297-2621-011

Digital Switching Systems

# UCS DMS-250

## Service Operation Support Manual

UCS11 Standard 14.01 May 1999

NORTEL

NORTHERN TELECOM

Digital Switching Systems

# UCS DMS-250

## Service Operation Support Manual

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# Publication history

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The following sections were changed:

- List of telephone numbers
- Warranty Services chapter
- Extended Service Plan chapter changed to Service and Support Plan
- Maintenance support services chapter
- Network support services chapter
  - — Technical Center services changed to Product training
  - — Billing guidelines

**November 1998**

Standard release 13.02 for software release UCS09.

The following sections were changed:

- List of telephone numbers
- Warranty Services chapter
  - — Repair and replacement
  - — Technical Assistance Service
- Extended Service Plan chapter
  - — Types of repair and return services
  - — Technical Assistance Support (TAS)
- Maintenance support services chapter
- Network support services chapter

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- List of telephone numbers
- Warranty Services chapter
  - — Technical Assistance Service
  - — Design change support (hardware)
- Maintenance support services chapter
  - — Remote services
  - — Field services
- Network support services chapter—Training center services

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Standard release 08.01. Up-issued to incorporate new forms that reflect current Nortel support information.

**June 1995**

Standard release 07.01. Incorporated nontechnical changes.

**July 1994**

Standard release 06.01. Incorporated nontechnical changes.

**September 1993**

Standard release 05.01. Revised to incorporate changes in the Northern Telecom customer service organization telephone numbers, and to incorporate changes.

# Contents

# About this document

## When to use this document

The purpose of this document is to describe the various types of services that Nortel Networks may make available to its customers and how a customer can obtain those services. Nothing in this document shall be deemed to create any contractual obligation between Nortel Networks and any customer, or to alter or amend in any manner any existing rights and obligations that may be set forth in a contract between Nortel Networks and a customer. The terms and conditions set forth in any contract between Nortel Networks and a customer shall supersede any conflicting procedures or statements contained in this document.

## How to check the version and issue of this document

The version and issue of the document are indicated by numbers, for example, 01.01.

The first two digits indicate the version. The version number increases each time the document is updated to support a new software release. For example, the first release of a document is 01.01. In the *next* software release cycle, the first release of the same document is 02.01.

The second two digits indicate the issue. The issue number increases each time the document is revised but rereleased in the *same* software release cycle. For example, the second release of a document in the same software release cycle is 01.02.

To determine which version of this document applies to the software in your office and how documentation for your product is organized, check the release information in *UCS DMS-250 Master Index*, 297-2631-001.

This document is written for all DMS-100 Family offices. More than one version of this document may exist. To determine whether you have the latest version of this document and how documentation for your product is organized, check the release information in *UCS DMS-250 Master Index*, 297-2631-001.

## References in this document

The following documents are referred to in this document:

- *Post-Release Software Manager Operating Procedures*, 297-8991-540
- *ONP and Hybrid Software Delivery Procedures*, 297-1001-303
- *DMS-100 and DMS-10 Family Service Priority Classification Description*, 297-0201-015
- *UCS DMS-250 Master Index*, 297-2631-001.

# List of telephone numbers

The following are the telephone numbers for the functions mentioned in this document. For additional information, call your account manager.

| Department | Telephone number |
|---|---|
| Change Application Engineering | (972) 684-7650 |
| Customer Service<br>Including:<br>Billing Recovery Service<br>non-warranty service<br>OEM/vendor repair/replacement<br>Printed Circuit Pack (PCP) repair<br>repair and return/replacement<br>shipping lists<br>warranty service | (972) 684-7888<br>or<br>(800) 684-7888<br>or<br>Fax (repair/replacement)<br>(972) 685-8862 |
| Documentation | 1 (800) NTI-CARE |
| Helmsman Technical Support | 1 (888) 435-6762 |
| New Product Inquiry (hardware) | (972) 684-5595 |
| National Service Center | (800) 527-0797 |
| Merchandise Ordrs<br>Including:<br>consumables (such as filters, fuses, light bulbs)<br>Nortel Networks merchandise and spares<br>Nortel Networks-supplied vendor equipment | (972) 685-7168 |
| Customer Support Center | (972) 685-1147 |

—continued—

| Department | Telephone number |
|---|---|
| Service Contracts Administration | (972) 685-1877 |
| Technical Assistance Service (TAS) | (800) 846-9507 |
| Including:<br>routine service<br>emergency service<br>after hours service | |
| Training Center | (800) 688-7246 |
| **—end—** | |

# Introduction to services

***Note:*** Refer to chapter 1, "List of telephone numbers," for the telephone numbers of the Nortel Networks' departments and functions referenced in this chapter.

Nortel Network's support services are divided into three main areas—warranty, service and support plan (S&SP), and maintenance support services.

- Warranty service introduces the core of Nortel Network's support.
- A Service and Support Plan (S&SP) represents complete post-warranty support, offering core services and optional services.
- Maintenance support services—which can be purchased individually from initial system in-service, as an S&SP option, or as post-warranty non-S&SP services—are integrated offerings grouped in three ways: remote services, field services, and performance support.

In addition, Nortel Networks offers its customers a variety of educational and other support-related services. These services include:

- documentation on Compact Disk Read-Only Memory (CD-ROM)
- technical training at one of Nortel Network's training centers
- software releases and hybrid software upgrades
- a Disaster Recovery Plan that helps the customer quickly put a switch back into operation in the event that it has been damaged in a disaster

# Warranty services

***Note:*** See chapter 1, "List of telephone numbers," for the telephone numbers of the Nortel Networks' departments and functions referenced in this chapter.

During the first year that a system is in service, warranty service provides repair and replacement services, Technical Assistance Service (TAS), and design change support for hardware and software.

## Repair and replacement

Nortel Network's repair and replacement service provides reliable, efficient service for units that must be replaced during or beyond the initial warranty period.

***Note 1:*** Inquiries for new products and feature enhancements may be directed to the account representative.

***Note 2:*** Emergency replacement order charges are $250 for each emergency replacement module.

***Note 3:*** Counter-to-counter emergency replacement order charges are $250 for each order, plus $250 for each emergency replacement module.

### International or overseas customers

The procedures in this document also apply to international customers unless otherwise specified by the laws of the host country.

### Warranty

#### Repair and replacement warranty

All repaired or replaced parts are under warranty by Nortel Networks for one year. The warranty period begins five days after the date of shipment or for the balance of the original warranty, whichever is longer.

#### Non-warranty services

A purchase order number is required for all non-warranty services. This can be either a blanket purchase order number or an individual purchase order number issued at the time of the request for service.

To establish a specific process for providing purchase order numbers, contact a Service Contracts Administration Representative at 1-972-685-1877.

## Service types

### Routine repair service

Nortel Networks will ship a like-for-like replacement part within five days after receipt of request.

### Emergency service

Nortel Networks will either repair the defective equipment on-site or ship a like-for-like part within 24 hours of the request.

***Note:*** An expedite fee is assessed on emergency orders, as specified in your contract with Nortel Networks.

Only parts vital to the call processing capability of the system are considered emergency parts. These are replaced under the following circumstances:

- The last spare of a circuit pack has been used to replace a defective pack in the switch, and all similar packs in the system are carrying live traffic.
- Nortel Network's TAS group determines that emergency service is required to correct the situation.

### Counter-to-counter service

Counter-to-counter service is the same as emergency service except shipment is made to an airport specified by the customer. Shipment of material to the specified airport is made the same day, providing there is a departing flight. The customer must pick up the order.

### Original equipment manufacturer (OEM) /vendor repair

Original equipment manufacturer (OEM)/vendor equipment refers to equipment that is manufactured by another vendor, but is purchased through Nortel Networks as an integral part of the system. OEM equipment can be repaired in the following ways:

- OEM/vendor repair and replacement. The equipment is shipped directly to the Nortel Networks specified location for like-for-like replacement, under a routine or emergency scenario.
- OEM/vendor tracking repair. The equipment is shipped directly to the vendor who will repair it and return it to the customer address. The order is tracked by Nortel Networks.
- On-site vendor repair. The equipment is repaired by a Nortel Networks' specified vendor on the customer premises.

### Material on Loan (MOL) policy

The customer is invoiced for the current purchase price of any defective equipment not received by Nortel Networks within 30 days after shipment of the replacement part.

***Note:*** A separate order must be placed for each project number. A surcharge is assessed for emergency service per contract.

## Consumables order process

Consumable items are consumed during use and are considered non-repairable. These items include, but are not limited to, the following:

- light bulbs
- printer ribbons
- drive belts
- fuses
- magnetic tapes
- circuit breakers
- filters

Consumables are provided as a part of the spare inventory when your switch is installed. Consumables may also be provided as part of a support contract.

