name	bdrhost

Note

- **RDS.** This table is NOT synchronized by refsynch (see ["What data is synchronized for RDS?" on page 15-3](#)).
- **Sources and converters.** For interfaces requiring specialized converters, the value in the type field in this table may resemble the value in the conv field in the ["rearch Table" on page A-114](#), and this can lead to confusion. The type field here designates the type of source from which NTP receives data and NOT the software module (converter) NTP uses to convert CIMs to CFIMs.
- **One source per Re.** For some interfaces you must add a SEPARATE source for EACH Re. This is because NTP cannot identify the Re without relating it to a unique source.
 - Direct OTR TOPS or OSPS interface (For OTR interfaces through an EMS such as NFM, multiple Re's can use the same source.)
 - Succession SN02 interface (F6289)
 - Some custom interfaces (typically direct)

Reference

For information on which Re's can use which source types, see ["Source Types and Re's" on page 14-8](#).

name (Key field) The customer-determined name of the data source, for example cpnorth, bdat03, trado5. Field type: String of 8 printable characters.

type The type of source. Field type: Set Field (set of name values). Values are as follows.

Note

Conversions (research conv field). The appropriate conversion must be specified for each Re that uses a source. See the conv field in the ["research Table" on page A-114](#). A separate source must be configured for EACH Re in some cases.

Value	Description	Used for these conversions...	Supports
ems	EMS (element management system), such as NFM or NOC1 Note All Re's with data collected by the same ems-type source must use the SAME conversion — for example 5ess OR 1aess, but NOT both. See the conv field in the "research Table" on page A-114 for information on conversions.	<ul style="list-style-type: none"> ■ 1A ESS ■ 5ESS ■ 7R/E PLS (F6259) ■ AUTOPLEX MSC (F6234) ■ DMS MTX MSC (F6276) ■ OTR OSPS or TOPS module through NFM — also see osps and tops direct interfaces below ■ EWSD (F6171) 	Multiple Re's
cp	Communications processor (CP)	4ESS	Multiple Re's
ccc	The source sends data in a format acceptable to NTP's standard interface driver (configurable converter conversion) Note For more information on formats, see the format field in the "bildtsroll Table" on page A-16 .	<ul style="list-style-type: none"> ■ AXE 10 (F6186) ■ AXE 10 TRADO (F6313) ■ Lucent Softswitch (F6314) ■ IPDR (F6305) ■ Other CDR-type conversions custom-configured through your NTP support organization (F6306) 	Multiple Re's
osps	OSPS (operator service position system) module, 5ESS switch	OTR OSPS direct interface — see also EMS interface above	One source per Re
tops	TOPS (traffic operator position system) module, DMS switch	OTR TOPS direct interface — see also EMS interface above	One source per Re

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Value	Description	Used for these conversions...	Supports
univ	Universal interface feature	DMS and Succession SN02 (F6289) via an SDM (supernode data manager) source	One source per Re
		GeoProbe (F6272)	Multiple Re's
		Sources custom-configured through the universal interface (Chapter 16, "Universal Interface")	Consult your NTP support organization

bdrhost

(For F6214, refsynch, only) The host to which this source normally delivers data. This value must exist in the name field of the bdrhost table. "-" means not applicable or no data available. For RDS, this is always the host where you are logged in. Field type: String of 11 printable characters.

st Table

Purpose

This table defines service types known to NTP. A service type must be defined here before it can be used in the `fdc`, `gtspec`, `domain`, `cos` (class of service) or `stcode2st` table. This table is used for the following conversions:

- EWSD (6171)
- GeoProbe (F6272)
- AXE 10 (BILLDATS F6186)
- AXE 10 TRADO (F6313)
- Lucent Softswitch (F6314)
- IPDRs (F6305)

Field dependency

There are no fields in this table whose values must be defined in other tables.

type

(Key field) The service type (`st`) of the call involved in the message. Field type: String of 5 mixed-case, printable characters.

description

The description of the service type. "-" means not applicable or no data available. Field type: String of 50 mixed-case printable characters.

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stcode2st Table

Purpose

This table derives a CFIM's service type (st field) from CDRs or IPDRs. This table is used for the following conversions:

- AXE 10 (F6186) (This is one of six tables [fdc, acode2fdc, dcode2d, scode2sig, stcode2st, id2ne] that translate BILLDATS CIMs to CFIMs.)
- AXE 10 TRADO (F6313)
- Lucent Softswitch (F6314)
- IPDR (F6305)

Reference

See [Step 13](#) in "Add or modify an FDC" on page 5-60 for when this table is used.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
stcode2st	st	type	st

stcode

(Key field) Service type code as found in a CIM. Field type: String of 4 printable

stname

(Key field) Field of CIM that, in combination with an stcode, defines a unique service type. Field type: String of 40 printable characters.

st

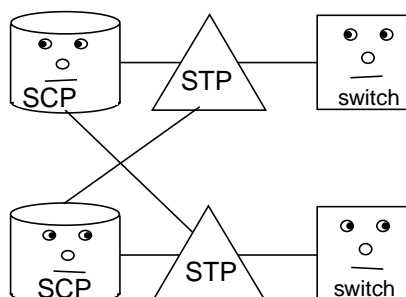
The service type for CIMs in the st table. The service type defined here becomes the identifier for this specific service type. This field is the customer-defined service type for CIMs. It is often a unique combination of the actual code of the service type and an associated field name. This value must exist in the type field of the st table. Field type: String of 5 mixed-case printable characters.

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stparch Table

Purpose

Populate this table so that you will see values in the CLLI fields Rs and Ds.



The STP architecture (stparch) table maps an STP ID to the CLLI code of each STP pair. The record includes the ID for the hierarchical STP pair, the signaling network the STP is in, and the owner of the STP. An STP pair must be defined by a record in stparch before it can be used in the stp field of a swarch record (note that both members of the pair are defined by one record).

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
stparch	owner	id	owner
	signet	name	signet

ne (Key field) The ID of the STP pair. Field type: String of 4 printable characters.

clli1 The CLLI code of one STP in the pair. "-" means not applicable or no data available. Field type: String of 16 printable characters.

clli2 The CLLI code of the other STP in the pair. "-" means not applicable or no data available. Field type: String of 16 printable characters.

owner The owner of the STP pair. This value must exist in the id field of the owner table. Field type: String of 6 printable characters.

signet The name of the signaling network to which this STP belongs. This value must exist in the name field of the signet table. Field type: String of 10 printable characters.

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swarch Table

Purpose

The switch architecture (swarch) table defines all Re's known to the system, and most De's (see ["Arch" and route tables](#) on page 5-6 for full details).

Note

OTR TOPS DMS "fake" CLLI's. For OTR TOPS modules on DMS switches as Re's, if you already added to swarch the DMS switch on which a TOPS module resides, then add the TOPS module with a fake value in the clii field.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
swarch	clii (See AXE10 (F6186) note, below.)		
	eqtype	type	eqtype
	stp	ne	stparch
	owner	id	owner
	ccd	ccd	country

clii

(Key field) The network element ID of the Re, such as a CLLI code, a switch ID, or a server name. Field type: String of 16 printable characters, including underscore.

Note

AXE 10 (F6186). With this conversion, if the entity ID (from the CDR CIM) is a traditional 11-character CLLI, use it here. If the ID is not a CLLI, **dbedit** a new id2ne record to map the ID to a CLLI, and use the CLLI here.

ccd

Optional. Country code of an international De. 1, 2 or 3 digits. Used when Re is 4ESS (F6262), or is any switch from GeoProbe (F6272), to fill in the CFIM's ccd (country code) field. To see which countries the codes refer to, see ["country Table" on page A-30](#). Field Type: 3 digit numeric.

dpc

Destination point code (dpc) that uniquely identifies an entity within a network (Actually, pc is a better name, since dpc for destination, or opc for origin, makes sense in the cfim table only.) A dpc must be unique among the "arch" tables (adjarch, swarch, scparch, lrarch). Field type: 1-to-9 digit number.

(If a 5ESS switch has more than one point code, see ["pc2cli Table" on page A-106](#).)

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Format represents either:

- Three triplets for North American ANSI, padded with 0's as needed. For example, 002125202 means 002-125-202, means 2-125-202. The three parts are:
 - network indicator
 - cluster
 - cluster member
- For one customer only: Four parts for your internal representation, where the first and fourth parts can have leading zeros, but the second part (always one character) and third (always 2 characters) are combined in one triplet. For example, 012122032 means, 012-122-032, means 012-1-22-032, means 12-1-22-32.
- Three triplets for international ITU, padded with zeros, as needed. For example, 007002006 means 7-2-6. The first number is 3 bits (so, up to 7), the second up to 8 bits (so, up to 255) and the third up to 3 bits (so, up to 7).
- 1-to-5 digits for international ITU. For example, 123 means 123.

If you are adding an Re monitored by GeoProbe (F6272) or Lucent Softswitch (6314), you must populate the Dpc field so that De's can be derived.

eqtype

Entity's type. What you put here appears in the retype or detype field of CFIMs. The value for this field must be defined in the type field of the eqtype table. "-" means not applicable or no data available.

Note

You might think that, if an Re's source (in the source table) is type univ, you need to put univ here. No. Here put whatever the eqtype really is. If it is not yet in the eqtype table, go ahead and **dbedit** to add it there.

stp

The STP the Re is homed on. This value must exist in the ne field of the stparch table. "-" means not applicable or no data available. Field type: String of 4 printable characters.

owner

The owner of the entity. This value must exist in the id field of the owner table. Field type: String of 6 printable characters.

hnpa

For U.S. entities, this is the 3-digit NPA (area code). For international entities, this is the 1-to-5-digit city code, country code, or both. Do NOT use leading zeros to pad the field to 5 digits. Field type: 5-digit numeric.

ai

(This field is ignored by flexible alerting, F6268.) The alert indicator (ai) that determines whether the system thresholds the entity. Values: "on" or "off". (If

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you change this field, you must run **sui modmat** to implement your change.)
Field type: set values.

ipaddress

IP address of the network element. Fill this in if the record is to be used for:

- IPDR (F6305), identifies De's.
- AXE TRADO (F6313)
- Softswitch (F6314)

.Type: String of 15 printable characters.

description

Description of the switch. Field type: String of up to 50 characters.

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sysuser Table

Purpose

The system user (sysuser) table lists NTP users. It is populated when NTP users are added or deleted (see ["add_ntpuser Command" on page 6-24](#) and ["del_ntpuser Command" on page 6-28](#)).

Note

The following fields do NOT affect the BB-GUI. They do, however, affect the SUI (and the legacy AUI and X-GUI still used by a few customers): cmdgroup, fdcgroup, netgroup, restricted. For affected users, this table is modified by the ["mod_cmdgrp command" on page 7-13](#), ["mod_fdcgrp command" on page 7-21](#), and ["mod_netgrp command" on page 7-33](#). The equivalent attributes (except command groups) are set SEPARATELY for the Bb-GUI.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
sysuser	cmdgroup	name	cmdgroup
	fdcgroup	name	fdcgroup

login

(Key field) The user login. Field type: String of 10 printable characters.

name

The user's name or description. "-" means not applicable or no data available. Field type: String of 30 printable case-sensitive characters.

cmdgroup

(This field does not affect the BB-GUI, which does not support command groups. It does, however, affect the SUI (and the legacy AUI and X-GUI still used by a few customers). It contains the attribute set with the ["add_ntpuser Command" on page 6-24](#).) The name of the set of commands available to this user. Command groups are defined in the cmdgroup table and mapped to commands in the cmdgroupmap table. This value must exist in the name field of the cmdgroup table. Field type: String of 10 printable characters.

fdcgroup

(This field does not affect the BB-GUI. It does, however, affect the SUI and the legacy AUI and X-GUI still used by a few customers. It initially contains the attribute set with the ["add_ntpuser Command" on page 6-24](#).) The name of the set of FDCs which this user is currently monitoring. FDC groups are defined in the fdcgroup table and mapped to sets of FDCs in the fdcgroupmap table. This value must exist in the name field of the fdcgroup table. "-" means **all** FDC groups. Field type: String of 10 printable characters.

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netgroup

(This field does not affect the BB-GUI. It does, however, affect the SUI and the legacy AUI and X-GUI still used by a few customers. It initially contains the attribute set with the ["add_ntpuser Command" on page 6-24.](#)) The name of the network segment or segment group that the user is currently monitoring. This field must be a valid network segment or group. "-" means **all** network groups and segments. Field type: String of 10 printable characters.

restricted

(This field does not affect the BB-GUI. It does, however, affect the SUI and the legacy AUI and X-GUI still used by a few customers. It initially contains the attribute set with the ["add_ntpuser Command" on page 6-24.](#)) Determines which FDC groups and network groups and segments a user can access. Restricted users can access only those groups to which they are assigned in the `fdcgrou` or `netgroup` fields AND those groups for which they have permission in the `fdcpermit` or `netpermit` tables. Unrestricted users see the aforementioned groups, plus "all" (that is, they have access to all groups regardless of what other user administration is done). You cannot enter **y** (restricted) in this field if the user is assigned to "all" FDC groups or "all" network groups and segments. Values: **y** (restricted) or **n** (unrestricted). Field type: Set Field (set of name values).

tcapdiag Table

Purpose

This table contains a textual mapping of the hexadecimal error code found in the TCAP message to a text string that will be placed in the CFIM.

Field dependency

There are no fields in this table whose values must be defined in other tables.

code

(Key field) The error code found in the hexadecimal dump of the TCAP message. Field type: String of 2 alphanumeric characters.

diagnostic

The diagnostic information associated with the code field. The data in this field is the same data that is placed in the MISC1 field of the CFIM. "-" means not applicable or no data available. Field type: String of 25 printable characters.

trapalert (v-trapalert) Table

This is an output table, not a reference table. See Appendix A in the *GUI User's Guide*.

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univconfig Table

Purpose

The universal interface link configuration (univconfig) table enables the system administrator to custom-configure conversions.

Reference

This table is used with the universal interface (see [Chapter 16, "Universal Interface"](#)).

Background

Delimiter characters (SOM and EOM) are a decimal representation for the delimiter byte. For example, a **^B** in UCIMs is an ASCII translation of the **start of text** character, which is specified by its decimal value of 2.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
univconfig	source	name	source

Note

This table was once used for AXE10 (F6186) conversions, but is no longer.

source

(Key field) The source through which CIMs, NCIMs, or UCIMs are collected. This is a key field in the univconfig table. This value must exist in the name field of the source table. Field type: String of 8 printable characters.

config

The configuration file name that contains the names and rules information for the universal converter. These are the defaults file, the Names Definition file, and the NCIM filter; with corresponding names such as univtrans.defaults, univtrans.names, and univtrans.filter. All you need to enter here is **univtrans**. Field type: String of 5 printable characters. "-" means not applicable or no data available. Field type: String of 10 printable characters.

som

The decimal representation of the start of message (som) character that separates the UCIMs in this link. Range: 0 to 255. Field type: 3-digit numeric.

eom

The end of message (eom) character used to separate the UCIMs in the universal link. Range: 0 to 255. "-" means not applicable or no data available. Field type: 3-digit numeric.

univroute Table

Purpose

The universal route (univroute) table identifies distant entities for Re's by associating switch and trunk group information with a distant entity (De).

Reference

This table is used for the universal interface (see [Chapter 16, "Universal Interface"](#)) and other interfaces.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
univroute	cli	re cli	rearch swarch
	de	cli	swarch
	sig	type	signaling

cli

(Key field) The cli code. This value must already be in the Re field in the rearch table. Field type: String of 16 printable characters.

tgid

(Key field) The trunk group to the De. If there is no trunk group ID other than the trunk group number, that trunk group number can go in both the tgid and tgn fields. Field type: String of up to 16 printable characters.

tgn

The trunk group number (tgn) field of the trunk group to the De. Range: 0 to 9999. "-" means not applicable or no data available. Field type: 4-digit numeric.

de

The CLLI code of the De. Field type: String of 16 printable characters.

sig

The type of signaling on the trunk. This value must exist in the type field of the signaling table. "-" means not applicable or no data available. Field type: String of 6 printable characters.

vpnid Table

Purpose

Not yet used for standard conversions, but available for CDR-type installations (F6306).

