Nortel Communication Server 1000

Element Manager System Reference - Administration

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New in This Release

Deployment changes

Element Manager (EM) for Communication Server 1000 Release 6.0 is available on Commercial Off The Shelf (COTS) and Linux based CP PM servers. The VxWorks based ISP1100 hardware is not supported in this release.

The move to COTS and Linux CP PM allows more flexibility to deploy only the applications you want on that hardware. This includes Element Manager.

Unified Communication Management

Prior to this release, Element Manager (EM) could be deployed on VxWorks or on Linux based server with Enterprise Common Manager (ECM). In CS 1000 Release 6.0, ECM has been overhauled to provide a more comprehensive management solution. ECM is now Unified Communication Management (UCM) and provides the management for a number of elements. Element Manager, Networking Routing System Management, and Subscriber Manager all operate under UCM umbrella. With this release, Element Manager is only deployed as part of UCM.

For more information, see *Unified Communication Management* (NN43001-116).

Phone Provisioning

Prior to this release Phone Provisioning was not available on a VxWorks system. With CS 1000 Release 6.0, Element Manager is only deployed on UCM, which provides all users access to Phone Provisioning. The following functional enhancements are additions to Phone Provisioning for this release:

- Graphical interface for Phone Key Programming.
- Terminal Number (TN) enhancements to provide the ability to span TNs beyond a single card.
- Support for employee reference in import/export of telephones.

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- Ability to create a new telephone template from an existing telephone configuration.
- Export and Import for telephone templates.
- Ability to migrate phone data from Element Manager to Subscriber Manager.
- Publish additional telephone attributes in Subscriber Manager.
- Un-Marp DN of an account in Subscriber Manager

For more information about Subscriber Manager, refer to *Subscriber Manager Fundamentals* (NN43001-120).

Dialing Plan

Element Manager provides a user interface for new commands and prompts for Zone Based Dialing and Zone Based Parameters. Two links are added in the existing Zones page of Element Manager. These two links lead to two new pages to configure a number of parameters using overlay LD 117. EM also provides options for every customer to enable the Dialing Plan feature. For more information refer to *Dialing Plans Reference* (NN43001-283).

CLID-C: Enhance Override CLID Presentation Restriction

In CS 1000 Release 6.0, you can configure currently existing PII (Privacy Indicator Ignore) prompt for all the ISDN interfaces on the Route page of EM. A new AUXP (Auxiliary Application) prompt is introduced in overlay 16 (RDB) to enhance the ability of the system to honor or ignore the Privacy indicator for a Calling Party Privacy call for each incoming route.

FAXS Modem Pass Through

The FAXS/Modem Pass Through adds support to existing telephone provisioning architecture with the introduction of new Class of Service Modem Pass Through on CS 1000 Release 6.0.

Patching enhancements

Enhancements to the patching mechanism handles obsolete patches and provides a way to deliver special instructions for a patch during installation as part of the patch.

The technician is alerted that a patch has special instructions (for example INI required; other patch requirements; hardware specific requirements).

Some patches may depend on other patches to be in service before the most recent patch is activated.

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Fault Management (SNMP)

The concept of SNMP profiles is introduced with Communication Server 1000 Release 6.0. The SNMP Profile Manager page in Unified Communications Manager (UCM) provides a common interface for configuring SNMP parameters on all Communication Server 1000 Network Elements.

CS 1000 Release 6.0 introduces the following enhancements to SNMP:

- New commands in LD 117 and Element Manager for enabling or disabling the sending of traps for any network element
- Suppression of traps for network elements based on severity
- Ability to configure trap destination ports is extended to all elements

Configuration of SNMP by Element Manager at the system level propagates upward to the SNMP Profile Manager. Changes made in Element Manager apply to all CS 1000 elements.

MALT and VNR Enhancement

The MALT (Meridian ALTernate Routing) and Vacant Number Routing (VNR) Enhancement feature provides call clearing treatment for vacant number calls over IP domain. VNR is a default route used to route untranslated, invalid, or unassigned called numbers (dialed numbers, DN's).

With this feature, you can perform MALT on the Call Server for an additional 10 causes other than the existing six, when the call is routed by VNR to the IP network. You can configure these extra MALT causes in Element Manager. If the call is determined to be a VNR call which is tried at least once to route over an IP route, then the call receives vacant number treatment.

Access Restriction

CS 1000 Access Restrictions prevents port-based attacks and user customizable IP filtering, starting with CS 1000 Release 6.0. The platforms that this feature applies to are MGC, MC32S, CPP4 and CP PM. The Signaling Server platform runs on Linux which has its own firewall, thus this feature is not relevant for that platform.

Port blocking is required by customers who need the capability to close off access to applications and other unused ports. Examples include closing down rlogin on the TLAN interface. A port blocker is required because the call server cannot close applications.

For information about Access Restriction in Element Manager, see *Security Management Fundamentals*(NN43001-604).

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TLS and SRTP Enhancements

Transport Layer Security (TLS) and SIP Real-Time Transport Protocol (SRTP) were implemented in CS 1000 release 5.0. CS 1000 Release 6.0 enhances the implementation to better meet the requirements of security conscious customers, and to better interoperate with third parties.

A new prompt **`Enable Secure Media`** is introduced under the Microsoft Unified Messaging section in EM.

Unicode Name Directory

Unicode Name Directory is a server application storing the database of user names translated to various languages. This feature delivers a CPND capability in Unicode and can hold multiple Unicode names for each DN for a large enterprise customer. You can select a Unicode language preference to match the Unicode Name and Personal Directories. Subscriber Manager and Element Manager are both required when using Unicode Name Directory.

Other

Revision History

May 2009	Standard 03.16. This document is up-issued to support Communication Server 1000 Release 6.0. This NTP may contain information on or refer to products and naming conventions that are not supported in this release. This information is included for legacy purposes and convenience only. This includes but is not limited to items, such as: SSC; ISP 1100; ITG Pentium cards; and Media Cards running certain IP Line applications.
July 2008	Standard 02.15. This document is up-issued to update the Station Fast Sync feature section.
April 2008	Standard 02.14. This document is up-issued to add patching information.
March 2008	Standard 02.12. This document is up-issued to add information about Zone 0 and CR Q01834961.
February 2008	Standard 02.11. This document is up-issued to reflect changes in technical content.
January 2007	Standard 02.10. This document is up-issued to reflect changes in technical content.
December 2007	Standard 02.09. This document is up-issued to support Communication Server 1000 Release 5.5.
August 2007	Standard 01.05. This document is up-issued to support Microsoft Exchange Server 2007 Unified Messaging.

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June 2007	Standard 01.03. This document is up-issued for: (1) to specify that PDT access is required to access the Element Manager patching feature. (2) to indicate that the rows in the Excel spreadsheet must be completed sequentially. (3) to correct the graphic Digit Conversion Tree Configuration Web page. (4) to provide more information about QoS threshold values. (5) to correct the graphic Clock Controller Basic Properties Web page.
May 2007	Standard 01.01. This document is up-issued to support Communication Server 1000 Release 5.0. This document contains information previously contained in the following legacy document, now retired: Element Manager System Administration (553-3001-332).
August 2005	Standard 3.00. This document is up-issued to support Communication Server 1000 Release 4.5.
September 2004	Standard 2.00. This document is up-issued for Communication Server 1000 Release 4.0.
October 2003	Standard 1.00. This document is a new NTP for Succession 3.0. It was created to support a restructuring of the Documentation Library. This document contains information previously contained in the following legacy document, now retired: Element Management (553-3023-222). Some content from Element Management (553-3023-222) also appears in Succession 1000 Element Manager: Installation and Configuration (553-3001-232).

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How to get help

Contents

This section contains information about the following topics:

- "Getting help from the Nortel Web site" (page 15)
- "Getting help over the telephone from a Nortel Solutions Center" (page 15)
- "Getting help from a specialist by using an Express Routing Code" (page 16)
- "Getting help through a Nortel distributor or reseller" (page 16)

Getting help from the Nortel Web site

The best way to get technical support for Nortel products is from the Nortel Technical Support Web site:
www.nortel.com/support
This site provides quick access to software, documentation, bulletins, and tools to address issues with Nortel products. From this site, you can:

- download software, documentation, and product bulletins
- search the Technical Support Web site and the Nortel Knowledge Base for answers to technical issues
- sign up for automatic notification of new software and documentation for Nortel equipment
- open and manage technical support cases

Getting help over the telephone from a Nortel Solutions Center

If you do not find the information you require on the Nortel Technical Support Web site, and you have a Nortel support contract, you can also get help over the telephone from a Nortel Solutions Center.
In North America, call 1-800-4NORTEL (1-800-466-7835).

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Outside North America, go to the following Web site to obtain the telephone number for your region:
www.nortel.com/callus

Getting help from a specialist by using an Express Routing Code

To access some Nortel Technical Solutions Centers, you can use an Express Routing Code (ERC) to quickly route your call to a specialist in your Nortel product or service. To locate the ERC for your product or service, go to:
www.nortel.com/erc

Getting help through a Nortel distributor or reseller

If you purchased a service contract for your Nortel product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller.

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Introduction

This document is a global document. Contact your system supplier or your Nortel representative to verify that the hardware and software described are supported in your area.

Subject

This document describes the Element Manager interface.

Applicable Systems

This document applies to the following systems:

- Communication Server 1000M Single Group (CS 1000M SG)
- Communication Server 1000M Multi Group (CS 1000M MG)
- Communication Server 1000E (CS 1000E)

Intended Audience

This document is intended for individuals responsible for administering CS 1000 and Meridian 1 systems.

Conventions

Terminology

In this document, the following systems are referred to generically as system:

- Communication Server 1000E (CS 1000E)
- Communication Server 1000M (CS 1000M)
- Meridian 1

Related information

This section lists information sources that relate to this document.

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Technical Documentation

The following technical documents are referenced in this document:

- *Unified Communications Management Common Services Fundamentals* (NN43001-116)
- *Signaling Server IP Line Applications Fundamentals* (NN43001-125)
- *Network Routing Service Fundamentals* (NN43001-130)
- *SIP Line Fundamentals* (NN43001-508)
- *CP PM Co-resident Call Server and Signaling Server Fundamentals* (NN43001-509)
- *Subscriber Manager Fundamentals* (NN43001-120)
- *Transmission Parameters Reference* (NN43001-282)
- *Dialing Plans Reference* (NN43001-283)
- *Security Management Fundamentals* (NN43001-604).
- *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315)
- *System Management Reference* (NN43001-600)
- *Communication Server 1000 Fault Management - SNMP* (NN43001-719)
- *Software Input Output Reference — Maintenance* (NN43001-711)
- *Branch Office Installation and Commissioning* (NN43001-314)
- *System Redundancy Fundamentals* (NN43001-507)
- *Software Input Output Administration* (NN43001-611)

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Overview

Contents

This section contains information about the following topics:

"Element Manager overview" (page 19)

"Key features" (page 20)

"Signaling Server" (page 21)

"Call Server and Media Gateway" (page 22)

"IP Line and Voice Gateway" (page 22)

Element Manager overview

Element Manager is a Web-based user interface used to configure and maintain CS 1000 components.

Element Manager is deployed with the Nortel Unified Communications Management solution on a Linux based operating system. UCM provides logon and security features for Element Manager.

For more information about UCM, see *Unified Communication Management* (NN43001-116).

For more information about installing the Linux operating system, see *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

With Subscriber Manager, an administrator can create an account, publish/display phone attributes, and add and configure phone services for subscribers with available Templates in Element Manager. A template contains attributes common to a CS 1000 phone type. Once a template is created, you can use it to apply these common attributes to a group

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of phones, without having to repetitively define the same value for each phone. In general, using a template is a more efficient method of adding large numbers of phones than maintaining each phone individually.

Element Manager is a simple and user-friendly Web-based interface that supports a broad range of system management tasks, including:

- configuration and maintenance of IP Peer and IP Telephony features
- configuration and maintenance of traditional routes and trunks
- configuration and maintenance of numbering plans
- configuration of Call Server data blocks
- maintenance commands, system status inquiries, backup and restore functions
- patch upload, patch activation, firmware download

Element Manager has many features to help administrators manage systems with greater efficiency. Examples are as follows:

- Web pages provide a single point-of-access to parameters that were traditionally available through multiple overlays.
- Parameters are presented in logical groups to increase ease-of-use and speed-of-access.
- The *hide or show information* option enables administrators to see information that relates directly to the task at hand.
- Full-text descriptions of parameters help administrators reduce configuration errors.
- To simplify response selection, configuration screens offer preselected defaults, lists, checkboxes, and range values.
- To simplify the importing of phones to the database a Comma Separated Value (CSV) file can be used.

Note 1: All screen captures in this chapter are applicable to CS 1000E and CS 1000M systems. Where there is no indicator, the screen and commands are available on both.

Note 2: Option 81C and 61C must be upgraded to a CS 1000 M (SG or MG) in order to deploy it with UCM.

Key features

The following functional areas can be accessed using Element Manager:

- **Links** — Provides access to Virtual Terminal sessions.
- **IP Network** — Helps the user access all functions related to managing IP Networks. These functions include data and physical

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structure configuration, high-profile operational activities, and administrative/maintenance functions.

- **System** — Provides access to system-wide configuration and basic hardware/software management, including supported maintenance overlays and configuration.
- **Customers** — Allows the user to view and edit customer properties.
- **Routes and Trunks** — Provides access to all functions required to create and manage trunks.
- **Dialing and Numbering Plans** — Provides a way to configure all Electronic Switched Network (ESN) data blocks for the Call Server. Network Routing Service cannot be launched from inside EM from CS 1000 Release 6.0 onwards. To access configuration for the Network Routing Service (NRS), you must log on through UCM.
- **Phones**— Enables users to import and configure phones for the Call Server.
- **Tools** — Provides general administrative tools, features and functions, and allows the user to find and access task-related pages, including Reports.
- **Security** — Allows the user to perform Security functions, including IP Security.

Signaling Server

Element Manager enables administrators to perform the following activities on the Signaling Server:

- reset
- access the maintenance window
- download new IP Phone firmware
- upgrade IP Phone firmware
- view report log
- view Operational Measurements (OM) data
- Telnet
- patching
- increase Virtual Trunk capacity and perform configuration tasks on Virtual Trunks
- configure and manage the Web-based services for Personal Directory, Redial List, and Callers List
- add, delete, view, and edit Signaling Server information

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Call Server and Media Gateway

For Call Server and Media Gateway, Element Manager enables administrators to configure and manage the following data:

- Configuration Record
- Customer Data Block
- Route Data Blocks
- Trunks
- ESN Data Block
- Patching

To learn more about parameters that can be configured and managed in Element Manager, see *System Management Reference (NN43001-600)*.

IP Line and Voice Gateway

Element Manager enables administrators to perform the following activities on the IP Line and Voice Gateway Media Cards:

- View and configure Simple Network Management Protocol (SNMP) parameters and add IP addresses for forwarding SNMP traps.
- View and configure Voice Gateway profile data.
- View and edit Quality of Service (QoS) parameters.
- Use Local Area Network (LAN) configuration to configure the Management LAN (ELAN) subnet, Telephony LAN (TLAN) subnet, and Routes.
- View and edit Simple Network Time Protocol (SNTP) Server and Client information.
- View and configure file server access for downloading firmware for IP Phones.
- View and select the Loss and Level Plan for the country. For more information about selecting the Loss and Level Plan for the country, see *Transmission Parameters Reference (NN43001-282)*.
- Add, remove, view, and edit card properties of Voice Gateway Media Cards.

To learn more about IP Line and Voice Gateway Media Card parameters that can be configured and managed in Element Manager, see *IP Line Application Fundamentals (NN43001-125)*.

The following maintenance activities are supported when using Element Manager for IP Line and Voice Gateway Media Card:

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- reset Voice Gateway Media Card
- enable/disable Voice Gateway Media Card
- access the maintenance window to the Voice Gateway Media Card
- download new loadware/firmware for upgrades
- run Syslog reports
- obtain Operational Measurement (OM) data
- Telnet to the card
- patching

To learn more about the IP Line and Voice Gateway maintenance activities that are supported by Element Manager, see “IP Network” (page 129).

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How to use Element Manager

Contents

This section contains information about the following topics:

"Launching Element Manager" (page 25)

"Timeout after a period of inactivity" (page 26)

"Navigation" (page 26)

"Configuring data" (page 29)

"Logging off" (page 29)

Launching Element Manager

Element Manager is installed with the Nortel Unified Communications Management (UCM) solution on a Nortel CP PM server or on one of the Commercial off the shelf (COTS) servers:

Start Element Manager from the UCM solution. This solution supports Single Sign-on so that you can access multiple systems. Users access UCM Common Services through Microsoft Internet Explorer 6.02600 or later. For information about how to log on to UCM Common Services, configure the UCM Common Services, and log on to Element Manager, see *Unified Communications Management* (NN43001-116).

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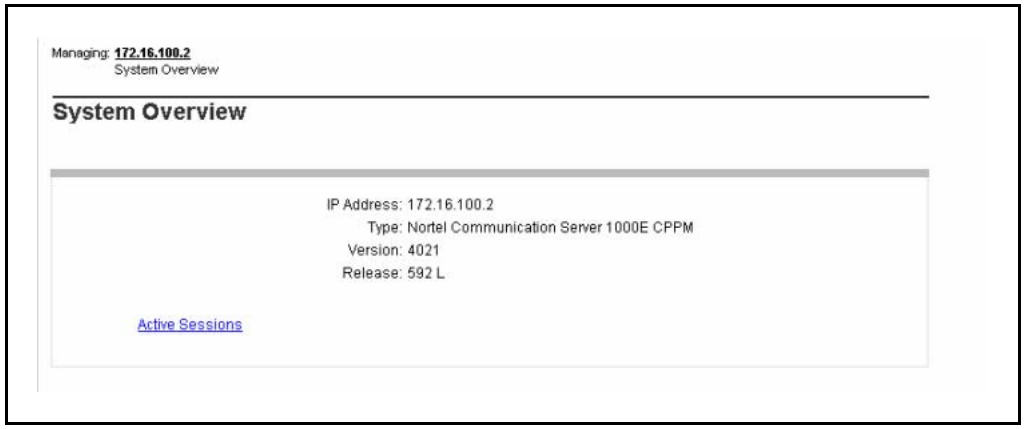
Figure 1
Element Manager System Overview Web page



Timeout after a period of inactivity

Element Manager times out after a period of inactivity. Users are logged off without warning in all Element Manager Web pages. The exception is the **Edit** Web pages. When a user is works on this Web page, a message appears that warns of the impending timeout action. Click OK (on the warning message) within the remaining timeout period (5 minutes) to reset the timer. If no response occurs within the five-minute warning period, the session is cancelled, and the user must log in again. Data modifications made on screen, but not submitted to the system, are lost.

Navigation

The Element Manager navigator is on the left side of the Web page as shown in Figure 2 "Element Manager navigator" (page 27).

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Figure 2
Element Manager navigator

Links in the Element Manager navigator are structured as follows:

- **Home**
- **Links**
  - Virtual Terminals
- **System**
  - Alarms
  - Maintenance
  - Core Equipment
  - Peripheral Equipment
  - IP Network
  - Interfaces

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  - Engineered Values
  - Emergency Services
  - Geographic Redundancy
  - Software
- **Customers**
- **Routes and Trunks**
  - Routes and Trunks
  - D-Channels
  - Digital Trunk Interface
- **Dialing and Numbering Plans**
  - Electronic Switched Network
  - Flexible Code Restriction
  - Incoming Digit Conversion
- **Phones**
  - Templates
  - Report
  - Properties
  - Migration
- **Tools**
  - Backup and Restore
  - Call Server Initialization
  - Date and Time
  - Logs and Reports
- **Security**
  - Passwords
  - Policies
  - Login Options

During periods of high call volume, Element Manager Web pages load slowly.

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Configuring data

In many cases, users can edit data using configuration Web pages. At the bottom of the configuration Web pages, the following four buttons appear:

- **Submit** — Transmits changes to the Call Server.
- **Refresh**— Refreshes data from the Call Server. Refresh overwrites any changes not yet submitted.
- **Delete** — Deletes the item being edited or configured.
- **Cancel** — Discards the changes and returns to the appropriate configuration page.

Logging off

To log off Element Manager and UCM, click the **Logout** link in the top right corner of the Web page.

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Links

Contents

This section contains information about the following topics:

“Introduction” (page 31)

“Virtual Terminals” (page 31)

Introduction

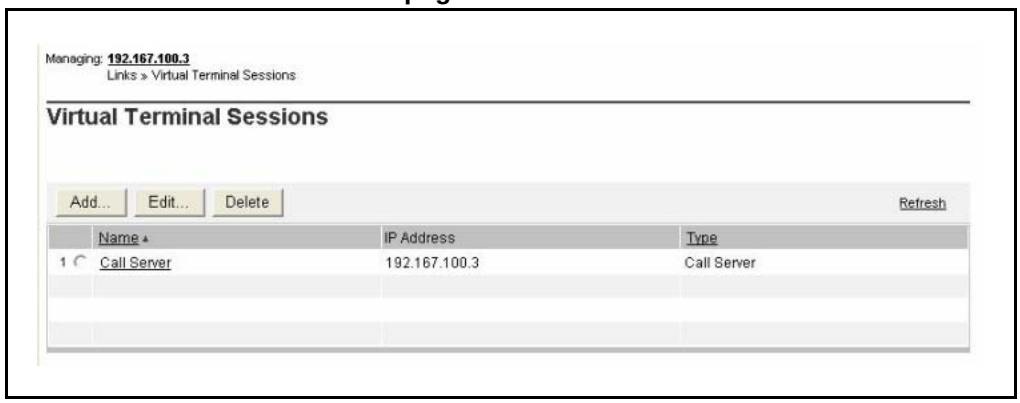
The features available under the **Links** branch of the Element Manager navigator enable Element Manager to be the single point of management access to Web pages and character-based interfaces.

Use the Virtual Terminal feature to access any IP-based elements on the network. On the Call Server, users can access context-sensitive online help, which provides detailed information about system prompts and error messages.

Virtual Terminals

Click the **Virtual Terminals** link to open the **Virtual Terminal Sessions** Web page as shown in Figure 3 "Virtual Terminal Sessions Web page" (page 31).

Figure 3
Virtual Terminal Sessions Web page



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The **Virtual Terminal Sessions** Web page enables users to bookmark the connection details to any IP-based element on the network. Virtual Terminal can be used to connect to an element which supports Telnet, Rlogin or SSH2.

Virtual Terminal (VT) sessions are secured using SSL and SSH. If the element doesn't support SSH then normal TCP fallback is also provided (either to the Telnet or Rlogin server) to connect to the elements.

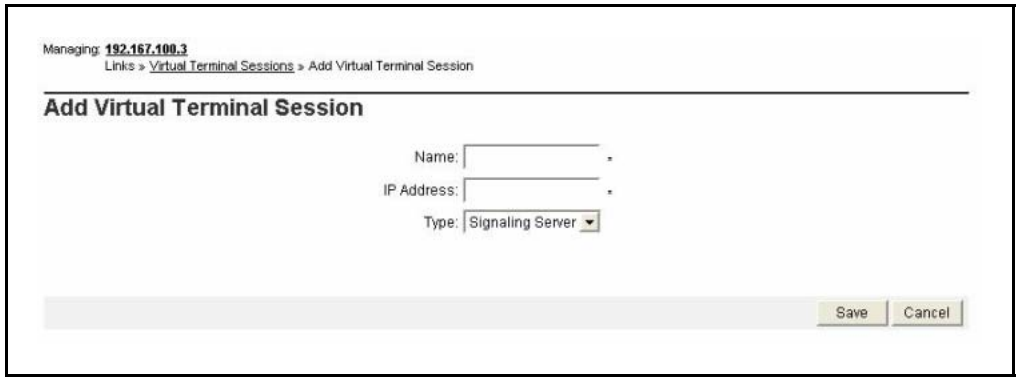
ATTENTION
Java Runtime Environment (JRE) version 1.5 must be installed for the Virtual Terminal Emulator to run properly.

Follow the steps in Procedure 1 "Adding a Virtual Terminal session" (page 32) to add a Virtual Terminal Session .

Procedure 1
Adding a Virtual Terminal session

Step	Action
1	On the **Virtual Terminal Sessions** Web page, click **Add**. The **Add Virtual Terminal Session** Web page appears, as shown in Figure 4 "Add Virtual Terminal Session Web page" (page 32).

Figure 4
Add Virtual Terminal Session Web page



2	Enter a **Name** and **IP Address** for the session.
3	Select the **Type** from the list.
4	Click **Save** to save.
5	To cancel the session, click **Cancel**.

--End--

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To access a Virtual Terminal Session that is already created, click the name of the Virtual Terminal Session on the **Virtual Terminal Sessions** Web page. A **Virtual Terminal** window appears in a separate browser window.

Note 1: Virtual terminal prompts for pdt2 password, but you can press Enter and give the admin1 or admin2 password to get connected, and pdt2 password is not mandatory if you start Virtual Terminal through UCM.

Note 2: Upon initial launch of Virtual terminal, the user is prompted for the PDT2 level password. Entering this password will navigate user to the PDT2 shell of the Call Server. The user can also carriage return past the PDT2 password prompt. This action will prompt the user for a new username for other accounts on the Call Server. The user can provide admin1 or admin2 login credentials allowing overlay access to the Call Server.

The Virtual Terminal window provides a menu with the following items:

- Current Overlay
- Current Prompt
- Search M1 Help Files
- About Terminal Client

When the user enters an overlay, the Current Overlay and Current Prompt menu items are enabled.

Click the **Help -> Current Overlay** link to open a Help window containing help for that particular overlay.

Click the **Help -> Current Prompt** link to open a Help window explaining the definition of the prompt, along with acceptable responses.

Follow the steps in Procedure 2 “Editing an existing Virtual Terminal session” (page 33) to edit an existing Virtual Terminal session.

Procedure 2
Editing an existing Virtual Terminal session

Step	Action
1	Select the radio button beside the appropriate Virtual Terminal name on the **Virtual Terminal Sessions** Web page.
2	Click **Edit**. The information about the Virtual Terminal Session selected is displayed in the fields.

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3 Edit the **Name** and **IP Address** values as necessary.

4 To change this session so that it logs into a Call Server, select the **Call Server** check box.

5 Click **Save** to save the changes.

6 Click **Cancel** to undo any changes made.

--End--

Procedure 3
Deleting an existing Virtual Terminal Session

Step	Action
1	Select the radio button beside the appropriate Virtual Terminal name on the **Virtual Terminal Sessions** Web page.
2	Click **Delete** to remove the Virtual Terminal Session information completely.

--End--

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System

Contents

This section contains information about the following topics:

“Introduction” (page 36)

“Maintenance” (page 42)

- “Application Module Link Diagnostics” (page 46)
- “Background Signaling and Switching Diagnostics” (page 49)
- “Call Trace Diagnostics” (page 50)
- “Clock Controller Diagnostics” (page 56)
- “Core Common Equipment Diagnostics” (page 57)
- “Core Input/Output Diagnostics” (page 61)
- “D-channel Diagnostics” (page 63)
- “D-Channel Expansion Diagnostics” (page 66)
- “Digital Trunk Diagnostics” (page 69)
- “Digital Trunk Maintenance Diagnostics” (page 72)
- “Emergency Services Diagnostics” (page 75)
- “Ethernet Diagnostics” (page 77)
- “Ethernet Quality of Service Diagnostics” (page 82)
- “Input/Output Diagnostics” (page 84)
- “Intergroup Switch and System Clock Generator Diagnostics” (page 87)
- “MSDL Diagnostics” (page 91)
- “Multifrequency Sender Diagnostics” (page 93)
- “Multifrequency Signaling Diagnostics” (page 96)
- “Network and Peripheral Equipment Diagnostics” (page 98)
- “Network and Signaling Diagnostics” (page 103)
- “TMDI Diagnostics” (page 105)
- “Tone and Digit Switch Diagnostics” (page 106)

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"Trunk Diagnostics" (page 108)
"Zone Diagnostics" (page 111)
"Loops (Common Equipment)" (page 113)
"Superloops" (page 115)
"MSDL/MSIP Cards" (page 116)
"Conference/TDS/Multifrequency Cards" (page 118)
"Tone Senders and Detectors" (page 118)

Introduction

The **System** branch of the Element Manager navigator provides access to diagnostic tools that enable users to issue a variety of commands to the components of the CS 1000 system.

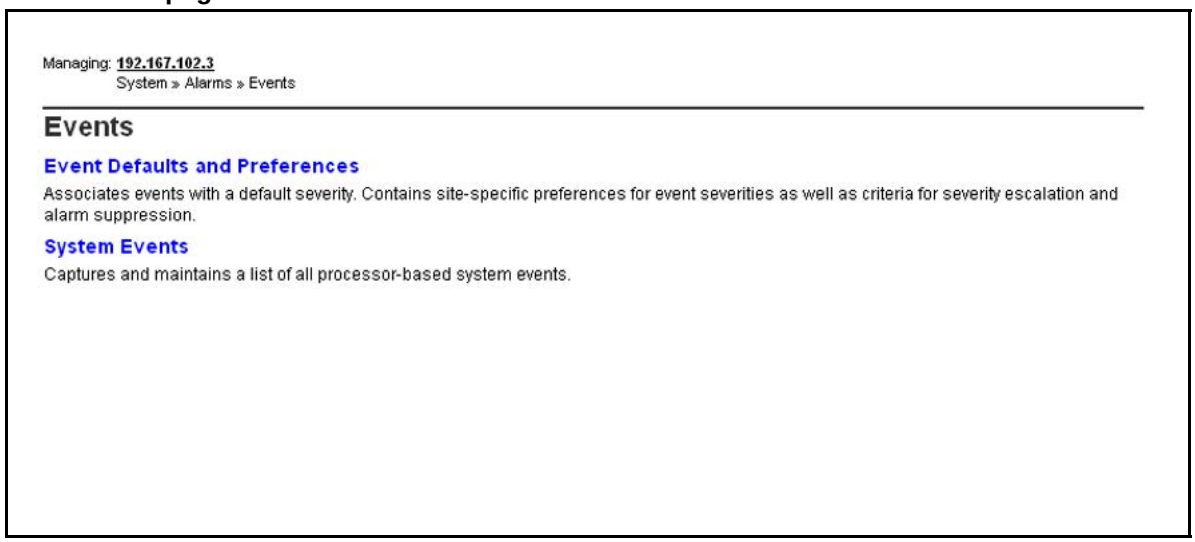
The following buttons appear on some or all of the System Web pages:

- **Submit** — Transmits changes to the Call Server.
- **Refresh** — Refreshes data from the Call Server. Refresh overwrites any changes not yet submitted.
- **Cancel** — Discards the changes and returns to the appropriate configuration Web page.