After the initial supply has been used, consumables can be purchased by contacting the Merchandise Order Entry number which is 1-972-685-7168. A purchase order number is required when the order is placed. A $50 minimum order is required on consumable item orders.

## Repair order process

Nortel Networks is committed to providing the highest level of customer support to ensure

customer satisfaction. This section provides Nortel Networks' customers with instructions for obtaining circuit pack and vendor product repairs.

Nortel Network's Customer Service Organization (CSO) in Richardson, Texas, has supported the DMS family of switching products since 1983. The goal of the department is to provide a simple and reliable repair and replacement service for units that must be replaced during the initial warranty period.

## Repair order information

For repair assistance, call a customer service representative between the hours of 7:00 A.M. and 5:00 P.M. (CST), Monday through Friday. After 5:00 P.M. weekdays, weekends, and holidays, customer calls are received by the Remote Service Center. The Remote Service Center forwards all information to the appropriate on-call personnel.

You can place a repair order in any of the following ways:

- By phone with an 800 number access — call 1-800-684-7888 and select option one.
- By phone without an 800 number access — call 1-972-684-7888 and select option one.
- By Fax — dial 1-972 685-8862 and submit a specific FAX order form. Order forms can be obtained from Order Entry and must be used for the order to be accepted.

Each repair service order is issued a return material authorization (RMA) number by Nortel Networks' Customer Service Organization (CSO) in Richardson. This number is critical for tracking individual orders. The RMA number must be referenced on failure tags, shipping/packing lists, and any correspondence or inquiries concerning the order.

### Nortel Networks CSO shipping address

Nortel Networks CSO
400 N. Industrial Blvd.
Richardson, TX 75081
Attention: (RMA #)

### Information needed for placing a repair order

Please have the following information ready when placing a repair order with Nortel Networks CSO-Richardson:

- customer I.D. (project number, site I.D.)
- purchase order number (required for all non-warranty services and to cover expedite fee on emergency orders)
- requestor name and phone number
- part number
  - — Product Engineering Code (PEC)
  - — Corporate Product Code (CPC)
  - — manufacturers' part number
- quantity

- order type
  - — on-site
  - — routine
  - — emergency
  - — counter-to-counter
- customer's desired ship-to address or location of equipment for on-site repair

***Note:*** Vendor ship-to address instructions are provided at the time the order is placed.

## Shipping procedures

Defective return shipping/packing lists must be used to return all defective equipment/materials to Nortel Networks.

### Defective return packing list

Nortel Networks CSO provides a Defective Return Packing List for use by the customer in return shipments, and provides extra copies on request. A copy of the Defective Return Packing List must be placed in the carton. Be sure to attach the original to the outside of the carton. The following information must be included on the Defective Return Packing List. The numbers on the list relate to the numbers on the sample on the following page.

1 From (include the return address and telephone number)

2 Customer's P.O.# (customer's purchase order number, if applicable)

3 Repair Order Number [RMA # (Return Material Authorization) issued when order Authorization Number is placed]

4 Project number or site I.D. (four-digit or five-digit switch number)

5 Ship date (date parts are shipped from customer)

6 Ship via (carrier name)

7 Waybill number (carrier number)

8 Item number

9 Quantity shipped

10 Nortel Networks part number

11 Description of item

12 Serial number

13 Shipment requested by (customer signature)

14 Date (date the Defective Return Packing List originated)

All materials must be returned pre-paid (depending on contract) to the appropriate Nortel Networks repair facility. Customers must use their discretion in selecting shipping methods.

All packages, regardless of warranty status, must be insured by the customer to cover possible loss during shipping.

## Packaging

Parts must be individually wrapped in anti-static containers to avoid damage from static electricity. Avoid using polystyrene plastic peanut material, if possible. Circuit packs must be packed in anti-static containers designed specifically for them to avoid damage during shipment.

**DEFECTIVE RETURN PACKING LIST**

NORTEL

TO: Nortel Networks
400 N. Industrial Blvd.
Richardson, TX 75081
800-684-7888 972–684–7888
Attn. Repair & Replacement

FROM: _____ (1)

| Customer P.O. Number (2) | Customer Number | *Repair Order Number* (3) | *Project Number* (4) |
|---|---|---|---|
| | | | |

| Ship Date (5) | Ship Via (6) | Waybill Number (7) |
|---|---|---|
| | | |

| Item (8) | Ordered | Shipped (9) | Nortel Part # (10) | Description (11) | Serial Number (12) |
|---|---|---|---|---|---|
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Remarks _____

**IMPORTANT**

In order to properly process your repair order and credit your account
Please reference the Nortel Repair Order Number and Project Number on this Defective Return Packing List and include this form with the returned shipment.
Please ensure that all defective material is returned to Nortel within 30 days to avoid being invoiced the purchase price for the material.

*Shipment Requested By:* _____ (13) Date: _____ (14)

White – NT Receiving Yellow – Customer

### Repair Tags

A repair tag must be filled out and attached to each returned item to assist in assessment and problem tracking. Repair tags can be obtained by contacting the Nortel Networks CSO Help Line at 1-800-684-7888.

## Other site recommendations

Nortel Networks provides the following recommendations for spares testing and the repair log.

### Spares testing

Nortel Networks recommends that the on-site spare be immediately replaced with the new replacement pack when it arrives. The replacement pack must then be tested with a full set of Maintenance and Administration Position (MAP) diagnostics to ensure that it is completely operational. If the replacement pack does not pass the diagnostic test, it must be tagged immediately and returned to Nortel Networks. Nortel Networks issues a second RMA and ships a replacement within 24 hours after notification of the failure.

### Repair log

Nortel Networks recommends that customers track all repair and replacement of equipment in a repair log. Shipping information and the RMA number must be included with each entry. Maintaining an accurate repair log helps identify repetitive problems and controls inventory levels. A template for this log and copies can be obtained from Nortel Networks CSO.

## Technical Assistance Service

UCS Technical Assistance Service (TAS) provides three basic classifications of assistance to the customer:  routine technical assistance service, emergency technical assistance service, and technical information service.

TAS is a centralized team of highly trained personnel. TAS has access to complete DMS Family documentation, the latest developments in hardware and software, plus access to captive offices for verification of problems and their solutions.

Emergency service is free of charge in critical E1 and E2 situations. Refer to “Priority classification” in this chapter for information in which situations are classified as E1 or E2.

### In warranty support

During the warranty period, emergency technical support is available on a 24 hour, seven days a week, 365 days a year basis. This support includes hardware and/or software problem resolution.

Non-emergency technical support during the warranty period is limited to assistance in answering questions and providing direction to obtain resolution. This support is available during business hours, Monday through Friday, 8:00 a.m. to 5:00 p.m. Central time.

Normally, off-hour, customer local time, non-emergency technical support is billable at the current rate for the service requested. A purchase order is required in advance of the service being performed.

Customer support plans are available for purchase during the warranty period to meet customer specific needs.

### Out of warranty support

Once the initial warranty period expires, the customer can purchase a customer support plan, or purchase support on a per request, “time and material” basis.

Support on a per request, “time and material” basis, requires a purchase order in advance of the service being performed. Support on a per request, “time and material” basis is billed at the current rate.

A customer support plan (CSP) covers repair and return of Nortel Networks purchased hardware, technical support, and patching. Other services, such as remote maintenance, may be added if requested by the customer. Customer support plans can be tailored to meet specific customer needs.

Out of warranty software support is limited to the two prior software releases from the most current, generally available release.

## Routine technical assistance service

This service is available to customers who require problem isolation/resolution in a non-emergency situation. This service is available during business hours, Monday through Friday, 8:00 a.m. to 5:00 p.m. Central time, except Nortel Networks holidays. Non-emergency technical support is limited to assistance in answering questions and providing direction to obtain resolution.

## Emergency technical assistance service

This service is available to customers who require immediate assistance with operational problems (such as loss of call processing or loss of billing). This service is available 24 hours a day, 7 days a week. Through verbal reports and remote diagnoses of the system, TAS engineers recommend actions to restore the system to stable operation as quickly as possible.

### Technical information service through ServiceWeb

ServiceWeb is the system that distributes Emergency Warning and Customer Advisory Bulletins. ServiceWeb is replacing C-Scan, the current distribution system. Contact your service account manager for access to ServiceWeb.

Emergency Warning Bulletins inform you of problems that may exist within the DMS Family of switches and the procedures to avoid them.

As a guide for the maintenance staff, the Emergency Warning Bulletins package is accompanied by a prioritized index for all active bulletins. Nortel Networks recommends that you carefully adhere to the information in the Emergency Warning Bulletins to avoid problems.

Customer Advisory Bulletins are UCS DMS-250 switch-specific bulletins that are also accompanied by a prioritized index for all active bulletins. Again, Nortel Networks recommends that you carefully adhere to the information contained within the bulletins to avoid problems.