The virtual private network ID (vpnid) table contains each VPN customer name and telephone number. It is nice to see the customer's name in the CFIM's Cust field, but the name is not on CIMS. But CIMS give other information, which you can map to a name to populate the Cust field by using the following tables (different conversions use different sets of these tables):

- ["custcode Table" on page A-32](#) — Use this if you get Re's from IPDRs (F6305). Maps a customer name to an account code, subscriber id, or other unique identifier. Populates the Cpcust and Cust fields on CFIMs.
- ["custid Table" on page A-33](#) — Maps each IDB/DSD or other non-VPN customer's name to a phone number. If no match is found, the CFIM's Cpdigit's value is placed in Cust.
- ["vpnid Table" on page A-152](#) — Maps each VPN customer's name to a VPN. If no match is found, the VPN is placed in Cust.
- ["custip Table" on page A-34](#) — Maps each customer's name to an IP address.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
vpnid	custname	cust	customer

digits

(Key field.) Calling party digits. You can enter the last four digits in the digit pattern as a range, which **dbedit** expands to create a record for every consecutive digit pattern in that range. For example, instead of entering every record from 123456789 to 123456795, you can enter 123456789-6795, which **dbedit** expands to 7 records. The range format must be 10 digits, dash (-), 4 digits (as in the example). This range expansion is valid only in the last four digits of the digits field in custid and vpnid records. Field type: String of 10 printable characters.

custname

The name of the VPN service customer. Records added manually to the custid database table are flagged as "man" in the source field. Records flagged "man" are not automatically deleted from the custid database table. Field type: 10-character string.

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vpnroute Table

Purpose

Not yet used for standard conversions, but available for CDR-type installations (F6306).

The virtual private network route (vpnroute) table contains the VPN routing numbers and their corresponding DSD/SCP pairs information. It lists the originating NPAs for VPN customers and their associated DSD/SCP IDs where the VPN calls are routed.

Field dependency

In table...	Before you put a value in field...	That value must be in field...	In table...
vpnroute	scpccli	scpccli	scparch
	signet	name	signet

digits

(Key field) The global title digits pattern of the calling number for this VPN. The format of this field is WXXXXXXXXX or WXXXXX where W=1-9 and X=0-9. Leading zeroes are not allowed. The digit pattern entered here must be consistent with Global Title Patterns defined in the gtspec table. Field type: String of 10 printable characters.

signet

(Key field) The name of the signaling network to which this entity belongs. This value must exist in the name field of the signet table. Field type: String of 10 printable characters.

scpccli

The CLLI code of the machine on which the SCP associated with the digits resides. This value must exist in the scpccli field of the scparch table. "-" means not applicable or no data available. Field type is string, up to 16 characters.

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SUI Commands

B

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Overview

What is SUI?

SUI (shell user interface) commands are NTP commands entered from the operating system shell, preceded by **sui**.

Example

To quickly see Ascreen output, you can enter **sui ascreen** directly in shell, without starting up the GUI.

Why type “sui”?

Some NTP commands, such as **sort** or **help**, may be named the same as existing operating system commands. To specify the NTP command, you must precede it by **sui**.

Note

Hint. When in doubt, precede a command with **sui**. If that fails, drop the **sui**.

SUI output

If a SUI command gives output, the output appears in the window where you executed the command.

Summary of SUI Commands

List of SUI commands

This table summarizes the function of SUI commands described more fully in this and other chapters of this book.

Command	Purpose	Reference
sui acresolve	(Alert case resolve) Searches for active alert case records that satisfy specific criteria,	"sui acresolve Command" on page B-9
sui ascreen	Runs Ascreen in an X window	"sui ascreen Command" on page B-14
sui compute	Runs Ascreen in an X window.	"sui compute Command" on page B-16
sui find	Retrieves records from databases. Use with dbedit .	"sui find" on page 4-16
sui help	Explains FDCs. Note Also explains control keys for customers still using the legacy AUI:	"sui help Command" on page B-18
sui join	Joins two user files (databases) into one.	"sui join Command" on page B-19
sui list	Lists all user files (databases) belonging to your own login.	"sui list Command" on page 7-51
sui mcascreen	(Applies ONLY if your system uses the mass call alert feature.) Runs MCAscreen in an X-window.	"sui mcascreen Command" on page B-20
sui modmat	(Used for basic alerting only, not for flexible alerting.) Updates the threshold matrix and resoaks the thresholds. No options or arguments	"sui modmat Command" on page 8-35
sui remove	Removes your user databases (user files). With force , removes others' user databases.	"sui remove Command" on page 7-53
sui rename	Renames user files (databases).	"sui rename Command" on page B-21
sui set	Sets an environmental variable (such as default printer) for your own login. (By convention on <i>UNIX</i> systems, environmental variable names are in capital letters.)	"sui set Command" on page B-22
sui setsys	Sets thresholding variables.	"sui setsys Command" on page 8-81
sui showthresh	(Used for basic alerting only, NOT for flexible alerting.) Displays thresholds from the threshold matrix.	"sui modmat Command" on page 8-35

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Command	Purpose	Reference
sui sort	Sorts the records in a user database file.	"sui sort Command" on page B-24
sui thresh	(Used for basic alerting only, NOT for flexible alerting.) Modifies 5-minute and hourly thresholds.	"sui thresh Command" on page 8-25
sui trapalert	Runs Trapalert in an X window.	"sui trapalert Command" on page B-25
sui trapcfim	Runs Trapcfim in an X window.	"sui trapcfim Command" on page B-26

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Syntax

Purpose

This section provides general information about SUI command syntax. See each command in this tab for its specific syntax.

Syntax elements

A SUI command such as **sui find source=cfim search=fdc=nca** has the following syntax:

command parameter=value parameter=subparameter operator value

Syntax elements include the following:

Element	Purpose	Example
command	Tells what to do	sui find source=cfim search=fdc=nca and search=tc!=dms
parameter	Affects a command. Always followed by = <i>subparameter</i> or an operator value.	sui find source=cfim search=fdc=nca and search=tc!=dms Reference search= . For how to use the search parameter, see the <i>GUI User's Guide</i> .
subparameter	Limits a parameter. IT is a tablename, field name, or other defined set of values. Preceded by a <i>parameter=</i> and followed by an operator value.	sui find source=cfim search= fdc =nca and search= tc !=dms
operator	=, !=, <, >, <=, >= (precedes a value)	sui find source=cfim search=fdc=nca and search=tc!=dms
value	Follows an operator	sui find source= cfim search=fdc= nca and search=tc!= dms
boolean	and, or	sui find source=cfim search=fdc=nca and search=tc!=dms

Command and parameter abbreviation

You need type only enough to uniquely identify a command or parameter.

Example

Instead of: **sui find source=cfim search=fdc=942**

You can type: **sui f so=cfim se=fdc=942**

(Continued on next page)

Syntax (Continued)

Parameter order

Parameters can be in any order.

Example

```
sui find source=cfim search=fdc=nca and search=tc!=dms
sui find search=tc!=dms and search=fdc=nca source=cfim
```

Parameter values

About parameter values:

- **Multiple.** Multiple values can be assigned to a parameter, separated by commas, for example:
Example: **sui find source=cfim search=fdc=nca,vca,1987**
 - **search=.** For how to use search parameters, see the *GUI User's Guide*.
 - **Types.** Parameter values are of four types:
 - **Time** - Use HHMM or HH:MM (for example, 1349, 13:49, 6:49, 06:49).
 - **Date** - Use YYMMDD, MMDD, or YY/MM/DD (for example, 941221, 1221, 94/12/21, 94/6/30).
 - **Numeric** - Whole numbers with the digits 0 to 9. (Exception: The *min* parameter in compute can contain a decimal point.)
 - **String** - Valid characters for a string are **A** to **Z**, **a** to **z**, **_**, **0** to **9**, **.**, **/**, and **!**. Strings can use other characters and spaces IF the string is enclosed in double quotes, and then single quotes.
 - **Wildcards.** A string parameter value can use ***** or **&**:
 - ***** means any number of characters.
Example: **sui find source=swarch se=ne=2*ny***
 - **&** means single characters:
Example: **sui find source=swarch se=ne=&&&&ny&&&&**
-

User variables

User variables are string substitutions (explained in the *GUI User's Guide* and "[sui set Command](#)" on page B-22). All or part of a SUI command can be a variable. When used, variables must be preceded by "\$", and surrounded by SINGLE quotation marks. For example: **sui '\$myfindf1'** or **sui find se='\$mysearch'**

(Continued on next page)

Syntax (Continued)

Operators

Operators are:

Operator	Means	Use with this parameter type
=	equal to	Any
!=	not equal to	
>	greater than	Numeric only
<	less than	
>=	greater than or equal to	
<=	less than or equal to	

Boolean

Booleans are:

Boolean	Means
and	include records that agree with BOTH parameters.
or	include records that agree with EITHER parameter.
and not	include records that BOTH: agree with the previous parameter, and NOT the next.
or not	include records that EITHER: agree with the previous parameter, or NOT the next parameter

Output to file

To send a SUI command's output to an ASCII file, use a redirect (>), as you would with any shell command.

Example

To send output to a file named tempfile enter
sui find source=swarch search=ne=12345 > tempfile

sui acresolve Command

Description

The **sui acresolve** (alert case resolve) command displays active alert case records that satisfy search expressions you specify. You can also:

- View or trap CFIMs related to those alert case records
- Update alert case records with problem resolution information by specifying a value in one or more of the following fields:
 - owner
 - referred
 - status
 - fcause (failure or event cause)
 - comments
- Group alert case records for the same problem by assigning the same trouble number, or ungroup previously grouped records
- Close one or more alert case records

(Continued on next page)

sui acresolve Command (Continued)

Syntax

acresolve search= *[not] field=value1... and/or [not] field=value1,value2...*
owner=value referred=value status=value fcause=value comments=text
dest=value save=user_file_name group=g/u view trap

Note

When you specify a value for any parameter in addition to the required search parameter, NTP modifies all the records that satisfy the search, displays the CFIMs (if directed to by `viewcfim=y`) and completes command execution.

When you run **acresolve** and specify only the required search parameter, NTP displays the resulting records.

Parameter	Description
Search (required)	<p>Specifies the criteria to select and display records. Maximum length: 1500 characters. Valid characters for the owner, referred, fcause, and comments fields are:</p> <p style="text-align: center;">A to Z, a to z, _, 0 to 9, ., /, and !</p> <p>Enclose printable characters other than the above in double quotes (for example, owner="Joe,Mary"). These fields do not allow the *, \$, or & characters except as part of a search expression.</p> <p>Note</p> <p>The FDC_SEARCH variable setting controls the default set of FDCs that are searched when you do not specify a list of FDCs.</p> <ul style="list-style-type: none"> ■ group — Searches only records with FDCs valid for your current FDC group. ■ all — Searches all records. <p>The NET_SEARCH variable setting controls the default set of network entities that are searched when you do not specify a list of NEs.</p> <ul style="list-style-type: none"> ■ group — Searches only records with entities valid for your network segment group. ■ all — Searches all records. <p>You can specify a TN in your search that involves an FDC or NE not in your FDC or network segment group, but the corresponding _SEARCH is set to group as opposed to all, you will not retrieve the record. Add the affected FDC or NE to the search expression so the _SEARCH setting is ignored. Restricted users see only FDCs or NEs in their group regardless of the FDC_SEARCH or NET_SEARCH setting or the search expression.</p> <p>Reference</p> <ul style="list-style-type: none"> ■ See "User environment variable list (admset)" on page 7-39 for more information on the FDC_SEARCH and NET_SEARCH variables. ■ See Chapter , "Search Expressions in sui find", for examples of search expressions.

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Parameter	Description
Owner (optional)	Name of the person or organization (up to ten characters) to which the case is assigned for resolution. Default value: -.
Referred (optional)	Name of the person or organization (up to ten characters) to which the case is referred for resolution (for example, the owner of the case may have a call in to the organization listed in this field). Default value: -.
Status (optional)	<p>Status of the case. Values:</p> <ul style="list-style-type: none"> ■ Enter closed in this field to close the alert case record and make it inactive. (Once an alert case record is inactive, you cannot use acresolve to subsequently display or modify it. You can view inactive alert case records via the find acase command.) ■ If there are no values in the referred or owner fields, the system lists the status as open. ■ The system automatically changes status to assigned or referred (in that order) when you enter a value in either of these fields. <p>Note The system can also automatically close a case record when conditions set by the NTP administrator are met and the current status is not referred.</p>
fcause (optional)	Identifies the cause of a failure or event. Causes are customer-defined (see " fcause Table " on page A-50). You must enter an exact value of a cause defined for your system.
comments (optional)	Contains user comments detailing the problem or resolution. You can enter a continuous string or the ^ character to indicate a line return.
save (optional)	Specifies a file name in which to store CFIM records that result from a View CFIM. Length: up to 30 case-insensitive characters. The name must begin with an alpha character and consist of alphanumeric and underscore characters only. Default: Leave this field blank to store records in the default file ws_view. The ws_view file is overwritten with each execution of the View CFIM function. A most recent backup copy is named ws_view_prev.
destination (optional)	Where CFIM output displays when View CFIM is selected. Valid destinations are: <ul style="list-style-type: none"> ■ pager, or blank (default) — Your terminal screen via the standard pager. ■ The name of a printer on your system or lp (defaults to the printer defined in the PRINTER environment variable.) ■ llocal — A printer attached to a 630/730 terminal. You can also use llocal if you logged in as an xterm and your system has optional local printer support for xterms. ■ <i>filename</i> — Name of an ASCII file. ■ terminal — Your terminal screen, bypassing the standard pager (useful if you are running on a PC or wish to send to an unsupported local printer). ■ null — No output display. Selected records are stored in ws or a named user file.

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Parameter	Description
group (optional)	<p>Values:</p> <ul style="list-style-type: none"> ■ g (group) — Groups all the alert cases in the current set and assigns the lowest TN of the group as the TN for each record of the group. (Grouped records are all assigned the same trouble number so you can track the problem and search for records by that one number.) ■ u (ungroup) — Ungroups the alert case records and returns the TN back to the ACN of the record. <p>Note Each alert case record is assigned an alert case number (ACN) and trouble number (TN). ACNs are assigned sequentially for each alert case. If you have the trouble number grouping feature turned on, alert cases for the same FDC that began alerting at the same time are assigned the same TN, which is the first ACN of the group. Thus, you can track the same problem by TN.</p> <p>Reference See information on the Acase table in the <i>GUI User's Guide</i>.</p>
viewcfim (optional)	<p>Value: view — Indicates that you want to view the CFIMs related to the alert cases that satisfy your search. The related CFIMs are in a user file called ws_view.</p>
trapcfim (optional)	<p>Value: trap — Indicates that you want to trap the CFIMs related to the alert cases which satisfy your search. The incoming CFIMs will display in a Trap CFIM window as they generate.</p> <p>Note The output format for trapped CFIMs is determined by your CFIM_FORM variable, if one is set, or by the system default. See "User environment variable list (admset)" on page 7-39 for more information.</p>

(Continued on next page)

sui acresolve Command (Continued)

Examples

The following examples illustrate various uses of **acresolve**.

Purpose	Command
Search and do batch edit	<p>This command finds all alert case records that have trouble number (Tn) of 7 (search field), and adds the same failure or event cause to the fcause comment field for ALL records found.</p> <p>acresolve search=tn=7 fcause=install comments="Install of new translations at the switch^ Stripping instructions incorrect"</p> <p>Note The ^ indicates a new line in the comments field.</p>
Trap related CFIMs	<p>This command traps all CFIMs that have trouble number (TN) of 8.</p> <p>acresolve search=tn=8 trap</p>
Group alert case records by TN	<p>This command groups CFIMs that have trouble number (TN) of 7, 9, or 10.</p> <p>acresolve search=tn=7,9,10 group=g</p>

sui ascreen Command

Purpose The **sui ascreen** command shows active alert cases.

Reference

For how to read Ascreen, see the *GUI User's Guide*.

Note

Ascreen automatically updates periodically. To exit, press **Delete**.

Syntax

ascreen search= *[not] field=value1... and/or [not] field=value1,value2...*
sort=*field1:a/d,field2:a/d . . .format=field1,field2:width,field3,...*
fdcgroup=*all/group_name netgroup=**all/group_name*

Note

These parameters apply one time when entered. To permanently change a parameter for your login, use the **admset** command on your environment variables (see "[Manage User Environment Variables](#)" on page 7-36), or you can do the same by customizing (see the *GUI User's Guide*).