Events

To configure or edit Events information, click the **Alarms > Events** link in the **System** branch of the Element Manager navigator. The **Events** Web page appears as shown in Figure 5 "Events Web page" (page 36).

Figure 5
Events Web page



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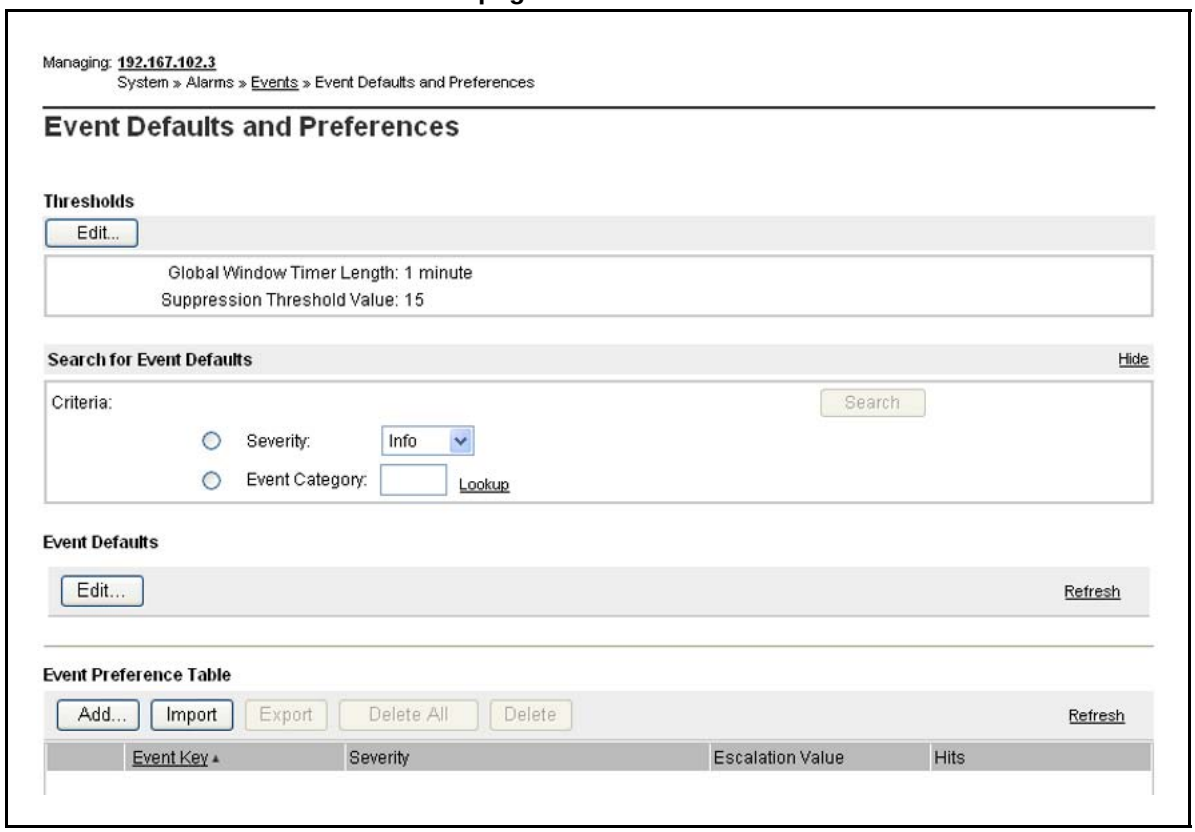
To display event default severity, event thresholds and site-specific event preferences, click the **Event Defaults and Preferences** link to open the **Event Defaults and Preferences** Web page as shown in Figure 6 "Event Defaults and Preferences Web page" (page 37).

Figure 6
Event Defaults and Preferences Web page



To edit the Suppression Threshold Value and Global Window Timer Length that are common to all events, in the **Thresholds** section click **Edit**. The **Edit Thresholds** Web page appears as shown in Figure 7 "Edit Thresholds Web page" (page 38).

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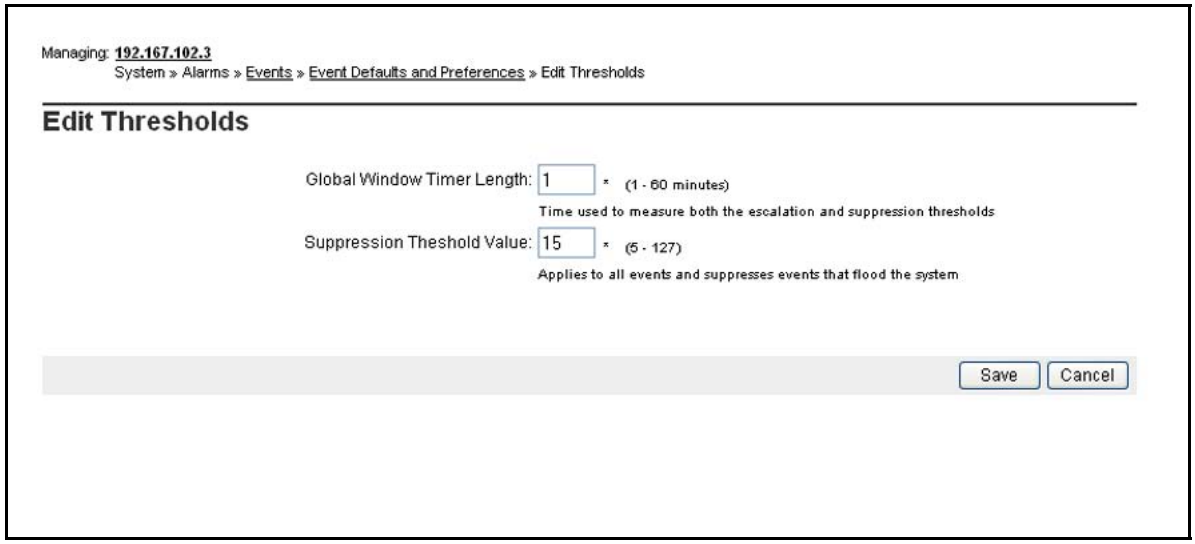
Figure 7
Edit Thresholds Web page



Enter the desired changes and click **Save**.

Search for event defaults by clicking either the **Severity** or **Event Category** radio buttons. Enter the Search criteria and click **Search**. The results appear in the **Event Defaults** section.

To maintain a list of system events, from the **Events** Web page click the **System Events** link. The **System Events** Web page appears as shown in Figure 8 "System Events Web page" (page 39).

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Figure 8
System Events Web page

The System Event List Size in the **Collection Limit** section is the upper limit to the number of events collected in the System Event List. To edit this limit, click **Edit**.

All events collected in the system event list are displayed in the text area at the bottom of the page.

Use this page to import an Event Preference Table from a user specified location to the switch.

Import Event Preference Table (EPT)

Use this page to import an Event Preference Table from a user specified location to the switch.

To display this page, choose **System>Alarms>Events>Event Defaults and Preferences**. In the Event Preference Table Section, click **Import**.

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The Event Preference Table page appears.

Note: The user needs to change the Security settings in Microsoft Internet Explorer while doing Import EPT. This file is residing at the user PC which uses ActiveX FileSystemObject to do the validations. This provides access to the local file system of the PC using even JavaScript code. Microsoft IE has a field called "Initialize and script ActiveX controls not marked as safe" under IE -> Tools -> Security -> Custom Level. This field needs to be either set to "Prompt" or "Enable". When this field is set to Disabled it doesn't allow IE to create ActiveX object and we find an error called "Automation server can not create object" and our validation for the file fails. If the IE Security level setting is set to High then no ActiveX controls is allowed, hence it should be set to Medium with the specified field to set to either "Prompt" or "Enable".

Procedure 4
Import Event Preference Table

Step	Action
1	Click **Browse**, to browse for the Event Preference Table.
2	Click **Import & Activate** to import the Event Preference Table to the switch.
3	Click **Cancel** to return to the Event Defaults and Preferences without importing a Event Preference Table to the switch.

--End--

SNMP

The SNMP Profile Manager provides a common interface for configuring SNMP parameters on all CS 1000 Network Elements. You can use SNMP Profile Manager which is part of the UCM solution, to add, modify and delete SNMP profiles. Profiles can be configured and assigned to the following types of UCM managed elements:

- Element Manager
- Call Server (configuration settings are migrated to the SS, VGMC, and MGC)
- NRSM (configuration settings are migrated to NRS)

Fault management is implemented in Element Manager.

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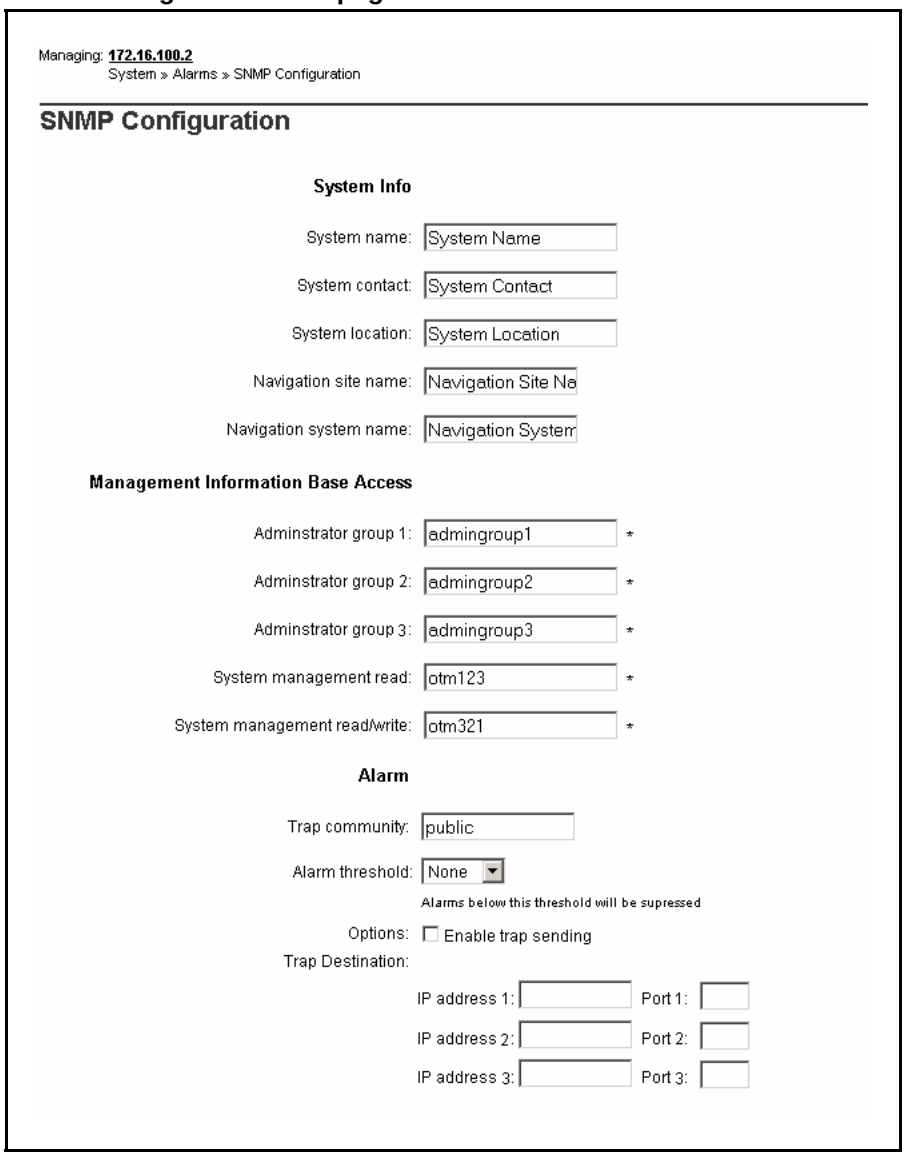
To configure or edit SNMP information, click the **Alarms > SNMP** link in the System branch of the Element Manager navigator. The **SNMP Configuration** Web page appears as shown in Figure 9 "SNMP Configuration Web page" (page 41).

Figure 9
SNMP Configuration Web page



The information entered on this Web page corresponds to the SNMP data traditionally configured using LD 117 - Ethernet and Alarm Management.

The SNMP parameters are grouped in three logical groups in the SNMP Configuration Web page:

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- System Info
- Management Information Base Access
- Alarm

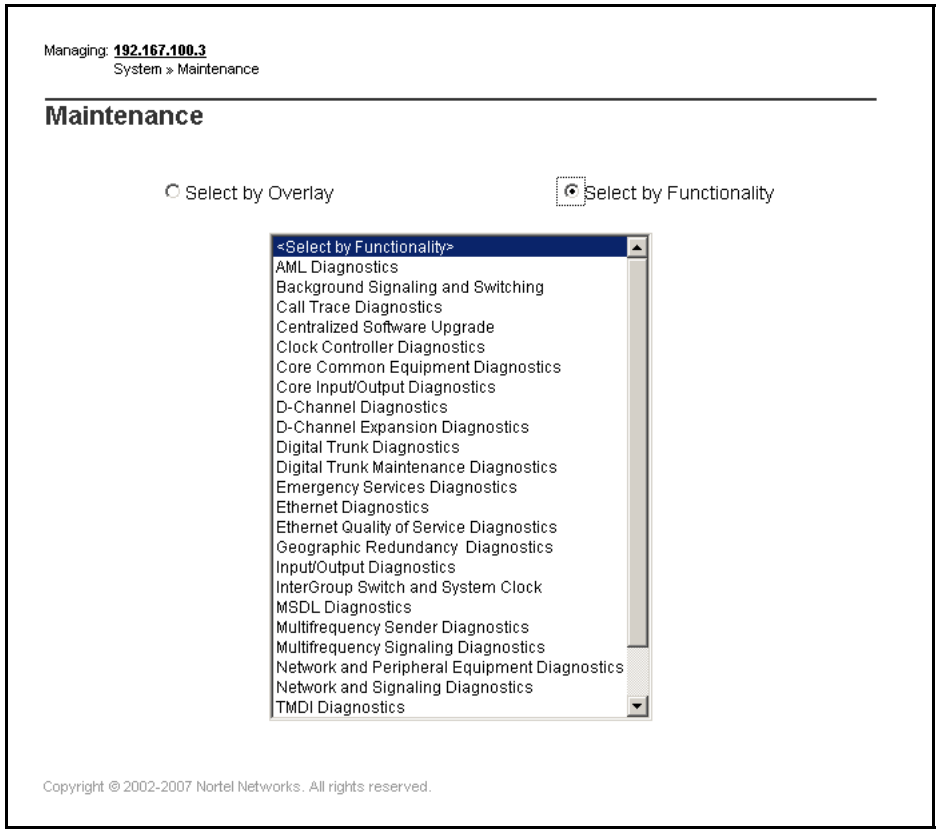
Configuration of SNMP by Element Manager at the system level propagates upward to the SNMP Profile Manager. Changes made in Element Manager apply to all CS 1000 elements.

For detailed information about SNMP, see *Communication Server 1000 Fault Management - SNMP* (NN43001-719).

Maintenance

When the user clicks the **Maintenance** link in the **System** branch of the Element Manager navigator, the **Maintenance** Web page appears. The user can choose how the options are presented. If the user chooses **Select by Functionality**, the diagnostic tool options are presented by functionality as shown in Figure 10 "Maintenance diagnostic tools presented by functionality" (page 42).

Figure 10
Maintenance diagnostic tools presented by functionality



The following tool options are available from this Web page:

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- AML Diagnostics
- Background Signaling and Switching
- Call Trace Diagnostics
- Centralized Software Upgrade
- Clock Controller Diagnostics
- Core Common Equipment Diagnostics
- Core Input/Output Diagnostics
- D-Channel Diagnostics
- D-Channel Expansion Diagnostics
- Digital Trunk Diagnostics
- Digital Trunk Maintenance Diagnostics
- Emergency Services Diagnostics
- Ethernet Diagnostics
- Ethernet Quality of Service Diagnostics
- Geographic Redundancy Diagnostics
- Input/Output Diagnostics
- InterGroup Switch & System Clock
- MSDL Diagnostics
- Multifrequency Sender Diagnostics
- Multifrequency Signaling Diagnostics
- Network and Peripheral Equipment Diagnostics
- Network and Signaling Diagnostics
- TMDI Diagnostics
- Tone and Digit Switch Diagnostics
- Trunk Diagnostics
- Zone Diagnostics

Note: Depending on the type of system being accessed, not all options may be available.

If the user chooses **Select by Overlay**, the following options are presented by LD numbers, as shown in Figure 11 "Call Server diagnostic tools presented by overlay" (page 45):

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- LD 30 - Network and Signaling
- LD 32 - Network and Peripheral Equipment
- LD 34 - Tone and Digit Switch
- LD 36 - Trunk
- LD 37 - Input/Output
- LD 39 - Intergroup Switch and System Clock
- LD 45 - Background Signaling and Switching
- LD 46 - Multifrequency Sender
- LD 48 - Link
- LD 54 - Multifrequency Signaling
- LD 60 - Digital Trunk Interface and Primary Rate Interface
- LD 75 - Digital Trunk
- LD 80 - Call Trace
- LD 96 - D-Channel
- LD 117 - Ethernet and Alarm Management
- LD 135 - Core Common Equipment
- LD 137 - Core Input/Output
- LD 143 - Centralized Software Upgrade

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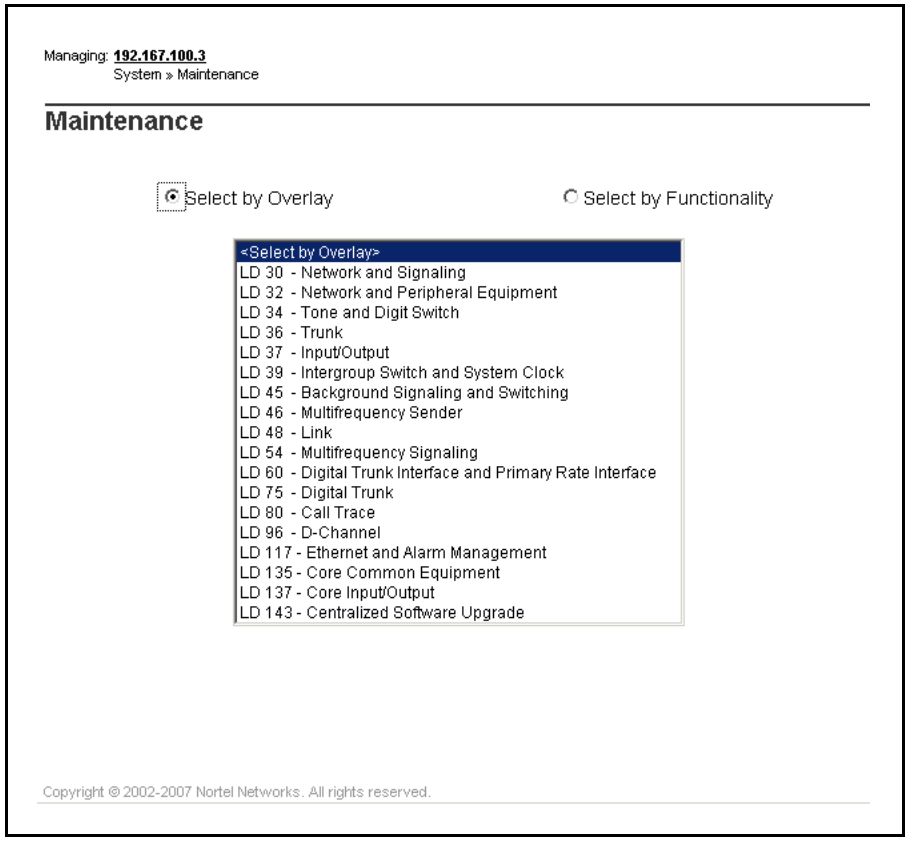
Figure 11
Call Server diagnostic tools presented by overlay



If selecting an overlay that corresponds to more than one functionality, choose the desired functionality in the **Select Group** list, as shown in Figure 12 "Select Group list" (page 46).

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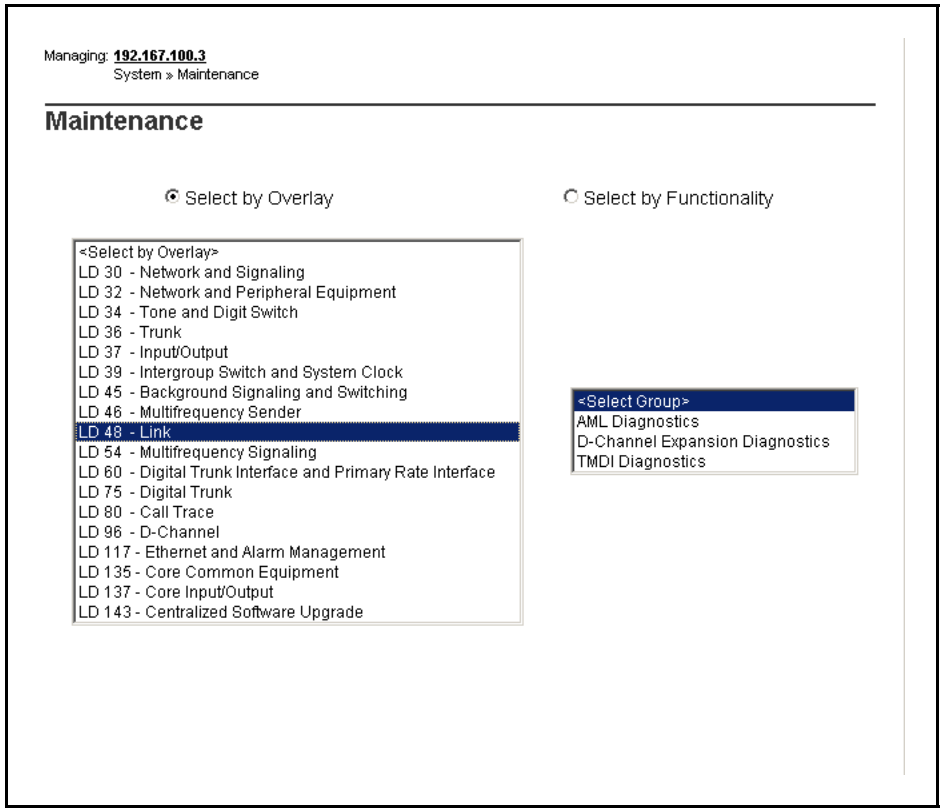
Figure 12
Select Group list



This document presents the options by functionality, with cross-references to the appropriate overlay.

The following sections provide information about each functionality.

Application Module Link Diagnostics

Click the **AML Diagnostics** link in the list of **Maintenance** functionalities to open the **Link: AML Diagnostics** Web page as shown in Figure 13 "AML Diagnostics Web page" (page 47).

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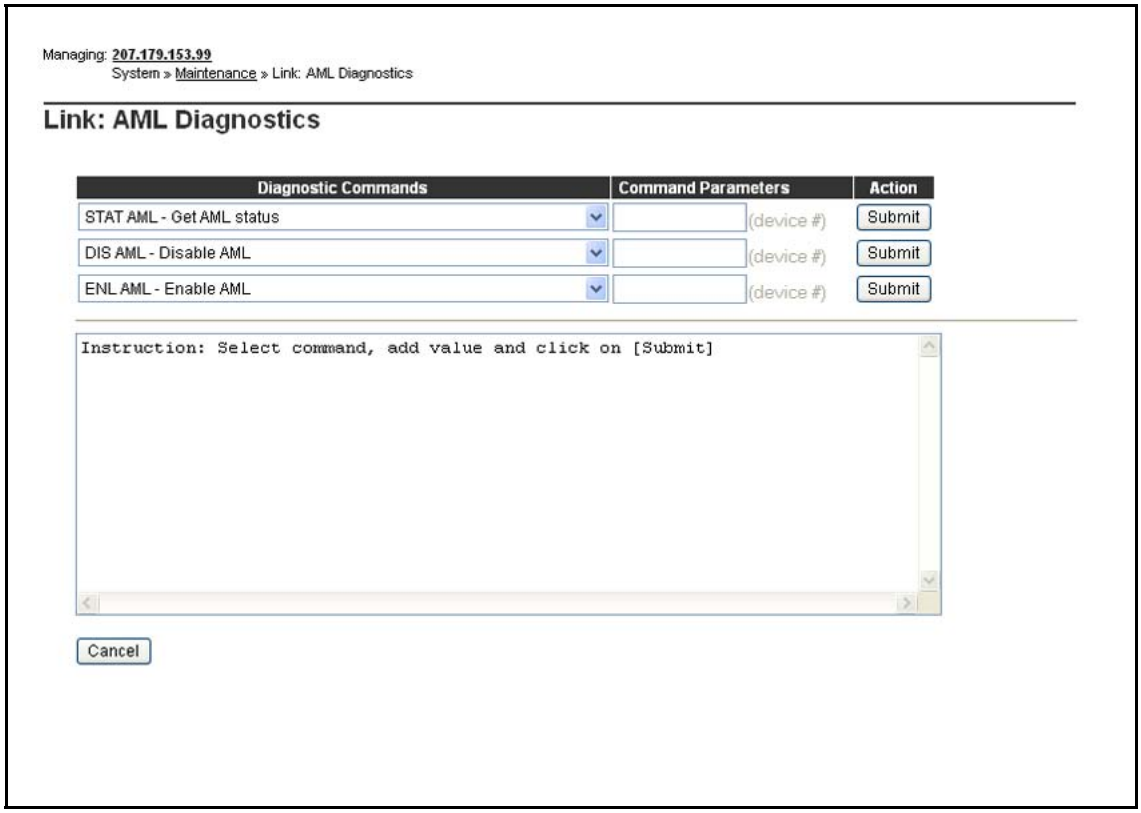
Figure 13
AML Diagnostics Web page



The commands available from this Web page correspond to the AML diagnostics traditionally performed by using LD 48.

To perform AML commands using this Web page, follow the steps in Procedure 5 “Performing AML commands” (page 47).

Procedure 5
Performing AML commands

Step	Action
1	Select one of the following commands from the first **Commands** list: **a** STAT AML - Get AML status **b** STAT ELAN - Check status of all specified / all configured ELANs **c** EST AML - Establish layer 2 on AML **d** MAP AML - Get card information of one or all AMLs **e** RLS AML - Release layer 2 on AML **f** SLFT AML - Perform self-test on AML

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g UPLD AML - Upload parameter table 1 to 4 from AML

2 (Optional) Enter the device number in the **Command Parameters** text box.

3 Click **Submit**.

--End--

To disable AML using this Web page, follow the steps in Procedure 6 “Disabling AML ” (page 48).

Procedure 6
Disabling AML

Step	Action
1	Select one of the following commands from the second **Commands** list: **a** DIS AML - Disable AML **b** DIS AML - Disable AUTO recovery on AML **c** DIS AML - Disable layer 2 on AML **d** DIS AML - Disable layer 7 on AML **e** DIS AML - Disable MDL error reporting on AML **f** DIS ELAN - Disable ELAN (server/client task)
2	(Optional) Enter the device number in the **Command Parameters** text box.
3	Click **Submit**.

--End--

To enable AML using this Web page, follow the steps in Procedure 7 “Enabling AML” (page 48).

Procedure 7
Enabling AML

Step	Action
1	Select one of the following commands from the third **Commands** list: **a** ENL AML - Enable AML **b** ENL AML - Enable Automatic set-up on AML **c** ENL AML - Enable AUTO recovery on AML

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d ENL AML - Enable Layer 2 on AML

e ENL AML - Enable Layer 7 on AML

f ENL AML - Enable MDL error reporting on AML

g ENL ELAN- Enable ELAN (server task)

2 (Optional) Enter the device number in the **Command Parameters** text box.

3 Click **Submit**.

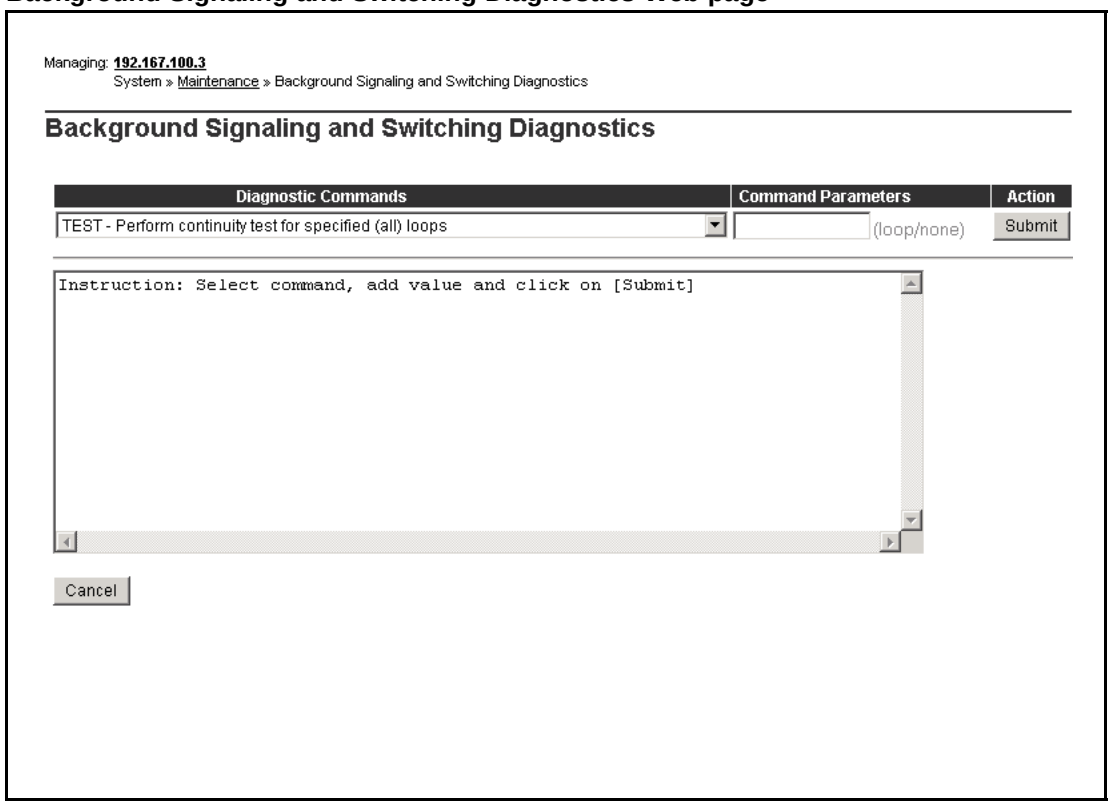
--End--

Background Signaling and Switching Diagnostics

The **Background Signaling and Switching diagnostics** Web page is applicable only to Large Systems.