### Non-warranty services

Some situations may arise during the no-charge warranty period that can result in a service request being considered as billable. This category of service is referred to as non-warranty services. Situations handled by Nortel Network's non-warranty services are as follows:

- requests resulting from problems with equipment not furnished by Nortel Networks
- problems in which the solution was available through Nortel Networks' documentation, such as Northern Telecom Publications (NTP), advisory bulletins, and software release documents (Reldocs)
- requests that result from Post-Release Software Units (PRSUs). The PRSU, a software patch, alters the design intent of standard software to provide customer requested changes in operations.
- requests for on-site assistance in lieu of remote testing. Refer to the *DMS-Family PRSU* for additional information.
- non-emergency requests outside normal business hours, unless scheduled with appropriate TAS manager in advance. Normal business hours are Monday through Friday, 8:00 a.m. to 5:00 p.m., Central time, except Nortel Networks' holidays.
- requests for assistance in performing system data changes or changes to write-restricted tables.
- requests for assistance in identifying faulty hardware or software, for which standard maintenance, fault-locating procedures exist.

## Priority classification

The service priority classification system is designed to establish a relationship between problems and the appropriate level of action and resolution. The system is based on a problem's direct or potential effect on subscriber service.

The commitments described in this document do not constitute a contractual obligation upon Nortel Networks. The committments described are generally in support of terms and conditions of the system sale and the specific System Support Agreement. System problems are assigned one of three priority levels as follows:

- Critical
- Major
- Minor

The Critical priorities refer to situations in which large numbers of subscribers have their service impaired or endangered by the inoperability of a major redundant component of the system.

Emergency conditions that exist due to non-DMS related equipment or facilities are handled as the same service condition and with the same resolution objective as DMS-related Criticals. A Customer Service Report (CSR) is opened as a Major priority to track the non-DMS related incidents. No down time is charged toward the DMS down time for these non-DMS related outages (such as fiber cuts, power outages, or problems with signaling transfer points or distributed control points).

The Major priorities cover non-emergency service conditions in which different levels of subscribers are directly affected at varying frequencies.

The Minor priorities cover non-emergency, non-service affecting problems. These problems include maintenance, administrative, and operational measurement difficulties, that do not directly affect the subscribers served by the system.

### Critical priorities

Critical priority situations are as follows:

- central control or computing module
  - — inability to recover from initialization on active central processing unit
  - — standby central control or computing module CPU out of service
  - — manual bootstrap or system-initiated image reload

- — image test failure or image not restartable
- — inability to take an office image, due to problems other than magnetic tape drive, disk, or system load module
- — unscheduled restarts, such as warm, cold, or reload. This applies only to the host switch. It is not applicable to the enhanced input/output controller [EIOC] unless equipped with virtual network features.
- — 10% of ports out of service
- — trunk group 100% out of service and no alternate route or work-around available
- — both Remote Terminal Interfaces are out of service
- — ineffective machine attempts affecting greater than 10% of total call attempts
- — consistently slow dial tone (eight seconds delay or greater)

- Signaling System 7 (SS7)/Consultative Committee International Telephone and Telegraph system #6 (CCITT #6)
  - — one or more routesets unavailable. This results in call processing isolation to the affected point codes, where the associated trunk group does not have an alternate route.
  - — one or more SS7 routesets with only one route (linkset) available
  - — 33% of available SS7 links out of service
- call processing features (including ISDN)
  - — 50% or more loss of call processing features. This results in calls being blocked, such as Travel Card Number, N00, authcode, call transfer, or operator services.
  - — S/DMS Billing Server not transferring billing
  - — EIOC system not transferring billing
  - — intermittent individual trunk group problems
- billing recovery
  - — non-usable billing data being written on the active recording device
  - — no DMS billing data being written on active recording device
  - — Switch Network System out of service
  - — EIOC out of service
  - — 50% loss of disk drive units or magnetic tape drives. These drives have no parallel billing collection device, or parallel device on the same input/output controller as the active device.

- general
  - — any central message control, message switch, master clock, both planes of a network module, or out of service
  - — central control or computing module transient errors resulting in repeated loss of synchronization
  - — 100% loss of ability to load multiple peripheral processors, (MSB7, DTC, MTM)
  - — CPU occupancy 75% or higher, with no known acceptable cause, such as peak traffic period or major facility failure

Resolution objective: Immediate and continuous assistance until the service level is restored to pre-incident operation.

### Major priorities

Major priority situations are as follows:

- general
  - — software or hardware faults directly and continuously affecting any subscriber's service or the ability to collect revenue
  - — software or hardware faults only intermittently affecting service to one or more classes of subscribers
  - — magnetic tape drive or disk drive unit problems, except for maintenance and administration
  - — peripheral processor, such as MSB7, MTM, or network plane out of service
  - — input/output controller out of service
  - — office alarm unit out of service
  - — central control or computing module CPU receiving transient errors resulting in a loss of sync more than twice per day, or less than twice per day.
  - — system-related documentation errors that categorically result in or lead to service impairment
  - — the customer can show significant impact upon plant and traffic operations and upon the customer's ability to plan office extensions
  - — peripheral circuit failures
- SS7/CCITT#6 related
  - — 25% of message switch buffers out of service
  - — less than 33% of SS7 links out of service for one or more routesets

  - — one or more interperipheral message links out of service (both interperipheral channels going to the same digital trunk controller)
- call processing features (including ISDN)
  - — intermittent problems, such as TCN, N00, authcode, or operator services
  - — 100% loss of digital recorded announcement machine
  - — problems related to individual trunk circuit
  - — intermittent individual trunk group problems
- maintenance
  - — maintenance actions that cannot be performed due to a software or hardware problem, but which, if not performed, could lead to a service affecting problem (no alternate method)
- miscellaneous
  - — problems that seriously affect subscriber service at in-service date
  - — loss of any extended peripheral module
  - — follow-up to E1 CSRs

Resolution objective: Status response in two weeks with a fix or work-around solution applied within four weeks.

### Minor priorities

Minor non-service affecting situations are as follows:

- general
  - — non-service affecting software inconsistencies
  - — service analysis
  - — individual recorded announcement
  - — operational measurements
  - — network management problems
  - — system related documentation inaccuracies, which do not affect call processing or revenue collection capabilities
- maintenance
  - — peripheral equipment diagnostic failures, not already defined, which cannot be corrected by the customer
  - — circuit pack testing problems

— repetitive central control or computing module transient errors with no loss of synchronization, which cannot be corrected by the customer

— requests to analyze store dump of a single occurrence initialization

— automatic trunk testing or individual trunk testing problems

— test equipment failures for which a backup or manual alternate can be employed

Resolution objective: Status response in six weeks. Upon the completion of the investigation, a fix, if applicable, is scheduled for a future standard software, hardware, or documentation update or revision.

## Customer Service Report (CSR) system

### System overview

Nortel Networks uses a priority driven, automated CSR system to manage and report all customer reported service calls.

This service performance information system allows Nortel Networks to serve the customer organization in the following ways:

- Expedites Nortel Networks' daily service control and responsiveness. The CSR system tracks each request for service to make sure that it is quickly attended to and closed. The system highlights all emergency situations or those that might need extended repair time.
- Provides switch system performance data. As the data is accumulated, very specific system and service performance trends can be analyzed. Nortel Networks is committed to providing service that is higher than national industry standards.

### Customer responsibility

To ensure proper day-to-day operation of Nortel Networks equipment, all of the customer's engineering and technical support personnel are advised to attend specific training courses. The customer needs to determine the engineering parameters and troubleshoot system problems, prior to calling Nortel Networks' TAS for assistance. However, in emergency situations such as system outages, TAS must be notified immediately.

When a service call is placed with TAS, the following information must be provided:

- nature of call (routine or emergency)
- company name and switch site location
- main telephone number
- project number

- contact name and telephone number
- equipment type
- detailed problem description with the following information:
  - — all appropriate datafill
  - — duplicated fault scenario, if possible
  - — any corrective action already taken
  - — other significant switch activities in progress (for example, a new software load or new spans)

All appropriate system logs must be captured to disk or a stored file device.

After a service call is placed, customer site personnel must be available to take direction from TAS. The site personnel perform on-site activity required to isolate and resolve the problem.

It is recommended that on-site technicians keep a CSR log. The CSR log is used to maintain a record of all trouble conditions referred to TAS for resolution. An example of a blank TAS Referred Trouble Log is shown.