Parameter	Description
Search (optional)	Selects which alert cases appear on Ascreen. Omit to see all. Reference For how to build search expressions, see the <i>GUI User's Guide</i> .
Sort (optional)	Glves output sort. List fields in the order you want them processed, with "a" for ascending sort or "d" for descending sort. Example sui sort=cai5:d,cnt5:d
format (optional)	Selects output screen format. Options are: <ul style="list-style-type: none"> ■ Enter all to display all the fields. ■ Enter a list of field names separated by commas in the order you want. Example format=fdate,ftime,ldate:5,ltime, ne,type,fdc,tc,tn,cnt5,cai5,cnth,caih,owner <ul style="list-style-type: none"> ■ To change field size, follow the field name with colon and number of characters. Example format=fdate:5,ltime:5, ne:16

Parameter	Description
fdgroup (optional)	Limit output according to an FDC group. Options are: <ul style="list-style-type: none">■ all■ An FDC group name To list FDC groups, see " List FDC groups " on page 7-16.
netgroup (optional)	Applicable only if you have the optional network grouping feature. Limit output according to a network group or segment. Options are: <ul style="list-style-type: none">■ all■ A network group name To list network groups, see " List network segments and groups " on page 7-26.

Example

sui ascreen

sui compute Command

Purpose The **sui compute** command looks for patterns in groups of records.

Reference

- For how to read Compute, see the *GUI User's Guide*.
- For how to use the **sui set** command to define the ASCREEN_FORM variable or your own named FORM variable, see "[sui set Command](#)" on page B-22.

Syntax

compute file=*userfile* **row=***field1,field2,...fieldN*
column=*fieldname=value1,value2,...value12* **output=***count or percent*
min=*value* **title=***"title"* **sort=***count or value* **sigdig=***digits positions*
interval=*time interval*

Note

These parameters apply one time when entered. To permanently change a parameter for your login, use the **admset** command on your environment variables (see "[Manage User Environment Variables](#)" on page 7-36), or you can do the same by customizing (see the *GUI User's Guide*).

Parameter	Description
file (optional)	Selects the user file (database) to compute on. If omitted, the working set (ws) is used. Non-restricted users can use another user's file by including the user ID followed by a slash prior to the file name (for example, sjm/rpt94).
row (required)	Selects at least one row to sort on. Separate multiple rows with commas; no spaces. Example row=fdc,de
column (optional)	Selects one or no columns to sub-sort on. Can also limit output according to matches you give. Examples column=re column=(re=switchaus01t,switchb02t)
output (optional)	<ul style="list-style-type: none"> ■ To label output as counts, use output=count ■ To label output as percentages, use output=percent <p>This affects the min parameter. For example, if you set min=2, the output parameter determines whether to compute on a minimum of count 2 or 2%.</p>

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Parameter	Description
min (optional)	<p>The lowest numerical value to appear on compute output. Values for min can be a whole number in the range 0 to number of records minus 1, or a percent in the range 0.00% to 99.99%. If omitted, default is 1 or .01%</p> <p>Example To display compute output for only those digit patterns that appear at least 100 times in the user file, enter row=digits,min=100</p> <p>When you use the column field, the sum of the columns beside any row value will be >= min count, even though individual column cells for a row value may be < than min count.)</p>
title (optional)	<p>Title you want to appear on output. Up to 80 characters. Enclose in double quotes, and then single quotes.</p> <p>Example title="OCT. - NOV. RESULTS"</p>
sort (optional)	<p>To sort row values:</p> <ul style="list-style-type: none"> ■ Biggest to smallest (default), enter sort=count ■ Alphanumerically, enter sort=value <p>If you specify a column, sorting is always by value.</p>
sigdig (optional)	<p>(Significant digits) identifies the digit positions to compute on. You can use sigdig only if a row parameter is a digits field. If omitted, the default is all digits. Position values can be:</p> <ul style="list-style-type: none"> ■ Digit or digits, counted from the left, for example: 1,5,7 ■ Range, using dash, for example: 3-7 ■ Both, for example: 2,10-13,15-17,19 <p>You can specify positions on multiple digit type fields using the syntax: <i>fieldname:positions;fieldname:positions</i>, for example: digits:1-6;cpdigits:1-10</p> <p>On output, x means ignored digits and dash means no digit. For example, if the digit pattern is 800123456 and sigdig is 1-6,9-11, then the output is 800123xx6 - - xxxxxxxxx.</p>
interval (optional)	<p>Selects a time interval displayed on the output. You can use this only if a row is a time-related field. If omitted, defaults to 1 minute. Enter interval as <i>nnmin</i> or <i>nnhour</i>, where <i>nn</i> can be any integer from 1 to 59 (min) or 1 to 23 (hour).</p> <p>Example interval=10min</p>

Example

```
sui compute row=digits,de title="Compute Digits" min=50
```

sui help Command

Purpose The **sui help** command explains FDCs.

Syntax **sui help item=fdc=fdc1,fdc2...fdc10**

Parameter	Description
(required) item=	Up to ten FDCs separated by commas, no spaces

Note

For customers who still run the legacy AUI, this command provides help about control keys: **sui help item=control**

Example **sui help item=fdc=nca,vca**

Note

Since the output from **sui help** is extensive, it will scroll on your screen, stopping only on the last page. To page through the output, direct it to the operating system **pg** command: **sui help item=fdc-nca,vca | pg**

See your operating system manuals for more information on the **pg** command.

sui join Command

Purpose The **sui join** command combines two user files (databases) into one user file.

Reference

Other commands for user files (databases) are: ["sui list Command" on page 7-51](#), ["sui remove Command" on page 7-53](#), ["sui rename Command" on page B-21](#), and ["sui sort Command" on page B-24](#).

Syntax `sui join from=user_file to=user_file`

Parameter	Description
from (required)	<p>The source file you are copying into the destination file. This file is not changed.</p> <p>The source and destination files must:</p> <ul style="list-style-type: none"> ■ Have different names. ■ Hold the same type of records (such as CFIMs) <p>Nonrestricted users can indicate another user's file by including the user ID followed by a slash prior to the file name. Example: sjm/rpt94</p>
to (required)	The source file is added to the end of the destination file.

Example `sui join from=cfims_812 to=cfims_811`

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sui mcascreen Command

Purpose

This command is used ONLY if your system uses the mass call alert feature.

The Mass Call Alert (MCAscreen) shows mass call events in your network.

Reference

For how to read MCAscreen, see the *GUI User's Guide*.

Note

MCAscreen automatically updates. Exit by pressing the **Delete** key.

Syntax

sui mcascreen

There are no options or arguments for this command.

sui rename Command

Purpose The **sui rename** command changes the name of a user file (database).

Caution

If you rename to a file name that already exists, the file is overwritten.

Reference

Other commands for user files (databases) are: "[sui join Command](#)" on page B-19, "[sui list Command](#)" on page 7-51, "[sui remove Command](#)" on page 7-53, and "[sui sort Command](#)" on page B-24.

Syntax **sui rename from=*userfile1* to=*userfile2***

Parameter	Description
from (required)	Requires the name of the user file you want to rename. This file must already exist.
to (required)	Requires the new or existing user file name to which you are renaming the data.

Example To rename a user file called trapout to traprpt, enter
rename from=trapout to=traprpt

sui set Command

Purpose

This command defines the following for YOUR login:

- **Environment variables.** These determine such things as your FDC group and what fields you see when you run Ascreen from the SUI.
- **User variables.** These are expandable strings, used, for example to represent a long list of CLLIs you do not want to type repeatedly. Precede it with the \$ character and enclose it in single quotes. Example: **sui '\$myfindf1'**

Reference

- You can also indirectly set your X-GUI and AUI user and environment variables.
- To set environment variables for another user, or for the system default, use **admset** (see "[Manage User Environment Variables](#)" on page 7-36). You do NOT set user variables for another user, or system-wide.
- **sui set** is NOT related to **sui setsys** (see "[sui setsys Command](#)" on page 8-81) for thresholding variables.

Syntax

sui set [variable=*variable_name* value='*value*']

Parameter	Description
variable (optional)	The environment or user variable you will set. Reference For the list of environment variables, see " User environment variable list (admset) " on page 7-39.
value (optional)	The value you are assigning. Omit to unset (remove) a variable. Nest the value in double, and then single quotation marks. For example: sui set variable=RANGE value="'30001 - 50000'

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sui set (Continued)

Procedure: List variables

To list environment and user variables specific to YOUR login only, enter **sui set**

Note

To list ALL variables recognized for your login, use the operating system enter **set** (or to page the list, enter **set | pg**)

Procedure: Set a variable

Use the **value=** parameter to set variables:

- **Environment variable.** To set your login's TERMINAL variable to vt100, enter (in this case, you can omit the double and single quotation marks around vt100, but it would hurt nothing to include them):

sui set variable=TERMINAL value=vt100

- **User variable.** To unset a user variable named mytrap, enter (note the double and single quotation marks):

sui set variable=mytrap value=""trapcfim se=fdc=900 and re=arlnht0504t and digits=8007931212""

To use the **mytrap** variable for shorthand entry in the command line, enter **sui '\$mytrap'**

Procedure: Unset variables

To unset a variable, omit the **value=** parameter:

Examples

- **Environment variable.** To unset your login's TERMINAL variable back to system default, enter

sui set variable=TERMINAL

- **User variable.** To unset (remove) a user variable named mytest, enter

sui set variable=mytest

Procedure: Use a user variable in the SUI

To use the variable in the SUI, enter the variable name preceded by a \$ character surrounded by single quotes

sui '\$myfindf1'
sui find se='\$mysearch'

sui sort Command

Purpose The **sui sort** command reorders records in a user file (database), by the column or columns you choose, in ascending or descending order.

Reference

Other commands for user files (databases) are: ["sui join Command" on page B-19](#), ["sui list Command" on page 7-51](#), ["sui remove Command" on page 7-53](#), and ["sui rename Command" on page B-21](#).

Syntax **sort file=userfile save=user_filename field=field1:a/d,field2:a/d,...
format=format**

Parameter	Description
file (optional)	Default: ws. Names the user file containing the data to be sorted. Metacharacters are not allowed in this parameter. Nonrestricted users can indicate another user's file by including the user ID followed by a slash prior to the file name, for example: sjm/rpt94
save (optional)	Names the user file in which to store the newly sorted records. A new file name must begin with an alpha character and contain only alphanumeric or underscore characters. Default: ws
field (optional)	Names the field(s) on which the records are to be sorted. When multiple fields are entered in this value, records are sorted based on the order of those fields. Enter each field using the format: <i>field:order</i> Example fdc:a,lcnt:d
format (optional)	Selects output screen format. Options are: <ul style="list-style-type: none"> ■ Enter all to display all the fields. ■ Enter a list of field names separated by commas in the order you want. format=fdate,ftime,ldate:5,ltime, ne,type,fdc,tc,tn,cnt5,cai5,cnth,caih,owner ■ To change field size, follow the field name with colon and number of characters. format=fdate:5,ltime:5, ne:16

Example To sort records in the working set (ws) database by the records' count field in descending order, enter **sui sort file=ws field=count:d**

sui trapalert Command

Purpose

The **sui trapalert** command shows each new alert case, within the 5-minute period when it is created, but before the end of the period, when the alert case moves to Ascreen. (For how to read Trapalert, see the *GUI User's Guide*.)

Note

Trapalert automatically updates. Exit by pressing the **Delete** key.

Syntax

trapalert search= *[not] field=value1... and/or [not] field=value1,value2...*
format=*field1,field2:width,field3...*
fdcgroupp=*all/group_name* **netgroup=***all/group_name*

These parameters apply one time when entered. To permanently change a parameter for your login, use the **admset** command on your environment variables (see "[Manage User Environment Variables](#)" on page 7-36).

Parameter	Description
search (optional)	Selects which alert cases appear on Trapalert. Omit to see all. Reference For how to build search expressions, see the <i>GUI User's Guide</i> .
format (optional)	Selects output screen format. Options are: <ul style="list-style-type: none"> ■ Enter all to display all the fields. ■ Enter a list of field names separated by commas in the order you want. format=fdate,ftime,ldate:5,ltime,ne,type,fdc,tc,tn,cnt5,cai5,cnth,caih,owner ■ To change field size, follow the field name with colon and number of characters. format=fdate:5,ltime:5, ne:16
fdcgroupp=all or a group_name (optional)	Limit output according to an FDC group. To list FDC groups, see " List FDC groups " on page 7-16.
netgroup=all or a group name (optional)	If you use the network groups feature; limit output according to a network group or segment. To list network groups, see " List network segments and groups " on page 7-26.

Example

To call up Trapalert output, enter **sui trapalert**

sui trapcfim Command

Purpose The **sui trapcfim** commands shows each new cfim as it arrives. (For how to read Trapcfim, see the *GUI User's Guide*.)

Note

Trapalert automatically updates. Exit by pressing the **Delete** key.

Syntax

sui trapcfim search= *[not] field=value1... and/or [not] field=value1,value2...*
format=*field1,field2,... numr=numrows*

Note

These parameters apply one time when entered. To permanently change a parameter for your login, use the **admset** command on your environment variables (see "[Manage User Environment Variables](#)" on page 7-36).

Parameter	Description
search (optional)	Selects which alert cases appear on Trapalert. Omit to see all. Reference For how to build search expressions, see the <i>GUI User's Guide</i> .
numrows (optional)	Sets the number of rows in the display window (for layers on an AT&T 630 or 730 terminal). Valid values are whole numbers between 10 and 60. If no value is entered, the TRAPCFIM_ROWS environment variable sets the number of rows.
format (optional)	Selects output screen format. Values: <ul style="list-style-type: none"> ■ all — displays all the fields. ■ Enter a list of field names separated by commas in the order you want. format=fdate,ftime,ldate:5,ltime, ne,type,fdc,tc,tn,cnt5,cai5,cnth,caih,owner ■ To change field size, follow the field name with colon and number of characters. format=fdate:5,ltime:5, ne:16

Example

To run Trapcfim to show each new CFIM with FDC 63, enter
sui trapcfim search=fdc=63

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Introduction

Purpose

The OneVision Network Fault Management system (NFM) system collects CIMs from switches and forwards the CIMs to NTP. (NFMs can do other things, but this is all NTP uses them for.)

5ESS, DMS, and 1A ESS link administration must be performed by the NFM administrator while logged on an NFM machine. The procedure for link administration is provided here as a courtesy to help you work with the NFM administrator to ensure that administration is correctly performed for NTP.

The source for the procedure is Lucent Technology's *NFM Administrator Guide*, 190-422-527.

Reference

NTP host. For NFM and administration you do on the NTP host (such as adding or deleting an NFM at the host), see ["NFM Sources" on page 14-26](#).

When to use

Typically, NFM is administered only once for NTP, during NTP installation.

Coordinate

Consult with your NTP support organization before working with the NFM administrator.

Other terms for NFM

You may see several old terms and other designations that mean NFM in references, messages, and file or directory names. For a list, see ["Other terms for an NFM source" on page 14-26](#).

Reference

For general information on CIM I/O with NFM, see [Chapter 14, "CIM Source Administration"](#).

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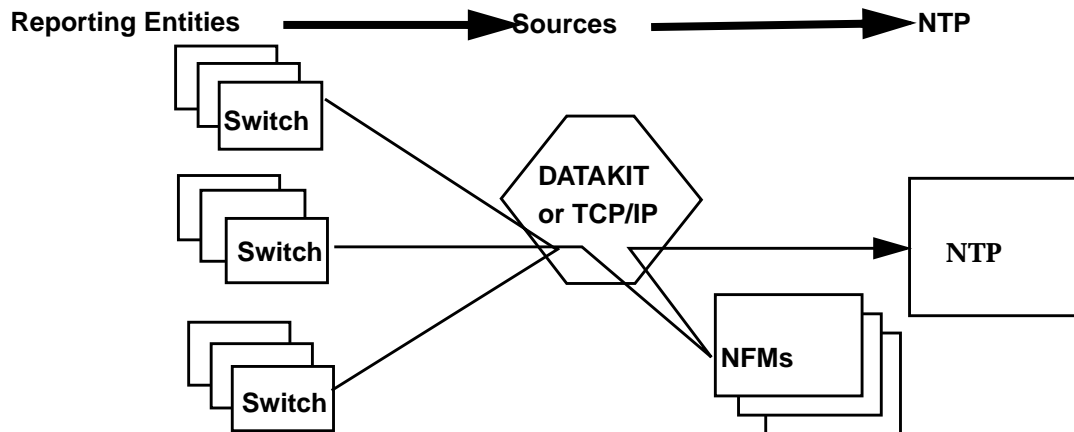
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Introduction (Continued)

Background

CIMs flow from switches, through NFM, and to NTP, running on its host computer.

For a list of switches for which NFM forwards CIMS to NTP, see "[Source Types and Re's](#)" on page 14-8.