Click the **Background Signaling and Switching** link in the list of **Call Server** functionalities to open the **Background Signaling and Switching Diagnostics** Web page, as shown in Figure 14 "Background Signaling and Switching Diagnostics Web page" (page 49).

Figure 14
Background Signaling and Switching Diagnostics Web page



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The commands available from this Web page correspond to the Background Signaling and Switching command traditionally performed using LD 45 - Background Signaling and Switching Diagnostics.

This Web page is used to perform the TEST command. This command performs a continuity test for specified loops.

Procedure 8
Performing the TEST command

Step	Action
1	Select the **Diagnostic Command** from the list.
2	Enter the loop number in the **Command Parameters** box. ***Note:*** To run the TEST command on all loops, leave the **Command Parameters** box empty.
3	Click **Submit**.

--End--

Call Trace Diagnostics

Click the **Call Trace Diagnostics** link in the list of **Maintenance** diagnostic tools to open the **Call Trace Diagnostics** Web page, as shown in Figure 15 "Call Trace Diagnostics Web page" (page 51).

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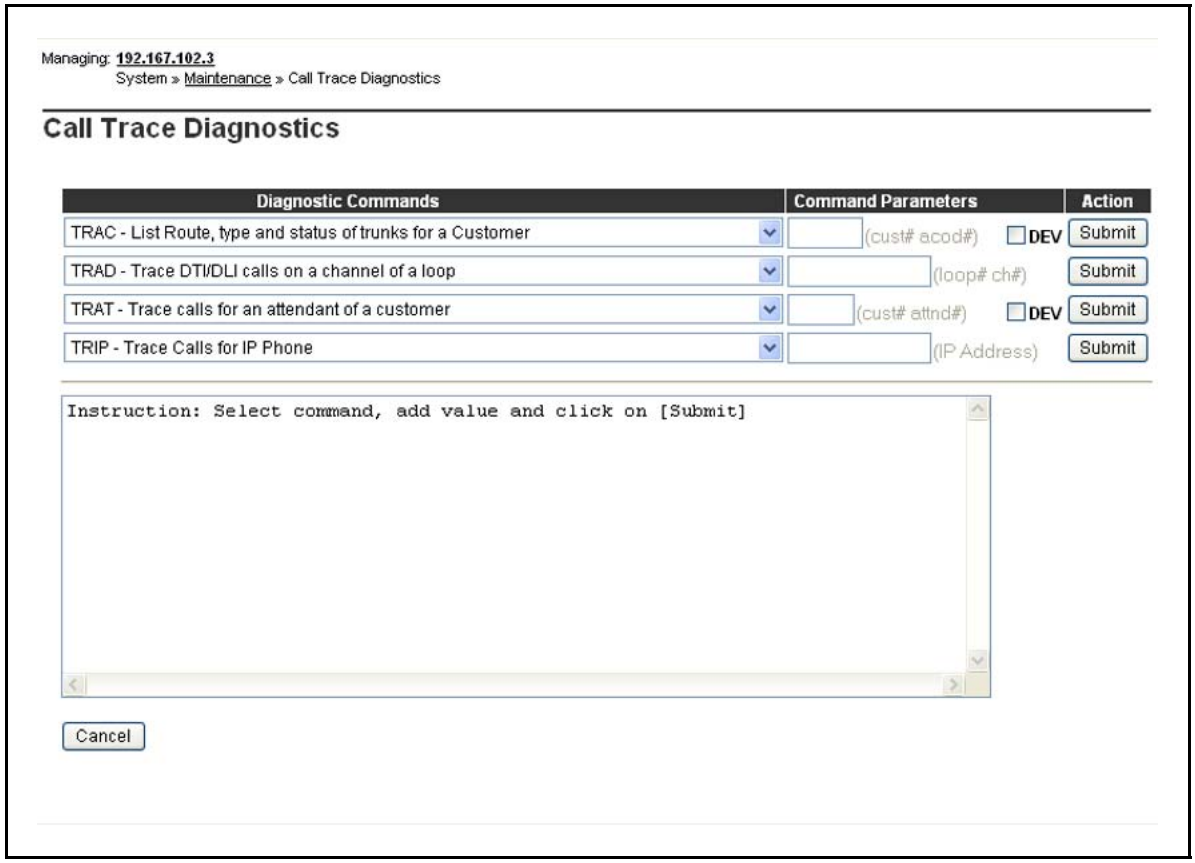
Figure 15
Call Trace Diagnostics Web page



The commands available from this Web page correspond to the Call Trace diagnostics traditionally performed by using LD 80 - Call Trace Diagnostics.

This Web page is used to perform the following Call Trace functions:

- TRAC commands
- TRAD commands
- TRAT commands
- TRIP commands

To perform TRAC commands, follow the steps in Procedure 9 “Performing TRAC commands” (page 52).

Note: To issue a detailed call trace select the **DEV** checkbox.

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Procedure 9
Performing TRAC commands

Step	Action
1	Select one of the following commands from the first **Commands** list: **a** TRAC - List Route, type and status of trunks for a Customer **b** TRAC - Trace calls for specified customer and DN/LSC DN **c** TRAC - Trace calls for specified customer, route and member **d** TRAC - Trace calls on specified Digital Subscriber Loop (0-7) **e** TRAC - Trace calls associated with the specified unit **f** TRAC - Trace calls on specified key for specified unit
2	Enter the customer number and the acod number in the **Command Parameters** text box.
3	Click **Submit**.

--End--

To perform TRAD commands, follow the steps in Procedure 10 “Performing TRAD commands” (page 52).

Procedure 10
Performing TRAD commands

Step	Action
1	Select the following command from the second **Commands** list: **a** TRAD - Trace DTI/DLI calls on a channel of a loop
2	Enter the loop number and channel number in the **Command Parameters** text box.
3	Click **Submit**.

--End--

To perform TRAT commands, follow the steps in Procedure 11 “Performing TRAT commands” (page 53).

Note: To issue a detailed call trace select the **DEV** checkbox.

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Procedure 11
Performing TRAT commands

Step	Action
1	Select one of the following commands from the third **Commands** list: **a** TRAT - Trace calls for an attendant for a customer **b** TRAT - Trace calls on a key of an attendant of a customer **c** TRAT - Trace attendant calls for a unit **d** TRAT - Trace attendant calls on specified key of a unit
2	Enter the customer number and attendant number in the **Command Parameters** text box.
3	Click **Submit**.

--End--

To perform TRIP commands, follow the steps in Procedure 12 “Performing TRIP commands” (page 53).

Procedure 12
Performing TRIP commands

Step	Action
1	Select the following command from the fourth **Commands** list: **a** TRIP - Trace calls for IP Phone
2	Enter the required parameters in the **Command Parameters** text box.
3	Click **Submit**.

--End--

Centralized Software Upgrade

Click the **Centralized Software Upgrade** link in the list of **Maintenance** diagnostic tools to open the **Centralized Software Upgrade** Web page, as shown in Figure 16 "Centralized Software Upgrade Web page" (page 54).

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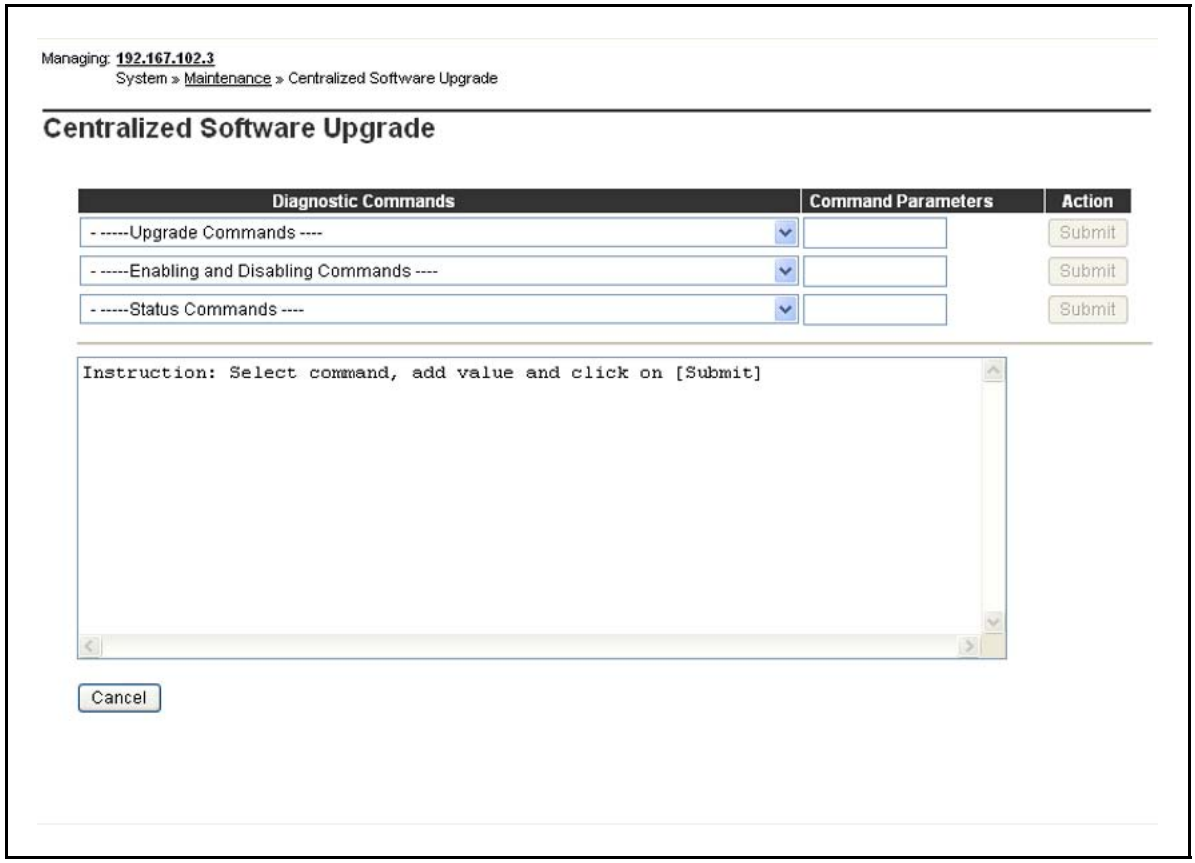
Figure 16
Centralized Software Upgrade Web page



To perform Upgrade commands, follow the steps in Procedure 13 "Performing Upgrade commands" (page 54).

Procedure 13
Performing Upgrade commands

Step	Action
1	Select the following commands from the first **Commands** list: **a** UPGMG - Upgrade IPMG **b** UPGMG ALL - Upgrade ALL IPMGs **c** UPGMGCOMMIT - Initiate Reboot of the IPMG after upgrade **d** UPGMGCOMMI ALL - Initiate Reboot of all the IPMG after upgrade **e** UPGMGBOOT - Upgrade the bootrom of the IPMG
2	Enter the required parameters in the **Command Parameters** text box.

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3 Click **Submit**.

--End--

To perform Enabling and Disabling commands, follow the steps in Procedure 14 “Performing Enabling and Disabling commands” (page 55).

Procedure 14
Performing Enabling and Disabling commands

Step	Action
1	Select the following commands from the second **Commands** list: **a** ENL AUTOUPGMG - Enable Automatic Software Upgrade **b** DIS AUTOUPGMG - Disable Automatic Software Upgrade
2	If ENL AUTOUPGMG is used, select either SEQ or SIM from the menu.
3	Click **Submit**.

--End--

To perform Status commands, follow the steps in Procedure 15 “Performing Status commands” (page 55).

Procedure 15
Performing Status commands

Step	Action
1	Select the following commands from the third **Commands** list: **a** PRT AUTOUPGMG - Displays settings of Automatic Software Upgrade feature **b** UPGMG STAT - Provides display details of the specified IPMG upgrade status **c** UPGMGSETUP - Display the current CSU Setting **d** UPGMGABORT - Abort and display centralized software upgrades **e** HELP - Provides a list of all supported commands
2	If UPGMG STAT is used, enter the Superloop # and Shelf # in the **Command Parameters** text box.
3	Click **Submit**.

--End--

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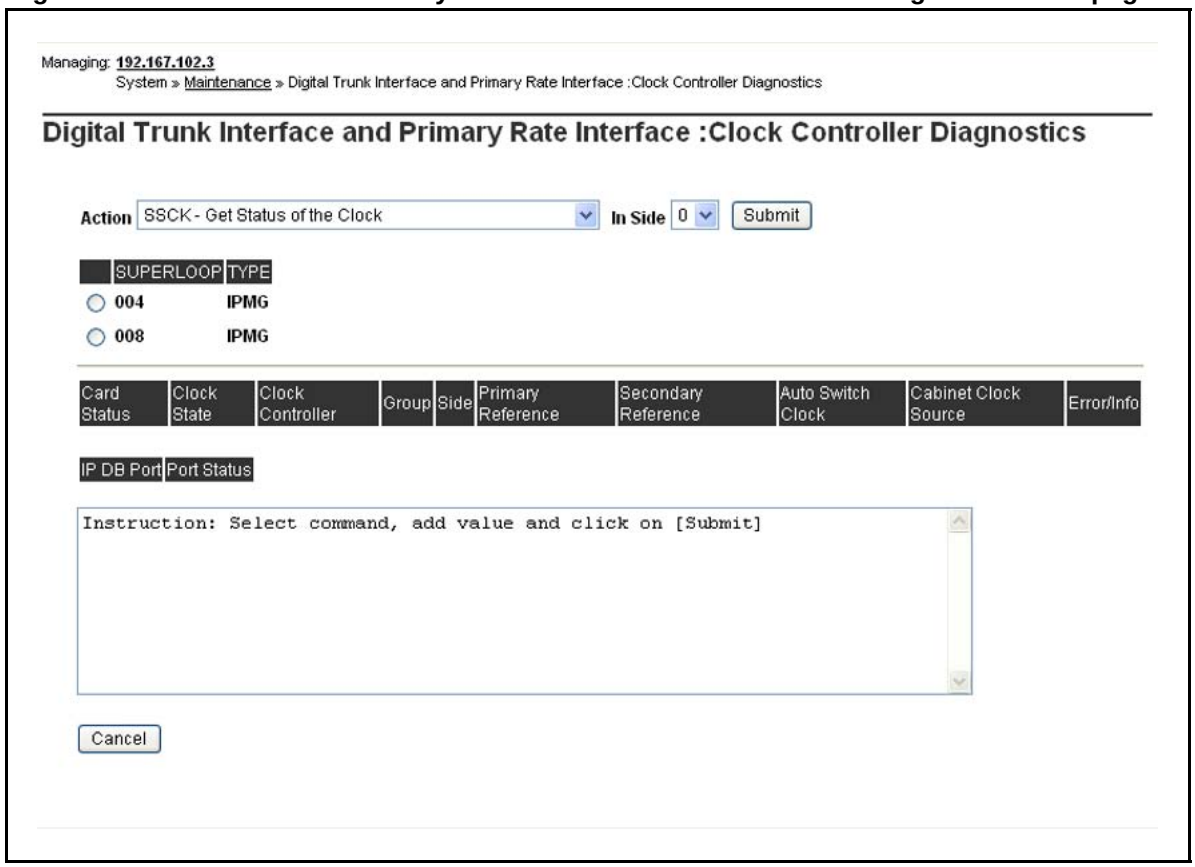
Clock Controller Diagnostics

Click the **Clock Controller Diagnostics** link in the list of **Maintenance** diagnostic tools to open the **Digital Trunk Interface and Primary Rate Interface: Clock Controller Diagnostics** Web page as shown in Figure 17 "Digital Trunk Interface and Primary Rate Interface: Clock Controller Diagnostics Web page" (page 56).

Figure 17
Digital Trunk Interface and Primary Rate Interface: Clock Controller Diagnostics Web page



This Web page is used to maintain the digital trunk interface and the primary rate interface clock controllers.

The commands available from this Web page correspond to the Clock Controller data traditionally maintained by using LD 60 - Digital Trunk Interface and Primary Rate Interface Clock Controller.

This Web page shows the status of the Clock Controller card.

To perform Clock Controller maintenance activities using this Web page follow the steps in Procedure 16 “Performing Clock Controller maintenance activities” (page 57).

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Procedure 16
Performing Clock Controller maintenance activities

Step	Action
1	Select one of the following commands from the **Action** list: **a** SSCK - Get Status of the Clock **b** ENL CC - Enable the Clock **c** DIS CC - Disable the Clock **d** TRCK - Set the Clock Controller **e** DSCK - Disable the clock for loop **f** ENCK - Enable the secondary clock reference for card **g** EREF - Enable auto switchover of reference clocks **h** IDC - Get card ID of Clock Controller Card **i** MREF - Disable switchover of system clocks **j** SEFT CC - Execute self test
2	Select a Cabinet number from the **In Side** list.
3	Select the appropriate sub-parameters.
4	Click**Submit**.

--End--

Core Common Equipment Diagnostics

Click the **Core Common Equipment Diagnostics** link in the list of **Maintenance** diagnostic tools to open the **Core Common Equipment Diagnostics** Web page, as shown in Figure 18 "Core Common Equipment Diagnostic Web page" (page 58).

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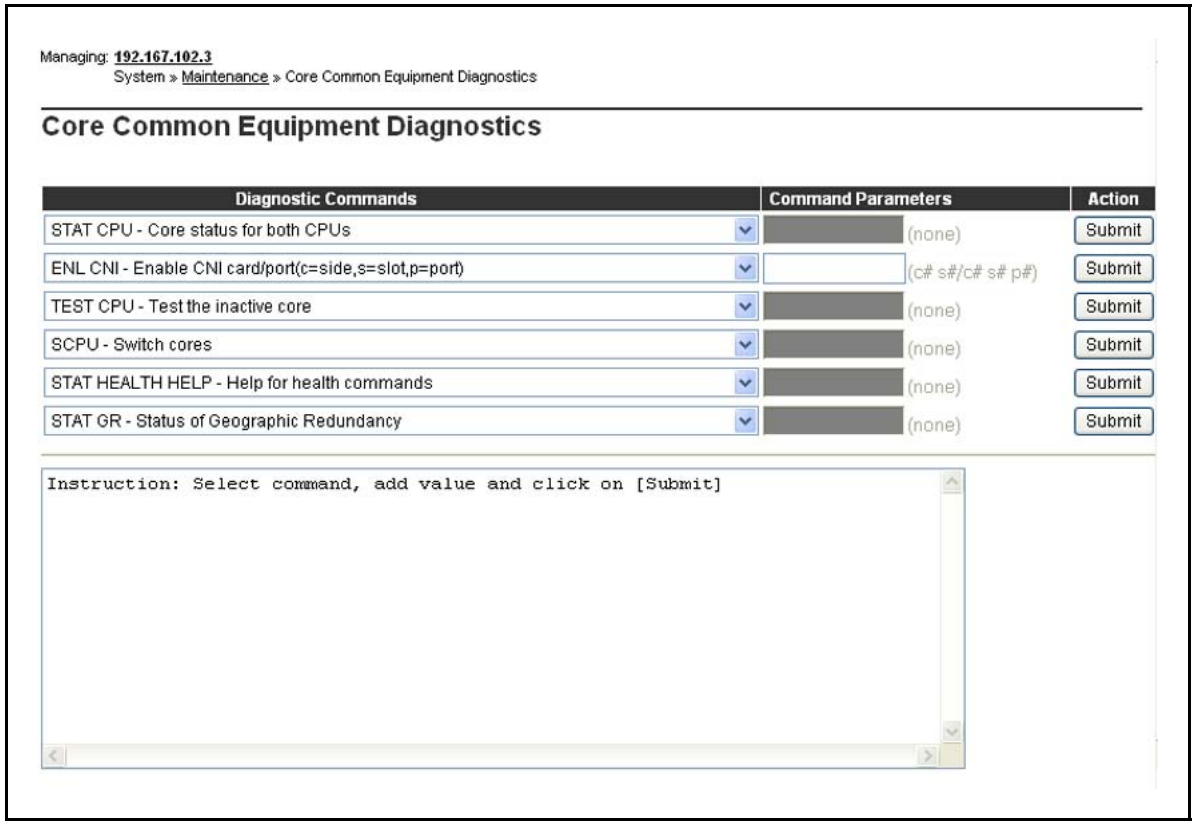
Figure 18
Core Common Equipment Diagnostic Web page



The commands available from this Web page correspond to the Core Common Equipment data traditionally maintained by using LD 135 - Core Common Equipment.

To execute status commands using this Web page, follow the steps in Procedure 17 “Performing Core Common Equipment Status commands” (page 58).

Procedure 17
Performing Core Common Equipment Status commands

Step	Action
1	Select one of the following commands from the first **Commands** list: **a** STAT CPU - Core status for both CPUs **b** STAT CNI - Status of configured CNI (c=side, s=slot, p=port) **c** STAT MEM - Status of SIMMs on both CPs **d** STAT EXT - Status of all Extender pair designations **e** STAT SUTL - Status of system utility

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2 Enter appropriate **Command Parameters** wherever applicable.

3 Click **Submit**.

--End--

To execute CNI commands using this Web page, follow the steps in Procedure 18 “Performing Core Common Equipment CNI commands ” (page 59).

Procedure 18
Performing Core Common Equipment CNI commands

Step	Action
1	Select one of the following commands from the second **Commands** list: **a** ENL CNI - Enable CNI card/port (c=side, s=side, p=port) **b** DIS CNI - Disable CNI all, card or port **c** DSPL - Display active core contents **d** DSPL ALL - Display active core contents for all **e** IDC CPU - Print card ID for active core **f** IDC CNI - Print card ID for CNI on active side **g** ENL EXT - Enable specified Extender pair
2	Enter the required parameters in the **Commands Parameters** text box.
3	Click **Submit**.

--End--

To execute test commands using this Web page, follow the steps in Procedure 19 “Performing Core Common Equipment test commands” (page 59).

Procedure 19
Performing Core Common Equipment test commands

Step	Action
1	Select one of the following commands from the third **Commands** list: **a** TEST CPU - Test the inactive core **b** TEST CNI - Test CNI card/port (c=card, s=slot, p=port) **c** TEST IPB - Test backplane on Secondary Interprocessor Bus

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d TEST LCD - Test the LCD display on the active CP card

e TEST LED - Test LEDs

f TEST SUTL - Test system utility

2 Enter appropriate **Command Parameters** wherever applicable.

3 Click **Submit**.

--End--

To execute miscellaneous commands using this Web page, follow the steps in Procedure 20 “Performing Core Common Equipment miscellaneous commands” (page 60).

Procedure 20
Performing Core Common Equipment miscellaneous commands

Step	Action
1	Select one of the following commands from the fourth **Commands** list: **a** SCPU - Switch cores **b** SPLIT - Put a redundant system into single mode **c** CDSP - Clear maintenance displays **d** CMAJ - Clear major alarm and reset power fail transfer **e** CMIN - Clear the minor alarm for all customers **f** CUTOVR - Transfer call processing from active to standby cores **g** JOIN - Synchronize the memory and drives
2	Click **Submit**.

--End--

To execute status health commands using this Web page, follow the steps in Procedure 21 “Performing Core Common Equipment status health commands” (page 60).

Procedure 21
Performing Core Common Equipment status health commands

Step	Action
1	Select one of the following commands from the fifth **Commands** list: **a** STAT HEALTH HELP - Help for health commands

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b STAT HEALTH - Overall health status

c STAT HEALTH AML - AML health status

d STAT HEALTH DSPDB - DSP Daughterboard health status (applicable only to systems with Media Gateway Controllers containing DSP Daughterboards)

e STAT HEALTH IPL - IPL health status

f STAT HEALTH ELAN - ELAN health status

g STAT HEALTH HW - Hardware health status

2 Click **Submit**.

--End--

To execute Geographic Redundancy commands using this Web page, do the following:

Procedure 22
Performing Core Common Equipment Geographic Redundancy commands

Step	Action
1	Select one of the following commands from the sixth **Commands** list: **a** STAT GR - Status of Geographic Redundancy **b** TEST GR - Test Geographic Redundancy **c** CLR GR - Clear operation for the secondary CS
2	Enter appropriate **Command Parameters** wherever applicable.
3	Click **Submit**.

--End--

Core Input/Output Diagnostics

Click the **Core Input/Output Diagnostics** link in the list of **Maintenance** tools to open the **Core Input/Output Diagnostics** Web page as shown in Figure 19 "Core Input/Output Diagnostics Web page" (page 62).

This Web page is used to obtain the status of PPP and Ethernet links. The commands available from this Web page correspond to the tools traditionally maintained using LD 137 - Core Input/Output Diagnostics.

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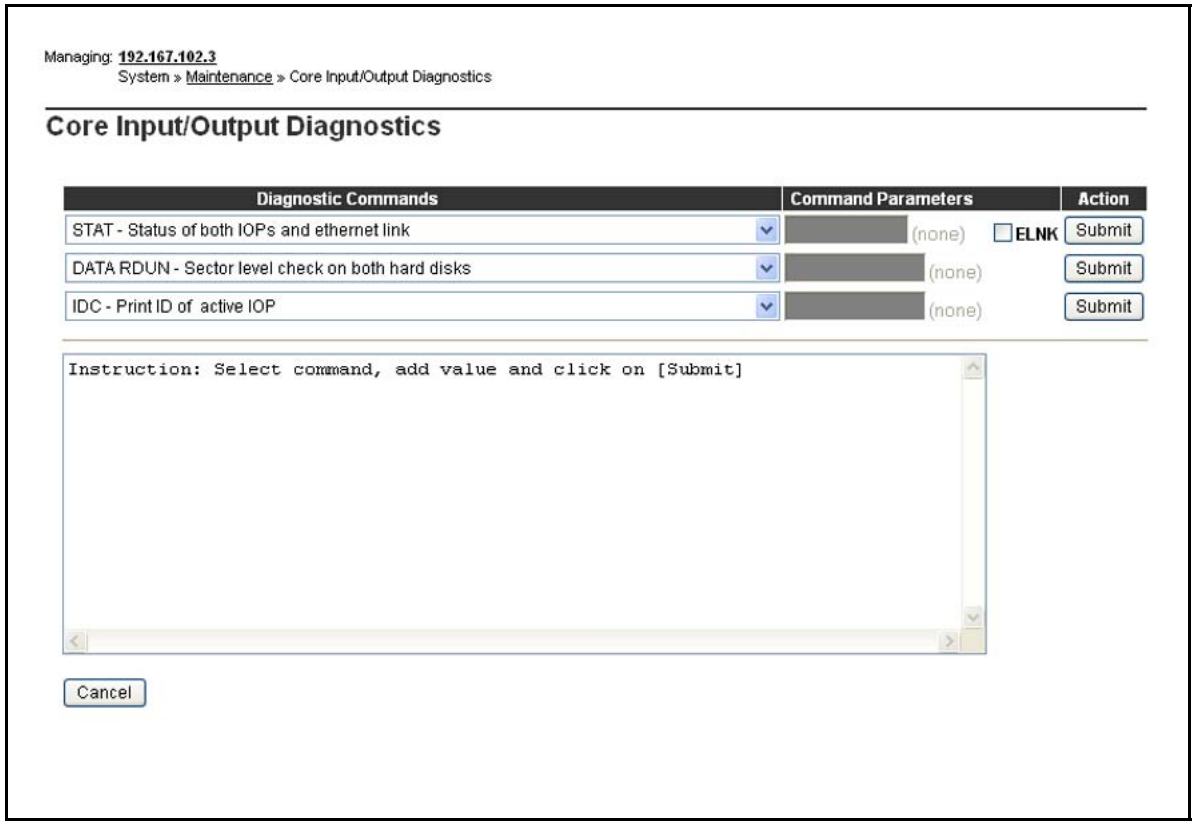
Figure 19
Core Input/Output Diagnostics Web page



To perform diagnostic commands using this Web page, follow the steps in Procedure 23 “Performing Core Input/Output diagnostic commands” (page 62).

Procedure 23
Performing Core Input/Output diagnostic commands

Step	Action
1	Use the first **Commands** list to perform the following diagnostic activities: **a** STAT - Status of both IOPs and CMDUs and ethernet link **b** STAT RDUN - Status of both disks **c** STAT FMD - Status of active Fixed Media Devices **d** STAT RMD - Status of active Removable Media Devices
2	Click **Submit**.
3	Use the second **Commands** list to perform the following diagnostic activities: **a** DATA RDUN - Sector level check on both hard disks

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b TEST RDUN - Test file level check on both hard disks

4 Click **Submit**.

5 Use the third **Commands** list to perform the following diagnostic activities:

a IDC - Print IDs of both CMDUs and active IOP

b SDID - Display security device information

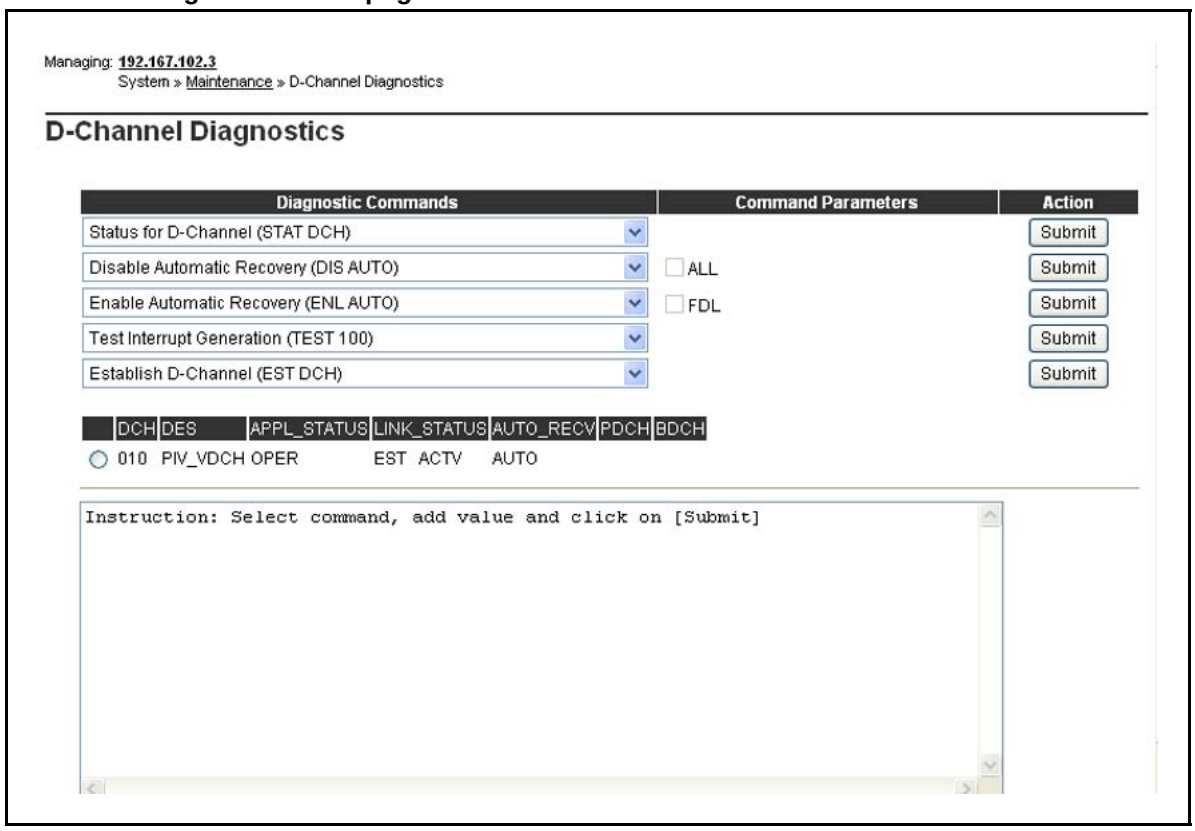
6 Click **Submit**.