## TAS Referred Trouble Log

Office _____

| CSR No./ Site Tech. | Trouble Description | Priority Date/Time NT TAS Eng. | Trouble Clearance Action Taken | Date/Time TAS Engineer | NT CSR Status/Date | Remarks |
|---|---|---|---|---|---|---|
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CSR codes are defined as follows:

| CSR | Definitions |
|---|---|
| Status code | AN (Answer)—answer to the problem has been provided between Nortel Networks departments. The reply must be analyzed and appropriate action taken.<br><br>CA (Customer)—customer has been advised of the time when the final solution to the problem will be delivered (for example, the delivery date of a new load or hardware fix).<br><br>CL (Closed)—solution to the problem has been applied or the problem no longer exists.<br><br>IS (Interim Solution)—an acceptable workaround has been provided. A temporary solution to the problem has been delivered in the form of an PRSU. Service has been restored to the pre-incident level, but the cause of the problem is still under investigation.<br><br>OP (Open)—problem is under investigation.<br><br>SD (Solution Delivered)—patch (only) delivered to site to correct the problem. |
| Fault type code | CD (Customer Data)—any data table changes that are under direct customer control.<br><br>HD (Hardware Design)—design problem with the hardware, likely resulting in a Design Change Authorization.<br><br>HF (Hardware Failure)—malfunctioning or defective hardware causing failure.<br><br>MP (Maintenance Procedure)—site operationally did not follow procedures during a maintenance activity.<br><br>NT (Northern Telecom)—Nortel activity caused the problem.<br><br>SD (Software Design)—software fault.<br><br>OT (Other)—any other customer requests for service that do not fall into the other fault types. |

## Key contacts

On or before in-service, each site is assigned a prime TAS representative. All service requests must be addressed to the prime TAS representative or another TAS Representative if the prime is unavailable. Emergency service requests are responded to immediately by the first available TAS representative.

After hours emergency calls are responded to immediately by the designated TAS representative on-call.

For emergency service, contact TAS, 24 hours a day, 7 days a week.

### Escalation procedure

If customer needs are not met at the TAS representative level, the matter may be escalated by contacting the following persons, in sequential order:

- Manager, Technical Assistance Service
- Senior Manager, Technical Assistance Service
- Director, Technical Assistance Services
- Director, Service Operations

## Design change support

Design change support provides on-going upgrades, enhancements, and maintenance for both hardware and software in a timely, coordinated manner.

### Design change support (hardware)

Design change support services for hardware is also known as Richardson Change Application Engineering (RCAE). RCAE is a formal means to apply product changes. These product changes are required as a result of a design deficiency, feature enhancement, or product evolution that affect Nortel Networks' equipment.

### Change control process

The change control process consists of two departments:  RCAE and Field Change Applications (FCA).

The RCAE department maintains the Extended Product Inventory Control (EPIC) database, which is used to coordinate change control.

A design change is initiated from Nortel Networks Technologies in the form of a Design Change Authorization or Engineering Change Document and is classified into one of the following categories:

- Class A, service affecting
- Class AC, conditional change
- Class E, non-service affecting
- Class D, introduces new feature

RCAE introduces the service affecting changes (Class A/AC) into a database. The equipment requiring modification is identified in the form of an 88K Order. The 88K Orders for field modifications are delivered to the Field Change Applications department for scheduling.

Class E changes are typically applied when printed circuit packs are returned for repair.

### Extended Product Inventory Control (EPIC) database

EPIC is a customer-accessible database that represents the specific site inventory and revision status of UCS DMS-250 switch hardware. EPIC compares inventory and revision status data to baseline release levels and provides notification of design changes. The EPIC database is used to identify the packs, modules, or frames requiring upgrade when design changes are identified. The database contains the Product Engineering Code, release level, frame, shelf, and pack slot location obtained from physical audits of the customer's Nortel Networks equipment. Benefits to the customer include the following:

- network-wide control of hardware inventory and release levels
- reduction of customer tracking of hardware quantities and location
- elimination of a troubleshooting variable by assuring that all packs are above baseline release levels
- no additional cost involved because EPIC operates on existing hardware
- assurance that the most current technology is installed and providing optimal switch and network performance

### Field Change Applications

The Field Change Applications (FCA) department is a centralized team of highly skilled personnel trained to work on in-service Nortel Networks equipment. The group has access to complete UCS DMS-250 switch documentation, to the latest developments in hardware, and to captive offices for verification of problems and their solutions.

FCA receives authorization to upgrade equipment on customer sites in the form of an 88K Order. FCA contacts the site, describes the changes, and dispatches the technicians to make the changes. Each customer location is upgraded when visited by the FCA team.

FCA applies the design changes while performing software release related hardware modifications and feature enhancements, such as memory upgrade, CPU upgrade, or peripheral module enhancement. FCA applies only to field modifications.

### Verification worksheets

Verification worksheets are frame-, module-, and pack-slot-specific representations of the switching equipment. The worksheet is used to perform physical audits of the systems. The information obtained is stored in the EPIC database.

### 88K orders

88K Orders, the work orders to authorize design changes, are generated from EPIC when design changes are identified. 88K Orders are site specific and include all the packs, modules, and frames that need to be modified.

### Key contacts

Key contacts are

- Richardson Change Application Engineering (RCAE)
- Field Change Applications (FCA)
- Extended Product Inventory Control (EPIC) inquiries/support
- Customer Service Senior Manager
- Field Service Senior Manager

## Design change support (software)

Software enhancements or design deficiencies discovered between software releases are corrected by Post-Release Software Units (PRSUs). PRSUs are also known as single change supplements or software patches. For more information, see the *DMS-Family PRSU*.

### PRSU generation

PRSUs are written by Nortel Networks/BNR field support personnel in response to a software-related CSR. Once a PRSU is written, it is tested extensively in a captive office. The PRSU is then set to V-status and is forwarded to a Verification Office (VO) for testing on an in-service switch. After a five-day soak, the PRSU is set to R-status and is released for distribution to all affected sites.

### PRSU definitions

Emergency: A service affecting software design deficiency that must be corrected by the application of a PRSU by Nortel Networks' personnel as soon as possible.

General: A software design change or correction that will be applied according to the pre-established application schedule.

### PRSU downloading

PRSU administration makes sure that all in-warranty offices are maintained at an up-to-date software level. The administration coordinates all application activity with the customer. Each warranty site is on a seven-day schedule and is visited once during this time cycle. All new, approved PRSUs are downloaded to the site into the store file or onto a disk. Critical or emergency PRSUs are spooled immediately by PRSU administration. PRSU administration also produces a file listing of the PRSUs spooled.

### PRSUs applied by site

Sites may schedule and implement their own PRSUs after TAS has trained and certified the on-site personnel. TAS supervises the implementation of PRSUs until the site personnel are comfortable with the entire procedure. VO implementation of PRSUs is done exclusively by TAS personnel. If the site requires additional support, coordination must occur before the date of application. A file containing PRSU prerequisites and special handling instructions, as well as obsolete and replacement PRSUs, is provided. Site personnel must contact their prime TAS representative with their planned PRSU application schedule.

### PRSU testing

Site personnel should test all PRSUs immediately after application. Critical call test plans should be developed to execute after implementation of the PRSU. If this cannot be accomplished, a call test plan must be developed that encompasses the call scenario to which the PRSU was applied.

### Trouble reporting

Any problems or side effects caused by a PRSU application must be reported immediately to TAS for analysis. If PRSUs need to be removed, it must be under TAS supervision. In an emergency, the site personnel must carefully track removed PRSUs. They must save all logs and keep a written record of the symptoms and the time the symptoms occurred.

### Emergency and faulty PRSU procedure

To prevent or resolve possible E1 and E2 service degradations, TAS and Support Administration track critical or emergency PRSUs. They spool these PRSUs to all sites within two working days after the PRSU has been released. Site personnel must review these types of PRSUs quickly for application to their systems. Faulty or obsolete PRSUs are removed during the normal time cycles unless they are service-affecting. Service-affecting PRSUs are removed as soon as possible.

### Key contacts

Key contacts are the PRSU technician and supervisor.

## TAS responsibility

### Routine service

Routine service calls are taken during business hours, Monday through Friday, 8:00 a.m. to 5:00 p.m., Central time, except Nortel Networks' holidays.

The TAS coordinator directs the service call to the prime TAS representative assigned to the account. If the prime TAS representative is unavailable, a message is taken or the call is referred to another TAS representative. TAS is

committed to a same day reply or response to all messages. Emergency calls are responded to immediately by the first available TAS representative.

The TAS representative taking the service call does the following:

- requests the required customer information
- determines if the problem description requires that a CSR be opened
- determines the appropriate priority classification
- responds according to the response objective associated with that classification

The TAS representative documents the service call using the required information on the CSR. The representative enters information in the CSR database within 24 hours from the time the CSR was opened with the customer.

***Note:*** General questions which do not require investigation may not need to be formally documented by a CSR.

The TAS representative ranks all assigned CSRs according to priority classification and resolves and closes the CSR with the customer accordingly. If the problem appears to expose a design fault, the CSR is referred to the appropriate design authority.

The design authority investigates the problem and affects resolution as required. All solutions must be acceptable to the customer, who authorizes closure of the CSR.

# Service and Support Plan

***Note:*** Refer to chapter 1, "List of telephone numbers," for the telephone numbers of the Nortel Networks' departments and functions referenced in this chapter.