Purpose

When NTP software is installed, it includes a pattern file to tell NFM which switch messages to forward to NTP. (There is one pattern file for ALL switch types.) Before the file can be used, the following must occur:

1. **Send the Pattern File.** Use "[Send the pattern file](#)" on page C-5 to send the pattern file from NTP to NFM.
2. Copy the Pattern File. Ensure that the NFM administrator uses "[Copy the pattern file](#)" on page C-5 to copy the pattern file.
3. Set Up NFM. Ensure that the NFM administrator uses "[Set up NFM](#)" on page C-6 to tell NFM to send CIMs to NTP.

Note

On NTP. You must also use procedures in [Chapter 14, "CIM Source Administration"](#) to set up NTP to receive CIMs from NFM.

Copy the Pattern File

Reference

For how this fits with other procedures, see ["Purpose" on page C-4](#).

Procedure: Send the pattern file

Use this procedure to copy the pattern file from the NTP host machine to an NFM host machine so that the NFM administrator can access it.

Step	Action
1	Log on NTP as ntp . (You must be logged in as ntp to proceed.)
2	Enter the following to go to the directory where the pattern file, <code>tsm.pat</code> resides: cd \$MODELDIR/pat/tsm.pat
3	Use rcp (remote copy), ftp (file transfer protocol) or any other utility or tool (such as attaching the file to email) by which you can copy the pattern file from the NTP host to the NFM host. Note To use rcp or ftp , you must have permission to access the NFM machine.
4	Tell the NFM administrator where you have copied the file, or how to access it (if you used email).
Done	

Procedure: Copy the pattern file

Ensure that the NFM administrator completes these steps to copy the `tsm.pat` pattern file to a new filename on the NFM host.

Step	Action
1	Log on the NFM host as the NFM administrator.
2	Locate the pattern file sent by the NTP administrator, and copy it to the filename <code>nfm</code> . To do this, enter cp tsm.pat nfm
3	Make a note of the directory location of the <code>nfm</code> file. You will need this information in "Set up NFM" on page C-6 .
4	Store the <code>tsm.pat</code> file in case it is needed again.
Done	

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Set Up NFM

Purpose This procedure administers NFM for NTP.

Reference

For how this fits with other procedures, see ["Purpose" on page C-4](#).

Procedure: Set up NFM Have that the NFM administrator complete this procedure to tell NFM to forward CIMs to NTP.

Step	Action
1	Have the procedures in "Copy the Pattern File" on page C-5 been completed? <ul style="list-style-type: none"> ■ If YES, go to the next step. ■ If NO, go to "Copy the Pattern File" on page C-5.
2	Log on NFM as the NFM administrator. <p>Response A menu similar to the following appears:</p> <pre> TNM MENU [tnm_m] cmds User Commands osap OSAP Administration tim TIM nei NEI Commands rtn Return </pre>

Step	Action
3	<p>Enter osap and press Return.</p> <p>Response A menu similar to the following appears.</p> <pre>ADMINISTER OSAP MENU [admosap_m]x port Port Administration netp Network Element Type Administration ne Network Element Administration srctp Data Source Type Administration src Data Source Administration pat Pattern Administration perm Permission Administration prntr Printer Administration osif Operations Support Systems Administration sched Scheduler Administration meas Measurement Administration sec Security Administration lkupadm Table Lookup Administration udtr UDTR Administration rtn Return</pre>
4	<p>Enter pat</p> <p>Response A menu similar to the following appears.</p> <pre>ADMINISTER PATTERN MENU [admpat_m] upat User Pattern Administration lpat Logging Pattern Administration dpat Data Distributor Pattern Administration scpat Sctab Pattern Administration simpat Simple Pattern Administration rtn Return</pre>
5	<p>Enter dpat</p> <p>Response A menu similar to the following appears.</p> <pre>ADMINISTER DATA DISTRIBUTOR PATTERN MENU [admdpat_m] view View Data Distributor Pattern ed Edit Data Distributor Pattern cpy Copy Data Distributor Pattern dlt Delete Data Distributor Pattern ex Exercise Data Distributor Pattern actv Activate Data Distributor Pattern</pre>

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Step	Action
6	<p>Enter ed</p> <p>Response A screen appears, similar to the one shown in the next step.</p>
7	<p>Type values on the screen as follows:</p> <pre>EDIT DATA DISTRIBUTOR PATTERN [eddpatt] Pattern name: * nfm <see note, below> Base pattern location <local,cur,prev>: local Subsystem name: Base pattern name: <see note, below> Data source type: <see note, below></pre> <p>Note</p> <ul style="list-style-type: none"> ■ For the entry in the <code>Pattern name</code> field, this step assumes “nfm” is the name you gave the pattern file in "Copy the pattern file" on page C-5 and that the nfm file is in the current working directory. If it is not, enter the appropriate pathname. ■ Use <code>local</code> for the value in the <code>Base pattern location</code> field. ■ If you do not know the base pattern name, do the following to complete the <code>Base pattern name</code> field: <ol style="list-style-type: none"> a. Press Control-Shift-? to see a dialog box similar to the following to display a list of current base patterns: <pre>----- <TEXT> ----- list rtn ----- </pre> b. Select list in the dialog box to see the list. c. Select any pattern from the list, and press Enter. ■ In the <code>Data source type</code> field, you can enter <code>ess5</code>, <code>ess1A</code>, <code>ess4</code>, <code>dms100</code>, <code>dms 250</code>, <code>dms500</code>, or another string defined in NTP's <code>eqtype</code> table. The Data source type you specify MUST already be defined as a data source on NFM.
8	<p>At the last field, press Return.</p> <p>Response: A dialog box similar to the following appears on the same screen:</p> <pre>----- CONFIRM ----- redo exec rtn ----- </pre>

Step	Action
9	<p>Enter exec</p> <p>Response You are in a file for editing the base pattern file with the vi editor, with your cursor on the first line. The file resembles the following:</p> <pre> /* ** This pattern is associated with data source type <ess5> */ ~ ~ "/tmp/EdPat22124.pat" 3 lines, 64 characters </pre>
10	<p>With your cursor on the first line, edit the file as follows:</p> <ol style="list-style-type: none"> Delete all lines in the file. To do so, press and release Escape and then type: 1,\$d (The number 1 signifies the first line in the file, \$ signifies the last line, and d means delete.) Read in the NFM pattern file. To do so, press and release Escape and then type :r nfm where nfm is the name you gave the pattern file in "Copy the pattern file" on page C-5. (You may need to type a pathname if the file is not in your working directory.) Press and release Escape and then enter :wq <p>Response You write and quit the file. This automatically compiles the nfm file. Then you receive a message confirming compile completed. You may receive a prompt asking if you want to continue. Then you return to the following menu.</p> <pre> ADMINISTER DATA DISTRIBUTOR PATTERN MENU [admdpat_m] view View Data Distributor Pattern ed Edit Data Distributor Pattern cpy Copy Data Distributor Pattern dlt Delete Data Distributor Pattern ex Exercise Data Distributor Pattern actv Activate Data Distributor Pattern </pre>
11	<p>Enter actv</p> <p>Response A screen appears, similar to the one shown in the next step.</p>

Step	Action
12	<p>Enter the values shown in bold as follows and then press Return.</p> <pre>ACTIVATE DATA DISTRIBUTOR PATTERN [actvdpat] Pattern location <local,prev>:* local Subsystem name:* osif Pattern name:* nfm</pre> <p>Response The following message appears: Your pattern is activated.</p>
13	<p>Press and release Escape, and type home, and press Return.</p> <p>Response You return to this menu:</p> <pre> TNM MENU [tnm_m] cmds User Commands osap OSAP Administration tim TIM nei NEI Commands rtn Return</pre>
14	<p>Enter osap</p> <p>Response A menu similar to the following appears:</p> <pre>ADMINISTER OSAP MENU [admosap_m]x port Port Administration netp Network Element Type Administration ne Network Element Administration srctp Data Source Type Administration src Data Source Administration pat Pattern Administration perm Permission Administration prntr Printer Administration osif Operations Support Systems Administration schd Scheduler Administration meas Measurement Administration sec Security Administration lkupadm Table Lookup Administration udtr UDTR Administration rtn Return</pre>

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Step	Action
15	<p>Enter osif</p> <p>Response A menu similar to the following appear:</p> <pre>ADMINISTER OPERATIONS SUPPORT SYSTEMS (OS) DATA MENU [admosif_m] x viewosdata View OS Data dfnosdata Define OS Data updosdata Update OS Data dltosdata Delete OS Data actvosdata Activate OS Data dactvosdata Deactivate OS Data viewsrcos View OS/DataSource Association dfnsrcos Define OS/DataSource Association dltsrcos Delete OS/DataSource Association rtn Return</pre>
16	<p>Enter dfnosdata</p> <p>Response A screen appears, similar to the one shown in the next step.</p>
17	<p>Enter values shown in bold below:</p> <pre>DEFINE OS DATA [dfnosdata] OS name:* ntp Distributor pat name: nfm OS type:* udos Activate <y,n>: y message type(s):* status,drsc,wdog,file OS baud rate: 9600 Transmission type: priv Back-up baud: Telephone number: Printer type: Back-up phone number: Start of message: Port name: > End of message: Back-up port name: Scheduler time: Reformatting pat name: 2nd Scheduler time: Define UDOS message header <n,y>:</pre>

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Step	Action
18	<p>Still on the same screen in Step 17, press Return until you come to the Port name: field. The following window pops up:</p> <pre> DEFINE PORT DATA [dfnport] Port name:* <see note, below> Port function:* osif Network type:* <see note, below> Address: <see note, below> Port Options: <leave blank> </pre> <p>Note</p> <ul style="list-style-type: none"> ■ In the Port name: field, enter any name you want to assign to the port, such as ntp1. ■ In the Network type: field, enter enet (for ethernet or TCP/IP), int (for internal) or dk (for <i>Datakit</i>). (NOC1 uses TCP/IP only. NFM can use <i>Datakit</i> or TCP/IP.) ■ In the Address: field, enter the NTP system name and port as assigned by the NTP administrator. This address must be defined in the /etc/hosts file as <i>IP_address:port_id</i>. Example: netntp:3000
19	<p>At the last field press Return.</p> <p>Response: A dialogue box similar to the following appears:</p> <pre> ----- CONFIRM ----- redo exec rtn ----- </pre>
20	<p>Enter exec</p> <p>Response You return to the screen in Step 17. The Port name: field is filled in.</p>

Step	Action
21	<p>Still on the same screen in Step 17:</p> <ol style="list-style-type: none"> Press Return until you come to the “Start of message field”. Press CONTROL-? (simultaneously press the CONTROL and ? keys) to call up a help window. Use that window to enter \001 <p>(This represents Control-A.)</p> <ol style="list-style-type: none"> Press Return until you come to the “End of message field”. Press Control-? (simultaneously press the Control and ? keys) to call up a help window. Use that window to enter \003 <p>(This represents Control-C.)</p> <p>Response You return to the screen in Step 17. The “Start of message field” the “End of message field” are filled in.</p>
22	<p>Still on the same screen in Step 17, press Return until you come to the “Define UDOS message header <n,y>” field and enter y</p> <p>Response The following window pops up. Fill in the two fields shown in bold below:</p> <pre> DEFINE UDOS MESSAGE HEADER [udoshdr] FIELD TYPE CONTENTS FIELD TYPE CONTENTS 1: ttype 9. 2: clli <see note below> 10. 3: 11. </pre> <p>Note Instead of clli for the network element CLLI, you can use srcname for the data source name. (See Step 28.)</p>
23	<p>At the last field press Return.</p> <p>Response: A dialogue box similar to the following appears:</p> <pre> ----- CONFIRM ----- redo exec rtn ----- </pre>

Step	Action
24	<p>Enter exec</p> <p>Response You return to the screen in Step 17. The screen should now resemble the following:</p> <pre> DEFINE OS DATA [dfnosdata] OS name:* ntp Distributor pat name: nfm OS type:* udos Activate <y,n>: y message type(s):* status,drsc,wdog,file OS baud rate: 9600 Transmission type: priv Back-up baud: Telephone number: Printer type: Back-up phone number: Start of message:\001 Port name: ntpl End of message:\003 Back-up port name: Scheduler time: Reformatting pat name: 2nd Scheduler time: Define UDOS message header <n,y>: y </pre> <p>Note For the Port name: field, see Step 17.</p>
25	<p>With your cursor on the last field, press Return.</p> <p>Response: A dialogue box similar to the following appears on the same screen:</p> <pre> ----- CONFIRM ----- redo exec rtn ----- </pre>
26	<p>Enter exec</p> <p>Response You return to the same screen.</p>
27	<p>Press and release Escape and then type dfnsrco</p> <p>Response A screen appears, similar to the one shown in Step 28.</p>

Step	Action
28	<p>Enter values shown in bold.</p> <pre>DEFINE OS - DATA SOURCE ASSOCIATION [dfnsrccos] Data source name:* <source - see note, below> OS name:* ntp</pre> <p>Note Data source name is whatever NFM name you gave to the network element.</p> <p>Response A dialogue box similar to the following appears on the same screen:</p> <pre>----- CONFIRM ----- redo exec rtn ----- </pre>
29	<p>Enter exec</p> <p>Response You return to the previous screen.</p>
30	Exit NFM.
Done	

Change NFM

See your support organization

To change a pattern file in order to change which switch messages are collected and forward to NTP, see your NTP support organization.

Such changes would require changing not only the pattern file, but also NTP code.

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Introduction

Purpose

This appendix tells how to back up and recover the NTP application and databases, and provides information for designing a backup strategy.

Responsibility for backup strategy

The NTP administrator is responsible for backing up and recovering the NTP application and databases. We cannot detail a backup strategy for every type of installation or customer scenario. However, NTP provides several utilities that are documented here to assist you in developing a backup strategy.

Scope

The utilities described in this chapter enable you to create:

- A recoverable Oracle database image
- A tar-compatible backup of all files on the NTP host

Backups made with these utilities are designed to be used in conjunction with standard vendor utilities for your operating system and platform. NTP backups are NOT alone suitable for recovery of entire disks or non-NTP disks.

Reference

- See the documentation for the standard backup and recovery utilities for your operating system and platform to perform such tasks as creating a bootable tape for use in disaster recovery scenarios, establishing disk mirrors, and recovering files or disks from a mirror.
- See "[Application Directory Structure](#)" on page 2-30 for a full description of the NTP file system and directory structure.

Note

- **CP on host.** If you use a CP source that resides on the NTP host (for 4ESS switches only), the CP's files are in /opt and are backed up with other files — you need do nothing special to back them up. However, you will need to recover them individually.
- **Archiving system tables not normally backed up.** Surveillance databases (except acase) are NOT normally backed up because they change rapidly. However, you may want to archive CIMs (if your system retains them) or other data for historical analysis. To do so, you can use the **arcwrite**, **arcrestore**, and **arcread** commands. The **arcwrite** utility is suitable if you require daily backup of surveillance data (see [Chapter 10, "Archive and Retrieve Surveillance Data"](#)).

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Introduction (Continued)

Disk failure

Disk failures typically fall into one of three scenarios:

Scenario	Description
Disk array or NetApp	If the NTP host uses RAID or other high availability technology (such as the Model 20 High Availability Array used with the HP K460 machine or any system using a Network Appliance), then no operating system level recovery action should be required. Fault tolerant disk systems use redundant hardware to maintain system availability and allow most components to be replaced while the system is running.
Simple disk mirroring	If the NTP host uses logical volume mirroring of simple disks for fault tolerant storage (such as HP J-series systems with internal disks), then follow normal operating system procedures to recover file systems and logical volumes. (For example, the HP documentation includes these procedures under administration tasks for mirroring data using LVM).
No mirroring	If the NTP host does not use logical volume mirroring or fault tolerant storage, all NTP files will likely be lost if a disk fails. Recovery may require complete reinstallation of NTP, followed by recovery of reference data and user files from backup tapes. Therefore, we recommend that NTP run on systems with either mirroring or fault tolerant storage.

Catastrophic data loss that requires reinstallation to recover is possible even on systems that use fault tolerant hardware if an error corrupts or deletes all mirrored or backup copies of any Oracle data file. Examples of such errors are corruption of operating system, Oracle, or NTP data; administrator error (removing files); or malicious intruder activity. For this reason, a sound backup and recovery strategy is necessary.

Recommended action

After a disk failure, if a mirrored disk is:

- Available, first attempt to restore from the mirror using appropriate vendor procedures for your system.
- Not available, first attempt to boot and recover from a bootable tape (for example on HP systems with a tape made with **make_recovery**). Create an empty file system sufficiently large for the NTP application "root" (typically /lucent/ntp — \$APPLROOT). Then recover other data from tape (see ["Recover Application Files from Tape" on page D-49](#)) and/or from \$ORAEXPORT (see ["Recover System Tables from \\$ORAEXPORT" on page D-40](#)).