--End--

D-channel Diagnostics

Click the **D-channel Diagnostics** link in the list of **Maintenance** diagnostic tools to open the **D-Channel Diagnostics** Web page as shown in Figure 20 "D-channel Diagnostics Web page" (page 63).

Figure 20
D-channel Diagnostics Web page



This Web page is used to test and maintain D-channel links and D-channel Interface (DCHI) cards. The commands available from this Web page correspond to the D-channel data traditionally maintained using the following overlays:

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- LD 37 - Input/Output Diagnostic
- LD 48 - Link Diagnostic
- LD 96 - D-channel Diagnostic

To execute status commands using this Web page, follow the steps in Procedure 24 “Performing D-channel status commands” (page 64).

Procedure 24
Performing D-channel status commands

Step	Action
1	Select one of the following commands from the first **Commands** list: **a** Status for D-Channel (STAT DCH) **b** Status for Service Message (STAT SERV)
2	Click **Submit**.

--End--

To execute disable commands using this Web page, follow the steps in Procedure 25 “Performing D-channel disable commands” (page 64).

Procedure 25
Performing D-channel disable commands

Step	Action
1	Select one of the following commands from the second **Commands** list: **a** Disable Automatic Recovery (DIS AUTO) **b** Disable D-Channel (DIS DCH). Select the ALL check box to disable all D-Channels. **c** Disable Local Loop Back (DIS LLB) **d** Disable Remote Loop Back (DIS RLB) **e** Disable Test Mode (DIS TEST)
2	Click **Submit**.

--End--

To execute enable commands using this Web page, follow the steps in Procedure 26 “Performing D-channel enable commands” (page 65).

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Procedure 26
Performing D-channel enable commands

Step	Action
1	Select one of the following commands from the third **Commands** list: **a** Enable Automatic Recovery (ENL AUTO) **b** Enable D-Channel (ENL DCH). To force a loadware download at the same time, select the FDL check box. **c** Enable Local Loop Back (ENL LLB) **d** Enable Remote Loop Back (ENL RLB) **e** Enable Test Mode (ENL TEST)
2	Click **Submit**.

--End--

To execute test commands using this Web page, follow the steps in Procedure 27 “Performing D-channel test commands” (page 65).

Procedure 27
Performing D-channel test commands

Step	Action
1	Select one of the following commands from the fourth **Commands** list: **a** Test interrupt Generation (TEST 100) **b** Test Loop Back (Test 101) **c** Test Interrupt Handler (TEST 200) **d** Test Interrupt Handler-to-link (TEST 201)
2	Click **Submit**.

--End--

To execute D-Channel commands using this Web page, follow the steps in Procedure 28 “Performing D-channel commands” (page 66).

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Procedure 28
Performing D-channel commands

Step	Action
1	Select one of the following commands from the fifth **Commands** list: **a** EEstablish D-Channel (EST DCH) **b** Get Physical Address and switch settings (MAP DCH) **c** Reset DCH and Inhibit Signaling (RST DCH) **d** Release D-Channel (RLS DCH) **e** Switch to Standby D-Channel (SDCH DCH)
2	Click **Submit**.

--End--

D-Channel Expansion Diagnostics

Click the **D-Channel Expansion Diagnostics** link in the list of **Maintenance** diagnostic tools to open the **Link: D-Channel Expansion Diagnostics** Web page as shown in Figure 21 "Link: D-Channel Expansion Diagnostics Web page" (page 67).

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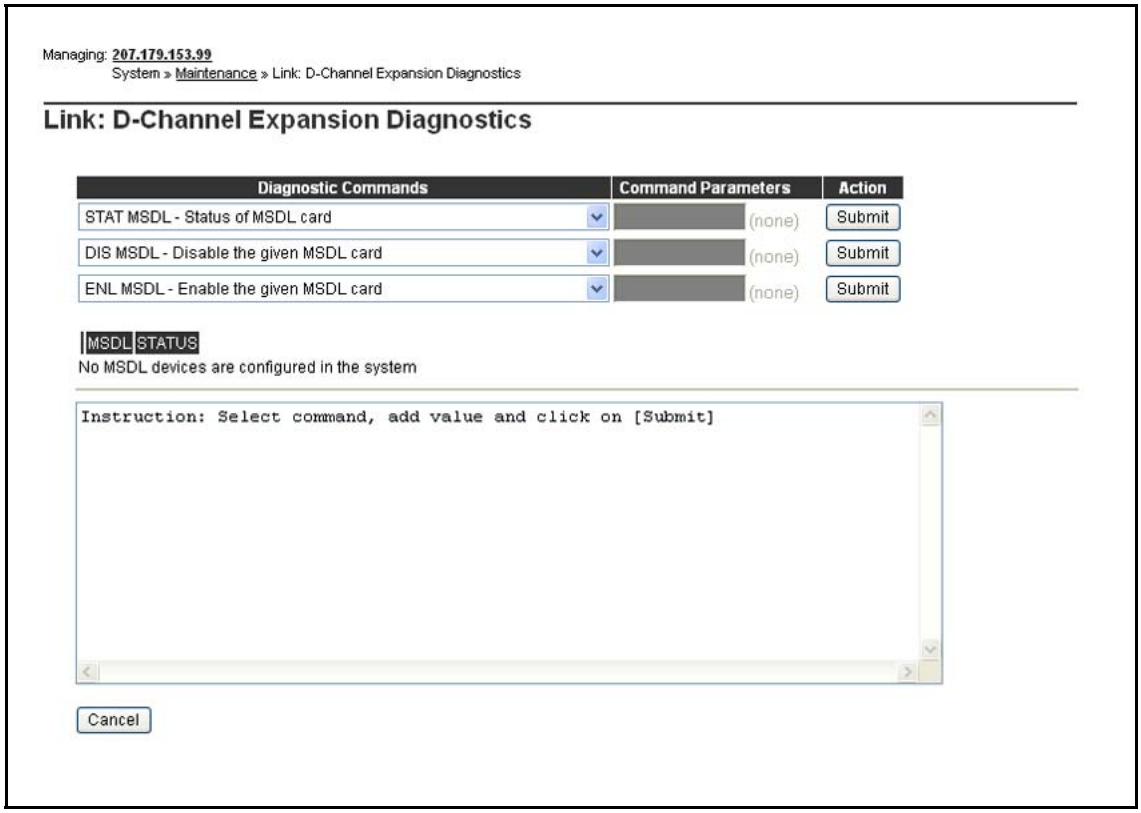
Figure 21
Link: D-Channel Expansion Diagnostics Web page



This Web page is used to test and maintain Multipurpose Serial Data Link (MSDL) cards. The commands available from this Web page correspond to the MSDL data traditionally configured by using LD 48 - Link Diagnostic.

To perform MSDL diagnostic activities using this Web page, follow the steps in Procedure 29 “Performing D-channel Expansion MSDL diagnostic commands” (page 67).

Procedure 29
Performing D-channel Expansion MSDL diagnostic commands

Step	Action
1	Select one of the following commands from the first **Commands** list: **a** STAT MSDL - Status of MSDL card **b** STAT MSDL full - Status MSDL card and available RAM **c** SLFT MSDL - Self test on the given MSDL card **d** RST MSDL - Power-On rest the given MSDL card

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2 Click **Submit**.

--End--

To execute disable commands using this Web page, follow the steps in Procedure 30 “Performing D-channel Expansion disable commands” (page 68).

Procedure 30
Performing D-channel Expansion disable commands

Step	Action
1	Select one of the following commands from the second **Commands** list: **a** DIS MSDL all - Disable the given MSDL card **b** DIS MSDL ALL - Disable all ports and then the MSDL card **c** DIS MSDL AUDM - Disable MSDL auditing for the MSDL card **d** DIS MSDL DBG - Disable debugger option for the MSDL card
2	Click **Submit**.

--End--

To execute enable commands using this Web page, follow the steps in Procedure 31 “Performing D-channel Expansion enable commands” (page 68).

Procedure 31
Performing D-channel Expansion enable commands

Step	Action
1	Select one of the following commands from the third **Commands** list: **a** ENL MSDL - Enable the given MSDL card **b** ENL MSDL all - Enable all ports and then the MSDL card **c** ENL MSDL AUDM - Enable MSDL auditing for the MSDL card **d** ENL MSDL FDL - Force download loadware to the MSDL card

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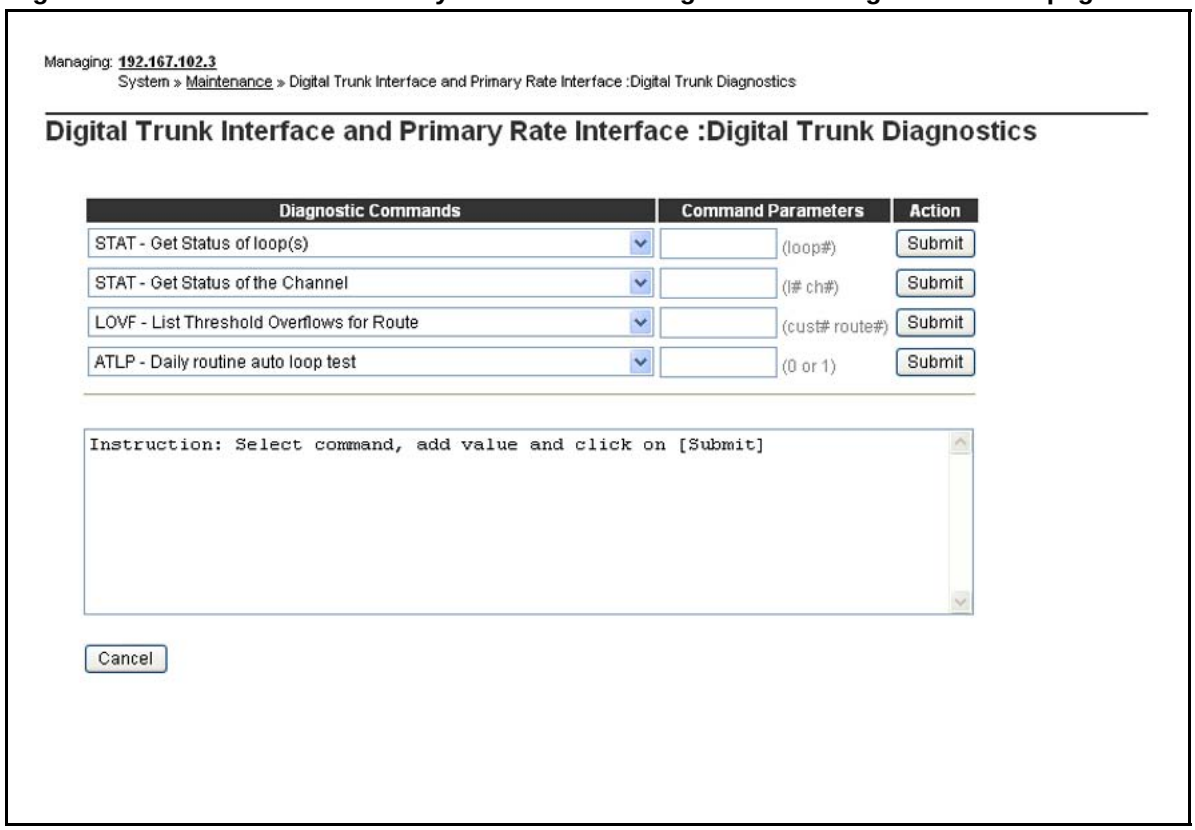
2 Click **Submit**.

--End--

Digital Trunk Diagnostics

Click the **Digital Trunk Diagnostics** link in the list of **Maintenance** diagnostic tools to open the **Digital Trunk Interface and Primary Rate Interface: Digital Trunk Diagnostics** Web page as shown in Figure 22 "Digital Trunk Interface and Primary Rate Interface: Digital Trunk Diagnostics Web page" (page 69).

Figure 22
Digital Trunk Interface and Primary Rate Interface: Digital Trunk Diagnostics Web page



This Web page is used to test and maintain Digital Trunk Cards. The commands available from this Web page correspond to the DTI/PRI data traditionally maintained by using LD 60 - Digital Trunk Interface and Primary Rate Interface Diagnostics.

Use this Web page to issue maintenance commands on cards, channels, or routes by using the appropriate command list and parameter text box.

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To perform maintenance activities on a Digital Trunk Card using this Web page, follow the steps in Procedure 32 “Performing maintenance activities on a Digital Trunk Card” (page 70).

Procedure 32
Performing maintenance activities on a Digital Trunk Card

Step	Action
1	Select one of the following commands from the first **Commands** drop-down list: **a** STAT - Get Status of loop(s) **b** DISL - Disable network and DTI/PRI cards of loop **c** DISI - Disable loop (when all channels are idle **d** ENCH - Enable all channels on 2.0 Mb/s DTRI/PRI **e** ENLL - Enable network and DTI/PRI cards of loop **f** LCNT - List contents of alarm counters on loop(s) **g** RCNT - Reset alarm counters of all DTI/PRI loops **h** SLFT - Self Test on the loop) **i** DSYL - Disable yellow alarm processing for loop **j** ENYL - Enable yellow alarm processing for loop **k** DLBK - Disable remote loop back test **l** RLBK - Close loop at carrier interface point for testing **m** RMST - Perform remote loop back test on loop
2	Enter the Loop number in the **Command Parameters** text box.
3	Click **Submit**.

--End--

To perform maintenance activities on a Channel belonging to a Digital Trunk Card using this Web page, follow the steps in Procedure 33 “Performing maintenance activities on a Channel” (page 70).

Procedure 33
Performing maintenance activities on a Channel

Step	Action
1	Select one of the following commands from the second **Commands** drop-down list: **a** STAT - Get Status of the channel

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b DSCH - Disable the channel

c ENCH - Enable the channel

d SLFT - Self Test on the channel

e DLBK - Disable remote loop back test on channel

f RLBK - Close channel at carrier interface point

g RMST - Perform far end loop test on Channel

h RSET - Reset thresholds for channel on loop

2 Enter the Loop number and the Channel number, separated by a space, in the **Command Parameters** text box.

3 Click **Submit**.

--End--

To perform maintenance activities on a Digital Trunk Route using this Web page, follow the steps in Procedure 34 “Performing maintenance activities on a Digital Trunk Route” (page 71).

Procedure 34
Performing maintenance activities on a Digital Trunk Route

Step	Action
1	Select one of the following commands from the third **Commands** drop-down list: **a** LOVF - List Thresholds Overflows for the Route **b** CMIN - Clear minor alarm indication for customer
2	Enter the Customer number and the Route number, separated by a space, in the **Command Parameters** text box.
3	Click **Submit**.

--End--

To perform maintenance activities on a card using this Web page, follow the steps in Procedure 35 “Performing maintenance activities on a card” (page 71).

Procedure 35
Performing maintenance activities on a card

Step	Action
1	Select one of the following commands from the fourth **Commands** drop-down list:

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a ATLP - Daily routine automatic card test

b CDSP - Clear maintenance display

2 Enter the 0 or 1 in the **Command Parameters** text box.

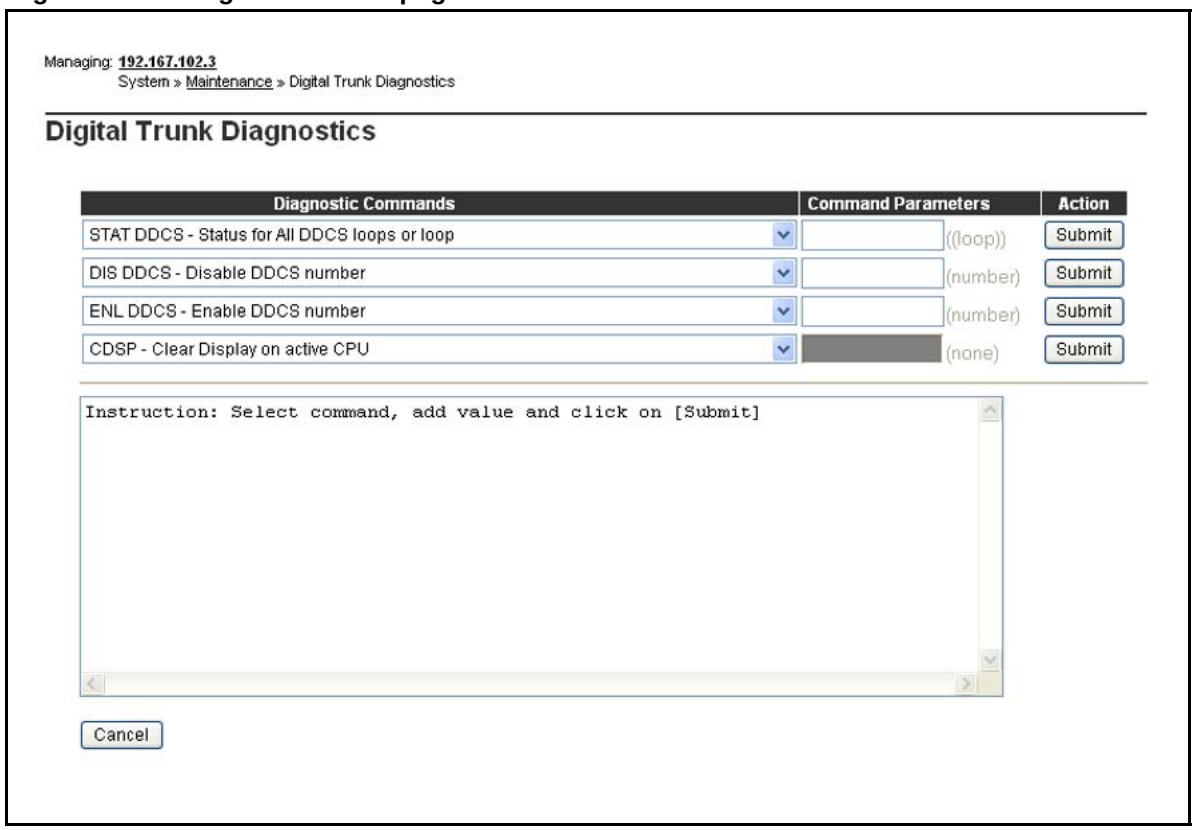
3 Click **Submit**.

--End--

Digital Trunk Maintenance Diagnostics

Click the **Digital Trunk Maintenance Diagnostics** link in the list of **Maintenance** diagnostic tools to open the **Digital Trunk Diagnostics** Web page as shown in Figure 23 "Digital Trunk Diagnostics Web page" (page 72).

Figure 23
Digital Trunk Diagnostics Web page



The commands available from this Web page correspond to the digital trunk diagnostics traditionally performed by using LD 75 - Digital Trunk Diagnostics.

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To get status information about a digital trunk using this Web page, follow the steps in Procedure 36 “Performing status commands on a digital trunk” (page 73).

Procedure 36
Performing status commands on a digital trunk

Step	Action
1	Select one of the following status commands from the first **Commands** drop-down list: **a** STAT DDCS - Status for all DDCS loops or loop **b** STAT DDSL - Status for all DDSLs or DDSL number **c** STAT DTCS - Status for all DTCS loops or DTCS loop **d** STAT DTRC - Status of RDC on loop **e** STAT DTSL - Status of all DTSLs or DTSL number **f** STAT DTVC - Status of VDC on loop **g** STAT LSSL - Status of LSSL number for APNSS **h** STAT LSRC - Status of RDC on Signaling Link number **i** STAT LSVC - Status of VDC on Signaling Link number
2	Enter the Loop number in the **Command Parameters** text box.
3	Click **Submit**.

--End--

To disable an entity on a digital trunk using this Web page, follow the steps in Procedure 37 “Performing disable commands on a digital trunk” (page 73).

Procedure 37
Performing disable commands on a digital trunk

Step	Action
1	Select one of the following disable commands from the second **Commands** drop-down list: **a** DIS DDSC - Disable DDSC number **b** DIS DDSL - Disable DDSL number **c** DIS DTCS - Disable DTCS loop **d** DIS DTRC - Disable RDC on Loop **e** DIS DTSL - Disable DTSL number

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f DIS DTVC - Disable VDC on loop

g DIS LSSL - Disable LSSL number for APNSS

h DISI DDCS - Disable all Channels on Loop as idle

i DISI DTCS - Disable DTCS loop

2 Enter the appropriate number in the **Command Parameters** text box.

3 Click **Submit**.

--End--

To enable an entity on a digital trunk using this Web page, follow the steps in Procedure 38 “Performing enable commands on a digital trunk” (page 74).

Procedure 38
Performing enable commands on a digital trunk

Step	Action
1	Select one of the following enable commands from the third **Commands** drop-down list: **a** ENL DDSC - Enable DDSC number **b** ENL DDSL - Enable DDSL number **c** ENL DTCS - Enable DTCS loop **d** ENL DTRC - Enable RDC on Loop **e** ENL DTSL - Enable DTSL number **f** ENL DTVC - Enable VDC on loop **g** ENL LSSL - Enable LSSL number for APNSS
2	Enter the appropriate number in the **Command Parameters** text box.
3	Click **Submit**.

--End--

To perform miscellaneous commands on a digital trunk using this Web page, follow the steps in Procedure 39 “Performing miscellaneous commands on a digital trunk” (page 75).

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Procedure 39
Performing miscellaneous commands on a digital trunk

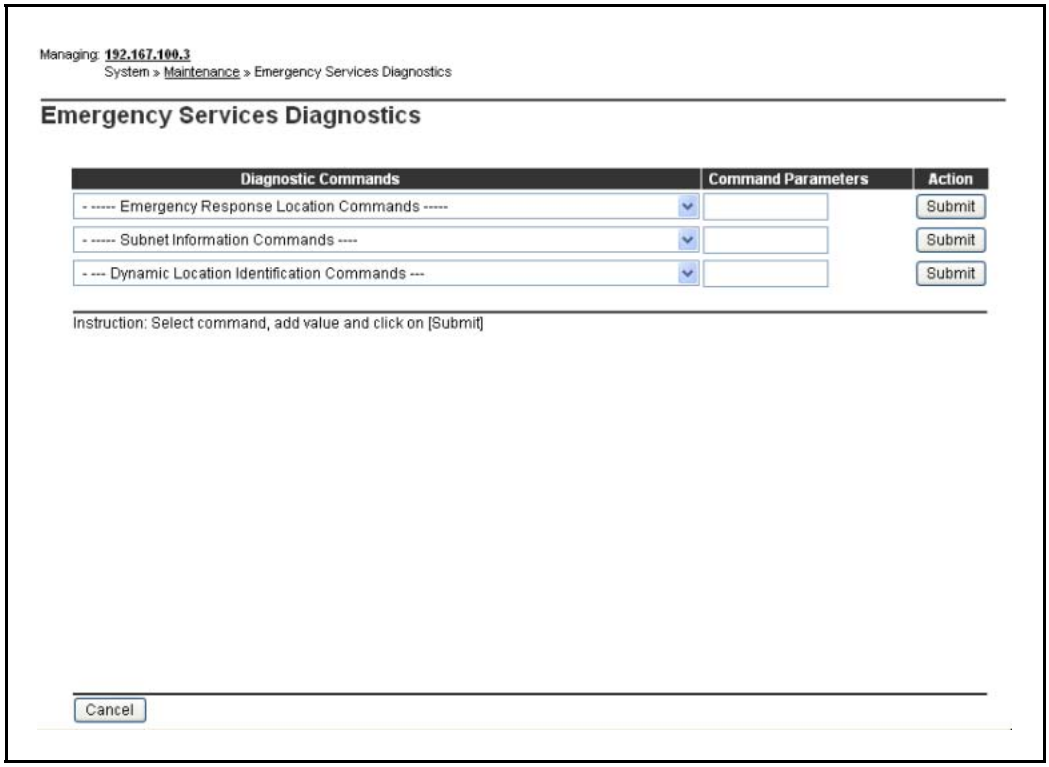
Step	Action
1	Select one of the following enable commands from the fourth **Commands** drop-down list: **a** CDSP - Clear display on active CPU **b** CMIN - Clear minor alarm for all customers **c** STRT - Start DDSL number
2	Enter the necessary parameters.
3	Click **Submit**.

--End--

Emergency Services Diagnostics

Click the **Emergency Services Diagnostics** link in the list of Maintenance diagnostic tools to open the **Emergency Services Diagnostics** Web page as shown in Figure 24 "Emergency Services Diagnostics Web page" (page 75).

Figure 24
Emergency Services Diagnostics Web page



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To perform Emergency Response Location commands using this Web page, follow the steps in Procedure 40 “Performing Emergency Response Location commands” (page 76).

Procedure 40
Performing Emergency Response Location commands

Step	Action
1	Select one of the following commands from the first **Commands** drop-down list: **a** PRT ERL - Print Emergency Response Location **b** ENL ERL - Enable ERL **c** DIS ERL - Disable ERL
2	Enter the required parameters in the **Command Parameters** text box.
3	Click **Submit**.

--End--

To perform Subnet Information commands using this Web page, follow the steps in Procedure 41 “Performing Subnet Information commands” (page 76).

Procedure 41
Performing Subnet Information commands

Step	Action
1	Select one of the following commands from the second **Commands** drop-down list: **a** PRT SUBNET - Print Subnet Location **b** PRT SUBNET NTH - Print Subnet Locations Starting from Index # **c** PRT SUBNET ERL - Print All Subnet Locations for ERL **d** PRT SUBNET ECL - Print All Subnet Locations for ECL **e** EST SUBNETLIS - Test Subnet Location
2	Enter the required parameters in the **Command Parameters** text box.
3	Click **Submit**.

--End--

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To perform Dynamic Location Identification commands using this Web page, follow the steps in Procedure 42 “Performing Dynamic Location Identification commands” (page 77).

Procedure 42
Performing Dynamic Location Identification commands

Step	Action
1	Select one of the following commands from the third **Commands** drop-down list: **a** PRT ELIN - Print Dynamic ELIN **b** STAT ELIN - Get Status of Dynamic ELIN **c** STAT ELIN ACTIVE - Get Status of active Dynamic ELIN
2	Enter the required parameters in the **Command Parameters** text box.
3	Click **Submit**.

--End--

Ethernet Diagnostics

Click the **Ethernet Diagnostics** link in the list of Maintenance diagnostic tools to open the **Ethernet Diagnostics** Web page as shown in Figure 25 "Ethernet Diagnostics Web page" (page 78).

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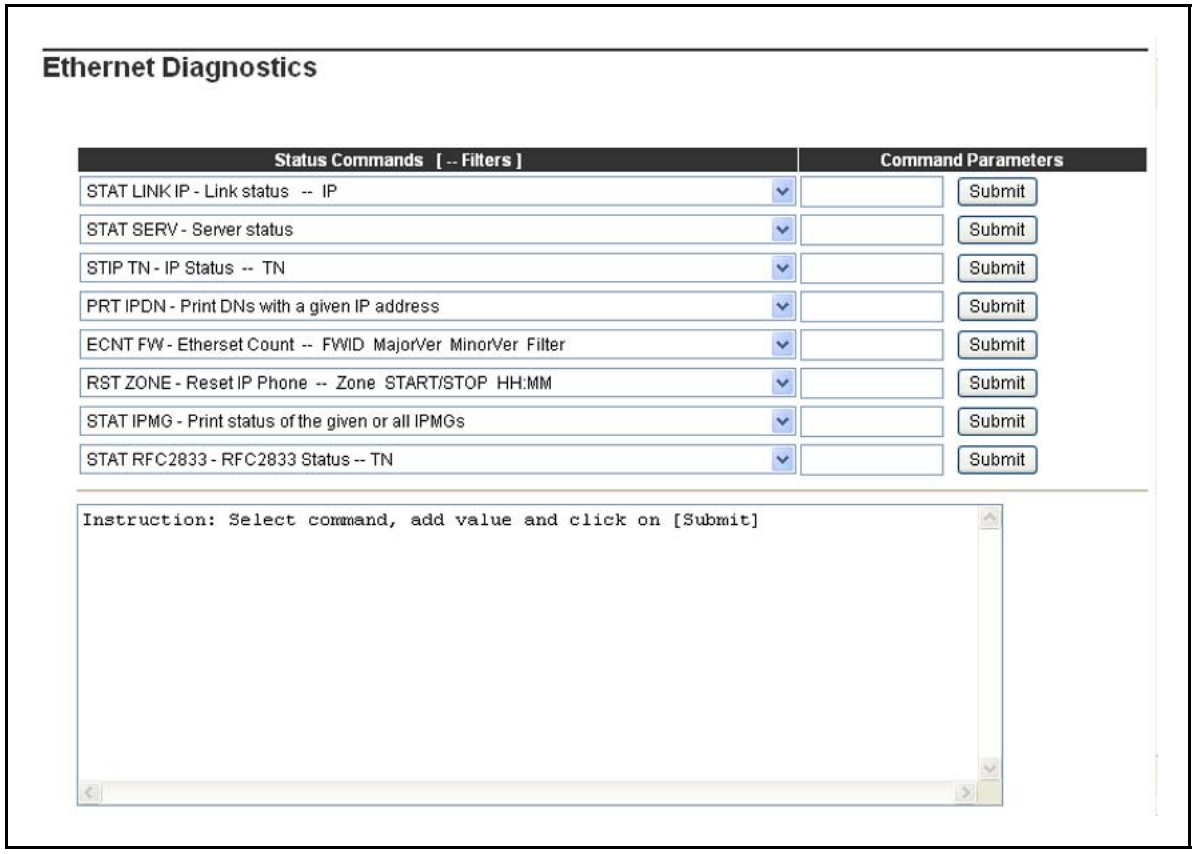
Figure 25
Ethernet Diagnostics Web page



This Web page is used to maintain Ethernet elements. The commands available from this Web page correspond to the data traditionally maintained by using LD 117- Ethernet Quality of Service Diagnostics.