Nortel Networks' Service and Support Plan (S&SP) provides a convenient, flexible, and cost-effective means of maintaining your UCS DMS-250 switching network. It provides the customer with the same high quality Technical Support and Repair services that are furnished under the initial warranty period. In addition, the Service and Support Plan includes Patch Administration/Application, and comprehensive Technical Assistance Support (TAS). By including Patch/Administration/Application and TAS, Nortel Network's goes beyond their standard warranty service.

## S&SP Offerings

The Repair and Replacement Service and Operations Support are the services offered by S&SP.

### Repair and Replacement Service

Repair and Replacement Service is offered for the following items:

- Nortel Networks-coded "NT" provisionable circuit packs
- Nortel Networks-supplied OEM equipment (switching platform only)

### Operations Support

Operations Support includes the following:

- Technical Assistance Support (TAS)
- Emergency Technical Assistance Support (ETAS)
- Patch Administration and Application

## Service and Support Plan benefits

S&SP coverage includes the following services:

- Single point-of-contact, toll free access to highly skilled professionals
- Expanded level of technical assistance, which includes "how to" support

- Pro-active assistance early in the implementation of new features and applications
- Faster response to technical issues; access to 24x7 technical support
- Standardized support across your UCS DMS-250 switching network
- Additional support for your technicians while they learn about the UCS DMS-250 switch.
- Maximum switch revenue generating potential; assured through prompt technical response and emergency circuit pack replacement service
- Comprehensive support services, provided as a single administrative entity
- Reduced administrative costs due to the elimination of individual invoices
- Simplified fiscal planning and budgeting for UCS DMS-250 switching maintenance expenses.

## Types of repair and return services

Nortel Networks provides a new or repaired, functionally equivalent replacement circuit pack in exchange for the customer's defective circuit pack.

### Routine service

Routine service circuit pack repair and return is available between the hours of 8:00 a.m. and 5:00 p.m. (CST), Monday through Friday. Nortel Networks will ship a replacement circuit pack (in exchange) within five days after receipt of a customer's request.

### Emergency service

Emergency service for circuit pack replacement is available 24 hours a day, seven days a week. Nortel Networks,will ship the replacement unit within 24 hours of a request.

***Note:*** An expedite fee is assessed on emergency orders as specified in your contract with Nortel Networks.

Only parts vital to the call processing capability of the system are considered emergency parts. These parts are replaced under the following circumstances:

- The last spare of a circuit pack has been used to replace a defective pack in the switch. Simultaneously, all similar packs in the switch are carrying live traffic.
- Nortel Networks' TAS group determines that emergency service is required to correct the situation.

- Emergency replacement order charges are $250 for each emergency replacement module.
- Counter-to-counter emergency replacement order charges are $250 for each order, plus $250 for each emergency replacement module.

### Nortel Networks supplied original equipment manufacturer (OEM)/vendor

Original equipment manufacturer (OEM)/vendor equipment refers to equipment that is manufactured by another vendor. This equipment, however, is purchased and serviced through Nortel Networks as an integral part of the system. OEM equipment can be repaired in the following ways:

- OEM/vendor repair and replacement. The equipment is shipped directly to the Nortel Networks specified location for a like-for-like replacement under a routine or emergency situation.
- OEM/vendor tracking repair. The equipment is shipped directly to the vendor who will repair it and return it to the customer address. The order is tracked by Nortel Networks.
- On-site vendor repair. The equipment is repaired by a Nortel Networks specified vendor on the customer's premises.

### Material on Loan (MOL) policy

The customer is invoiced for the current purchase price of any defective equipment not received by Nortel Networks within 30 days after shipment of the replacement part.

***Note:*** A separate order must be placed for each project number.

## Repair order information

Repair and return services are provided by Nortel Networks Customer Service Operations (CSO), located in Richardson, Texas.

For repair assistance, call (800) 684-7888. Call between the hours of 8:00 a.m. and 5:00 p.m. (CST), Monday through Friday, to reach a repair and replacement representative.

After 5:00 p.m. weekdays, and on weekends and holidays, customer calls are received by the Remote Service Center. The Remote Service Center forwards customer repair service requests to the appropriate on-call personnel.

Each request for repair service is issued a Return Material Authorization (RMA) number by Nortel Networks CSO. This number is critical for tracking individual orders and must be referenced on failure tags,

shipping/packing lists, and any correspondence or inquiries concerning the order.

### Nortel Networks CSO shipping address

Nortel Networks CSO
400 N. Industrial Blvd.
Richardson, TX 75081

***Note:*** It is important that the customer provide the correct "Project Number" to the Nortel Networks repair and replacement representative at the time of repair order placement. Providing the correct "Project Number" for each defective circuit pack returned ensures accurate repair order processing.

## Operations Support Services

Nortel Networks provides Technical Assistance Service (TAS) and Emergency Technical Assistance Support (ETAS). The TAS and ETAS technical personnel investigate and resolve problems that customers encounter while operating the covered switching systems.

Requests and operational problems are classified according to severity and overall effect on the system.

### Routine Technical Assistance Support (TAS), S1 and S2

This service provides the following help for customers:

- Coverage during Nortel Networks' business hours or as scheduled with a TAS supervisor.
- Response from Nortel Networks as soon as practical, according to the severity of the problem. Assistance through telephone and/or remote access.
- Diagnosis of cause and recommended actions to restore operational stability.
- TAS-initiated on-site assistance made necessary by non-emergency conditions and covered by the S&SP
- Customer-initiated on-site assistance, available through mutual agreement and dispatched within four hours of mutual agreement. Additional charges are billed for travel and per diem expense, plus the current hourly rate.

Technical Assistance Support (TAS) can be reached between the hours of 8:00 a.m. and 5:00 p.m. (CST), Monday through Friday.

### Emergency Technical Assistance Support (ETAS), E1 and E2

This service provides the following help for customers:

- Coverage 24 hours a day, seven days a week.
- Immediate assistance through telephone and/or remote access.
- Diagnosis of cause and recommended actions to restore operational stability.
- ETAS-initiated on-site assistance made necessary by emergency conditions and covered by the S&SP.
- Customer-initiated on-site assistance, available through mutual agreement and dispatched within four hours of mutual agreement. Additional charges are billed for travel and per diem expense, plus the current hourly rate.

Emergency Technical Assistance Support (ETAS), can be reached 24 hours a day, seven days a week.

### Patch administration

This service provides the following help for customers:

- Patches spooled on a 14 day cycle for sites with Turbolink or equivalent (28 day cycle for all other sites).
- Patches administered and applied for the customer.
- Emergency category patches spooled within two working days.
- Business critical patches spooled within two working days.
- ‘V’ (verified) status patches spooled the day that they become available.

## Post-warranty policy

Post-warranty customers who decline a Service and Support Plan (S&SP) contract, can purchase services on a pay-as-you-go basis. This service is billed at Nortel Networks’ current prices. A “Not-to-exceed/Open” purchase order is required in advance of the services being performed. For more information, see Chapter 6, “Network Support Services”.

# Maintenance support services

***Note:*** See chapter 1, "List of telephone numbers," for the telephone numbers of the Nortel Networks' departments and functions referenced in this chapter.

Maintenance support is available to meet customer organization requirements. On-site maintenance offers an integrated range of services. These services include total maintenance of a customer switching system (customer premises maintenance) to temporary, "as required", support services (maintenance support). Increments from one month to a year or longer are available to provide on-site maintenance to augment customer maintenance personnel.

Through the Customer Support Center (CSC), Nortel Networks provides highly skilled technicians with expertise in all areas of switch maintenance. Customized services can be designed to meet specific customer needs and ensure that all equipment is maintained at peak performance level.

Additional services, such as translations support, provide information for management purposes.

For additional information regarding Nortel Networks' maintenance support services, contact your service account manager or call the National Service Center.

## Remote services

From the CSC, experienced personnel monitor customer switching activity 24 hours a day, 7 days a week. Remote services offers a progression of two options, each option increasing the level of support:

- remote surveillance
- remote hybrid maintenance

### Remote surveillance

Nortel Networks' personnel from the CSC, monitor customer networking switching activity 24 hours a day, 7 days a week. Remote surveillance offers monitoring of critical and major indicators on customer networks.

Immediate response to alarms keeps the customer informed of any potential problems before they become major performance issues. Call-out procedures are initiated as necessary.

Remote surveillance includes the following features:

- 24-hour monitoring of pre-established alarms
- initiation of customer-defined call-out procedures
- verification of the communication link and network sanity, check a minimum of three times a day. Each monitored location is manually accessed at least once during an eight-hour shift to check system status and integrity.
- pre-business day check

Nortel Networks provides an activity report that contains the following information:

- troubles by type, number, and reason for call-out
- troubles resolved by the CSC
- status of Customer Service Reports (CSR)

## Remote hybrid maintenance

Nortel Networks monitors and provides routine network maintenance activity 24 hours a day, 7 days a week. Call-out procedures are initiated as necessary and in coordination with customer-designated personnel. As an additional service, Nortel Networks provides technicians at customer request, to support the call-out requirements.