Contact your NTP support organization for assistance, if necessary.

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Introduction (Continued)

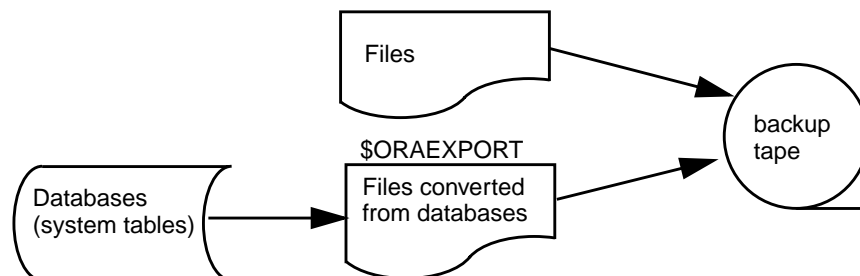
Cautions

NEVER use a mechanism (such as third-party backup software) that backs up NTP's Oracle databases directly, without any special preparation by the NTP application. Copies of Oracle data files made from a running NTP system always corrupt the database if they are restored. The utilities described in this appendix prevent this by making backups from either an idle (cold, non-volatile) mirror of the NTP file system or exported copies of the data.

If an NTP installation is corrupted due to hardware failure, such as loss of a disk, the initial task is always to recreate the NTP file system. The procedure for this varies by hardware configuration and operating system. Consult the vendor documentation for your system, or a vendor service representative for assistance. Contact your NTP support organization, if necessary. Once a file system — empty and of sufficient size — is created, the NTP application can be restored.

Overview of backup and recovery

Backup to \$ORAEXPORT and tape. NTP files can be backed up directly to tape. NTP database tables must first be converted from databases to files and then backed up to tape. The \$ORAEXPORT directory stores files that NTP utilities convert from databases, as illustrated below.



Recovery. You can recover from either \$ORAEXPORT or tape:

- **\$ORAEXPORT.** This directory holds files converted from databases ONLY. If a system table's file is already here, you do not have to load it from tape before converting it back to database format.
- **Tape.** Tapes hold all ASCII format files. If you are recovering a system table from tape, after recovering it to a file in \$ORAEXPORT, you must convert it back to database format.

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Task Summary

Overview

This table summarizes the recommended backup and recovery tasks discussed in this appendix.

Data type	Recommended backup	Recovery	Reference
ALL files except those specifically excluded	WEEKLY with file_backup or applbackup to tape, and: <ul style="list-style-type: none"> ■ Before major changes or updates to software ■ Before risky modifications, such as some hardware changes 	Use file_restore to recover files from tape.	<ul style="list-style-type: none"> ■ "Back Up Application Files to Tape" on page D-37 ■ "Recover Application Files from Tape" on page D-49 ■ "Back Up Application Databases to \$ORAEXPORT" on page D-36
Most system tables (excluding surveillance data and MTDB).	<ul style="list-style-type: none"> ■ WEEKLY to tape with file_backup or applbackup. ■ Manually with exp_db to \$ORAEXPORT, before major edits to system tables <p>Note exp_db runs daily from cron and as part of applbackup and file_backup. You can also run it manually.</p>	<ul style="list-style-type: none"> ■ Use file_restore to recover files from tape; then use imp_db to convert databases. ■ From \$ORAEXPORT, use imp_db. 	
Working sets (user files).		Use the imp_ws command, or the dbgeneral and imp commands.	<ul style="list-style-type: none"> ■ "Recover System Tables from \$ORAEXPORT" on page D-40 ■ "Recover Working Sets from \$ORAEXPORT" on page D-44
The NTP Oracle RDBMS	For disaster recovery purposes, use db_backup or applbackup -C	dbrestore in consultation with your NTP support organization.	See the command descriptions in this Appendix

Disaster recovery

An **applbackup** tape does not necessarily include the large binary databases (see /dbf in ["Application directories" on page 2-32](#)). Nor do the exported files include surveillance data. To make a backup of the ENTIRE Oracle database suitable for disaster recovery, you must use **applbackup** with the **-C** option or **db_backup**.)

Commands for Application Backup and Recovery

Introduction

Purpose

NTP provides a core set of commands for use in standard backup and recovery scenarios. Other utilities are also provided for use in custom strategies. Customers participating in an enterprise management backup system, for example, may have use for these utilities. The following two tables summarize the core and custom utilities.

Consult your NTP support organization to ensure that your backup strategy and the utilities you use are appropriate.

Commands for standard backup and recovery scenarios

This table briefly describes the available utilities for use in custom backup and recovery. For more detail, see the individual descriptions in the references.

Command	Summary	Reference	Use
applbackup	(For HP systems withOUT NetApp only) Executes exp_db and then backs up to tape (fbackup) ALL files except those you specifically exclude. A -C option produces a cold database image. Reference You can also use file_backup , which is the preferred command. See also " file_backup Command " on page D-23	<ul style="list-style-type: none"> ■ "applbackup Command" on page D-10 ■ "Exclude Files from applbackup and file_backup" on page D-35 	Backup to tape Note Use standard platform procedures to recover files.
db_backup	Executes ntp_bkstart and ntp_bkstop to provide a disk image of the Oracle database to tape so you can later recover from tape.	" db_backup Command " on page D-15	
dbrestore	Restores the contents of tapes created with dbrestore or applbackup -C Caution This command should be used ONLY in consultation with the NTP support organization.	" dbrestore Command " on page D-18	Recovery of the NTP Oracle RDBMS

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Command	Summary	Reference	Use
exp_db	Converts the Oracle reference data and user working sets (user files) to ASCII files using the Oracle export utility, and stores the files in \$ORAEXPORT for recovery with imp_db .	" exp_db Command " on page D-20	Backup to \$ORAEXPORT
file_backup	(For all platforms) Backs up to tape ALL files on the host, except the Oracle data and control files those you specifically exclude.	<ul style="list-style-type: none"> ■ "file_backup Command" on page D-23 ■ "Exclude Files from applbackup and file_backup" on page D-35 	Backup to tape Note Use standard platform procedures to recover files.
file_restore	On Sun systems, attempts to recover from tape files specified on the command line. On HP systems, prompts you to use the standard SAM utility to recover.	" file_restore Command " on page D-26	Recovery from applbackup (with no options) or file_backup tape
imp_db (and imp_ws)	Converts system tables backed up by exp_db as files in \$ORAEXPORT back to databases. The imp_ws command does the same for working sets (user files, "ws" files) exclusively.	" imp_db (and imp_ws) Command " on page D-29	Recovery from \$ORAEXPORT

Commands for custom backup and recovery scenario

NTP provides the following commands for custom backup and recovery scenarios.

Command	Summary	Reference
bk_lockfile	Creates a lock file compatible with other NTP backup and recovery commands.	" bk_lockfile Command " on page D-13
dbgeneral	This utility allows you to execute an SQLplus query from the command line. It is used in procedures to recover working sets (user files) from backups.	" dbgeneral Command " on page D-17
db2ascii	Saves NTP databases (including MTDB, reference data, working sets) and the Oracle control file in ASCII representation.	" db2ascii Command " on page D-14
exp_mtdb	Creates an ASCII representation of the MTDB (thresholding and alerting) data.	" exp_mtdb Command " on page D-22

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Command	Summary	Reference
ntp_bkstart	Prepares the NTP application for a cold backup, and saves files suitable for later use in recovery. Includes an option to force the system to remain down after command execution.	"ntp_bkstart Command" on page D-30
ntp_bkstop	Undoes the effects of a previous ntp_bkstart command.	"ntp_bkstop Command" on page D-32
ntp_dbfiles	Outputs a list of files that can NOT not be backed up while the Oracle database is open without damaging the Oracle database if a restore is done. Does not include TimesTen files.	"ntp_dbfiles Command" on page D-33

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applbackup Command

When to use

The **applbackup** command makes NTP application backups to tape on HP platforms without NetApp ONLY. This command can make a backup of the entire Oracle database suitable for disaster recovery.

Note

Existing customers accustomed to **applbackup** can continue to use it, but should migrate to **file_backup** (and **db_backup**) because **file_backup** runs on ALL platforms. See "[file_backup Command](#)" on page D-23 and "[db_backup Command](#)" on page D-15.

Purpose

The **applbackup** command with no options executes **exp_db** (see "[exp_db Command](#)" on page D-20) and then the operating system **fbackup** command to back up to tape ALL files except those specifically excluded in the BackExclude file (see "[bk_lockfile Command](#)" on page D-13). This command does NOT back up raw disk partitions. With the **-C** option, **applbackup** creates a disk image of the Oracle database.

Note

- **No down time.** The system stays up when **applbackup** without options runs.
- **Duration.** Execution time depends on which files you exclude, and on the speed of your tape drive.

Excluding files

You can, and in many cases should exclude files from **applbackup** by using the BackExclude file. See "[Exclude Files from applbackup and file_backup](#)" on page D-35 for more information.

Permission

Only the **root** login can run **applbackup**.

(Continued on next page)

applbackup Command (Continued)

Syntax **applbackup** [[**-C**] [**-C -f**] [**-E**] [**-n**] [**-t device1 -t device2...**]]

Parameter	Purpose
-C	Makes a byte-for-byte disk image of the Oracle database that preserves the content and internal structure. This brings down NTP and Oracle and requires minimal system down time to ensure the database remains in sync. Backups done with -C (and -C -f) are time consuming and not typically recommended. See your NTP support organization for assistance.
-C -f	Does a cold database image backup on a system where a non-volatile copy of the database cannot be produced, such as a non-mirrored machine. This shuts down NTP and Oracle and requires that they remain down for the duration (normally hours) to ensure that the database remains in sync.
-E	Does full database export that preserves the content but not the internal structure. This option is best used during periods when the NTP is stopped. (On a running system it run much slower and degrades system performance while running.) If this option causes Oracle error 1555, with "Export terminated unsuccessfully", use ntpstop to stop NTP, try the -E option again, and then use ntpstart to start NTP (see Chapter 3, "Start and Stop").
-t device1 -t device2...	Names one or more devices where backup tapes are loaded. If you omit -t , the default is the first drive, and you are prompted to load additional tapes, as needed.
-n	Keeps the NTP application down after applbackup completes.

Example

This command for an HP system with two tapes drives, named 0m and 1m forces device 0 to be used first, and then device 1:

```
$APPLBIN/applbackup -t /dev/rmt/0m -t /dev/rmt/1m
```

Errors

If **applbackup** cannot find the \$LOGDATA, \$ORAEXPORT, or \$RESTORE directory, it stops. If it cannot find other directories, it gives a warning message, but continues.

applbackup Command (Continued)

Backup logs

Each time you run **applbackup**, it posts as follows:

- **Errors.** Success and any errors appear in a file in the \$LOGDATA directory. Each file is named with the backup date. For example, the log file for September 10, 2001 would be named backup.010910.log.
- **File list.** A list of files backed up appears in the file \$RESTORE/index.

Message format

The backup log starts with the backup date and time, and after many lines, ends with lines indicating the backup is complete. Look for unusual error reports in the log.

```
Backup Log for Sat May 22 13:10:52 EDT 2000
0+1 records in
0+1 records out
Sat May 22 13:11:03 EDT 2000
    [many lines]
Backing Up File Systems Completed
Remove Tape From /dev/rmt/0m
*****
*** Backups Completed ***
```

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bk_lockfile Command

When to use

The **bk_lockfile** command is useful in custom-designed backup routines to indicate what command is running (or that only one is running). This command would never be run by itself.

Purpose

The **bk_lockfile** command creates a lock file compatible with other NTP backup and archive commands. The presence of the lock file indicates that one of these commands is running.

Note

If you use **bk_lockfile** in a routine, be sure that the routine also removes the lock file (the name **bk_lockfile** returns on success). See the script for **db_backup** (in \$APPLBIN/db_backup) for an example of **bk_lockfile** usage.

Permission

Only the **root** login can run **bk_lockfile**.

Syntax

bk_lockfile *command_name*

Parameter	Purpose
<i>command_name</i>	The name of the command trying to create the lock.

db2ascii Command

Purpose

The NTP **db2ascii** command saves various NTP databases in ASCII representation.

This command uses the **exp_db** (see "[exp_db Command](#)" on page D-20), **exp_mtdb**, and **dbgeneral** commands to create ASCII representations of the NTP reference data, the MTDB data base (used in classic alerting), the user working sets (user files), and the Oracle control file.

In certain circumstances you can use the saved data to recover portions of NTP data.

Permission

Only the **ntp** login can run **db2ascii**. If you are not logged in as **ntp**, the command prompts you for the **ntp** password.

Syntax

db2ascii

There are no arguments or options for **db2ascii**.

Output

This command does not of itself return a response to the screen. However, it returns an exit code of 0 if successful. If any of the constituent commands fails, you get the response from the respective command, and the exit code for **db2ascii** is 1.

- Output from **exp_mtdb** goes to \$ORAEXPORT/MTDB
- Output from **exp_db** goes to \$ORAEXPORT/LOG, \$ORAEXPORT/DMP, and \$ORAEXPORT/PARAM
- Output from **dbgeneral** goes to the following file, where *PID* is the process ID from **db2ascii** execution
 - HP platforms — \$ORALOGS/ora_*PID*_ntp.trc
 - Sun platforms — \$ORALOGS/ntp_ora_*PID*.trc

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db_backup Command

When to use The **db_backup** command is designed for standard Oracle RDBMS backups to tape on any NTP system. This command can make a backup of the entire Oracle database suitable for disaster recovery.

Purpose The NTP **db_backup** saves a cold image of the NTP Oracle RDBMS files to a tape using the operating system **dd** command. The command calls **ntp_bkstart** (see "[ntp_bkstart Command](#)" on page D-30) to create a non-volatile copy of the database, if possible, and **ntp_bkstop** (see "[ntp_bkstop Command](#)" on page D-32) to restore the system to a normal state.

Note

The NTP **db_backup** command is equivalent to **applbackup -C** (see "[applbackup Command](#)" on page D-10), but supports more disk types.

Permission Only the **root** login can run **db_backup**.

Syntax **db_backup** [**-t** *device1* **-t** *device2...*] [**-f**]

Parameter	Purpose	Note
-t <i>device1</i> -t <i>device2...</i>	Names one or more devices where backup tapes are loaded. If you omit -t , the default is device 0m, and you are prompted to load additional tapes, as needed.	-
-f	Keeps the NTP application down after db_backup completes.	To restart the NTP, see " ntpstart command " on page 3-8.

(Continued on next page)

db_backup Command (Continued)

Output Logs and errors are produced similar to those for **applbackup** (see "[Backup logs](#)" on page D-12). Also see the following sample log.

Example This is an example of a **db_backup** log.

```
prod1# db_backup -f -t /dev/rmt/0m

Backup Log for Mon May 21 12:27:26 EDT 2001
#db_backup
Using DAT Tape Device /dev/rmt/0m

Broadcast Message from ntp () Mon May 21 12:27:49...
THE <application> SOFTWARE IS BEING SHUT DOWN NOW !!!
Log off now!

Beginning Cold Database Image Backup
/lucent/ntp/dbf/rssystem hdr 05/21/01 12:28:32
05/21/01 12:28:41 Writing data for /lucent/ntp/dbf/rssystem
/lucent/ntp/dbf/rssystem (/backup/ntp/dbf/rssystem) data 05/21/01 12:29:47
/lucent/ntp/dbf/rrollback hdr 05/21/01 12:29:47
05/21/01 12:29:55 Writing data for /lucent/ntp/dbf/rrollback
/lucent/ntp/dbf/rrollback (/backup/ntp/dbf/rrollback) data 05/21/01 12:30:55

[Many more lines of output, ending with the following message.]

05/21/01 12:51:01 Cold Database Image Backup Completed
```

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dbgeneral Command

When to use Use this command in procedures to recover working sets (user files) from backup.

Reference

See procedures in ["Recover Working Sets from \\$ORAEXPORT" on page D-44](#) for examples of use.

Purpose The **dbgeneral** command allows you to enter SQLplus commands from the command line.

Permission Any NTP user can run **dbgeneral**.

Syntax **dbrestore -c "SQLplus_command"**

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dbrestore Command

When to use Use this command **ONLY** in consultation with the NTP support organization.

Purpose The **dbrestore** command restores the NTP Oracle RDBMS from a tape made with **applbackup -C** or **db_backup**.