To execute Link status commands, follow the steps in Procedure 43 “Performing Link status commands” (page 78).

Procedure 43
Performing Link status commands

Step	Action
1	Select one of the following commands from the first **Commands** drop-down list: **a** STAT LINK IP - Link Status -- IP **b** STAT LINK SRV - Link Status -- Server **c** STAT LINK NAME - Link Status -- Host Name **d** STAT LINK NODE - Link Status -- Node ID

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2 Enter the required command parameters in the **Command Parameters** text box.

3 Click **Submit**.

--End--

To execute server status commands, follow the steps in Procedure 44 “Performing server status commands” (page 79).

Procedure 44
Performing server status commands

Step	Action
1	Select one of the following commands from the second **Commands** drop-down list: **a** STAT SERV - Server Status **b** STAT SERV IP - Server Status --IP **c** STAT SERV TYPE - Server Status -- Type **d** STAT SERV APP - Server Status -- Application **e** STAT SERV NAME - Server Status -- Name **f** STAT SERV NODE - Server Status -- Node ID
2	Enter the required command parameters in the **Command Parameters** text box.
3	Click **Submit**.

--End--

To execute IP status commands, follow the steps in Procedure 45 “Performing IP status commands” (page 79).

Procedure 45
Performing IP status commands

Step	Action
1	Select one of the following commands from the third **Commands** drop-down list: **a** STIP TN - IP Status -- TN **b** STIP TYPE - IP Status -- Type **c** STIP ZONE - IP Status -- Zone **d** STIP NODE - IP Status -- Node ID

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e STIP HOSTIP - IP Status -- Host IP

f STIP ACF - IP Status -- Active Call Failover

g STIP TERMIP - IP Status -- Term IP

h STIP FW - IP Status -- FWID MajorVer MinorVer Filter

i STIP MODL - IP Status -- ModelName

2 Enter the required command parameters in the **Command Parameters** text box.

3 Click **Submit**.

--End--

To execute print commands, follow the steps in Procedure 46 “Performing print commands” (page 80).

Procedure 46
Performing print commands

Step	Action
1	Select one of the following commands from the fourth Commands drop-down list: **a** PRT IPDN - Print DNs with a given IP address **b** PRT DNIP Print IP address(es) with a given DN **c** PRT IPR - Print information for the given IPMG **d** PRT IPMG - Print information for the given IPMG
2	Enter the required command parameters in the **Command Parameters** text box.
3	Click **Submit**.

--End--

To execute Etherset Count commands, follow the steps in Procedure 47 “Performing Etherset Count commands” (page 80).

Procedure 47
Performing Etherset Count commands

Step	Action
1	Select one of the following commands from the fifth **Commands** drop-down list: **a** ECNT FW - Etherset Count -- FWID MajorVer MinorVer Filter

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b ECNT MODL - Etherset Count -- Model

c ECNT PEC - Etherset Count -- PEC

d ECNT ZONE - Etherset Count -- Zone Customer #

e ECNT CARD - Etherset Count -- Loop Shelf Card Customer#

f ECNT NODE - Etherset Count -- Node ID

g ECNT SS - Etherset Count -- HostName

2 Enter the required command parameters in the **Command Parameters** text box.

3 Click **Submit**.

--End--

To execute Reset IP Phone commands, follow the steps in Procedure 48 "Performing Reset IP Phone commands" (page 81).

Procedure 48
Performing Reset IP Phone commands

Step	Action
1	Select one of the following commands from the sixth **Commands** drop-down list: **a** RST ZONE - Reset IP Phone -- Zone START/STOP HH:MM **b** RST FW - Reset IP Phone -- FWID START/STOP HH:MM
2	Enter the required command parameters in the **Command Parameters** text box.
3	Click **Submit**.

--End--

To execute IPMG commands, follow the steps in Procedure 49 "Performing IPMG commands" (page 81).

Procedure 49
Performing IPMG commands

Step	Action
1	Select one of the following commands from the seventh **Commands** drop-down list: **a** STAT IPMG - Print status of the given or all IPMGs **b** STAT IPMG SUMMARY - Print status of all IPMGs

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2 Enter the required command parameters in the **Command Parameters** text box.

3 Click **Submit**.

--End--

To execute RFC2833 commands, follow the steps in Procedure 50 “Performing RFC2833 commands” (page 82).

Procedure 50
Performing RFC2833 commands

Step	Action
1	Select one of the following commands from the eighth **Commands** drop-down list: **a** STAT RFC2833 - RFC2833 Status - TN **b** ENL RFC2833PRT - Enable the info Message Printing **c** DIS RFC2833PRT - Disable the info Message Printing
2	Enter the required command parameters in the **Command Parameters** text box.
3	Click **Submit**.

--End--

Ethernet Quality of Service Diagnostics

Click the **Ethernet Quality of Service Diagnostic** link in the list of **Maintenance**diagnostic tools to open the **Ethernet Quality of Service Diagnostics** Web page as shown in Figure 26 "Ethernet Quality of Service Diagnostics Web page" (page 83).

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Figure 26
Ethernet Quality of Service Diagnostics Web page

This Web page is used to issue commands on elements by using the appropriate **Action** drop-down list and the corresponding Zone Number and Attribute or Level text boxes.

The commands that are available from this Web page correspond to data traditionally maintained by using LD 117 - Zone Configuration and Diagnostic.

To perform maintenance activities for Zone Attributes, follow the steps in Procedure 51 “Performing maintenance activities for Zone Attributes” (page 83).

Procedure 51
Performing maintenance activities for Zone Attributes

Step	Action
1	Select one of the following commands from the **Action** drop-down list: **a** Print QoS attribute for Zone (PRT AQOS) **b** Print Zone IP statistics (PRT ZQOS)

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2 Enter the appropriate value in the corresponding **Zone Number** and **Attribute** text box.

3 Click **Submit**.

--End--

To perform maintenance activities for Zone Levels, follow the steps in Procedure 52 “Performing maintenance activities for Zone Levels” (page 84).

Procedure 52
Performing maintenance activities for Zone Levels

Step	Action
1	Select one of the following commands from the **Action** drop-down list: **a** Change Zone Notification Level (CHG ZQNL) **b** Print Zone Notification Level (PRT ZQNL)
2	Enter the appropriate value in the corresponding **Zone Number** and **Level** text box.
3	Click **Submit**.

--End--

Input/Output Diagnostics

Click the **Input/Output Diagnostics** link in the list of **Maintenance** diagnostic tools to open the **Input Output Diagnostics** Web page as shown in Figure 27 "Input/Output Diagnostics Web page" (page 85).

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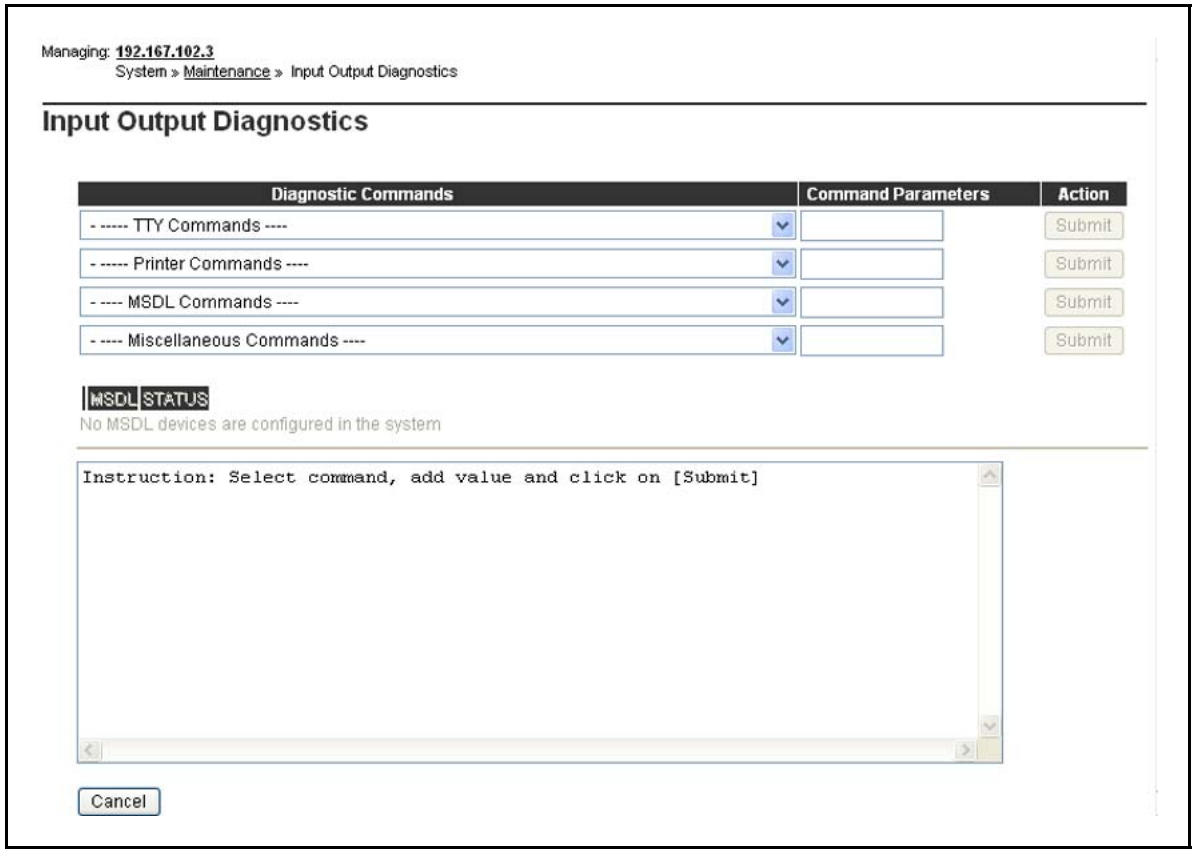
Figure 27
Input/Output Diagnostics Web page



The commands available from this Web page correspond to the Input/Output diagnostics traditionally performed using LD 37 - Input/Output.

To execute TTY commands, follow the steps in Procedure 53 “Performing Input/Output TTY commands” (page 85).

Procedure 53
Performing Input/Output TTY commands

Step	Action
1	Select one of the following commands from the first Commands drop-down list: **a** STAT TTY - Get status of TTY device(s) **b** ENL TTY - Enable TTY **c** DIS TTY - Disable TTY
2	Enter the required command parameters in the **Command Parameters** text box.

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3 Click **Submit**.

--End--

To execute Printer commands, follow the steps in Procedure 54 "Performing Input/Output Printer commands" (page 86).

Procedure 54
Performing Input/Output Printer commands

Step	Action
1	Select one of the following commands from the second **Commands** drop-down list: **a** STAT PRT - Get status of Printer(s) **b** ENL PRT - Enable Printer **c** DIS PRT - Disable Printer
2	Enter the required command parameters in the **Command Parameters** text box.
3	Click **Submit**.

--End--

To execute MDSL commands, follow the steps in Procedure 55 "Performing Input/Output MDSL commands" (page 86).

Procedure 55
Performing Input/Output MDSL commands

Step	Action
1	Select one of the following commands from the third **Commands** drop-down list: **a** STAT MSDL - Get status of MSDL card(s) **b** ENL MSDL - Enable MSDL device **c** DIS MSDL - Disable MSDL device **d** SLFT MSDL - Self test MSDL device **e** RST MSDL - Reset MSDL device
2	Enter the required command parameters in the **Command Parameters** text box.

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3 Click **Submit**.

--End--

To use the miscellaneous commands, do the following:

Step	Action
1	Select one of the following commands from the fourth **Commands** drop-down list: **a** STAT - Get status of all I/O devices in system **b** STAT XSM - Get status of the system monitor **c** STAT LINK - Get status of CDR data Link(s) **d** CMIN - Clear minor alarm for all customers **e** CDSP - Clear maintenance display on active CPU
2	Enter the required command parameters in the **Command Parameters** text box.
3	Click **Submit**.

--End--

Intergroup Switch and System Clock Generator Diagnostics

Click the **Intergroup Switch and System Clock Generator Diagnostics** link in the list of **Call Server** functionalities to open the **Intergroup Switch and System Clock Generator Diagnostics** Web page as shown in Figure 28 "Intergroup Switch and System Clock Generator Diagnostics Web page" (page 88).

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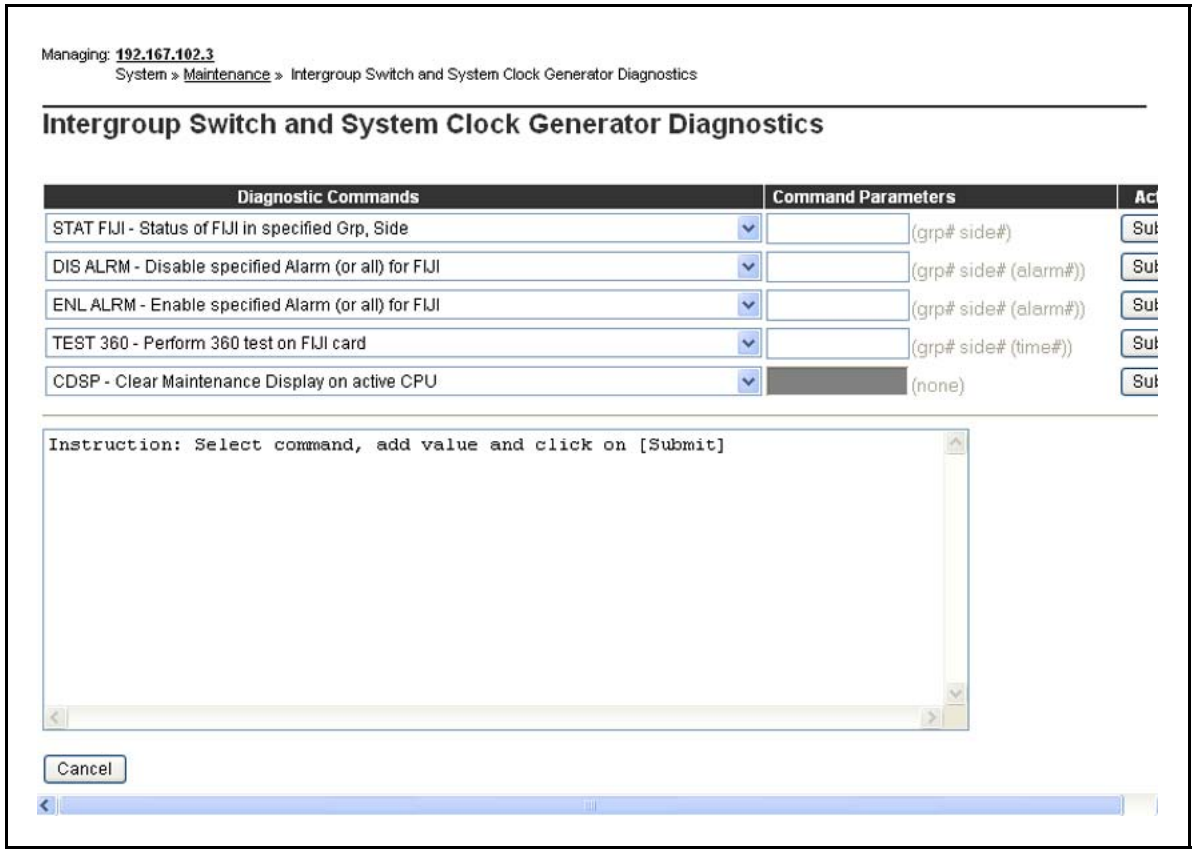
Figure 28
Intergroup Switch and System Clock Generator Diagnostics Web page



The commands available from this Web page correspond to the Intergroup Switch and System Clock Generator diagnostics traditionally performed using LD 39.

To use status commands, follow the steps in Procedure 56 “Performing Intergroup status commands” (page 88).

Procedure 56
Performing Intergroup status commands

Step	Action
1	Select one of the following commands from the first **Commands** drop-down list: **a** STAT FIJI - Status of FIJI on specified Grp, Side **b** STAT PER - Status of specified PS card **c** STAT SCG - Status of specified SCG card (0 or 1) **d** STAT RING - Status of all FIJI cards on specified Ring

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2 Enter the group number and side number in the **Command Parameters** text box.

3 Click **Submit**.

--End--

To use the disable commands, follow the steps in Procedure 57 "Performing Intergroup disable commands" (page 89).

Procedure 57
Performing Intergroup disable commands

Step	Action
1	Select one of the following commands from the second **Commands** drop-down list: **a** DIS ALRM - Disable specified Alarm (or all) for FIJI **b** DIS FIJI - Disable FIJI in specified Group and Side **c** DSPS - Disable specified PS card **d** DIS SCG - Disable specified SCG card (0 or 1) **e** DIS RING - Disable all FIJI cards on specified Ring **f** DIS RALM - Disable all alarms for all RIJI cards in Ring
2	Enter the required command parameters in the **Command Parameters** text box.
3	Click **Submit**.

--End--

To use the enable commands, follow the steps in Procedure 58 "Performing Intergroup enable commands" (page 89).

Procedure 58
Performing Intergroup enable commands

Step	Action
1	Select one of the following commands from the third **Commands** drop-down list: **a** ENL ALRM - Enable specified Alarm (or all) for FIJI **b** ENL FIJI - Enable FIJI in specified Group and Side **c** ENPS - Enable specified PS card **d** ENL SCG - Enable specified SCG card (0 or 1)

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e ENL RING - Enable all FIJI cards on specified Ring

f ENL RALM - Enable all alarms for all FIJI cards in Ring

2 Enter the required command parameters in the **Command Parameters** text box.

3 Click **Submit**.

--End--

To use the test commands, follow the steps in Procedure 59 “Performing Intergroup test commands” (page 90).

Procedure 59
Performing Intergroup test commands

Step	Action
1	Select one of the following commands from the fourth **Commands** drop-down list: **a** TEST 360 - Perform 360 test on FIJI card **b** TEST FIJI - Self Test FIJI Card **c** TEST BKPL - Test backplane **d** TEST CMEM - Test connection memory **e** TEST LINK - Perform Link test to identify hardware faults **f** TEST ALL - Perform FIJI diagnostic test
2	Enter the required command parameters in the **Command Parameters** text box.
3	Click **Submit**.

--End--

To use the miscellaneous commands, follow the steps in Procedure 60 “Performing Intergroup miscellaneous commands” (page 90).

Procedure 60
Performing Intergroup miscellaneous commands

Step	Action
1	Select one of the following commands from the fifth **Commands** drop-down list: **a** CDSP - Clear Maintenance Display on active CPU **b** CMIN - Clear minor alarm for all customers

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c ARCV ON - Set auto-recovery operation for ring

d ARCV OFF - Reset auto-recovery operation for ring

e ALRD ON - Turn on alarm display for all FIJI cards

f ALRD OFF - Turn off alarm display for all FIJI cards

g RSET - Reset thresholds for switchover functionality

h RSTR - Restore Ring(s)

i SCLK - Switchover to the other SCG

j SLCK FRCE - Force clock to switch to other SCG

k SWRG - Switch Call Processing to specified ring

2 If SWRG is selected, enter appropriate **Command Parameter**.

3 Click **Submit**.

--End--

MSDL Diagnostics

Click the **MSDL Diagnostics** link in the list of Maintenance diagnostic tools to open the **Multipurpose Serial Data Link (MSDL) Diagnostics** Web page as shown in Figure 29 "MSDL Diagnostics Web page" (page 92).

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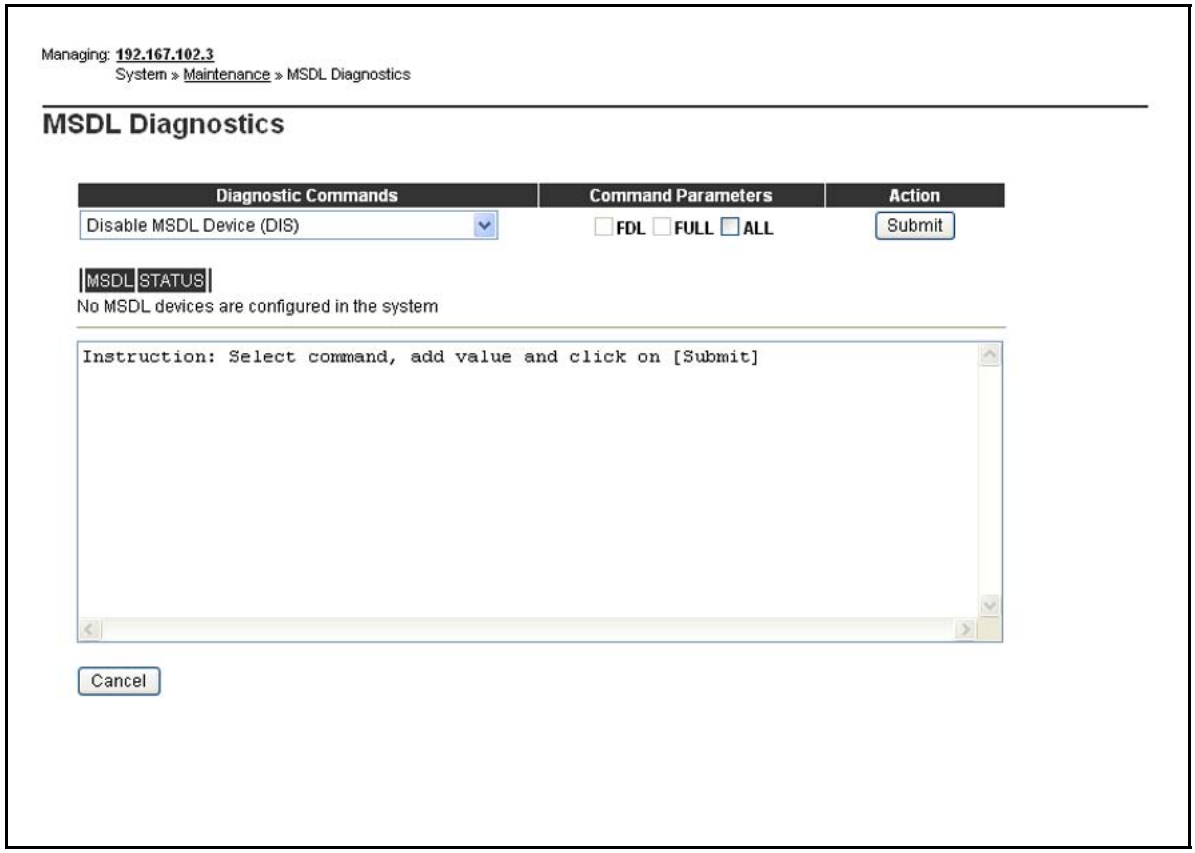
Figure 29
MSDL Diagnostics Web page



The commands available from this Web page correspond to the MSDL diagnostics traditionally performed by using LD 96 - D-channel.

This Web page is used to perform the following MSDL diagnostic functions:

- Disable MSDL Device (DIS)
- Enable MSDL Device (ENL)
- Self Test (SLFT)
- Get Status of MSDL Device (STAT)
- Causes Power-On Reset of MSDL Device (RST)

To perform diagnostic activities using this Web page, follow the steps in Procedure 61 “Performing MSDL diagnostic activities” (page 93).

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Procedure 61
Performing MSDL diagnostic activities

Step	Action
1	Select the required **Diagnostic Command** from the **Commands** drop-down list.
2	To update the loadware, select the **FDL (Force Download)** check box when the Enable MSDL Device command is selected.
3	To check the status of all MDSL devices, select the **Full** check box when the Get Status of MSDL Device command is selected.
4	Enter the required command parameters in the **Command Parameters** text box.
5	Click **Submit**.

--End--

Multifrequency Sender Diagnostics

The **Multifrequency Sender Diagnostics** Web page is available only on Large Systems.

Click the **Multifrequency Sender Diagnostics** link in the list of **Maintenance** diagnostic tools to open the **Multifrequency Sender Diagnostics** Web page as shown in Figure 30 "Multifrequency Sender Diagnostics Web page" (page 94).

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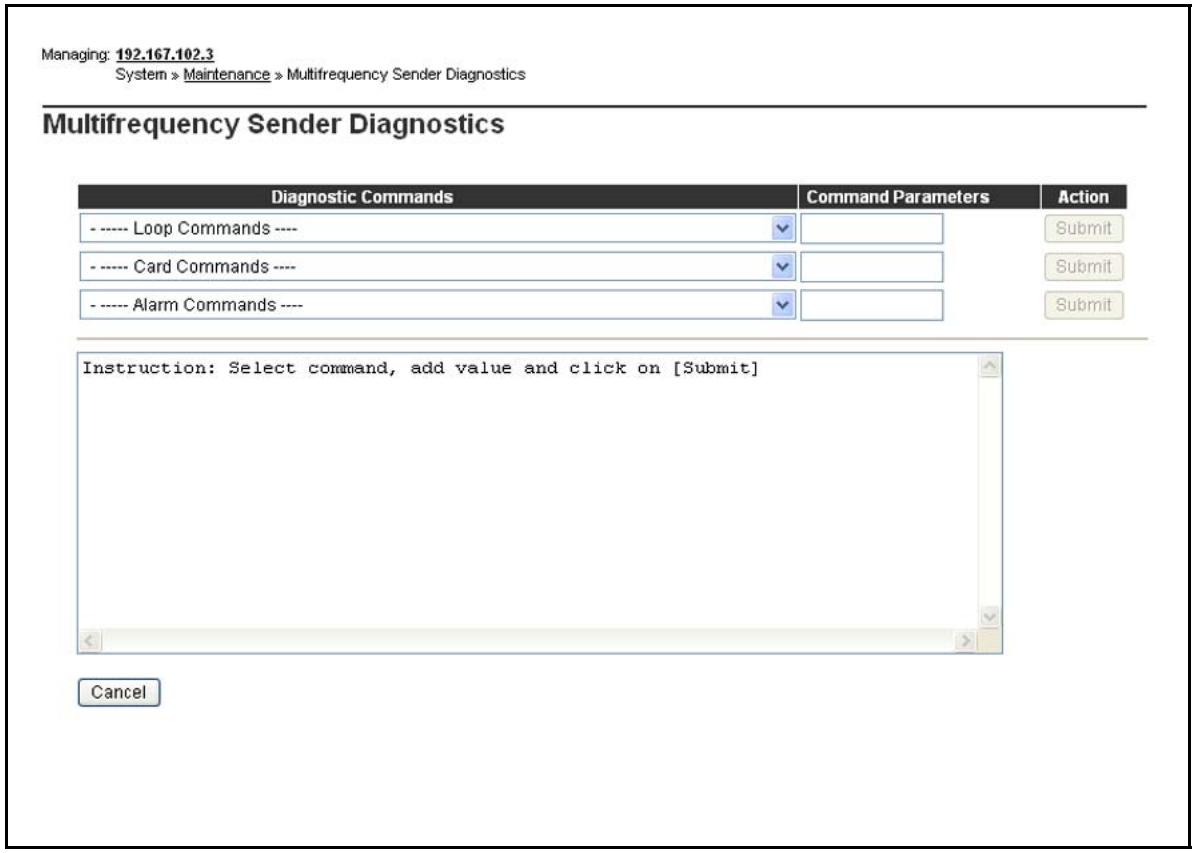
Figure 30
Multifrequency Sender Diagnostics Web page



The commands available from this Web page correspond to the Multifrequency Sender diagnostics traditionally performed by using LD 46.

To use the loop commands, follow the steps in Procedure 62 “Performing Multifrequency Sender loop commands” (page 94).

Procedure 62
Performing Multifrequency Sender loop commands

Step	Action
1	Select one of the following commands from the first **Commands** drop-down list: **a** STAT - Get Status of MFS loop **b** ENLL - Enable loop **c** DISL - Disable loop **d** MFS - Test and enable MFS loop
2	Enter the required command parameters in the **Command Parameters** text box.

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3 Click **Submit**.

--End--

To use the card commands, follow the steps in Procedure 63 “Performing Multifrequency Sender card commands” (page 95).

Procedure 63
Performing Multifrequency Sender card commands

Step	Action
1	Select one of the following commands from the second **Commands** drop-down list: **a** ENLX - Enable Conf/TDS/MFS card on loop **b** DISX - Disable Conf/TDS/MFS card on loop
2	Enter the required command parameters in the **Command Parameters** text box.
3	Click **Submit** button.

--End--

To use the alarm commands, follow the steps in Procedure 64 “Performing Multifrequency Sender alarm commands” (page 95).

Procedure 64
Performing Multifrequency Sender alarm commands

Step	Action
1	Select one of the following commands from the third **Commands** drop-down list: **a** CMAJ - Clear major alarm and reset power fail **b** CDSP - Clear Maint display on active CPU **c** CMIN - Clear minor alarm for all customers
2	Enter the required command parameters in the **Command Parameters** text box.
3	Click **Submit**.