Remote hybrid maintenance includes all the features of remote surveillance, as defined previously, and the following:

- setup, control, and coordination of all preventive maintenance tasks, such as
  - — focused maintenance
  - — network integrity
  - — carrier maintenance alarms
  - — OM thresholding
- control logs and administration
- trouble reporting and tracking
- assistance for software and hardware changes

- guidance and assistance to on-site technicians
- a single point of contact for the customer

The hybrid service is a combination of remote surveillance and maintenance. Nortel Networks is in a surveillance mode during the time the maintenance staff is on duty. They are in the maintenance mode when the staff is not on duty, typically off-hours, weekends and holidays.

## Maintenance Support

Maintenance support is available on a minimum of a monthly basis. Technical support is provided to prevent major service disruptions, allowing customers to effectively manage costs and adapt to changing workloads.

Maintenance support offers a wide range of services:

- preventive and corrective maintenance activities
- implementation of new features and products
- training in system test tools

Trained and experienced Nortel Networks maintenance service representatives provide the following types of on-site support:

- post-cutover integration services
- on-site maintenance support services.

### Post-cutover integration services

Post-cutover integration (PCI) services are offered after the installation of an initial system. PCI testing of the system and features, confirms that it operates as designed, and in accordance with Nortel Networks' standards.

### On-site maintenance support services

On-site maintenance support services provide a technician at the service site to perform a variety of technical support activities. The maintenance support services technician performs various activities, including the following:

- preventive maintenance tasks
- switch problem resolution
- emergency procedures
- administrative functions

For additional information regarding Nortel Networks' maintenance support services, contact your service account manager or call the National Service Center.

# Network support services

***Note:*** Refer to chapter 1, "List of telephone numbers," for the telephone numbers of the Nortel Networks' departments and functions referenced in this chapter.

Nortel Networks offers a variety of network support services that are not related to a service contract. These services include:

- product documentation
- product training
- software release and hybrid software upgrades
- disaster recovery plan

## Documentation services

Nortel Networks offers electronic documentation on CD-ROM, which results in a more effective retrieval of required information and, subsequently, in quicker problem resolution. Improved system understanding through a non-intimidating documentation medium means getting the most from Nortel Networks' equipment.

Typically each UCS DMS-250 switch is shipped with an initial set of documentation that includes (but is not limited to) the following:

- Nortel Publications (NTP)
- general specifications
- customer-specific specifications and drawings

The prime medium for documentation is CD-ROM, though some documents are provided on paper. One compact disc with software to read documentation is provided with each new switch sold, unless the customer specifically requests the paper or micro-fiche format. A DOS workstation is optional and can be purchased separately or through Nortel Networks.

## CD-ROM library

The documentation library resides on a single CD-ROM disc and is read from an on-site personal computer that provides sophisticated search capabilities to find the desired information rapidly.

Static documents, such as NTPs and general specifications, are available on CD-ROM to allow rapid access to information required to ensure effective operation of the Nortel Networks' equipment.

***Note:*** Some documents, such as vendor documents and engineering forms, do not lend themselves to this electronic medium and are delivered in paper form.

### Description

Use of Nortel Networks' CD-ROM system allows operative company personnel to quickly select, search, and use the most current information available from the product line documentation. Information related to switch operation, feature descriptions, and database information may be accessed by means of the CD-ROM system. Once accessed, documents can be easily retrieved, searched, and printed.

### Operation

A single CD-ROM system stores over 200,000 pages, eliminating the need for volumes of paper documentation. Graphics may be accessed from CD-ROM for printing as required.

CD-ROM services include comprehensive Help menus embedded at every functional level to guide customers in entering queries and moving through the system. User guides are available on CD-ROM. Paper copy user guides for the CD-ROM viewer are also included. Contact the Helmsman technical support line with questions regarding the use of CD-ROM, when all self-help opportunities have been attempted.

### Implementation

Documentation accompanying all new systems and software upgrades for installed systems has been provided in CD-ROM format since BCS28.

Customers receive NTP documentation from Nortel Networks, primarily in CD-ROM format, when they receive a software upgrade for their system. The CD-ROM includes the latest information about the new software load and how to run the newly installed system. The quantities of CD-Rom copies that are shipped are determined by contractual requirements. Additional copies may be ordered, depending on customer requirements. Also, as the CD-ROM application program is updated, the customer receives a copy of the new program.

### Benefits of electronic documentation

By providing its product documentation in electronic format, Nortel Networks has produced an information resource far superior to paper documentation. This new capability offers significant advantages to customers.

- Operational personnel are able to function more productively by using the electronic search system. Answers to questions are found electronically, instead of through labor-intensive, physical searches of paper documentation.
- CD-ROM eliminates the time previously devoted to updating volumes of paper documentation and physically filling orders.
- CD-ROM saves customers money by reducing the need to call TAS for problems related to documentation.
- The system's automatic access method lowers the learning curve for new users and increases the efficiency of experienced users.

### Availability

The CD-ROM electronic documentation system is available for use by all Nortel Networks customers.

CD-ROM documentation may be ordered through Order Entry or through your account manager.

As a user of Nortel Networks' documentation, you are reminded that these documents and the software programs required to read them are confidential. These documents and software programs are protected under federal government copyright laws. Confidentiality must be exercised as expressed in the original switch purchase agreement with Nortel Networks. You can use the documentation furnished solely for the purpose of study, operation, and maintenance of the Nortel Networks' products documented. You cannot sell, license, otherwise convey or allow, either directly or indirectly, access to the Nortel Networks Library. Use of the documentation, by any other person, firm, corporation, or other entity, without the prior written consent of Nortel Networks, is forbidden.

## Required equipment for CD-ROM

The recommended hardware for system specifications is listed below. This assists customers in identifying the proper equipment for installing and operating the CD-ROM.

### Viewing workstations

The following is the system specification with minimum configuration for using the CD-ROM.

- MS-DOS/Windows®: 486-based (recommended) Pentium personal computer with
  - — MS Windows® 3.1
  - — MS-DOS 5.0 or later
  - — 4 Mbyte RAM (8 Mbyte recommended)
  - — 5 Mbyte available disk space
  - — VGA monitor
  - — VGA graphics card
  - — MS Windows® compatible mouse
- Macintosh: 68040-based Macintosh with
  - — System®7.0 or later
  - — 4 Mbyte RAM (8 Mbyte recommended)
  - — 5 Mbyte available disk space
  - — mono or color monitor
- UNIX® / X-Windows: Hewlet Packard Model 9000 3xx, 4xx, 7xx, 8xx workstation with
  - — MOTIF 1.1 or later
  - — X-11 release 4 or later
  - — HP-UX 8.0 or later
  - — 32 Mbyte RAM
  - — 96 Mbyte swap space
  - — 30 Mbyte available disk space
  - — mono or color monitor
  - — mouse
- SUN: SPARC workstation with
  - — MOTIF 1.1
  - — X-11 release 4 or later
  - — SUN OS 4.1.2 or later
  - — 32 Mbyte RAM

— 96 Mbyte swap space

— 30 Mbyte available disk space

— mono or color monitor

— mouse

- IBM RS/6000 workstation with
  - — MOTIF 1.1 or later
  - — X-11 release 4 or later
  - — AIX Windows 3.2 or later
  - — 32 Mbyte RAM
  - — 96 Mbyte swap space
  - — 30 Mbyte available disk space
  - — mono or color monitor
  - — mouse
- AT&T Star Server E
  - — System V release 4 version 3
  - — StarGroup (R) TCP/IP version 4.0, release 04.00.00
  - — QuestMotif Revision 1.1.3b End User Version
  - — 32 Mbyte RAM
  - — 96 Mbyte swap space
  - — 30 Mbyte available disk space
  - — 1/4 inch cartridge tape
- NGT / UNIX®
  - — NGT / UNIX® requirements are the same as GUI excluding X and MOTIF requirements and mouse.
- NGT / DOS
  - — MGT/DOS requirements are the same as GUI excluding VGA and Windows requirement and mouse.