Caution

Shut down the Oracle database before using **dbrestore**. First use the procedure in "[Stop Oracle](#)" on page 3-19 (**orastop** command). If that fails, see the procedure in "[Stop Oracle if Shutdown Immediate Hangs](#)" on page 3-20.

Permission Only the **root** login can run **dbrestore**.

Syntax **dbrestore**

There are no options or arguments for this command. The command provides a description of its effects and then prompts you to respond to simple questions about your tape and tape drive.

Output Logs and errors are produced similar to those for **applbackup** (see "[Backup logs](#)" on page D-12). Also see the following example.

(Continued on next page)

dbrestore Command (Continued)

Example

This example shows that the command will not execute when Oracle is running:

```
# dbrestore
DB Restore Log for Mon May 21 13:25:41 EDT 2001
ERROR: Oracle is running. Cannot restore
```

This example shows successful execution.

```
# dbrestore
DB Restore Log for Mon May 21 13:35:38 EDT 2001

WARNING: this procedure will overwrite the existing Oracle database with data saved
        by a previous db_backup command. The existing Oracle database cannot be
        recovered afterwards. This command should only be executed by users in
        consultation with Lucent customer support personnel.

        Do you wish to continue? (y/n): y
Using DAT Tape Device /dev/rmt/0m

Rewinding tape
05/21/01 13:37:22 -- Reading tape header

This tape has a backup of /lucent/ntp/dbf/rssystem dated 05/21/01 at 12:28:32
Does this seem correct? (y/n):
Rewinding tape

File: 0 Name: /lucent/ntp/dbf/rssystem Date: 05/21/01 12:28:32
Restoring /lucent/ntp/dbf/rssystem
File: 1 Name: /lucent/ntp/dbf/rrollback Date: 05/21/01 12:29:48
Restoring /lucent/ntp/dbf/rrollback

[Many more lines are displayed, followed by a message indicating success execution.]

Completed Backup Volume 1
```

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exp_db Command

When to use Useful to provide backups of databases without requiring tape.

Purpose The NTP **exp_db** command converts the Oracle reference data and user working sets (user files) to ASCII files using the Oracle export utility, and stores the files in \$ORAEXPORT. If you need to recover databases, you can do so from these files, without loading backup tapes.

This table illustrates which databases **exp_db** converts. You can NOT select which tables are converted.

For these system tables...	exp_db backs up...
Reference. Contain data from system administrators (*see Chapter A, "Reference Database Tables")	All files in Oracle REFERENCE table space.
Working sets (user files). Contain data saved as working sets or user files These are "ws" databases NTP creates automatically in user "find" operations, and databases that users can save manually from working sets or through the sui find command.	All files in Oracle USR table space
Surveillance data. Contain data from Re's (see Appendix A of the <i>GUI User's Guide</i>).	ONLY acase (active alert case).

Note

- **No down time.** The system does NOT stop during conversion.
 - **Mirrors not split.** Mirrors are not split. The system runs in "safe" mode
 - **Where files are.** The converted files are in \$ORAEXPORT/DMP. Each file has a .dmp suffix.
-

Permission Only the **ntp** login can run **exp_db**.

Syntax **exp_db**
This command has no parameters. Enter only **exp_db**

(Continued on next page)

exp_db Command (Continued)

Output

Output from **exp_db** goes to:

- \$ORAEXPORT/LOG
- \$ORAEXPORT/DMP
- \$ORAEXPORT/PARAM

As the command executes, it outputs messages to the screen, ending with the following message indicating successful execution:

```
Export terminated successfully without warnings.
```

exp_db from cron

The **exp_db** command runs automatically, daily from **cron**. You can also run it manually, if needed.

Note

It also runs as part of **applbackup** with no options, **file_backup**, and **db2ascii**.

Reference

- **Backup.** To back up tables with **exp_db**, see ["Back Up Application Databases to \\$ORAEXPORT" on page D-36](#).
- **Recovery**
 - **System tables.** To recover system tables from \$ORAEXPORT, see ["Recover System Tables from \\$ORAEXPORT" on page D-40](#).
 - **Working sets.** To recover working sets from \$ORAEXPORT, see ["Recover Working Sets from \\$ORAEXPORT" on page D-44](#).
 - **MTDB.** **exp_db** does NOT convert MTDB data (thresholding and alerting). For a command that does this, see ["exp_mtdb Command" on page D-22](#)
 - **Surveillance data.** **exp_db** does NOT convert surveillance data (except acase). See information on **arcread**, **arcwrite**, and **arcstore** in ["Scope" on page D-3](#) if you need to save surveillance data.

exp_mtdb Command

When to use Useful to provide backups of the MTDB data without requiring tape.

Purpose The NTP **exp_mtdb** provides an ASCII representation of the MTDB (thresholding and alerting) data. This command requires that you specify a directory to hold the files. Typically this would be \$ORAEXPORT/MTDB.

Permission Only the **ntp** login can run **exp_mtdb**.

Syntax **exp_mtdb** *directory_name*

Parameter	Purpose
<i>directory_name</i>	Specifies the path to the directory where the ASCII output will be saved.

Example This command places the output of **exp_mtdb** in the MTDB directory in \$ORAEXPORT.

```
exp_mtdb $ORAEXPORT/MTDB
```

file_backup Command

When to use

The **file_backup** command makes NTP application backups to tape on ANY NTP platform. This command is similar to **applbackup** without arguments (but **applbackup** runs only on HP systems without NetApp — see ["applbackup Command" on page D-10](#)).

This command does NOT back up raw disk partitions.

Note

Existing customers accustomed to **applbackup** can continue to use it, but should migrate to **file_backup** (and **db_backup**) instead, since **file_backup** runs on ALL systems.

Purpose

The **file_backup** command executes **exp_db** (see ["exp_db Command" on page D-20](#)) and then an operating system backup utility. The following table summarizes the details.:

Platform	OS utility	Backs up...	Excluded files	Reference
HP	file_backup uses fbackup .	ALL files except those excluded	<ul style="list-style-type: none"> ■ Oracle control and data files ■ Files listed in the BackExclude file 	See "bk_lockfile Command" on page D-13
Sun	file_backup uses tar .	EITHER of the following sets of files, except those excluded: <ul style="list-style-type: none"> ■ All UNIX files (-u option) ■ All NTP files (-n option) 	<ul style="list-style-type: none"> ■ Files you exclude with the -x or -X command options ■ On Sun systems ONLY, the /dev directory 	

Note

- **No down time.** The system stays up when **file_backup** runs.
- **Duration.** Execution time depends on which files you exclude, and on the speed of your tape drive.

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file_backup Command (Continued)

Excluding files You can, and in many cases should exclude files from **file_backup** by using the BackExclude file. See "[Exclude Files from applbackup and file_backup](#)" on page D-35 for more information.

Permission Only the **root** login can run **file_backup**.

Syntax **file_backup** [**-t** *device1* **-t** *device2...*] [**-n** | **-u**]
 [**-i** *file* **-i** *file...*] [**-I** *list_of_files* **-I** *list_of_files...*]
 [**-x** *file* **-x** *file...*] [**-X** *list_of_files* **-X** *list_of_files...*]

Parameter	Purpose
-t <i>device1</i> -t <i>device2...</i>	Names one or more tape devices where backup tapes are loaded. If you omit -t , the default is device 0m, and you are prompted to load additional tapes, as needed.
-n -u (Sun systems ONLY)	<ul style="list-style-type: none"> ■ The -n option backs up NTP files ONLY. ■ The -u option backs up operating system (UNIX) files ONLY. These options are valid for Sun systems ONLY, NOT HP, and are mutually exclusive. You can NOT use both.
-i <i>file</i> -i <i>file...</i>	The -i option specifies the fully qualified pathname of a SINGLE file or directory to be INCLUDED in the backup. You can use multiple -i options to name multiple files or directories. <p>Note If you name a directory, all files and subdirectories in the that directory are backed up.</p>
-I <i>list_of_files</i> -I <i>list_of_files...</i>	The -I option names an ASCII text file that contains a list of the fully qualified pathnames of files and/or directories to be backed up, each on a line by itself. You can use multiple -I options to include multiple lists of files. <p>Note If you name a directory, all files and subdirectories in that directory are backed up.</p>
-x <i>file</i> -x <i>file</i>	The -x option specifies the fully qualified pathname (from root) of a SINGLE file (NOT a directory) to be excluded from the backup. You can use multiple -x options to name multiple files. You cannot exclude the entire contents of a directory unless you name each file in the directory.

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Parameter	Purpose
-X list_of_files -X list_of_files...	<p>The -X option names an ASCII text file that contains a list of the fully qualified pathnames (from root) of files (NOT directories) to be excluded from the backup, each on a line by itself. You can use multiple -X options to exclude multiple lists of files.</p> <p>Note You can NOT exclude the entire contents of a directory unless you name EACH file in the directory.</p>

Example

This command excludes from backup the following files, in addition to the normal exclusions (see the table by platform of exclusions in "[Purpose](#)" on [page D-23](#)):

- The file /FileA
- The directory /DirectoryA and all its contents
- The files /FileB and /FileC listed in the exclude_list file

```
file_backup -x /FileA -x /DirectoryA -X /exclude_list
```

```
#cat /exclude_list
/FileB
/FileC
```

Backup logs

Each time you run **file_backup**, it posts as follows:

- **Errors.** Success and any errors appear in a file in the \$LOGDATA directory. Each file is named with the backup date. For example, the log file for September 10, 2001 would be named file_backup.010910.log.
- **File list.** A list of files backed up appears in the file \$RESTORE/index.

Message format

The backup log starts with the backup date and time, and after many lines, ends with lines indicating the backup is complete. Look for unusual error reports in the log.

```
Backup Log for Sat May 22 13:10:52 EDT 2000
0+1 records in
0+1 records out
Sat May 22 13:11:03 EDT 2000
  [many lines]
Backing Up File Systems Completed
Remove Tape From /dev/rmt/0m
*****
*** Backups Completed ***
```

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file_restore Command

When to use The **file_restore** command restores files from tape made with **applbackup** or **file_backup** (see "[applbackup Command](#)" on page D-10 and "[file_backup Command](#)" on page D-23).

Purpose You can restore specific files, or all files on the backup tape.

- On an HP system, the command prompts you to use the standard SAM file restore utility to restore files, and then **file_restore** exits.
- On a Sun system, the command attempts to restore all files specified in the command line. If you do not specify any files to include or exclude from the recovery, **file_restore** prompts you to be sure you want to restore the entire archive tape.

Permission Only the **ntp** login can run **file_restore**.

Syntax

```
file_restore [ -t device1 -t device2... ]
[ -f file -f file... ] [ -F list_of_files -F list_of_files... ]
[ -x file -x file... ] [ -X list_of_files -X list_of_files... ]
```

Parameter	Purpose
-t device1 -t device2...	Names one or more tape devices where backup tapes are loaded. If you omit -t , the default is device 0m, and you are prompted to load additional tapes, as needed.
-f file -f file...	The -f option specifies the fully qualified pathname (from root) of a SINGLE file to be restored. You can use multiple -f options to name multiple files. Note You can NOT restore an entire directory with this option.
-F list_of_files -F list_of_files...	The -F option names an ASCII text file that contains a list of the fully qualified pathnames of files to be restored up, each on a line by itself. You can use multiple -F options to include multiple lists of files. Note To restore the entire contents of a directory, you must list each file in the directory.

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Parameter	Purpose
-x file -x file	<p>The -x option specifies the fully qualified pathname (from root) of a SINGLE file (NOT a directory) to be excluded from being restored. You can use multiple -x options to name multiple files.</p> <p>Note To exclude the entire contents of a directory you must name each file in the directory.</p>
-X list_of_files -X list_of_files...	<p>The -X option names an ASCII text file that contains a list of the fully qualified pathnames (from root) of files (NOT directories) to be excluded from the backup, each on a line by itself. You can use multiple -X options to exclude multiple lists of files.</p> <p>Note To exclude the entire contents of a directory you must name each file in the directory.</p>

Example

This command excludes the following files from recovery from a backup tape:

- The file /FileA
- The files /FileB and /FileC listed in the exclude_list file

file_restore -x /FileA -X /exclude_list

```
#cat /exclude_list
/FileB
/FileC
```

(Continued on next page)

file_restore Command (Continued)

Output

As **file_restore** runs (Sun systems only), it indicates the files being recovered up. If necessary, it prompts you to insert additional tape(s).

Note

When the recovery is complete, press **Delete** to stop **file_restore**.

Example

This example shows typical output from **file_restore** as it restores files and prompts you to load an additional tape.

```
File: 28 Name: /lucent/ntp/snas/user/control/controlfile2 Date: 06/20/01 08:26
Restoring /lucent/ntp/snas/user/control/controlfile2
File: 29 Name: /lucent/ntp/mtdb/control/controlfile3 Date: 06/20/01 08:23:47
Restoring /lucent/ntp/mtdb/control/controlfile3
File: Name: Date:
Restoring
Completed Backup Volume 1

Remove Tape From /dev/rmt/0m
Insert New Readable Tape in /dev/rmt/0m
Confirm DAT /dev/rmt/0m Ready
Then Press Return
Confirm DAT /dev/rmt/0m Ready
Then Press Return
```

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imp_db (and imp_ws) Command

Purpose

The NTP **imp_db** command recovers system tables by converting system tables (backed up by **exp_db** as files in \$ORAEXPORT) back to databases. This enables you to recover system tables without loading backup tapes. The **imp_ws** command does the same for working sets (user files, "ws" files) exclusively. Both commands are in \$APPLDIR/admetc.

Reference

- **Procedures.** For use of **imp_db**, see ["Recover System Tables from \\$ORAEXPORT" on page D-40](#). For use of **imp_ws**, see ["Recover Working Sets from \\$ORAEXPORT" on page D-44](#).
- **Which system tables.** For which system tables are in \$ORAEXPORT, see ["exp_db Command" on page D-20](#).
- **Backup.** For how to back up system tables (and working sets) to files in \$ORAEXPORT, see ["Back Up Application Databases to \\$ORAEXPORT" on page D-36](#).

Note

- **Downtime.** Before using this command, you must stop NTP. Procedures in this chapter tell you how to do this (using **ntpstop**).
- **How Current?** To see how current the files are that you are converting back to databases, you can list the contents of \$ORAEXPORT/DMP. (Since **exp_db** runs daily from **cron**, files are at least as current as yesterday's date.)

Permission

Only the **ntp** login can run **imp_db** (and **imp_ws**).

Syntax

imp_db

Example

This command has no parameters. Enter **imp_db** and then follow the prompts.

Reference

The **imp_db** command prompts you to import selected files, all BUT selected files, or all files. For details, see ["Recovery strategy for system tables" on page D-40](#).

ntp_bkstart Command

Purpose

The **ntp_bkstart** command prepares the NTP application for a cold (non-volatile) database backup. It also produces a list of file (device) names that should be used in strategies to produce a cold backup of the application.

This command prepares NTP for backup by:

- Stopping the NTP application
- Determining the filesystem type (mirrored disks, NetApp, Veritas)
- Issuing the appropriate commands to create a non-volatile copy of the NTP application

The NTP application then is restarted unless the **-f** option is used to force the application to remain down or the system has no means of producing a non-volatile copy of the NTP application.

If the system has no means of producing a non-volatile copy, NTP is NOT restarted, regardless of the **-f** option.

Note

The list is in the same order as the output from **ntp_dbfiles**, but the pathnames may be different.

Permission

Only the **root** login can run **ntp_bkstart**.

Syntax

ntp_bkstart [-f]

Parameter	Purpose	Note
-f	(force) Forces the NTP to remain down after command execution completes.	To restart NTP, see " ntpstart command " on page 3-8.

ntp_bkstart Command (Continued)

Output

This command returns to the screen errors, warnings, status messages, and if execution is successful, the list of files. If command execution fails, there is no list. An example of the list is shown below.