--End--

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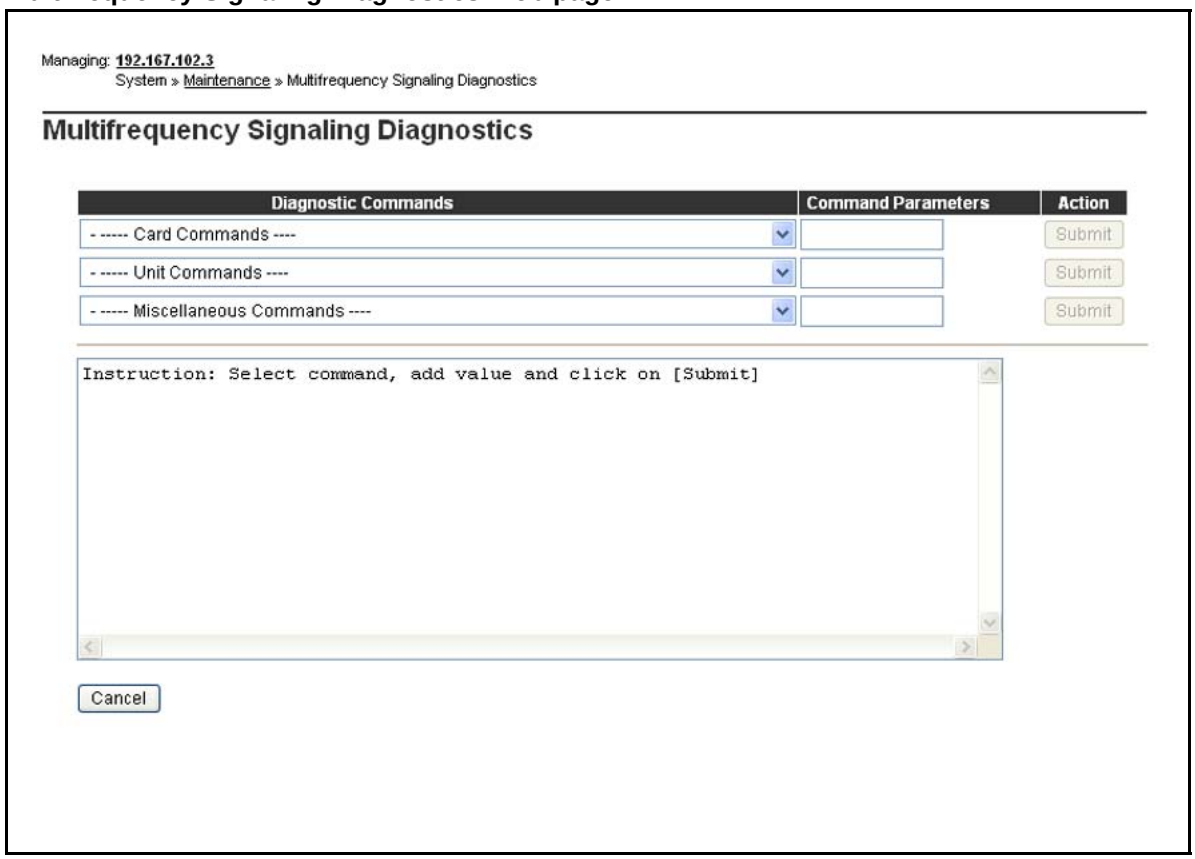
Multifrequency Signaling Diagnostics

Click the **Multifrequency Signaling Diagnostics** link in the list of **Maintenance** diagnostic tools to open the **Multifrequency Signaling Diagnostics** Web page as shown in Figure 31 "Multifrequency Signaling Diagnostics Web page" (page 96).

Figure 31
Multifrequency Signaling Diagnostics Web page



The commands available from this Web page correspond to the Multifrequency Signaling diagnostics traditionally performed by using LD 54 - Multifrequency Signaling.

To use the card commands, follow the steps in Procedure 65 “Performing Multifrequency Signaling card commands” (page 96).

Procedure 65
Performing Multifrequency Signaling card commands

Step	Action
1	Select one of the following commands from the first **Commands** drop-down list: **a** STAT - Get status of MFC or MFE card

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b DISC - Disable MFC/MFE card

c ENLC - Enable MFC or MFE card

d MIDN - Reset/Initialize all idle MFC or MFE cards

2 Enter the required command parameters in the **Command Parameters** text box.

3 Click **Submit**.

--End--

To use the unit commands, follow the steps in Procedure 66 “Performing Multifrequency Signaling unit commands” (page 97).

Procedure 66
Performing Multifrequency Signaling unit commands

Step	Action
1	Select one of the following commands from the second **Commands** drop-down list: **a** STAT - Get status of specified MFC or MFE unit **b** DISU - Disable XMFC/XMFE channel **c** ENLU - Enable MFC/MFE channel **d** MTST - Invoke loop around test on unit with digit and level **e** ATST - Invoke automatic loop test for unit
2	Enter the required command parameters in the **Command Parameters** text box.
3	Click **Submit**.

--End--

To use the miscellaneous commands, follow the steps in Procedure 67 “Performing Multifrequency Signaling miscellaneous commands” (page 97).

Procedure 67
Performing Multifrequency Signaling miscellaneous commands

Step	Action
1	Select one of the following commands from the third **Commands** drop-down list: **a** STAT - List all disabled MFC channels in system **b** CMIN - Clear minor alarm for all customers

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c CDSP - Clear the mtc display on active CPU

d CMAJ - Clear major alarm and reset power fail transfer

2 Enter the required command parameters in the **Command Parameters** text box.

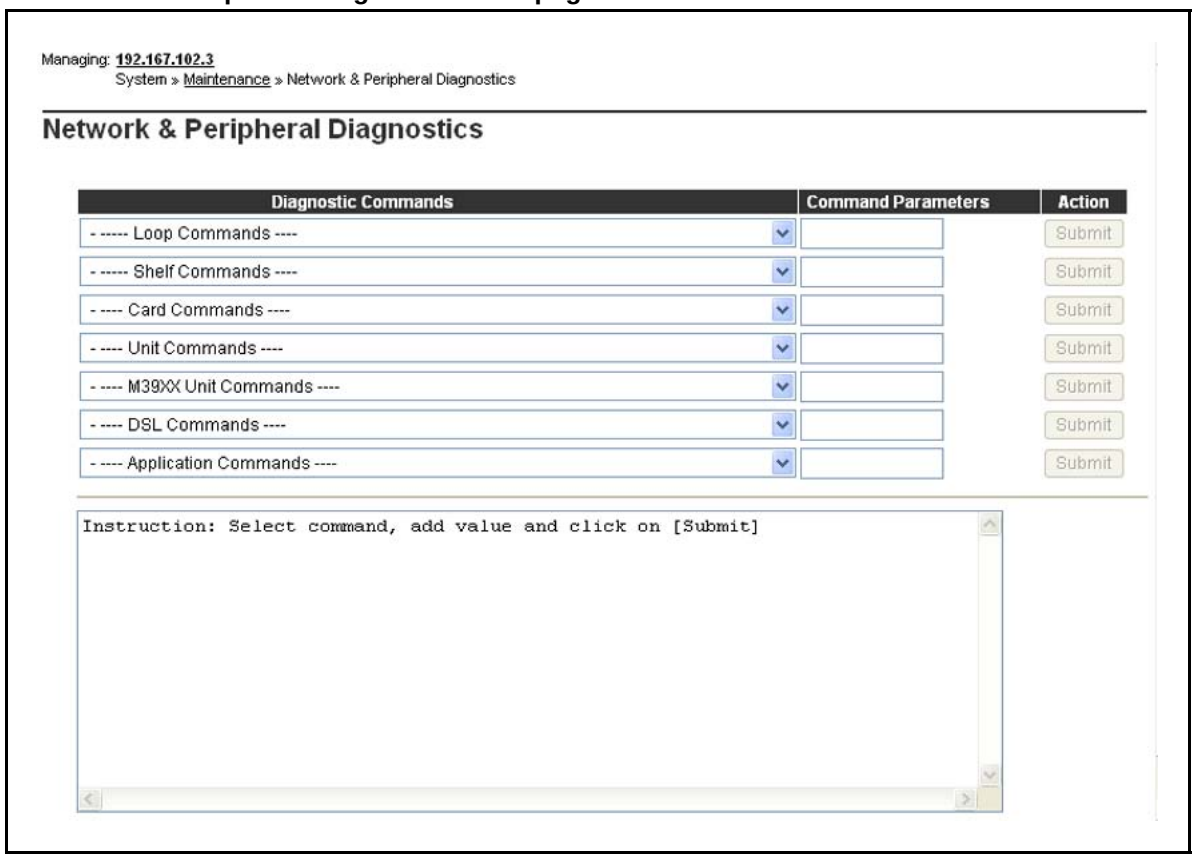
3 Click **Submit**.

--End--

Network and Peripheral Equipment Diagnostics

Click the **Network and Peripheral Equipment Diagnostics** link in the list of **Maintenance** diagnostic tools to open the **Network & Peripheral Diagnostics** Web page as shown in Figure 32 "Network and Peripheral Diagnostics Web page" (page 98).

Figure 32
Network and Peripheral Diagnostics Web page



This Web page is used to test and maintain network and peripheral equipment. The commands available from this Web page correspond to the data traditionally maintained by using the LD 32 - Network and Peripheral Equipment Diagnostic.

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These commands are split among separate drop-down lists, grouped by equipment type.

The command lists are as follows:

- Loop Commands
  - Network Loop
    - ENLL - Enable network loop
    - DISL - Disable network loop
  - Super Loop
    - STAT - Get status of Superloop
    - SUPL - Print data for one or all Superloops
    - IDC - Print Card ID for Superloop and associated Controller
    - XNTT - Do self-test of Network card for specified Superloop
    - ENLL - Enable specified Superloop
    - XRST - Reset the specified Superloop
- Shelf Commands
  - DISS - Disable the shelf
  - ENLS - Enable specified shelf
  - LBSY - List TNs of all busy units
  - LDIS - List TNs of all disabled units
  - LIDL - List TNs of all idle units
  - LMNT - List TNs of all maint. busy units
- Card Commands
  - General Card Commands
    - STAT - Get card status
    - ENLC - Enable and reset card
    - DISC - Disable peripheral card
    - IDC - Print card ID for PE card
  - MISP Card Commands
    - STAT - Print status of MISP appl/card
    - ENLL - Enable MISL loop
    - ENLL BRIL - Enable BRIL application on MISP loop
    - ENLL BRIT - Enable BRIT application on MISP loop
    - IDC - Print MISP card ID

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- DISL - Disable MISP loop
- DISL BRIL - Disable BRIL application on MISP loop (Large System)
- DISL BRIT - Disable BRIT application on MISP loop
- DISL BRIE - Disable BRIE application on MISP loop

— BRI BRSC Card Commands

- STAT - Get status of BRI card
- IDC - Print BRSC card and LW version
- DISC BRI - Disable the BRSC BRI application
- DISC - Disable specified card
- ENLC BRI - Enable the BRSC BRI application
- ENLC - Enable specified card

— PS Card Commands

- STAT PER - Get status of PS card
- ENPS - Enable PS card and associated loops
- DSPS - Disable Peripheral Signaling card

— Network Card Commands

- STAT NWK - Check status of N/W card with specified loop
- ENLN - Enable network card with specified loop
- DISN - Disable network card with specified loop

— XPEC Controller Commands

- XPEC - Print data for all or specified Controller(s)
- ENXP - Enable Controller and associated cards
- ENXP XPC - Enable Controller, not the associated cards
- DSXP - Disable Controller and all connected cards
- XPCT - Self-test on Controller
- IDCS - Print card ID for cards

• Unit Commands

— General Unit Commands

- STAT - Get unit status
- ENLU - Enable unit
- IDU - Print set ID
- DISU - Disable unit
- STAT VTRM - Display virtual trunk unit status

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- M39XX Unit Commands
  - FDLC - Cancel/stop flash download for M39xx
  - FDLU - Conditional download to one M39xx
  - FWVU - Print firmware versions on M39xx
  - FSUM - Print firmware versions on M39xx
- DSL Commands
  - STAT - Get status of SILC or UILC
  - ENL AUTO - Enable automatic link recovery
  - ENRB - Enable Remote Loop Back for DSL
  - DIS AUTO - Disable automatic link recovery
  - DISU - Disable the DSL
  - DSRB - Disable Remote Loop Back for DSL
  - IDC - Print SILC/UILC card ID
  - PERR - Print protocol log for the card
  - DISC - Disable SILC/UILC card
  - FDIS NCAL - Force disconnect the connection
  - STAT NCAL - List all current connections - DSL
  - PCON - Print configuration and LAPD parameters for specified DSL
  - DISI - Disable the card when idle
  - DSTS - Disable Disable Remote Loop Back test mode
  - ENLC - Enable SILC/UILC card
  - EISI - Enable the card when idle
  - EISU - Enable specified DSL
  - ESRB - Enable Remote Loop Back
  - ESTS - Enable Remote Loop Back test mode
  - ESTU - Establish D Channel Link
  - PLOG - Print protocol log
  - PMES - Print Layer 3 message log
  - PTAB - Upload and Print Layer 3 message configuration
  - PTRF - Print traffic data
  - RLBT - Perform Remote Loop Back test
  - RLSU - Release D Channel Link
- Application Commands

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- DISL BRIL - Disable and remove BRIL application from MISP card
- DISL BRIT - Disable and remove BRIT application from MISP card
- DISL BRIE - Disable and remove BRIE application from MISP card
- ENLL BRIL - Enable BRI application on MISP Card and force download of the loadware
- ENLL BRIT - Enable BRIT application on MISP card and force download of the loadware
- ENLL BRIE - Enable BRIE application on MISP card and force download of the loadware
- DIS BRIL - Disable BRIL application on MISP Card
- DIS BRIT - Disable BRIT application on MISP Card
- DIS BRIE - Disable BRIE application on MISP Card
- PERR BRIL - Upload error log for BRIL application on MISP Card
- PERR BRIT - Upload error log for BRIT application on MISP Card
- PERR BRIE - Upload error log for BRIE application on MISP Card
- PERR BRIL - Print protocol log for BRIL application on MISP Card
- PERR BRIT - Print protocol log for BRIT application on MISP Card
- PERR BRIE - Print protocol log for BRIE application on MISP card
- STAT BRIL - Get status of MISP card and BRIL application
- STAT BRIT - Get status of MISP card and BRIT application
- STAT BRIE - Get status of MISP card and BRIE application

Use this Web page to issue diagnostic commands on the network and peripheral equipment by using the appropriate **Diagnostic Commands** drop-down list and the corresponding **Command Parameters** text box. The required parameters for the selected command are indicated to the right of the **Command Parameters** text box after the command is selected.

To perform maintenance activities using this Web page, follow the steps in Procedure 68 “Performing Network and Peripheral maintenance activities” (page 102).

Procedure 68
Performing Network and Peripheral maintenance activities

Step	Action
1	Select a command from one of the **Diagnostic Commands** drop-down lists.

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2 Enter the appropriate value in the corresponding **Command Parameters** text box. The required parameters for the selected command are indicated to the right of the **Command Parameters** box once the command is selected.

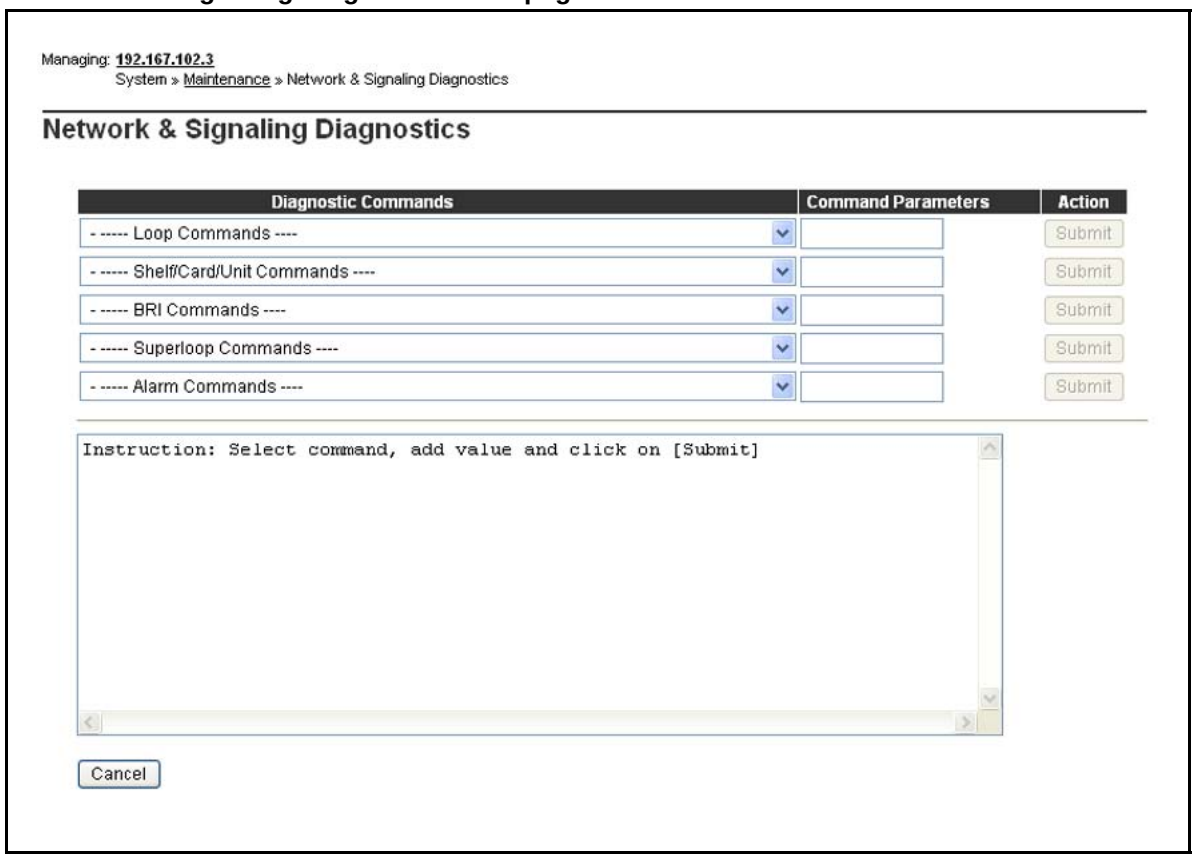
3 Click the corresponding **Submit** button.

--End--

Network and Signaling Diagnostics

Click the **Network and Signaling Diagnostics** link in the list of **Maintenance** diagnostic tools to open the **Network & Signaling Diagnostics** Web page as shown in Figure 33 "Network and Signaling Diagnostics Web page" (page 103).

Figure 33
Network and Signaling Diagnostics Web page



The commands available from this Web page correspond to the Network and Signaling diagnostics traditionally performed by using LD 30 - Network and Signaling.

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This Web page is used to perform the following Network and Signaling diagnostic functions:

- Loop Commands
  - ENLL - Enable network loop
  - DISL - Disable loop
  - LDIS - List disabled loops
  - LENL - List enabled loops
  - LOOP - Test network memory on loop(s)
  - STAT - Get status of all/specified N/W loops
  - TTSM - Test TSM of a loop
- Shelf/Card/Unit Commands
  - UNTT - Signaling test on specified card or unit
  - SHLF - Test loop l, shelf s (Large System)
  - CPED - Clear contents of ctrlr maint display (Large System)
  - RPED - Read contents of ctrlr maint display (Large System)
  - TTWI - Test TSM of the N/W card (Large System)
- BRI Commands
  - SLFT - Selftest on ISDN BRI line card
  - SLFT - Selftest ISDN BRI line card (Large System)
  - SLFT - Selftest on MISP card
  - STEI - Query Term Edpt Identifiers and USIDs (Large System)
  - TEIT - Perform TEI check on DSL
- Superloop Commands
  - ENLL - Enable specified Superloop
  - DISL - Disable specified Superloop
  - ENLL - Enable sl, download periph s/w ver
- Alarm Commands
  - CMAJ - Clear major alarm and reset power fail
  - CDSP - Clear Maint display on active CPU
  - CMIN - Clear minor alarm for all customers

To perform diagnostic activities using this Web page, follow the steps in Procedure 69 “Performing Network and Signaling diagnostic activities” (page 105).

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Procedure 69
Performing Network and Signaling diagnostic activities

Step	Action
1	Select the required **Diagnostic Command** from the drop-down list.
2	Enter any required **Command Parameters**. The required parameters for the selected command are indicated to the right of the **Command Parameters** text box once the command is selected.
3	Click **Submit**.

--End--

TMDI Diagnostics

T1 Multipurpose Digital Interface (TMDI) cards are used only in CS 1000MSmall Systems. Click the **TMDI Diagnostics** link in the list of Call Server diagnostic tools to open the **TMDI Diagnostics** Web page as shown in Figure 34 "TMDI Diagnostics Web page" (page 105).

Figure 34
TMDI Diagnostics Web page

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This Web page is used to test and maintain TMDI (DTI/PRI/DCH) cards. The commands available from this Web page correspond to the TMDI data traditionally configured by using LD 96 - D-channel.

To perform diagnostic activities using this Web page, follow the steps in Procedure 70 “Performing TMDI diagnostic activities” (page 106).

Procedure 70
Performing TMDI diagnostic activities

Step	Action
1	Select one of the following Actions from the **Commands** drop-down list: **a** Enable TMDI Card (ENL) **b** Disable TMDI card (DIS) **c** Reset TMDI card (RST) **d** Self Test on TMDI Card (SLFT) **e** Get TMDI Status (STAT)
2	Select one of the following **Command Parameters**: **a** FDL **b** FULL **c** ALL
3	Click **Submit**.

--End--

Tone and Digit Switch Diagnostics

Click the **Tone and Digit Switch Diagnostics** link in the list of Maintenance diagnostic tools to open the **Tone and Digit Switch and Digitone Receiver Diagnostics** Web page as shown in Figure 35 "Tone and Digit Switch and Digitone Receiver Diagnostics Web page" (page 107).

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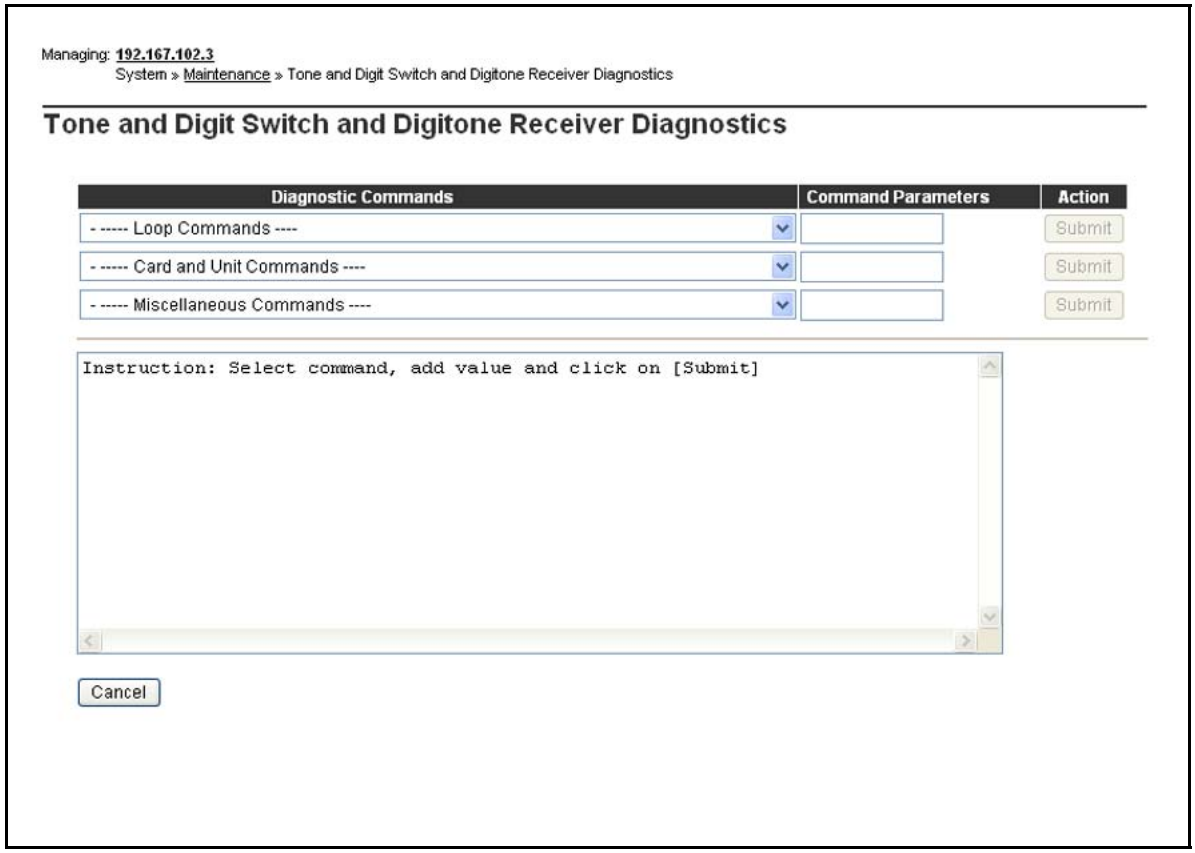
Figure 35
Tone and Digit Switch and Digitone Receiver Diagnostics Web page



This Web page is used to execute tone, digit switch, and digitone receiver diagnostics. The commands available from this Web page correspond to the TMDI data traditionally configured by using LD 34 - Tone and Digital Switch.

To perform diagnostic activities using this Web page, follow the steps in Procedure 71 “Performing Tone and Digit diagnostic activities” (page 107).

Procedure 71
Performing Tone and Digit diagnostic activities

Step	Action
1	Select one of the following commands from the **Diagnostic Commands** drop-down lists: • Loop Commands — STAT - Get status TDS loop — DISL - Disable tone and digit loop — DISX - Disable Conf/TDS/MFS card on loop l and l + 1

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- ENLX - Enable Conf/TDS/MFS card on loop l and l + 1
- ENLL - Enable tone and digit loop
- MFR - Test ANI Feature Group D Multifrequency receiver units
- TDS - Test outpulsers and channels on loop

- Card and Unit Commands
  - SDTR - Get status of DTR/MFR or XDT card/unit
  - DISR - Disable specified TDS/MFS card/unit
  - ENLR - Enable the DTR/MFR card/unit
  - DTR - Test specified Digitone receiver card/unit
  - MFR - Test ANI Multifrequency Card/Unit
- Miscellaneous Commands
  - ENLM - Enable all the TDS loops of the given IPMG
  - DISM - Disable all the TDS loops of the given IPMG
  - CMIN - Clear the minor alarm for all customers
  - CDSP - Clear the mtc display on active CPU
  - CMAJ - Clear major alarm and reset power fail transfer
  - MFR - Test all ANI Feature Group D MFR receiver units

2 Enter any required **Command Parameters**. The required parameters for the selected command are indicated to the right of the **Command Parameters** text box once the command is selected.

3 Click the corresponding **Submit** button.

--End--

Trunk Diagnostics

Click the **Trunk Diagnostics** link in the list of **Maintenance** diagnostic tools to open the **Trunk Diagnostics** Web page as shown in Figure 36 "Trunk Diagnostics Web page" (page 109).

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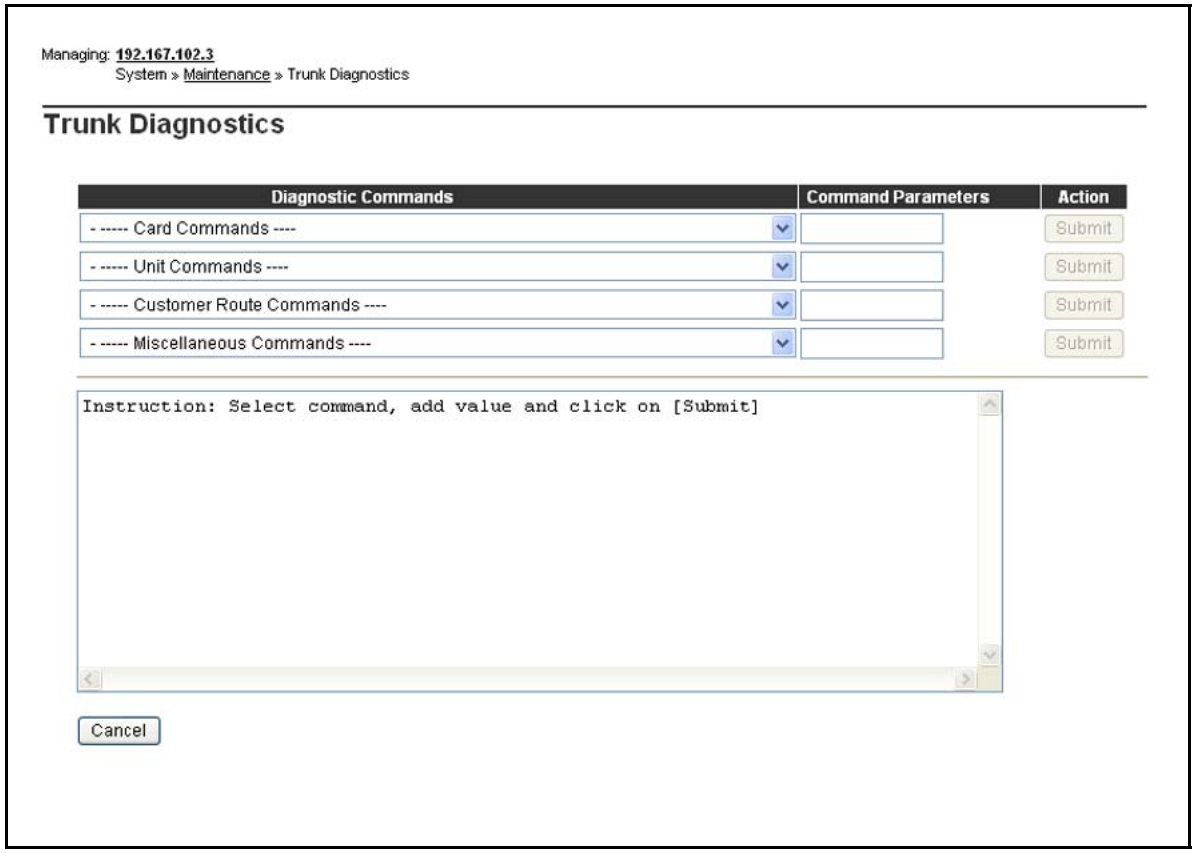
Figure 36
Trunk Diagnostics Web page



This Web page is used to test and maintain trunk cards. The commands available from this Web page correspond to the data traditionally maintained by using LD 36 - Trunk Diagnostic.

To use the card commands, follow the steps in Procedure 72 “Performing Trunk card commands” (page 109).

Procedure 72
Performing Trunk card commands

Step	Action
1	Select one of the following commands from the first **Commands** drop-down list: **a** STAT - Get card status **b** ENLC - Enable and reset card **c** DISC - Disable card
2	Enter the required command parameters in the **Command Parameters** text box.

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3 Click **Submit**.

--End--

To use the unit commands, follow the steps in Procedure 73 “Performing Trunk unit commands” (page 110).

Procedure 73
Performing Trunk unit commands

Step	Action
1	Select one of the following commands from the second **Commands** drop-down list: **a** ENLU - Enable unit **b** LDIC - Number of days since last inc. call **c** DISU - Disable unit **d** RSET - Reset thresholds for the trunk **e** TPPM - Test the specified PPM trunk
2	Enter the required command parameters in the **Command Parameters** text box.
3	Click **Submit**.

--End--

To use the customer route commands, follow the steps in Procedure 74 “Performing Trunk customer route commands” (page 110).

Procedure 74
Performing Trunk customer route commands

Step	Action
1	Select one of the following commands from the third **Commands** drop-down list: **a** LDIC - List days since last incoming call for customer **b** LMAX - List trunk with max idle days for customer **c** LNDS - List trunks with no disconnect sup. for customer **d** LOVF - List threshold overflows for customer **e** RAN - Test recorded announcement device
2	Enter the required command parameters in the **Command Parameters** text box.