### Local area networks (LAN)

If using a LAN, the suggested LAN equipment for CD-ROM is as follows:

- MS-DOS
  - — 3Com Plus

  - — Banyan
  - — LAN Manager
  - — LANTASTIC
  - — MS-Net
  - — NETBIOS
  - — Novell
- Macintosh
  - — AppleShare®
- UNIX®
  - — Ethernet TCP/IP

### Printers

- PostScript™ printers required for UNIX®

### Processing workstations

- UNIX®: Hewlett Packard 9000 series model 3xx/4xx or 7xx/8xx with
  - — HP-UX 8.0 or later
  - — 32 Mbyte RAM
  - — 96 Mbyte swap space
  - — 200 Mbyte available disk space for software. Database disk space varies with number of documents.
  - — mono or color monitor
- SUN: SPARC station
  - — SUN OS 4.1.2 or later
  - — 32 Mbyte RAM
  - — 96 Mbyte swap space
  - — 200 Mbyte available disk space for software. Database disk space varies with number of documents.
  - — mono or color monitor

## Product Training

Customer Information and Training Services (CITS) provides technical training for Carrier Solutions products and services of the UCS DMS-250 system.

Customer Information and Training Services (CITS) offers low cost performance-based training, and courses designed in several different media to meet training needs.

## Course types

The following are examples of the types of courses offered through CITS.

### Computer Based Training (CBT)

Computer Based Training (CBT) offers the convenience of learning at your pace and at your location.

### Remote Access Learning (RAL)

Remote Access Learning (RAL) offers the ability to interact audibly with the class and the instructor while networked for hands-on activities. You attend class without ever leaving your office.

### Self-paced workbooks and videos

Self-paced workbooks and videos provide effective training in less time with no travel required. When products have frequent software and hardware advances, workbooks provide essential updated information relevant to your job. A video is especially effective for demonstrating “hands-on” procedures when the equipment is uanavailable, or to review safety procedures.

### Instructor-led training

Instructor-led training is primarily lecture-based and presented by highly trained Nortel Networks instructors. The classes often include hands-on laboratory training. Most instructor-led courses are available for on-site delivery.

The hands-on courses and instructor-led training take place at five training facilities, complete with labs, sporting the latest equipment. Training centers are located in the following cities:

- Brampton (Toronto), Ontario
- Montreal, Quebec
- Ottawa, Ontario
- Raleigh, North Carolina
- Sacramento, California

## Service options

CITS offers, at a fee, a number of service options to maximize your training investment.

### Customized training

Given adequate notice, Nortel Networks can repackage existing training courses to provide customized training to meet specific training needs.

### External Customer Instructor Certification (ECIC)

External customer instructor certification (ECIC) information can be obtained from your CITS account manager.

### Volume purchase discounts

The volume purchase discount policy allows you to purchase large quantities of self-paced courseware from CITS. This policy applies to non-Nortel Networks' students only. A single order for 25 or more copies of a self-paced course, entitles you to a one-time discount off the list price of the course.

### Consultation services

For a fee, CITS experts can visit your site to provide training-related consultation.

For more information about these and all your training needs, call 1-800-NT-TRAIN or 1-800-688-7246.

## General course information

For complete course information, look to Advisor NOW!, an on-line course catalog. It is available on the Internet at http://www.nortelnetworks.com/advisor.

Advisor NOW! is user friendly and provides easy access to course descriptions and curriculum paths, as well as scheduling, pricing, lodging, and administrative information. An on-line registration request form is also available on Advisor NOW!. Fill out the form, submit it, and a training coordinator will call you with confirmation.

The Advisor CD-ROM is a source for training information from multiple Nortel Networks' training organizations. Advisor is a CD-ROM based catalog, designed for both PC and Macintosh platforms. You can order a copy of Advisor by calling 1-800-4NORTEL or 1-800-466-7835, and ask for document number 61002.15/03-99.

### Class confirmation

You are confirmed for class upon registration. If you make a registration request by using the Internet (or Intranet for Nortel employees), you must be contacted by a CITS coordinator for confirmation. Until you receive confirmation from the coordinator that your request was processed, you are not registered for the class.

An information letter is sent at the time of registration. This letter, which you must bring to class, contains class dates, time, and other important information.

### Substitutions and cancellations

All substitutions and cancellations must be handled by your company training coordinator. If you do not have a training coordinator, call Nortel Networks Customer Information and Training Services at 1-800-NT-TRAIN or 1-800-688-7246, and select option one.

To avoid charges, cancellations and/or rescheduling, requests for open enrollment courses must be made at least 14 calendar days prior to the course start date. On-sites can be rescheduled or canceled up to 28 calendar days prior to the course start date, without penalty.

Resident buyouts (block schedule of four or more seats) can be rescheduled or canceled up to 28 calendar days prior to the course start date, without penalty.

Full charges will apply for a cancelation or rescheduling that occurs with less than 28 calendar days remaining, before the course start date.

### Pricing and payment

Unless other contract arrangements have been made, invoices for tuition charges are sent to the participant's employer. A valid contract number or hard copy of a purchase order is required at the time of registration. Payment can also be made with Mastercard, Visa, or American Express, for courses taken in the U.S. or Canada.

### Lodging

The Advisor catalog and Advisor NOW! website contain area maps and the names and contact information for all recommended student lodging. Detailed lodging information, including rates and specific amenity offerings, are available through the various means of registration. See the "Class registration" section.

## Class registration

Customer Information and Training Services offers several ways to register for training. If your company has a training coordinator, contact the coordinator's office first. If your company does not have a training coordinator, you can register for courses in any of the following ways:

- Phone: call 1-800-NT-TRAIN or 1-800-688-7246 and select option one. Nortel Networks employees can call ESN 357-7565.

- Internet: submit a registration request form through the Internet at http://www.nortelnetworks.com/advisor. Nortel Networks employees can access http://47.192.6.254/advisor.
- Fax: submit an order form by Fax at 919-997-8556. Order forms are available on the Advisor CD, the Internet, and through Fax-on-Demand at 1-800-NT-TRAIN or 1-800-688-7246.
- E-mail: send an E-mail to teched@nortelnetworks.com.

Updated scheduling and pricing information is available on the web at http://www.nortelnetworks.com/advisor, and on Fax-on-Demand at 1-800-NT-TRAIN or 1-800-688-7246, option three.

## Software delivery

Nortel Networks recognizes that UCS DMS-250 switch customers have specific applications and feature requirements that do not necessarily change significantly over time. Nortel Networks also recognizes the need to control life cycle costs and has adopted a flexible software upgrade policy.

### UCS DMS-250 software support policy

Nortel Networks provides new features and enhanced software functionality through the software release process. Due to the evolving nature of this demand-driven process, it becomes necessary to define clearly the level of support associated with specific software loads as they move from one support category to another over time.

## Support categories

Nortel Networks provides the following three levels of support categories for installed new release software that is covered by a current Nortel Networks Software License Agreement.

| Category | Description |
|---|---|
| Current (C) | This category applies to production software available for shipment with new systems and software upgrade orders. Feature and operational functionality and Incremental Software Unit (PRSU) activity are supported by TAS and PRSU administration. |
| Active (A) | This category applies to software that is no longer available for shipment with new system orders, but may be purchased as a software upgrade. Feature packages that are part of the base release may be ordered. Feature and operational functionality and PRSU activity are supported by TAS and PRSU administration. |
| Retired (R) | This category applies to software no longer available for purchase. TAS is limited to problem diagnosis on a “reasonable effort” basis only. PRSUs are not available. |

The following table summarizes the support given to these software categories.

| Category | Shipped with new systems | Shipped with software upgrades | Supported by NT TAS | Supported PRSU adminstration |
|---|---|---|---|---|
| Current | Yes | Yes | Yes | Yes |
| Active | No | Yes | Yes | Yes |
| Retired | No | No | Reasonable effort only | No |

The following table shows the categories of the UCS DMS-250 software loads:

| Software load | Status |
|---|---|
| BCS30 and before | Retired |
| BCS31 | Retired |
| BCS32 | Retired |
| BCS33 | Retired |
| BCS34 | Retired |
| BCS35 | Retired |
| BCS36 (CSP01, IEC01) | Retired |
| CSP01, IEC02 | Retired |
| CSP01, UCS04.1 | Retired |
| CSP01, UCS04.2 | Retired |
| CSP04, UCS05 | Retired |
| CSP05, UCS06 | Retired |
| CSP07, UCS07 | Active |
| UCS08 | Active |
| UCS09 | Current |
| UCS10 | No release |
| UCS11 | Available July ’99 |

## Service support functions

### TAS support

TAS is made up of fully trained resources available 24 hours a day, 7 days a week. TAS provides remote emergency and routine technical assistance with the ability to diagnose fault conditions and effect resolution.

### Post-Release software Units (PRSUs) administration support

Software updates are available to correct service-affecting faults that fail to meet the required specifications. These specifications are outlined in the applicable design documents for the specific software load. Billable condition is dependent upon software warranty/Service and Support Plan (S&SP) status.

### Software warranty

Provided such software is not altered, there shall be, during the warranty period, no failure of such software to function as specified in the applicable NTPs, which failure shall materially affect use by an end user for the designated hardware system for which such software was licensed. The addition of extended software to a system shall not extend the warranty period on any previously ordered or installed software of that system.