Example

The list is in the same order as the output from **ntp_dbfiles**, but the pathnames may be different.

```
# ntp_bkstart
Broadcast Message from ntp () Tue May 22 15:01:47...
THE <application> SOFTWARE IS BEING SHUT DOWN NOW !!!
Log off now!

/backup/ntp/dbf/rssystem
/backup/ntp/dbf/rrollback
/backup/ntp/dbf/rtemp
/backup/ntp/dbf/racase
/backup/ntp/dbf/radmuser
/backup/ntp/dbf/ralert
/backup/ntp/dbf/rarchive
/backup/ntp/dbf/rcfim.1
/backup/ntp/dbf/rcfim.2
/backup/ntp/dbf/rcim.1
/backup/ntp/dbf/rcim.2
/backup/ntp/dbf/ricfimidx.1
/backup/ntp/dbf/ricfimidx.2
/backup/ntp/dbf/ricfimidx.3
/backup/ntp/dbf/ricfimidx.4
/backup/ntp/dbf/rindx
/backup/ntp/dbf/rlinkalert
/backup/ntp/dbf/rotrsumm
/backup/ntp/dbf/rreference
/backup/ntp/dbf/rsumcount
/backup/ntp/dbf/rthresh
/backup/ntp/dbf/rusr
/backup/ntp/dbf/rredolog.1
/backup/ntp/dbf/rredolog.2
/backup/ntp/dbf/rredolog.3
/backup/ntp/dbf/rredolog.4
/backup/ntp/snas/control/controlfile1
/backup/ntp/snas/user/control/controlfile2
/backup/ntp/mtdb/control/controlfile3
#
```

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ntp_bkstop Command

Purpose

The **ntp_bkstop** command undoes the effects of a previous **ntp_bkstart** command (see "[ntp_bkstart Command](#)" on page D-30). The non-volatile copy of the NTP application is reintegrated into the application. If a non-volatile copy was not made, NTP is restarted, unless the **-f** option was used.

Permission

Only the **root** login can run **ntp_bkstop**.

Syntax

ntp_bkstop [**-f**]

Parameter	Purpose	Note
-f	(force) Forces the NTP to remain down after command execution completes.	To restart NTP, see " ntpstart command " on page 3-8.

ntp_dbfiles Command

Purpose

The **ntp_dbfiles** command provides a list of files that comprise the NTP Oracle database, including Oracle control and data files.

- These files should NOT be backed up during incremental or other file-based backups unless the Oracle database is closed.
- These files MUST be backed AS A SET up for a complete cold database backup.

Note

Output from this command does NOT include any TimesTen data files.

Caution

If the files listed by **ntp_dbfiles** are backed up and then restored while the Oracle RDBMS is running, the Oracle database will be damaged.

Permission

Any user with a valid Oracle environment can run **ntp_dbfiles**.

Syntax

ntp_dbfiles

There are no arguments or options for **ntp_dbfiles**.

Output

This command returns a list of files and directories to stdout.

Note

The list is in the same order as the output from **ntp_bkstart**, but the pathnames may be different.

Application Backup Procedures

Application Backup Overview

Backup utilities

To back up files to tape, use one of the following utilities. See ["Overview of backup and recovery" on page D-5](#) to select the appropriate utility for your platform and purpose.

Purpose	Command	Platform	Reference
Create an NTP application backup	applbackup (with no options)	HP with no NetApp only	"applbackup Command" on page D-10
	file_backup	All platforms	"file_backup Command" on page D-23
Create a recoverable tape image of the Oracle RDBMS	applbackup -C	HP with no NetApp only	"applbackup Command" on page D-10
	db_backup	All platforms	"db_backup Command" on page D-15
Back up databases as files to \$ORAEXPORT	exp_db	All platforms	"exp_db Command" on page D-20

Backup tapes

For tape backups, observe these guidelines:

- **Number.** You will typically need one 4-mm DDS3 DAT cartridge tape or at most three 4-mm DDS2 DAT cartridges. The exact number depends on your platform, and the utility and options you select.
- **Label.** Label each backup tape with the name of the backup utility and the date and time. If possible, use the date and time displayed in the backup log file in the \$LOGDATA directory (see ["Backup logs" on page D-12](#)), for example:
- **Rotate.** Do NOT back up on the previous backup tape, since a problem during backup may leave you with no backup tape. We suggest you have at least three sets of tapes and use them in rotation.

Tape drive

Follow the vendor procedures for your tape drive(s) to load tapes and determine if a drive is functioning correctly. (Normally you should see a single green light indicating the drive is ready.)

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Exclude Files from `applbackup` and `file_backup`

Description

You can exclude files and directories from backups done with the **applbackup** and **file_backup** commands by listing them in the BackExclude file. Excluding certain files can speed up the backup and prevent backup of mounted directories that are backed up elsewhere.

Procedure: Create the BackExclude file

The **applbackup** command reads the `/opt/nas-ntp/ntp/BackExclude` text file to obtain a list of NTP files NOT to back up. The BackExclude file is NOT created when NTP is installed. You must create it yourself with a text editor (such as **vi**). Follow these guidelines:

- Each file or directory to be excluded MUST appear on a line by itself.
- There can be NO blank lines.

Note

See your NTP support organization before modifying the BackExclude file.

BackExclude entries

We strongly recommend you include these entries in the BackExclude file:

- `/cdrom`
- `/dump`
- `/tmp`
- `/usr/tmp`
- `/var/tmp`
- `/lucent/ntp/dbf` (`$APPLROOT/dbf`)
- `/lucent/ntp/restore` (`$RESTORE`)
- Other directories with completely temporary non-essential information.
- Any mounted directories that are already backed up elsewhere

Network Appliance

If your system has the Network Appliance disk array (typically on HP N-series platforms), also include these entries in the BackExclude file:

- `/lucent/ntp/.snapshot` (`$APPLROOT/.snapshot`)
- `/netapp`

Back Up Application Databases to \$ORAEXPORT

Purpose

This procedure uses **exp_db** to convert system tables and working sets (user files) in the Oracle databases to files in the \$ORAEXPORT/DMP directory, from which you can recover without loading backup tapes.

Reference

- **Which system tables?** For which system tables are converted to files, see ["exp_db Command" on page D-20](#).
- **Recover.** For how to recover system tables and user files from \$ORAEXPORT to databases, see ["Recover System Tables from \\$ORAEXPORT" on page D-40](#).and ["Recover Working Sets from \\$ORAEXPORT" on page D-44](#).

When to use

exp_db runs automatically, daily from **cron**, and whenever you run **applbackup**, **file_backup**, or **db2ascii**. You would rarely run this command manually — typically only before you do something risky, such as major database changes.

Procedure: Back up databases to files

Use this procedure to convert databases to files in \$ORAEXPORT.

Step	Action
1	Log on the NTP host as ntp . (You must be logged on as ntp to proceed.)
2	<p>Enter \$APPLBIN/exp_db</p> <p>Response The command produces many lines of output to the screen, ending with this line indicating successful execution: <code>Export terminated successfully without warnings.</code></p> <p>Reference For more information on the exp_db command, see "exp_db Command" on page D-20.</p>
Done	

Back Up Application Files to Tape

Purpose

This procedure his command executes **exp_db**, and then backs up ALL files to tape, so you can later recover files from tape

Reference

- **Which files.** For which files are backed up, see the appropriate command description.
- **Recover.** For how to recover files from tape, see ["Recover Application Files from Tape" on page D-49](#).

Before you begin

Be sure you have an appropriate number of tapes and that they are labeled. See ["Backup tapes" on page D-34](#). Be sure to load any additional tapes necessary, when prompted, to prevent the backup from timing out (after 3000 seconds, approximately 50 minutes).

Procedure: Back up files to tape

Use this procedure to back up NTP files.

Step	Action
3	Log on the NTP as root .
4	Enter the appropriate backup command for your platform, either applbackup , or file_backup (see "applbackup Command" on page D-10 "Application Backup Overview" on page D-34).
5	Respond to any prompts regarding loading tapes in the tape drive(s).
6	Wait until the backup is complete, and then remove the tapes and label them appropriately. For applbackup , for example, you will see the following message: *** BACKUPS COMPLETED ***
7	Verify that the NTP application software is running by entering runstat Note If the NTP application is not running, enter ntpstart to start NTP, and then re-enter runstat . If at this point, the application is not running, consult your NTP support organization. Reference For full details about the ntpstart and runstat commands, see Chapter 3, "Start and Stop" .
Done	

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Application Backup from cron

applbackup from cron

It is possible to run **applbackup** or **file_backup** from **cron** by adding an entry to the root crontab file. (See "[applbackup Command](#)" on page D-10 and "[file_backup Command](#)" on page D-23.)

If you do, you must pre-load a backup tape in the tape drive. If two tapes are required, pre-load them in separate tape drives. In the crontab entry, specify each tape drive in the **applbackup** or **file_backup** command line (use a separate **-t** option for tape drive). When run from **cron**, if the backup command finds no tape or runs out of tape, it creates an error message, aborts, and restarts NTP, if necessary.

root crontab entry for application backup

To execute **applbackup** or **file_backup** automatically from cron each night, add an entry resembling the following to the root crontab file (the example below shows **applbackup**). Be sure the entry includes the string **CONNID=db\$/db** to set permission for root to access the NTP database.

```
0 6 * * * /bin/ksh -c "export SNASDIR=/lucent/ntp/snas; export LOGDATA=lucent/ntp/logdat; CONNID=db$/db . /lucent/ntp/snas/appl/init/snas_env; /lucent/ntp/snas/appl/bin/applbackup -t /dev/rmt/2m > /dev/null 2>&1"
```

Note

The syntax to call `snas_env` includes a space character before and after the period preceding the path.

Reference

See "[Modify crontab Files](#)" on page 3-25 and "[NTP-related crontab files](#)" on page 3-23 for more information on modifying NTP-related crontab files.

Application Recovery Procedures

Application Recovery Overview

Guidelines

Data loss often means you have a problem your NTP support organization needs to know about. They can advise you on which recovery strategy is best. ALWAYS contact the NTP support organization in the following cases:

- Before recovering databases (system tables), particularly the mtdb database
- If you plan to restore ALL files from all file systems (Problems may occur when you restore all copies of the Oracle control files during this type of recovery.)
- If disk corruption or failure made a database inoperable (In severe cases, the only way to recover from a database corruption may be to reload NTP and rebuild the entire database.)

If you mis-edited a system table and you want to recover it to correct your mistakes, it is usually safe to do so.

Recovery utilities

To recover up files to tape, use one of the following utilities. See "[Overview of backup and recovery](#)" on page D-5 to select the appropriate utility for your platform and purpose. These utilities can be used on all platforms (HP and Sun)

Purpose	Command	Reference
Recover NTP application files from an applbackup (with no options) or file_backup tape	file_restore	<ul style="list-style-type: none"> ■ "file_restore Command" on page D-26 ■ "Recover from an applbackup or file_backup tape" on page D-49
Recover application databases from an applbackup -C or db_backup	db_restore	Contact your NTP support organization.
Do file-to-database conversion, recovering system tables saved in \$ORAEXPORT with exp_db .	imp_db (and imp_ws) Note The imp_ws command converts working sets (user files) only.	<ul style="list-style-type: none"> ■ "imp_db (and imp_ws) Command" on page D-29 ■ "Recover System Tables from \$ORAEXPORT" on page D-40 ■ "Recover Working Sets from \$ORAEXPORT" on page D-44

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Recover System Tables from \$ORAEXPORT

Purpose

The various procedures to recover system tables (see ["Recovery strategy for system tables" on page D-40](#)) all work in a similar way. They convert the system tables that were backed up as files in \$ORAEXPORT back to databases. This enables you to recover databases without loading backup tapes.

Reference

- **Which system tables.** For which system tables are converted to files, see ["exp_db Command" on page D-20](#).
- **Back up.** For how to convert system tables in databases to files in \$ORAEXPORT, see ["Back Up Application Databases to \\$ORAEXPORT" on page D-36](#).

Before you begin

The system table files that were converted from databases are at \$ORAEXPORT/DMP. Each has a .dmp suffix. Check there to be sure the files you want exist. If they do not, recover the files from tape (see ["Recover Application Files from Tape" on page D-49](#)). Then return to one of the next three procedures.

Recovery strategy for system tables

There are three ways to use **imp_db** to recover tables.

To recover...	Reference...
<ul style="list-style-type: none"> ■ All system tables ■ One or more of the following system tables ONLY: systeminfo, custid, active acase, or vpid 	"Recover systeminfo, custid, acase or vpid from \$ORAEXPORT" on page D-41
All system tables EXCEPT systeminfo, custid, active acase, or vpid	"Recover all BUT systeminfo, custid, acase, or vpid from \$ORAEXPORT" on page D-42

(Continued on next page)

Recover System Tables from \$ORAEXPORT to Databases (Continued)

Procedure: Recover systeminfo, custid, acase or vpnid from \$ORAEXPORT

This procedure uses the **imp_db** command to one or more of the listed tables (and NO other tables) from \$ORAEXPORT. The procedure requires you to use the **ntpstop** and **ntpstart** commands to stop and restart NTP

Reference

For information on stopping NTP, see ["Stop" on page 3-14](#) and ["Start" on page 3-8](#). For information on **imp_db**, see ["imp_db \(and imp_ws\) Command" on page D-29](#).

Step	Action
1	Log on the NTP as ntp . (You must be logged on as ntp to proceed.)
2	Stop NTP by entering \$APPLBIN/ntpstop
3	Enter \$APPLDIR/admetc/imp_db Response The following tables can be recovered individually SYSTEMINFO, CUSTID, ACASE and VPNID Do you want to recover any of these tables [y/n];
4	Enter y Response You see the following prompts, one by one: Do you want to recover SYSTEMINFO table [y/n]: Do you want to recover CUSTID table [y/n]: Do you want to recover ACASE table [y/n]: Do you want to recover VPNID table [y/n]:
5	Enter y or n at EACH prompt to select the table(s) you want to recover. Note If you also lost working sets, you may want to recover them all now by entering, imp_ws . See "Recover Working Sets from \$ORAEXPORT" on page D-44 .
6	Start NTP by entering \$APPLBIN/ntpstart
Done	

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Recover System Tables from \$ORAEXPORT to Databases (Continued)

Procedure: Recover all BUT systeminfo, custid, acase, or vpnid from \$ORAEXPORT

Use this procedure to recover all tables BUT the listed tables, from \$ORAEXPORT. The procedure requires you to use the **ntpstop** and **ntpstart** commands to stop and restart NTP.

Reference

For information on stopping NTP, see ["Stop" on page 3-14](#) and ["Start" on page 3-8](#). For information on **imp_db**, see ["imp_db \(and imp_ws\) Command" on page D-29](#).

Step	Action
1	Log on the NTP host as ntp . (You must be logged on as ntp to proceed.)
2	Shut down NTP by entering: \$APPLBIN/ntpstop
3	Enter \$APPLDIR/admetc/imp_db Response The following tables can be recovered individually SYSTEMINFO, CUSTID, ACASE and VPNID Do you want to recover any of these tables [y/n];
4	Enter n Response To recover any other reference table, all the other reference tables will have to be recovered. Continue with the recover [y/n]:
5	Enter y Note If you also lost working sets, you may want to recover them all now by entering, imp_ws . See "Recover Working Sets from \$ORAEXPORT" on page D-44 .
6	Start up NTP by entering: \$APPLBIN/ntpstart
Done	

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Recover System Tables from \$ORAEXPORT to Databases (Continued)

Procedure: Recover all tables from \$ORAEXPORT

Use this procedure to recover all tables BUT the listed tables, from \$ORAEXPORT.

Reference

Caution. See caution in ["Purpose" on page D-40](#).

Step	Action
1	Log on as ntp .
2	Shut down NTP by entering: \$APPLBIN/ntpstop
3	<p>Enter \$APPLDIR/admetc/imp_db</p> <p>Reference For the imp_db command, see "exp_db Command" on page D-20.</p> <p>Response The following tables can be recovered individually SYSTEMINFO, CUSTID, ACASE and VPNID Do you want to recover any of these tables [y/n];</p>
4	<p>Enter n</p> <p>Response To recover any other reference table, all the other reference tables will have to be recovered. Continue with the recover [y/n]:</p>
5	<p>Enter n</p> <p>Response Recover the entire reference database [y/n]:</p>
6	<p>Enter y</p> <p>Note If you also lost working sets, you may want to recover them all now by entering, imp_ws. See "Recover Working Sets from \$ORAEXPORT" on page D-44.</p>
7	Start up NTP by entering: \$APPLBIN/ntpstart
Done	

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Recover Working Sets from \$ORAEXPORT

Purpose

The procedures in this section tell how to recover working sets (user files) from \$ORAEXPORT to databases, for a user, or all users (see ["Recovery strategy for working sets" on page D-45.](#))

Background

Working sets are databases created automatically or manually by users:

- **Automatically.** Each time a GUI user uses Find/Analyze to retrieve data from a database, the retrieved data is saved in a database file called a working set. Each user's automatically created working sets are named `ws`, `ws_prev`, `ws_view`, and `ws_view_prev`. These overwrite each other with each Find/Analyze. Typically, these are NOT worth recovering.)
- **Manually.** A user can manually rename an automatically created a working set. It is retained until he or she manually removes it. Since users purposely save these, they may be worth recovering.