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3 Click **Submit**.

--End--

To use the miscellaneous commands, follow the steps in Procedure 75 “Performing Trunk miscellaneous commands” (page 111).

Procedure 75
Performing Trunk miscellaneous commands

Step	Action
1	Select one of the following commands from the fourth **Commands** drop-down list: **a** CMIN - Clear minor alarm for all customers **b** CDSP - Clear the mtc display on active CPU
2	Enter the required command parameters in the **Command Parameters** text box.
3	Click **Submit**.

--End--

Zone Diagnostics

Click the **Zone Diagnostics** link in the list of **Maintenance** diagnostic tools to open the **Maintenance Commands for Zones** Web page as shown in Figure 37 "Maintenance Commands for Zones Web page" (page 112).

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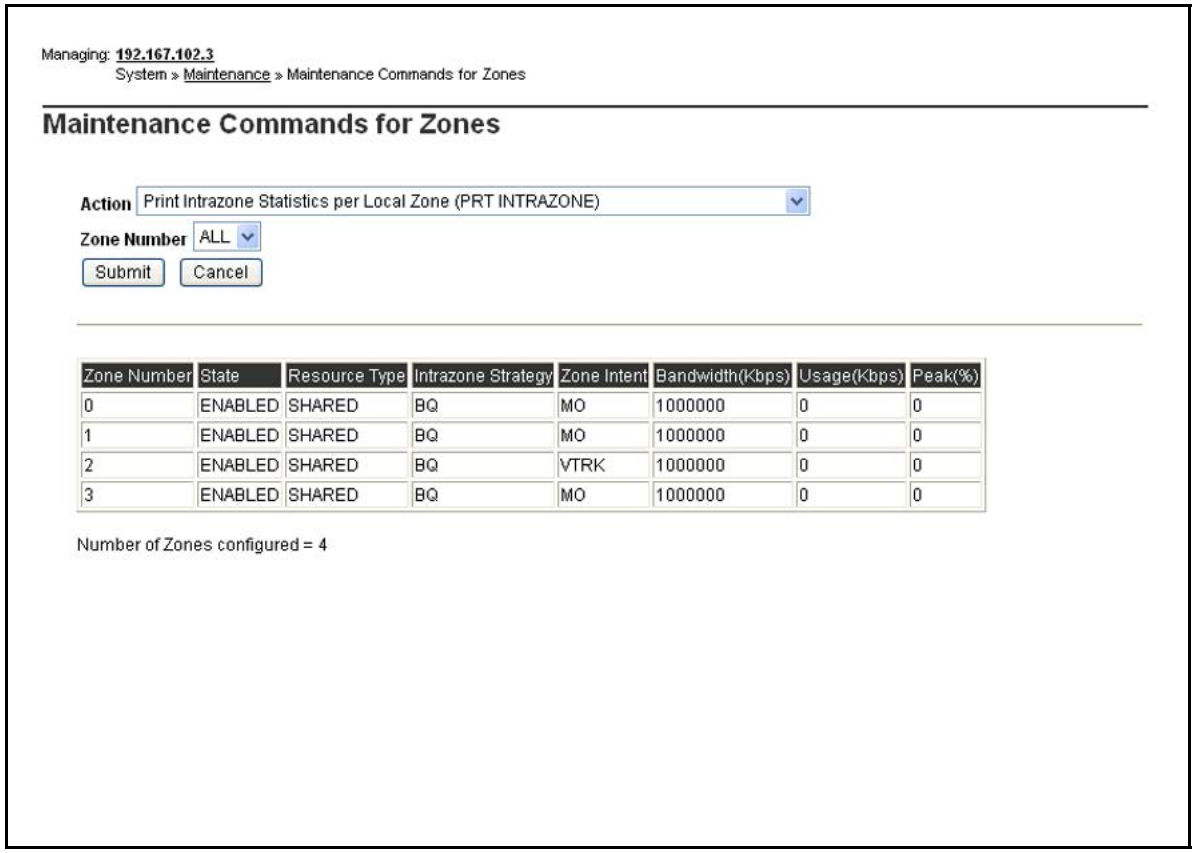
Figure 37
Maintenance Commands for Zones Web page



This Web page is used to enable and disable zones and to view various parameters, properties, and behaviors associated with the configured zones. The commands available from this Web page correspond to the data traditionally maintained by using LD 117 - Ethernet and Alarm Management.

This Web page also includes a table that shows the status and settings for the configured zones.

To perform maintenance activities using this Web page, follow the steps in Procedure 76 “Performing Zone maintenance activities” (page 112).

Procedure 76
Performing Zone maintenance activities

Step	Action
1	Select one of the following commands from the **Actions** drop-down list: **a** Print Intrazone Statistics per Local Zone (PRT INTRAZONE)

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b Print Bandwidth Property (PRT ZBW)

c Print Description (PRT ZDES)

d Print Dialing Plan and Access Codes (PRT ZDP)

e Print Time Change property (PRT ZTP)

f Show Branch Office Behaviour (STAT ZBR)

g Show Status (STAT ZONE)

h Enable a Zone (ENL ZONE)

i Disable a Zone (DIS ZONE)

j Enable a Zone's Branch Office Behaviour (ENL ZBR)

k Disable a Zone's Branch Office Behaviour (DIS ZBR)

l Print Adaptive Network Bandwidth Management and CAC Parameters (PRT ZCAC)

m Print Interzone Statistics (PRT INTERZONE)

n Reset CAC Statistics (CLR CACR)

o Print Zone Alternate Prefix Information (PRT ZALT)

p Show Alternate Routing Status (STAT ZALT)

q Print Alarm Suppression Time Period (PRT ZAST)

2 Select the **Zone Number** assigned to a configured zone from the drop-down list.

3 Click **Submit**.

--End--

Loops (Common Equipment)

To configure or edit Loops (Common Equipment) information, click the **Core Equipment > Loops** link of the**System** branch of the Element Manager navigator. The **Common Equipment** Web page appears (see Figure 38 "Common Equipment Web page" (page 114)).

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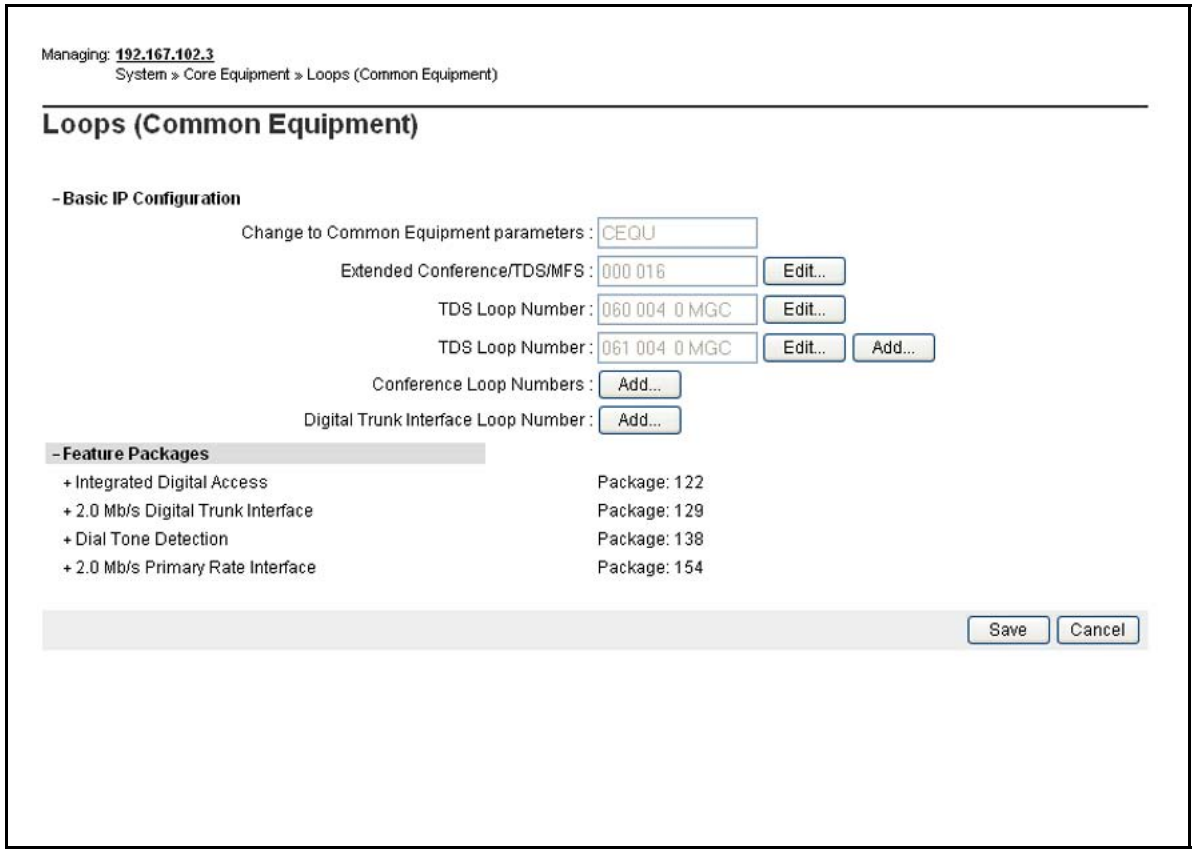
Figure 38
Common Equipment Web page



The **Common Equipment** Web page contains buttons that act as links to additional Web pages. The following functions can be performed from these pages:

- add and delete Tone and Digit Switch (TDS) numbers
- add and delete Digital Trunk Interface Loop (DLOP) numbers
- add and delete Conference loop (CONF) numbers
- configure parameters for the following Feature Packages:
  - Integrated Digital Access (Package 122)
  - 2 Mbit Digital Trunk Interface (Package 129)
  - Dial Tone Detection (Package 138)
  - 2.0 Mb/s Primary Rate Interface (Package 154)

The information entered in this section corresponds to CEQU (Common Equipment) data traditionally configured using LD 17 - Configuration Record 1.

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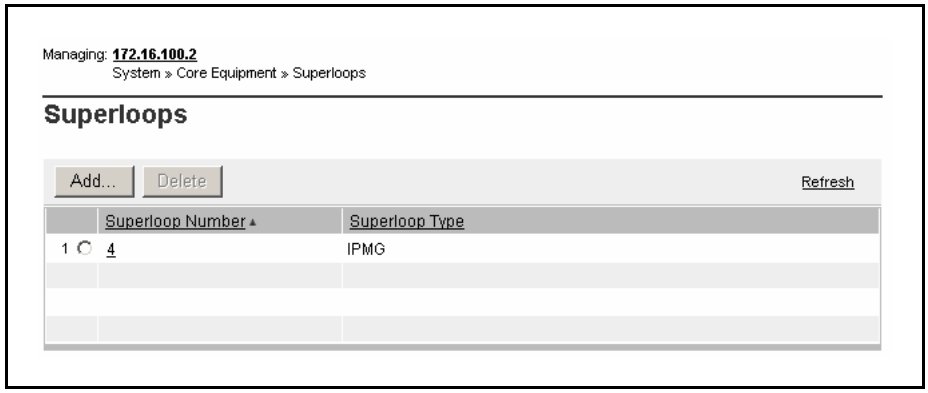
To save changes made in this section, click **Submit** at the bottom of the **Common Equipment** Web page.

Superloops

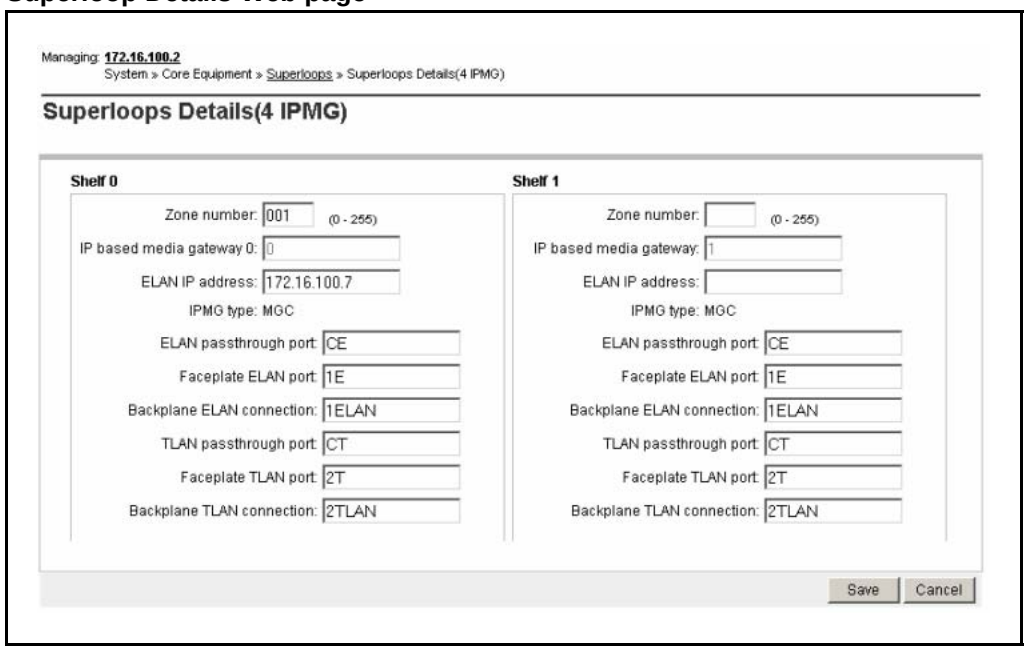
To view, configure or edit Superloop information, click the Core Equipment > Superloop link of the System branch of the Element Manager navigator. The **Superloops** Web page appears as shown in Figure 39 "Superloops Web page" (page 115).

Figure 39
Superloops Web page



To view, configure, or edit a Superloop click on the corresponding Superloop Number. The **Superloops Details** Web page appears as shown in Figure 40 "Superloop Details Web page" (page 115)

Figure 40
Superloop Details Web page



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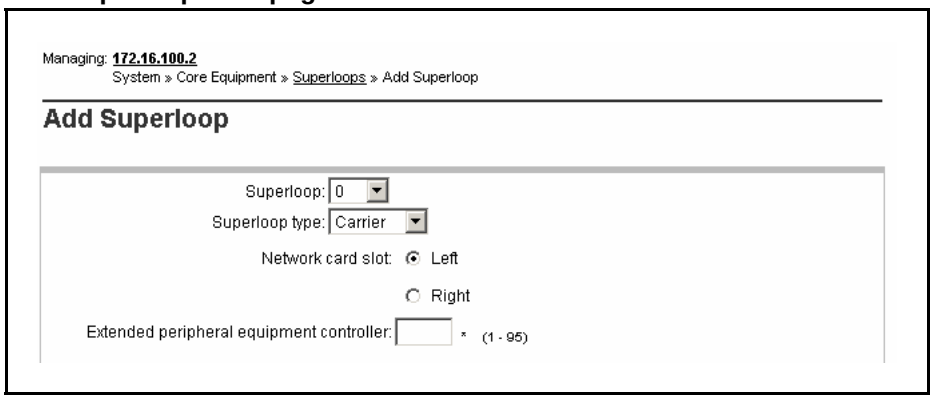
The information entered on this Web page corresponds to the Superloop (SUPL) command available in LD 97 - Configuration Record 2.

To save changes made in the **Superloop Details** Web page, click Save at the bottom.

To add a Superloop, click the Add button on the **Superloops** Web page. The **Add Superloop** Web page appears, as shown in Figure 41 "Add Superloop Web page" (page 116).

Figure 41
Add Superloop Web page



Fill in the appropriate information and click Save to add the new Superloop.

MSDL/MSIP Cards

The Multipurpose Serial Data Link / Multi-Purpose ISDN Signaling Processor (MSDL/MSIP) Cards navigation link appears the **Fast Download Control Web** page, as shown in Figure 42 "Fast Download Control Web page" (page 117).

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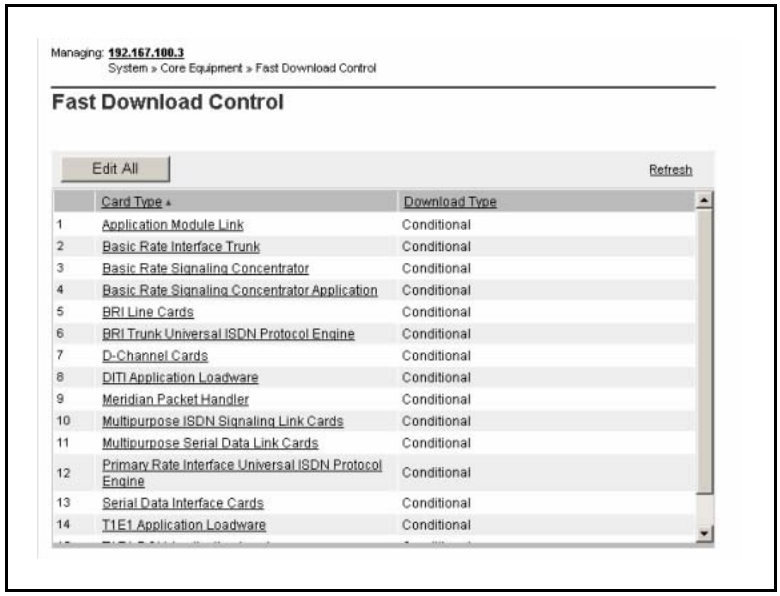
Figure 42
Fast Download Control Web page



The **Fast Download Control** Web page appears only for large systems. The page displays the table with the card type and the download type. The download type for any card can be changed.

To configure download type for a single card, follow the steps in Procedure 77 “Editing Fast Download Control (single card)” (page 117).

Procedure 77
Editing Fast Download Control (single card)

Step	Action
1	From the **Fast Download Control** Web page, click on the card you want to edit. The **Edit** Web page for the selected card appears.
2	Choose the **Download type** from the drop-down menu list.
3	Click **Save** or click **Cancel** to return to the **Fast Download Control** Web page.

--End--

To configure download type for all cards, follow the steps in Procedure 78 “Editing Fast Download Control all cards” (page 117).

Procedure 78
Editing Fast Download Control all cards

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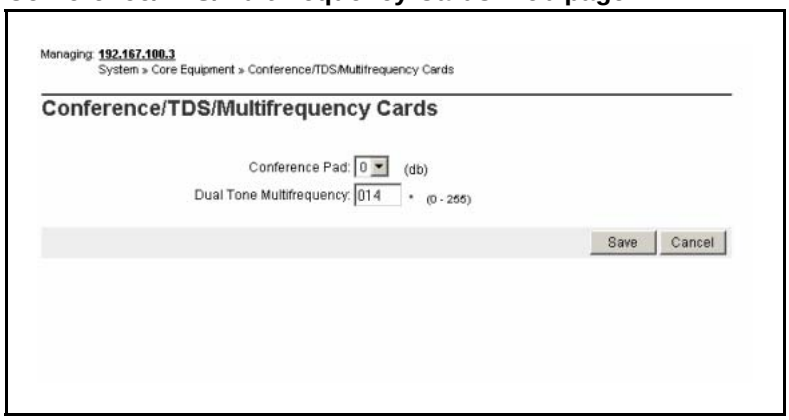
Step	Action
1	From the **Fast Download Control** Web page, click **Edit All** to edit all the cards in the list. The **Edit All** Web page appears.
2	Choose the **Download type** from the drop-down menu list.
3	Click **Save** or click **Cancel** to return to the **Fast Download Control** Web page.

--End--

Conference/TDS/Multifrequency Cards

Click on the **Conference/TDS/Multifrequency Cards** link of the Element Manager Navigator to open the **Conference/TDS/Multifrequency Cards** Web page, as shown in Figure 43 "Conference/TDS/Multifrequency Cards Web page" (page 118).

Figure 43
Conference/TDS/Multifrequency Cards Web page



Select a **Conference Pad** from the list, enter a **Dual Tone Multifrequency** value and click **Save** or click **Cancel** to return to the **System Overview** Web page.

Tone Senders and Detectors

Element Manager supports the configuration of Digitone receivers, Tone Detectors, and Multi Frequency Senders and Receivers. Click the **Core Equipment > Tone Senders And Detectors** link in the **System** branch of the Element Manager navigator. The **Tone Senders And Detectors** Web page appears, as shown in Figure 44 "Tone Senders and Detectors Web page" (page 119).

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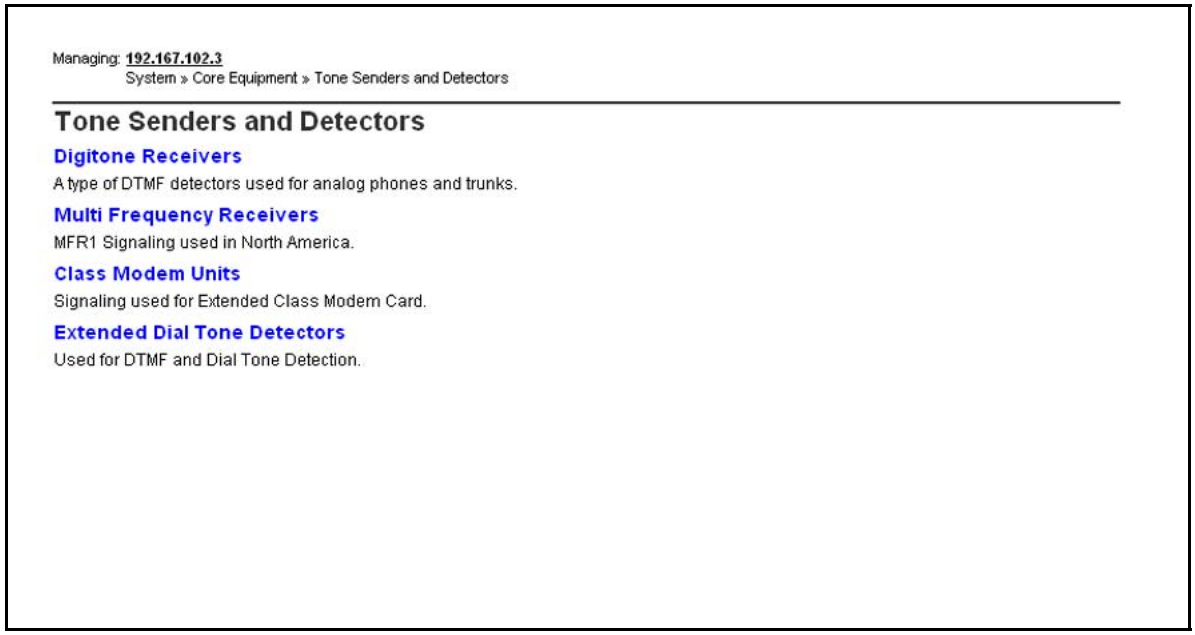
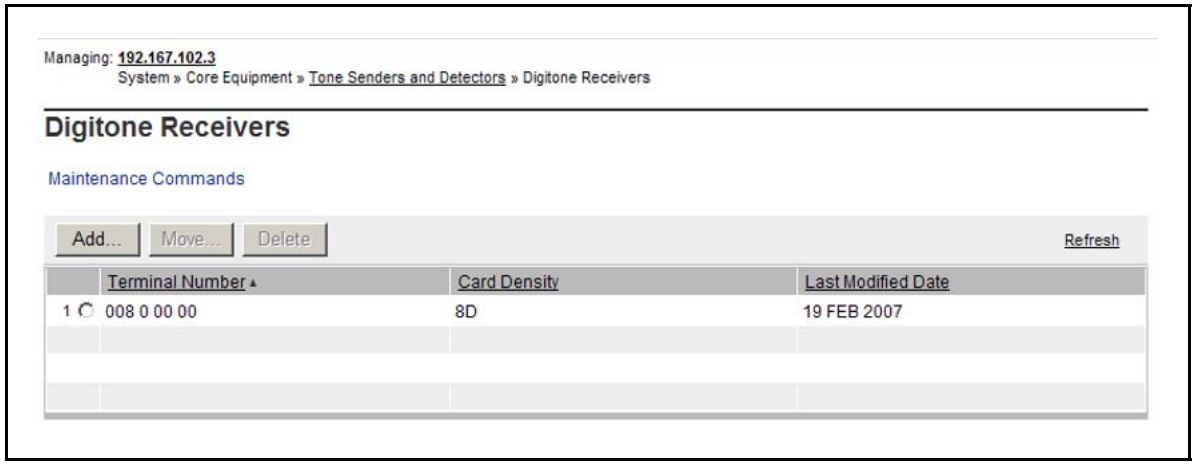
Figure 44
Tone Senders and Detectors Web page



Digitone Receivers

To display details of and to configure Digitone Receivers, from the **Tone Senders And Detectors** Web page, click the **Digitone Receivers** link. The **Digitone Receivers** Web page appears, as shown in Figure 45 "Digitone Receivers Web page" (page 119).

Figure 45
Digitone Receivers Web page



This Web page is used to display details of Digitone Receivers. Users can view, add, delete, and move Terminal Numbers.

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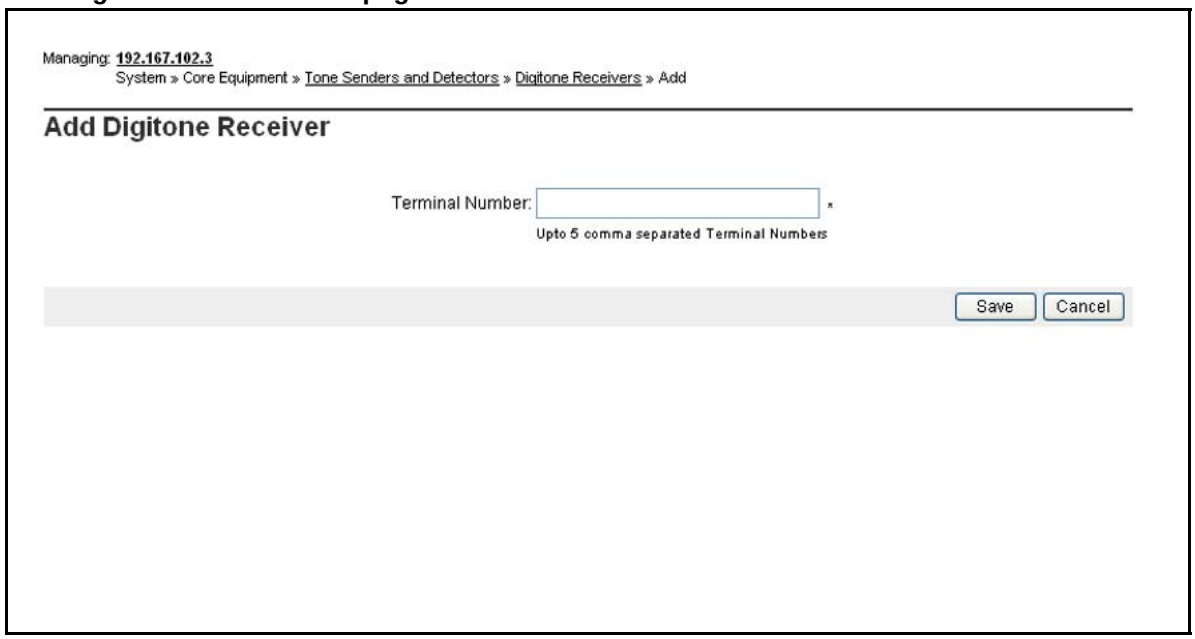
To delete a Digitone Receiver, select the radio button beside the Terminal Number and click **Delete**.

To add a Digitone Receiver, click **Add**. The **Add Digitone Receiver** Web page appears, as shown in Figure 46 "Add Digitone Receiver Web page" (page 120).

Figure 46
Add Digitone Receiver Web page



Enter the Terminal Number of the Digitone Receiver to be added and click **Save**.

To move a Digitone Receiver card from one terminal to another, from the **Digitone Receivers** Web page, select the radio button beside the Terminal Number and click **Move**. The **Move Digitone Receiver** Web page appears, as shown in Figure 47 "Move Digitone Receiver Web page" (page 121).

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Figure 47
Move Digitone Receiver Web page

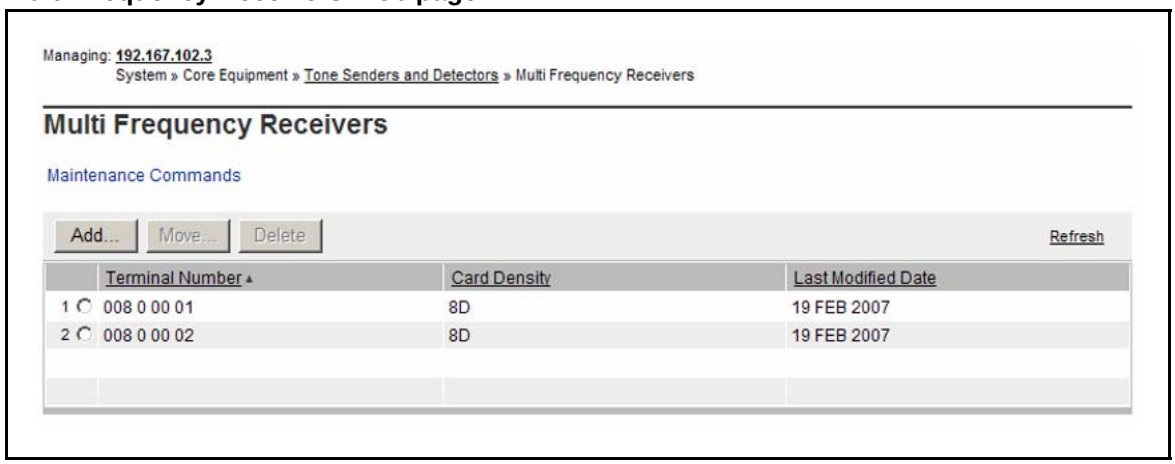
Enter the Destination Terminal Number and click **Save**.

To delete a Digitone Receiver, select the radio button beside the Terminal Number and click **Delete**.

Multi Frequency Receivers

To display details of and to configure Multi Frequency Receivers, from the **Tone Senders And Detectors** Web page, click the **Multi Frequency Receivers** link. The **Multi Frequency Receivers** Web page appears, as shown in Figure 48 "Multi Frequency Receivers Web page" (page 121).

Figure 48
Multi Frequency Receivers Web page



This Web page is used to display details of Multi Frequency Receivers. Users can view, add, delete, and move Terminal Numbers.

To delete a Multi Frequency Receiver, select the radio button beside the Terminal Number and click **Delete**.