Software PRSUs are normally developed to correct service-affecting deficiencies identified in software loads that are operating in a live environment. Deficiencies are reported through the Customer Service Report (CSR) system, and are classified as emergency (E1 and E2) and non-emergency (S1, S2, and NS) so that corrective development can be prioritized. Deficiencies classified as non-service-affecting (NS) are normally corrected in a subsequent software load.

The following paragraphs describe software warranty in three situations:

- initial switch warranty or Service and Support Plan (S&SP)
- standalone software release (CSP/IEC) upgrade (non-S&SP)
- beyond software warranty

### Initial switch warranty or Service and Support Plan

While under warranty or an S&SP, the site receives emergency and routine service-affecting PRSUs as part of their warranty or S&SP service. Software administration ensures that all in-warranty or S&SP offices are maintained at an up-to-date software level and coordinates all application activity with the maintainer. Each warranty and S&SP site is on a 28-day schedule and is visited once during this time cycle to receive released PRSUs.

Emergency PRSUs are spooled immediately by PRSU administration. Application of PRSUs by TAS is available at TAS standard technical rates.

### Stand-alone software upgrade (non-S&SP)

Stand-alone software upgrade (non-S&SP) sites are maintained on a 28-day schedule for the duration of the software warranty period to receive released PRSUs. During the software warranty period (90 days), software-related TAS is covered as part the software warranty, except as specified in “Service Billing Guidelines.”

### Beyond software warranty

Out-of-warranty and non-S&SP sites are removed from the 28-day schedule. Software-related TAS beyond the software warranty period is billable at the

then-current TAS rates. PRSUs (if available per support category) are applied as part of CSR resolution.

### One Night Process

The One Night Process (ONP) is an automated software delivery process. Data modification is restricted only during the software upgrade. The ONP increases accuracy in the delivery of new software.

With the ONP, the new software load is built at Nortel Networks with all the features and packages requested by the customer. The software is then shipped to the job site with no office-specific data imposed on it. When the tape is loaded into the inactive side of the processor, all office data is transferred to the existing program.

The ONP software delivery provides software tools for the identification and correction of datafill inconsistencies. Because of these tools, the switch operating system is easier to maintain. The tools, created for use in the delivery process, become a part of the operating system. They reside in the central controller for use by the customer at any time.

For a summary of activities that is performed prior to the software delivery date, refer to *ONP Software Delivery Procedures*. For more information about the time line of events, refer to *SNP Site Notification Package*.

## Disaster Recovery Plan

If a customer experiences a physical disaster that results in the complete loss of service of the customer's Nortel Networks' switching equipment, the customer should contact TAS. Nortel Networks, upon notification, immediately activates the Disaster Recovery Plan.

A disaster recovery team will be placed on alert and an on-site coordinator will be immediately dispatched to the site to assess the extent of damage to the switch and facilities.

The on-site coordinator will communicate his assessment to the Richardson coordinator, who will assemble all team members to formulate a detailed Disaster Recovery Plan. Each team member will have access to appropriate resources to direct towards the recovery effort.

The primary objective of the Disaster Recovery Plan is to restore basic telephone service to key personnel in the customer organization as soon as possible.

The secondary objective of the Disaster Recovery Plan is to restore the customer's Nortel Networks switching equipment to complete operational status as soon as possible.

Nortel Networks has a history of assigning top priority to a customer disaster and is dedicated to high quality and expedient recovery to pre-incident status. The modular design of the DMS family of switches and the high level of production in Raleigh, North Carolina, provide immediate access to the equipment required for a customer in a disaster situation.

Follow these steps to implement the Disaster Recovery Plan.

**1** The customer notifies TAS as soon after the disaster as possible and relates the severity of the situation.

**2** The TAS representative immediately notifies the TAS director.

**3** The TAS director immediately activates the Disaster Recovery Team.

**4** The Disaster Recovery Team assembles and identifies an on-site coordinator to be dispatched immediately to the customer site.

***Note:*** The members of the Disaster Recovery Team are:

Manager, TAS
Director, Engineering/Administration
Director, Installation and Commissioning
Senior Manager, Customer Service

**5** The Disaster Recovery Team identifies installation and commissioning personnel who are immediately dispatched to the customer site.

**6** The on-site coordinator determines the extent of damage and relates an assessment to the Disaster Recovery Team.

**7** The Disaster Recovery Team determines, locates, and directs to the site the exact configuration of the replacement equipment that is required.

**8** The on-site coordinator directs the installation and commissioning of the replacement equipment 24 hours a day, 7 days a week until permanent service is restored.

***Note 1:*** Response times are contingent on availability of materials, transportation, disaster site facilities and other contractual obligations.

***Note 2:*** Customer is responsible for maintaining current backup software (image) on a magnetic tape off-site. Nortel Networks recommends archiving monthly.

***Note 3:*** Hospitals, medical centers, and other public health and safety facilities are given priority in the case of multiple disasters.

***Note 4:*** Customer assumes all time, materials, and travel and living expenses involved that Nortel Networks incurs in the recovery effort.

***Note 5:*** All decisions affecting the customer site are made jointly between the customer and Nortel Networks personnel.

# Service billing guidelines

## Hardware warranty

### Initial and extension hardware

The warranty for initial and extension hardware is twelve months from the date of turnover to the customer (K date), unless otherwise defined in the purchase agreement.

### Repaired or replaced hardware

The warranty for repaired or replaced hardware is thirty days from the date of shipment or the remainder of the 12-month initial warranty, whichever is greater.

### Material on loan (MOL) policy

The customer is invoiced for the current purchase price of defective equipment Nortel Networks does not receive. The defective equipment must be received by Nortel Networks within 30 days of a replacement part shipment.

### Emergency order surcharges for continental United States

Emergency replacement order charges are $250 for each emergency replacement module.

Counter-to-counter emergency replacement order charges are $250 for each order, plus $250 for each emergency replacement module.

## Technical assistance service

Nortel Networks provides customers with on-going technical assistance for the identification and resolution of technical issues in accordance with *DMS-100 and DMS-10 Family Service Priority Classification Description.* Some technical assistance requests may be subject to billing.

## Post-warranty policy

Post-warranty customers who decline an S&SP contract, may receive services on a pay-as-you-go basis. This service is billed at Nortel Networks' current prices and a "Not-to-exceed/Open" purchase order.

# List of terms

**CASL**
Customer Account Site Location

**CCITT #6**
Consultative Committee on International Telephony and Telegraphy standard no. 6

**CD-ROM**
Compact Disc Read-Only Memory

**CPU**
central processing unit

**CSC**
customer support center

**CSR**
Customer Service Report

**EIOC**
enhanced input/output controller

**EPIC**
Extended Product Inventory Control

**ESP**
Extended Service Plan became Service and Support Plan in UCS11

**FCA**
Field Change Application

**ISDN**
Integrated Services Digital Network

**NTP**
Nortel Publication

**OEM**
original equipment manufacturer

**OM**
operational measurement

**ONP**
One Night Process

**PCP**
printed circuit pack

**PO**
purchase order

**PRSU**
Post–Release Software Unit

**RCAE**
Richardson Change Application Engineering

**SNS**
Switch Network System

**SPMS**
Switch Performance Monitoring System

**SS7**
Signaling System Number 7

**S&SP**
Service and Support Plan

**TAS**
Technical Assistance Service

**TCN**
Travel Card Number

**UCS**
Universal Carrier Software

# Ordering information

Use the following table for ordering Nortel NTPs (Northern Telecom Publications) and Product Computing-Module Loads (PCLs):

| Type of product | Source | Phone | Cost |
|---|---|---|---|
| Technical documents (paper or CD-ROM) | Nortel Product Documentation | 1-800-NT-I-CARE (1-800-684-2273) | Yes |
| Individual NTPs (paper) | Merchandising Order Service | 1-800-347-4850 | Yes |
| Marketing documents | Sales and Marketing Information Center (SMIC) | 1-800-4NORTEL (1-800-466-7835) * ESN 444-5930 | No |
| PCL software | Nortel | Consult your Nortel sales representative<br>* Employee | Yes |

### When ordering publications on CD

Please have the CD number and software version available, for example, **HLM-2631-001 02.02**.

### When ordering individual paper documents

Please have the document number and name available, for example, **297-2631-001, UCS DMS-250 Master Index of Publications**.

### When ordering software

Please have the eight-digit ordering code, for example, **UCSE0009**, as well as the ordering codes for the features you wish to purchase. Contact your Nortel representative for assistance.

Digital Switching Systems

# UCS DMS-250

## Service Operation Support Manual

Product Documentation—Dept 3423
Northern Telecom
P.O. Box 13010
RTP, NC 27709–3010
1–800–684–2273
(1–800–NTI–CARE)


Publication number: 297-2621-011
Product release: UCS11
Document release: Standard 14.01
Date: May 1999
Printed in the United States of America

NORTEL
NORTHERN TELECOM