Working sets are backed up (along with other databases) by:

- **exp_db** — into files in \$ORAEXPORT (automatically done daily from **cron**)
- **applbackup** and **file_backup** — into files in \$ORAEXPORT, and from there to tape

However, the **imp_db** command does NOT recover working sets from \$ORAEXPORT files to databases. Instead, use one of the procedures listed in ["Recovery strategy for working sets" on page D-45.](#)

Before you begin

Working sets are in \$ORAEXPORT/DMP/*.ws.dmp where * is the username in uppercase. Check there to make sure the working set files you want exist. If they do not, recover the files from tape (see ["Recover Application Files from Tape" on page D-49](#)). Then go to one of the next procedures listed in ["Recovery strategy for working sets" on page D-45.](#)

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Recover Working Sets from \$ORAEXPORT to Databases (Continued)

Recovery strategy for working sets There are two ways to recover working sets.

To recover	Use.	When to use
All working sets (uses imp_ws)	"Recover all working sets from \$ORAEXPORT " on page D-45	If you lost all or most working sets. Although this procedure recovers automatically created working sets, the real reason we do this is to recover any manually created working sets.
One or some working sets	"Recover one or more working sets from \$ORAEXPORT " on page D-47	If a user accidentally deleted a manually created working set. Recovering one or some sets causes minimal disruption for other users. Note Recovering all sets will probably nullify any Computes users are currently executing. To correct this, they would have to re-execute the last Find/Analyze and Compute again.

Procedure: Recover all working sets from \$ORAEXPORT Use this procedure to recover all working sets from \$ORAEXPORT to databases.

Step	Action
1	Log on the NTP host as ntp . (You must be logged on as NTP to proceed.)
2	Enter \$APPLDIR/admetc/imp_ws
Done	

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Recover Working Sets from \$ORAEXPORT to Databases (Continued)

Commands to recover specific working sets

The following commands are used in "Recover one or more working sets from \$ORAEXPORT" on page D-47.

dbgeneral delete

dbgeneral -c "delete from db\$.usertable where username='uname' and tablename='tname'"

Where:

- *uname* — The name of the user whose user file is to be deleted
- *tname* — The file name to be deleted

dbgeneral insert

A backslash (\) connects a line at a **Return**, so if you type this command on one long line, you can omit backslashes.

dbgeneral -c "insert into db\$.usertable (username, tablename, type, records, modtime) \ values ('uname', 'tname', 'search_table_type', 'number_of_records', 'time'"

Where:

- *uname* — User name
- *tname* — Name of the working set
- *search_table_type* — Name of the system table that was searched
- *number_of_records* — Number of records in the working set. This can be found in the log of the import command.
- *time* — Current time in the format YY/MM/DD hr:min

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Recover Working Sets from \$ORAEXPORT to Databases (Continued)

Procedure: Recover one or more working sets from \$ORAEXPORT

Use this procedure to recover one or more working sets from \$ORAEXPORT. The following values are used as examples. You will have different values.

- **nisha** — as a user ID
- **nsw** — as a working set name

Step	Action
1	Delete the working set entry from the USERTABLE table. Enter dbgeneral -c "delete from db\$.usertable where username='nisha' and tablename='nsw'"
2	Delete the damaged working set from the database. Enter dbgeneral -c "drop table nisha.nsw"
3	Run the import command interactively. Enter /oracle/bin/imp Response Response is similar to this: Import: Release 7.1.3.2.0 - Production on Wed Feb 15 12:14:16 1995 Copyright (c) Oracle Corporation 1979, 1994. All rights reserved. Username: / Connected to: Oracle7 Server Release 7.1.3.2.0 - Production Release With the distributed option PL/SQL Release 2.1.3.2.0 - Production Import file: expdat.dmp > NISHA.ws.dmp Enter insert buffer size (minimum is 4096) 30720> Export file created by EXPORT:V07.01.03 List contents of import file only (yes/no): no > Ignore create error due to object existence (yes/no): yes > Import grants (yes/no): yes > Import table data (yes/no): yes > Import entire export file (yes/no): yes > no Username: nisha Enter table names. Null list means all tables for user Enter table name or . if done: nsw Enter table name or . if done: . importing GRIMM1's objects into GRIMM1 . importing NISHA's objects into NISHA . . importing table "NSW" 29 rows imported Import terminated successfully with warnings.

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Step	Action
4	<p>Insert the working set entry into the USERTABLE table. Enter</p> <pre>dbgeneral -c "insert into db\$.usertable \ (username, tablename, type, records, modtime) \ values ('nisha', 'nsw', 'swarch', '29', '95/02/15 12:21')"</pre> <p>Note</p> <p>The "\n" is used as a line break. If you type this all on one line, do not use the "\n".</p>
Done	

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Recover Application Files from Tape

Procedure: Recover from an applbackup or file_backup tape

Use this procedure to recover files from a backup tape you made by using **applbackup** or **file_backup**, or **db_backup**. The procedure may require you to stop and restart NTP.

Note

If you are doing a disaster recovery from an **applbackup -C** or **db_backup** tape, consult with the NTP support organization about using **dbrestore**.

Reference

For information on stopping NTP, see ["Stop" on page 3-14](#) and ["Start" on page 3-8](#).

Step	Action
1	<p>Does the file you want to recover affect the NTP system?</p> <ul style="list-style-type: none"> ■ If NO, go to the next step. ■ If YES, use the \$APPLBIN/ntpstop command shut down NTP. <p>Reference See "Stop" on page 3-14 for information on ntpstop.</p> <p>Note Files that do NOT affect the system are typically found in /home, such as personal or log files you saved there. If in doubt, shut down the system.</p>
2	<p>Use the file_restore command to recover individual files or all files from the tape.</p> <p>Reference See "file_restore Command" on page D-26 for information on command options and an example of command output.</p>
3	<p>Are any of the files you recovered in \$ORAEXPORT/DMP (with the.dmp suffix)?</p> <ul style="list-style-type: none"> ■ If NO, go to the next step. ■ If YES, use one of the procedures starting in "Recover systeminfo, custid, acase or vpid from \$ORAEXPORT" on page D-41 to convert those files to databases.
4	<p>If you stopped NTP in Step 1, enter \$APPLBIN/ntpstart to restart the system.</p> <p>Reference See "Start" on page 3-8 for information on ntpstart.</p>
Done	

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NTP Quick Reference

Awareness Screen

Run **sui ascreen** to continuously display active alert case records for your FDC and network segments or groups. Ascreen auto-updates every 5 minutes. All parameters are optional. Default searches for ascreen are based on your current FDC_GROUP and NET_GROUP settings.

Example: ascreen RETURN

```
sui ascreen search=field=value1,value2... and/or [not]
field=value1 sort=(field1=a/d,field2=a/d) format=
field1,field2:width,field3,...
```

Important Alert Case Record Fields

“5”, “h”, and “d” in the field name indicates 5-minute, hourly, or system day alerts. Periodic (5min and hourly) alerts occur after a 5min and hourly interval during which a threshold has been crossed. System day (d) alerts occur at the time a threshold has been crossed within the system day. FDCs are assigned to either periodic (5min and h) or system day (d) thresholding.

- Trouble Number (tn) -- an ID used to group alert case records caused by the same problem. Needed for **acresolve viewcfim** function.
- (fdate, ftime, ldate, ltime, acstart) -- date and time of first and last alerts associated with this case.
- NE and Type -- The alerting entity (Ne) and whether it is reporting (Re) or distant (De) entity, or an STP (Rs or Ds).
- FDC -- Failure Designator Code code describing the event as translated by your system administrator (such as the 4ESS FHC or 5ESS MDII).
- CFIM counts (cnt5, cnth, cntd, fcnt, lcnt) -- cumulative CFIM counts for respective alert intervals. Also, CFIM counts for first and last alert records.
- Alert counts (alr5, alrh, alrd) -- total number of alerts for respective alert intervals. date and time of first and last alerts associated with this case.
- Consecutive Alert Intervals (cai5, caih, caid) -- the number of consecutive intervals (five minute, hourly, system day) during which alerts have (+ value) or have not (- value) been generated.
- Modification ID (mid) -- the ID of the user to last modify this record.
- Failure Cause (fcause) -- the cause of a problem/event; select from a list populated by the NTP Administrator.

- owner; referred -- The analyst or organization assigned to resolve this alert; The person or organization to whom the trouble has been reported.

Trapalert Command

The **sui trapalert** command provides a real-time display of threshold crossings (trapalert records) that are currently occurring and that have no corresponding active alert case record. Trapalert records are cleared from active Trapalert screens at 5-minute intervals when active Ascreens are updated. Information on a Trapalert window appears as an alert case record in Ascreen if the record satisfies the Ascreen search expression. The Trapalert command is an optional purchase and may not be available on your system.

```
sui trapalert search= [not] field=value1... and/or [not]
field=value1,value2... format=field1,field2:width,field3...
```

ACResolve Command

The **sui acresolve** command enables you to *view* or *trap* related CFIMs. In Menu mode, search on a specific “tn” and enter “y” in the *view* or *trap* parameter to view or trap the related CFIMs.

Example: sui acr se=tn=93 view RETURN

Viewed records are stored in user file **ws_view** or filename entered in the **save** parameter. You may also display alert case records matching your search criteria, update resolution information such as failure cause and to whom the case is assigned or referred, group or ungroup related cases to have the same Trouble Number, or close alert case records.

```
sui acresolve search=(expression) view trap
dest= save=user_filename assigned=whom referred=
whom status=closed fcause=cause comments=text
group=g/u
```

CFIM Record Fields to Remember

Use set command to put these or any CFIM field in your CFIM_FORM variable:

- Reporting entity (Re) -- the network forwarding the CIM.
- Distant entity (De) -- the entity the RE was attempting to reach when the event occurred.
- Call Direction (D) -- the direction of the call when the event occurred: i=De-to-Re; o=Re-to-De; n=neither; “.”=unknown.
- Digits -- the digits in the call register of the RE for this call.
- lct, Ogt-- incoming and outgoing trunks.
- Tgn --- trunk group number.

- Related -- CIMs identify the entities on the ICT and the OGT; NTP determines one to be the De, the other is the related entity. For 4Es, if the DE is (?), related contains the CLLI implicated by the CIM.
- Related Direction (R) -- the direction of the trunk to or from the **related** entity. Same values as (D).
- Calling Party Digits (cpdig) -- 15-character digits of the calling party.
- CIM -- the original CIM message, not stored in a working set, but saved in the cim table.
- dpc -- destination point code is the unique network id.
- servdig -- the global title key used as derived from the called/calling number of the CIM.
- Domi -- Numeric value representing domain.
- Caus -- the CCS protocol failure

Find Command

The **sui find** command searches for records that match your search expression and stores them in a user file (**ws**, **ws_prev**, or **save filename**) for analysis.

```
sui find source=user or system file save=user_filename
search=field=value1,value2... and/or [not] field=value1
format=field1,field2:width,field3... dest=destination
range=n to maxsave-1 (range cannot exceed 30,000)
maxsave=n (n can be 0-100,000) fdcgroup=
netgroup= findtime= netsearch= fdcsearch=
delim=“delimiter” noheader
```

- source: enter a NTP system table or user file.
- save: enter a *filename* in which to save the records.
- search: expression providing search criteria. *se=fdc=1016,1018 and re=nwrknja041t or fdc=63*
- format: the fields in the order you want the found records displayed. Enter a list of fields separated by commas (*field1,field2:width,field3*), a FORM variable, “all”, or press RETURN to use the default.
- range: indicate which records to display.
- maxsave: set max # of records to find and save.
- destination: leave blank to send output to the screen, or enter lp, a printer name, null (for no output), or an ASCII filename.
- delim: replace blanks between fields with another character (put in double quotes enclosed with single quotes).

Example: sui find source=cfim se=fdc=900 and re=dytnoh1401t format=\$CFIM_FORM,cpdigits RETURN finds CFIMs of FDC 900 reported by a specific Dayton office, displaying the fields listed in the CFIM_FORM variable and the calling party digits.

Trapcfim Command

The **sui trapcfim** command displays CFIMs matching your search expression on your screen as they are received and generated by NTP.

sui trapcfim se=expression format=format

Example: **sui trapcfim search=(fdc=1016,1018)** RETURN displays CFIMs with FDCs 1016 or 1018.

Compute Command

The **sui compute** command counts the occurrence of single or multiple fields in a working set of records and outputs the results in tabular format. Use column to organize the data in columns by the values for the field specified.

sui compute file=user filename row=field1,field2,... column=(fieldname [=value1,value2,...value12] output=output_type min=minimum title="title" sort=count/value sigdig=digit_pattern interv=time_interval dest=

- row: specifies fields on which to perform computation.
- column: specifies a single field and (optionally) field values by which the output table columns should be organized. For example, to compute by digits for fdc 106 or 108, specify row=digits and column=fdc=106,108. Limited to 1 field and up to 12 values.
- output: Display output by count (default) or percent.
- sort: Sort output by count or value (row values).
- sigdig: significant digits on which you want to focus the computation. Multi-field syntax: fieldname:positions;fieldname:positions (digits:1-6;cpdigits:1-10)
- interv: the time interval used in the display of the computed output when computing by time-related fields.

Example: **sui compute row=digits column=fdc=106,108 title="Comp by Digits for 106,108" sigdig=1-6**

Environment Variables

Set these variables to customize search defaults and output:

- FDC_GROUP -- your fdc group assignment.
- FDC_SEARCH -- default FDCs to search (*all* or *group*).
- NET_GROUP -- your network segment assignment.
- NET_SEARCH -- default NEs to search (*all* or *group*).
- FIND_TIME -- default search interval (1 to 120 minutes)
- MAXSAVE -- default # of records to save (up to 100000).
- RANGE -- records to show ($n-(maxsave-1)$). Range can be up to 30000 records, i.e. 15001-45000.
- _FORM variables, i.e. CFIM_FORM, ASCREEN_FORM. Sets default formats. Syntax:(field1:width,field2,field3...)

Search Expressions

[not] **fieldname operator value** and/or [not] **fieldname operator value**

Example: **date>940928** and **(fdc=1016,63 or tc=conv)**

If you do not provide parentheses, the system will assume parentheses around the expressions connected by "and", interpret them first, then interpret the "or".

Single Entry: To find all CFIMs reported by a single re:
sui find source=cfim search=re=waynpa123t

Multiple Values: To find all CFIMs that contain only ICTs 5233, 5567, 5569, or 5583:

sui fi sou=cfim search=ict=5233,5567,5569,5583

Range of values: To find all CFIMs with the ICT field containing only trunk numbers 5233 through 5264:

sui find sou=cfim search=ict=5233-5264

To find all CFIMs received from any Atlanta RE between 9:00 am on 12/27 and 10:30 am on 12/31 with FDC 297:

sui find sou=cfim se=fdc=297 and re=atln* and datetime=95/12/27 09:00-95/12/31 10:30

If you do not specify time or date ranges for Alert or CFIM records, the default search time (minutes back from present) is the value of FIND_TIME environment variable.

Relation on a Value: To find all CFIMs with an ICT that contains only trunk numbers less than 5200:

sui find cfim search=ict<5200

To find CFIMs where Time is before 4 pm or later than 8 pm:

sui fi sou=cfim search=time<16:00 or time>20:00

Complement of a Value: To find all CFIMs with an FDC not equal (!=) to 8 or to 153:

sui find source=cfim search=fdc!=8,153

Absence of Field Data: To find all CFIMs with no data (represented in a field as "?") in the de field:

sui find source=cfim se=de=?

Metacharacters can be used to substitute for one or more other characters:

Asterisk (*) - substitutes for zero or more instances of any characters in the position of the asterisk. **search=re=nycmny*** finds **nycmny5450t** and **nycmnybw24t**.

Ampersand (&) - represents a single instance of any character in a string. **search=re=*&&&&ny*finds** CLLIs beginning with any 4 characters, followed by ny in the 5th and 6th positions, and any characters in the remaining positions.

Lucent Technologies
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NTP

Quick Reference Card for Administrators Updated August 2001

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- This is a quick reference for experienced NTP administrative users.
- Commands are in **boldface**.
- For full information, see the *System Administration Guide*, 190-405-503.
- For information on the end-user interface, see the *BB-GUI User's Guide*, 190-405-505.

On-Line HELP for FDCs

Access HELP text for FDCs by entering:

sui help item=fdc=fdc1,fdc2,fdc3

Example: To see help text for 4E and 5E FDCs enter:

sui help item=fdc=101,202,303

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