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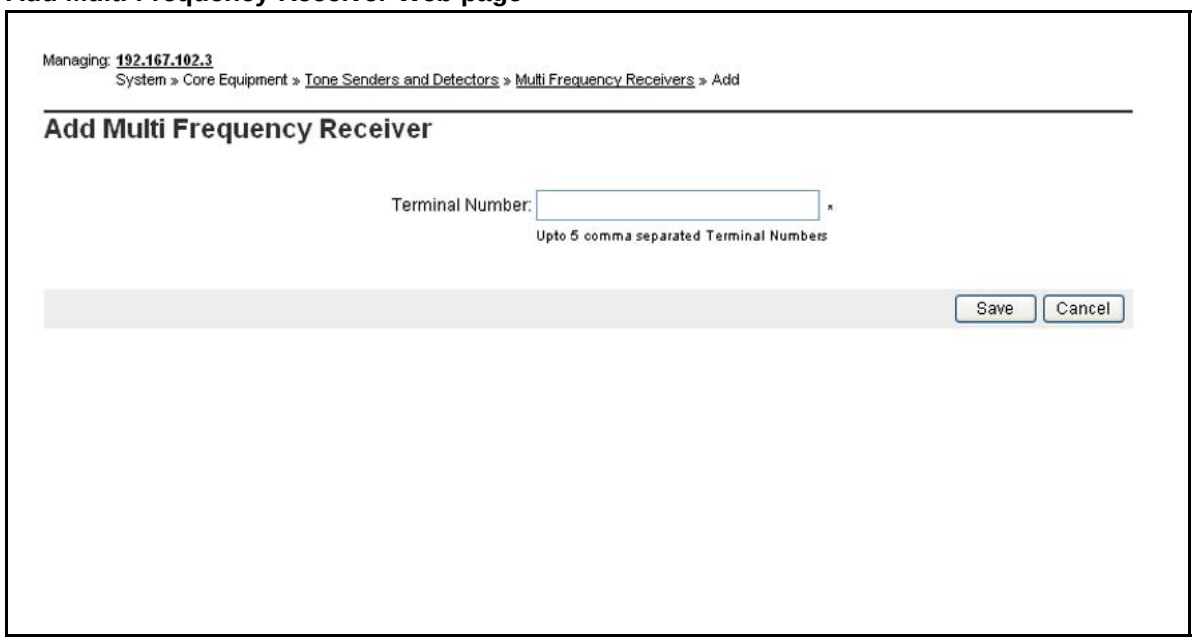
To add a Multi Frequency Receiver, click **Add**. The **Add Multi Frequency Receiver** Web page appears, as shown in Figure 49 "Add Multi Frequency Receiver Web page" (page 122).

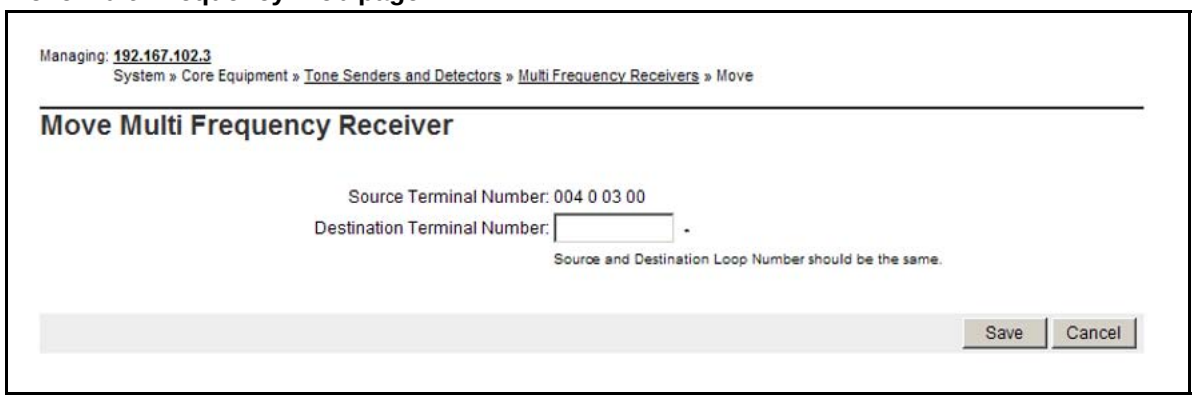
Figure 49
Add Multi Frequency Receiver Web page



Enter the Terminal Number of the Multi Frequency Receiver to be added and click **Save**.

To move a Multi Frequency Receiver card from one terminal to another, from the **Multi Frequency Receivers** Web page, select the radio button beside the Terminal Number and click **Move**. The **Move Multi Frequency Receiver** Web page appears, as shown in Figure 50 "Move Multi Frequency Web page" (page 122).

Figure 50
Move Multi Frequency Web page



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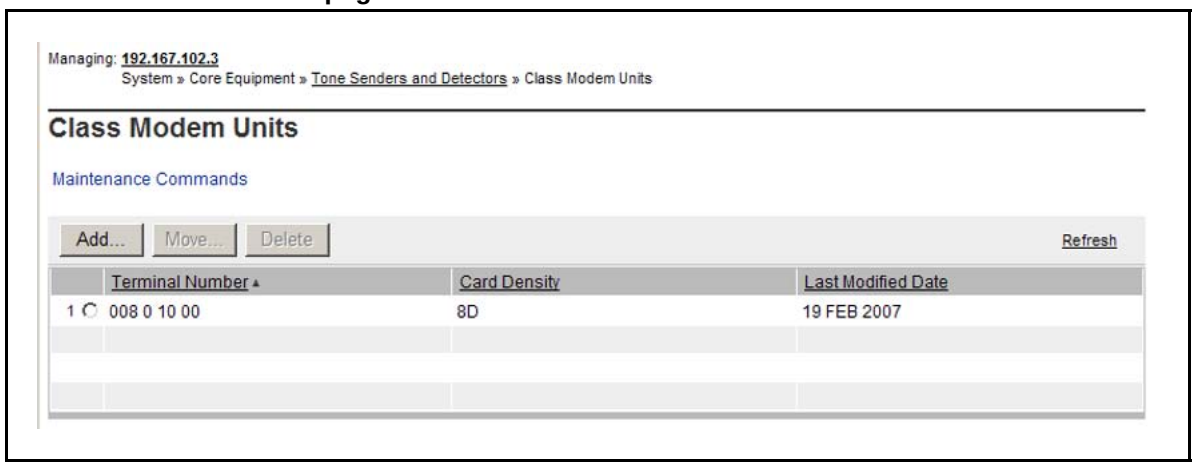
Enter the Destination Terminal Number and click **Save**.

Class Modem Units

To display details of and to configure Class Modem Units, from the **Tone Senders And Detectors** Web page, click the **Class Modem Units** link. The **Class Modem Units** Web page appears, as shown in Figure 51 "Class Modem Units Web page" (page 123).

Figure 51
Class Modem Units Web page



This Web page is used to display details of Class Modem Units. Users can view, add, delete, and move Terminal Numbers.

To delete a Class Modem Unit, select the radio button beside the Terminal Number and click **Delete**.

To add a Class Modem Unit, click **Add**. The **Add Class Modem Unit** Web page appears, as shown in Figure 52 "Add Class Modem Unit Web page" (page 124).

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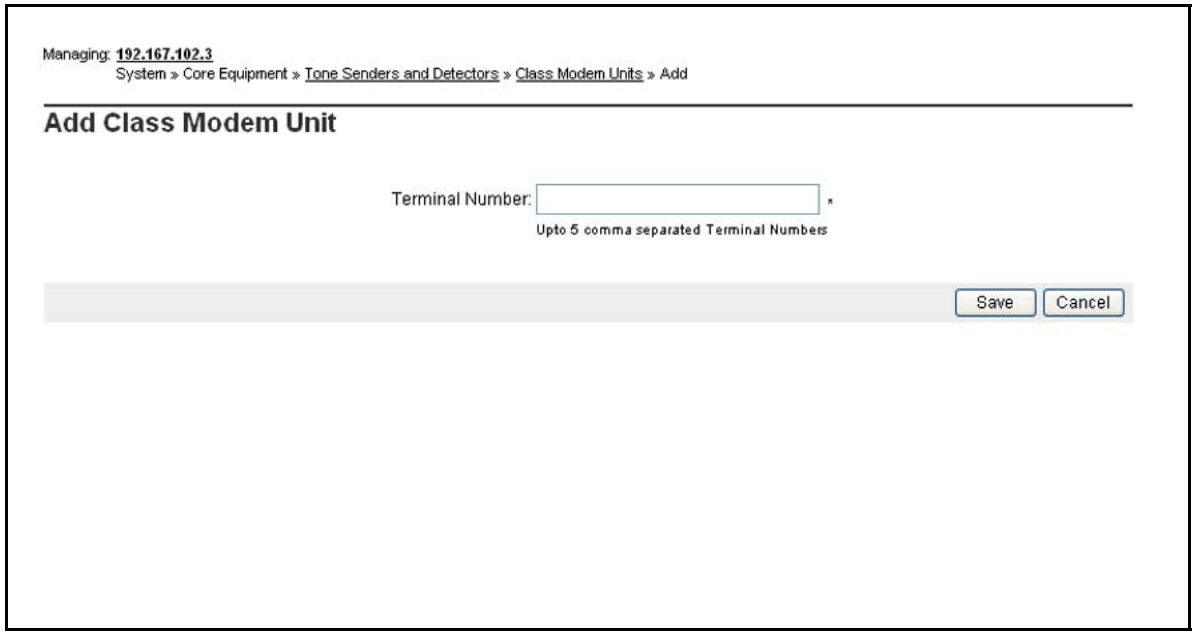
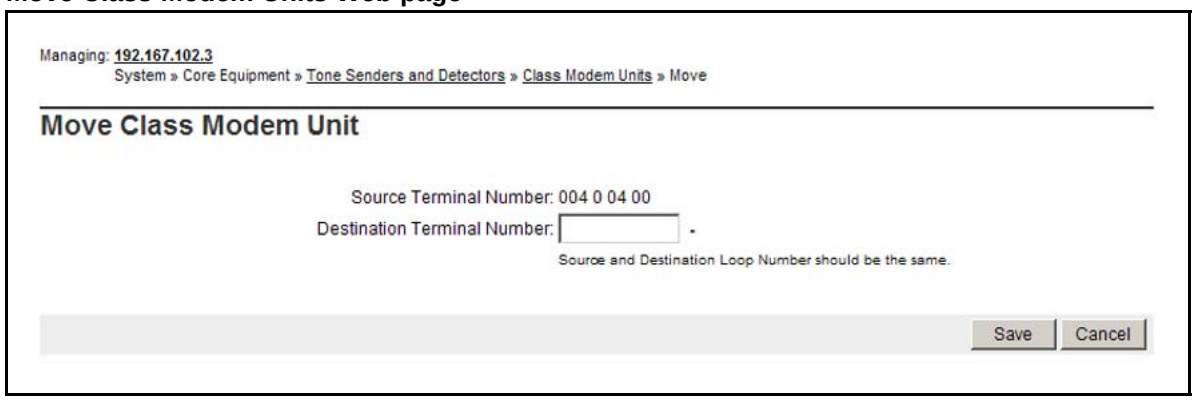
Figure 52
Add Class Modem Unit Web page



Enter the Terminal Number of the Class Modem Unit to be added and click **Save**.

To move a Class Modem Unit card from one terminal to another, from the **Class Modem Unit** Web page, select the radio beside the Terminal Number to move and click **Move**. The **Move Class Modem Units** Web page appears, as shown in Figure 53 "Move Class Modem Units Web page" (page 124).

Figure 53
Move Class Modem Units Web page



Enter the Destination Terminal Number and click **Save**.

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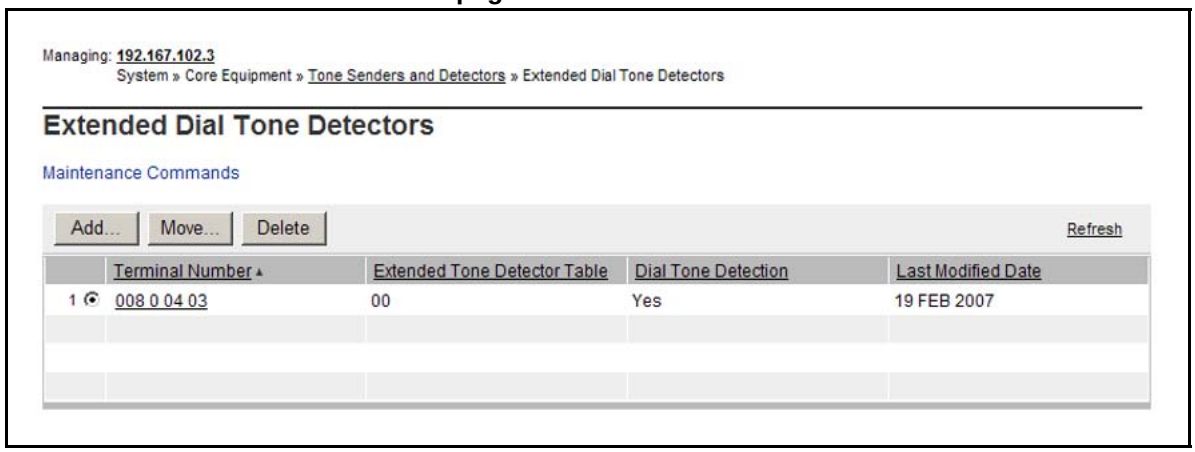
Extended Dial Tone Detectors

To display details of and to configure Extended Dial Tone Detectors, from the **Tone Senders And Detectors** Web page, click the **Extended Dial Tone Detectors** link. The **Extended Dial Tone Detectors** Web page appears, as shown in Figure 54 "Extended Dial Tone Detectors Web page" (page 125).

Figure 54
Extended Dial Tone Detectors Web page



This Web page is used to display details of Extended Dial Tone Detectors. Users can view, add, delete, and move Terminal Numbers.

To delete an Extended Dial Tone Detector, select the radio button beside the Terminal Number and click **Delete**.

To add an Extended Dial Tone Detector, click **Add**. The **Add Extended Dial Tone Detector** Web page appears, as shown in Figure 55 "Add Extended Dial Tone Detector Web page" (page 126).

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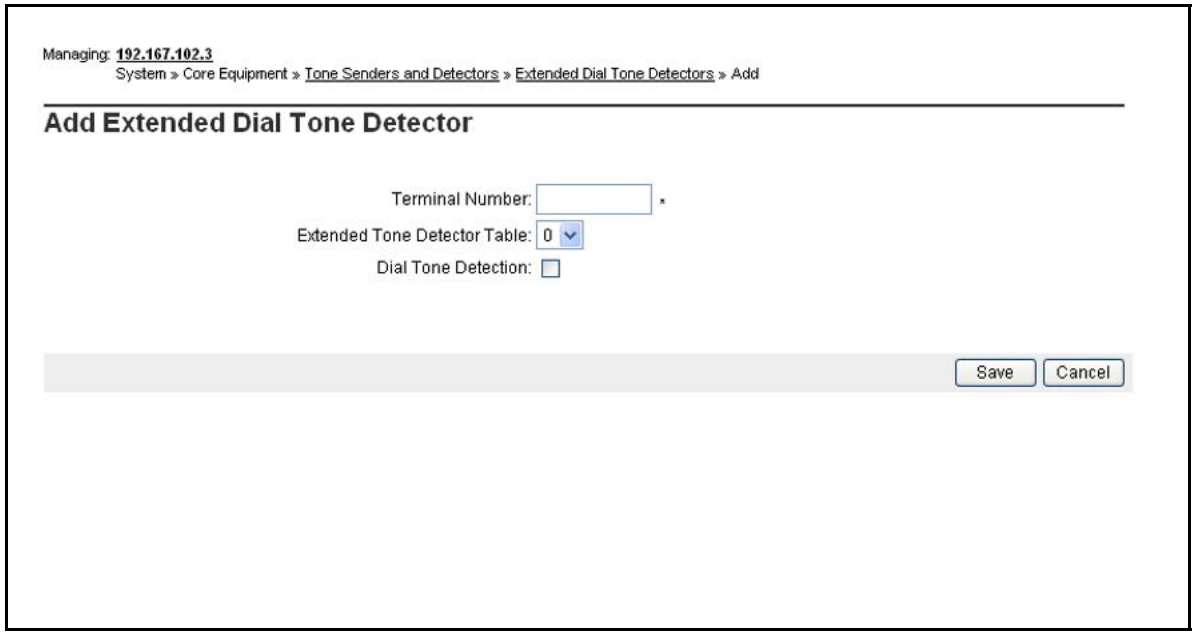
Figure 55
Add Extended Dial Tone Detector Web page



Procedure 79
Adding an Extended Dial Tone Detector

Step	Action
1	Enter the Terminal Number of the Extended Dial Tone Detector.
2	Select the **Extended Tone Detector Table** from the drop-down list.
3	Check the box beside **Dial Tone Detection**, if required.
4	Click **Save**.

--End--

To move an Extended Dial Tone Detector card from one terminal to another, from the **Extended Dial Tone Detectors** Web page, select the radio button beside the Terminal Number to move and click **Move**. The **Move Extended Dial Tone Detectors** Web page appears, as shown in Figure 56 "Move Extended Dial Tone Detectors Web page" (page 127).

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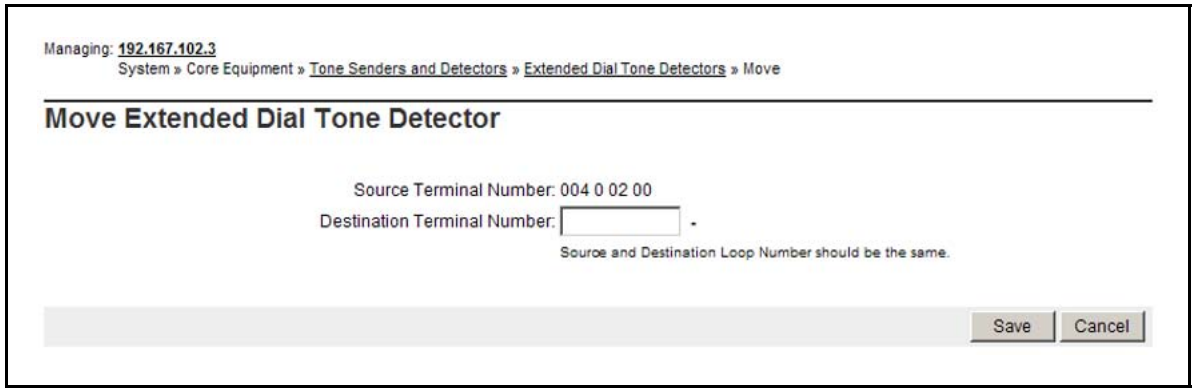
Figure 56
Move Extended Dial Tone Detectors Web page



Enter the Destination Terminal Number and click **Save**.

Peripheral Equipment

The **Peripheral Equipment** Web page displays parameters such as Timers, Multi-Frequency levels, Make-Break ratio.

To view, configure, or edit Peripheral Equipment click the Peripheral Equipment link of the System branch of the Element Manager navigator. The **Peripheral Equipment** Web page appears as shown in Figure 57 "Peripheral Equipment Web page" (page 128).

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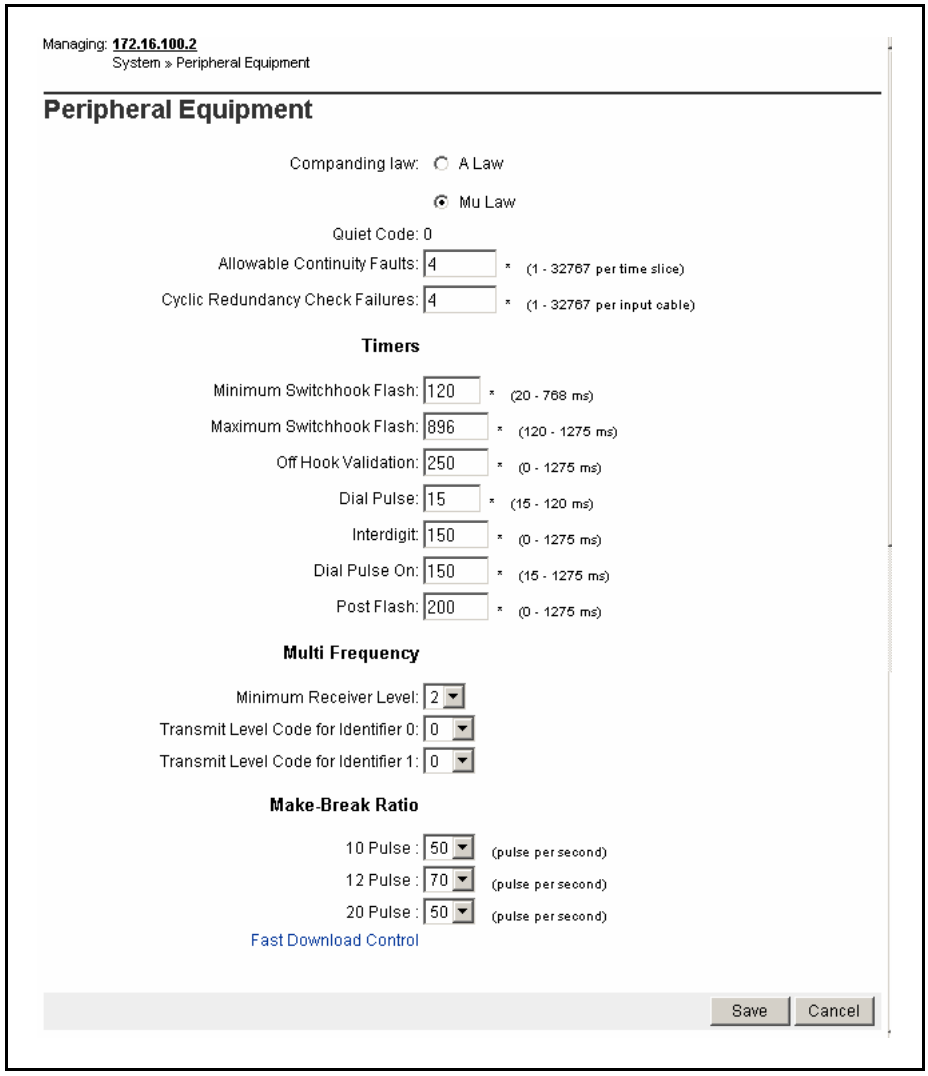
Figure 57
Peripheral Equipment Web page



To configure or edit the Peripheral Equipment, enter the appropriate values and click **Save**. If you enter invalid values, the system displays an error message and the original values are retained. A link for Fast Download Control is provided.

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IP Network

Contents

This section contains information about the following topics:

"Introduction" (page 129)

"IP Network" (page 129)

- "IP Telephony Nodes" (page 129)
- "Media Gateways" (page 146)
- "32 Channel Secure Media Card (MC32S) commands" (page 150)
- "Zones" (page 153)
- "Network Address Translation (NAT)" (page 162)
- "Quality of Service Thresholds (QoS)" (page 163)
- "Personal Directories" (page 166)
- "Unicode Name Directory" (page 166)

"Interfaces" (page 167)

"Engineered Values" (page 172)

"Emergency Services" (page 178)

"Geographic Redundancy" (page 192)

"Software" (page 195)

Introduction

The **IP Network** link of the **System** branch of the Element Manager navigator enables the user to view the version of software that is installed on the elements.

IP Network

IP Telephony Nodes

The Node management in Communication Server 1000 Release 6.0 introduces a new work flow on the User Interface (UI) with Add and Modify functions of the Node. This introduces the Cluster concept, where

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a Cluster represents a group of physical servers that shares the same configuration properties. The same set of services are configured and enabled on all physical servers within a Cluster.

The Nodes also provide scalability (by deploying multiple Nodes) and optionally Load sharing (by distributing processing to other Node members.

Each Node belongs to a Call Server and has a one-to-many relationship with Call Server. The IP Nodes resides on two LAN subnets: ELAN and TLAN.

The Node must have minimum one signalling server as a Node element in order for that Node to be operational. The administrator can add as many servers to be part of the Node and all the Node elements will have the same set of application services enabled. However, only one physical server can be active at a time. This active server can run all the configured services on that physical server, for example, UNIStim LTPS, SIPGw, and H323Gw can all be configured and enabled on the same server. The LTPS application is one exception where several servers can run active instances of LTPS service. The LTPS application does support load sharing.

The SIP Line application in CS 1000 Release 6.0 cannot co-reside with LTPS or any other virtual trunk applications like SIPGw or H323Gw. The Node management interface does not allow the user to configure SIP Line service any other application services.

The gateway application services operate on a service IP address configured to be on the TLAN of the network and this IP address floats between active and standby servers. The standby server takes over this IP address when the active instance goes down. The active and standby roles are dynamically assigned through a service specific election process that runs on the servers.

In CS 1000 Release 6.0, the Centralized Deployment Manager (CDM), deploys software applications from Unified Communication Management (UCM).

The Node management interface adds servers in to a Node from the list of servers that UCM has learned. Before you add the servers to a Node, it is required that the CDM feature deploys the necessary software application to each of the Linux servers.

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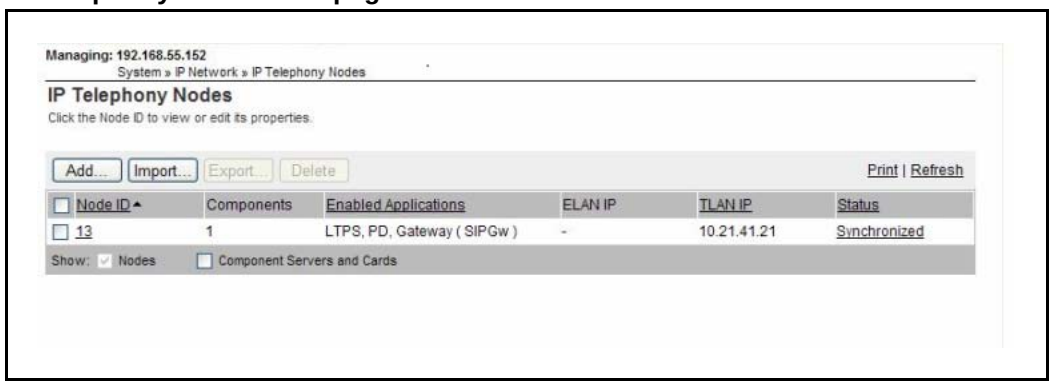
To view the **IP Telephony Nodes** Web page, select the Nodes: Servers, Media Cards link in the IP Network branch of the Element Manager navigator. The IP Telephony Node Web page appears as shown in, Figure 58 "IP Telephony Nodes Web page" (page 131).

Figure 58
IP Telephony Nodes Web page



The **IP Telephony Nodes** Web page appears showing the following information:

- Node ID – the ID number for each node
- Components – the number of components associated to each node
- Deployed Applications –- the applications deployed to each node
- ELAN IP – the IP address for the ELAN
- TLAN IP – the IP address for the TLAN
- Status – the status of the node

The **IP Telephony Nodes** Web page also contains buttons that link to additional Web pages:

- Add - add a new node
- Import - Import a node files
- Export - export a node file
- Delete - delete a node

To view Component Servers and Cards check the Component Servers and Cards box at the bottom of the **IP Telephony Nodes** Web page.

Add a new IP Telephony Node

Click the Add button from the summary page to start the add work flow for creating a new Node to be part of the Call Server where Element Manager is hosted. The **New IP Telephony Node** Web page appears as

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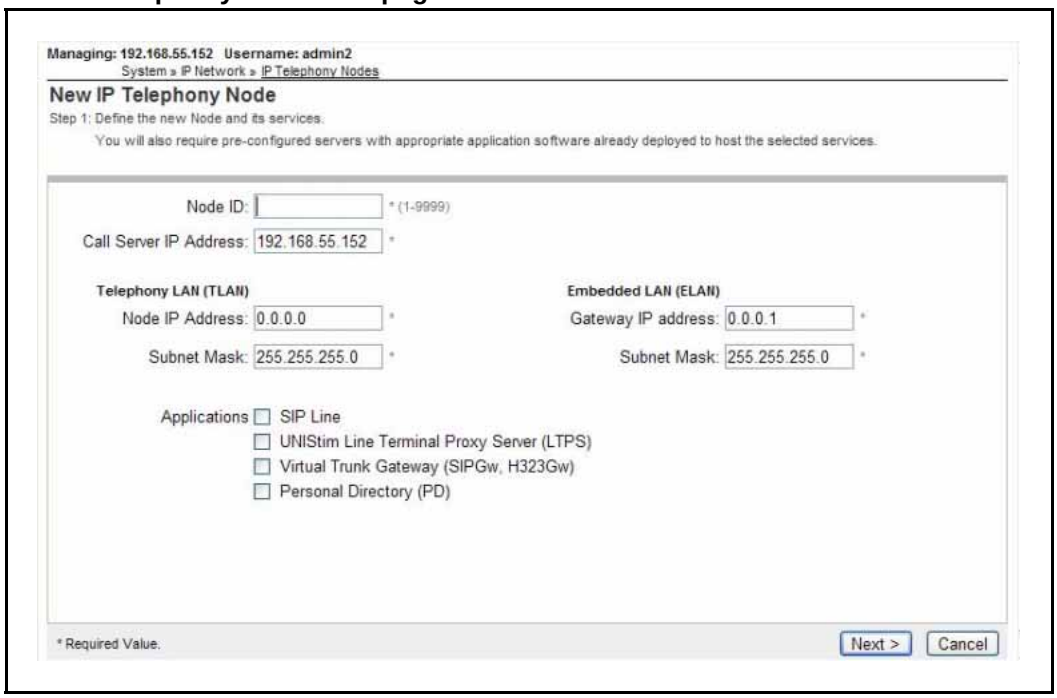
shown in, Figure 59 "New IP Telephony Node Web page" (page 132). For information about adding a new IP Telephony node refer to *Signaling Server IP Line Applications Fundamentals* (NN43001-125).

Figure 59
New IP Telephony Node Web page



Import IP Telephony Nodes file

Use the import functionality to import a local configuration file from a local work station (XML format) or from a Linux signaling server.

In the case of configuration file imported from a local work station, you must enter the configuration parameters in the file in a standard template model. This template follows the same model as the existing config.ini file format. You can enter as much as information to a local file and then import, edit, and save, using the import UI page, on the Call Server just like any IP Telephony Node.

Click the Import button, the **IP Telephony Import** Web page appears as shown in, Figure 60 "Import IP Telephony Nodes Web page" (page 133). The options for the import operation are displayed in the **IP Telephony Import** Web page, the options are import from an XML file stored on local work station or import from a Leader server that is already part of a Node.

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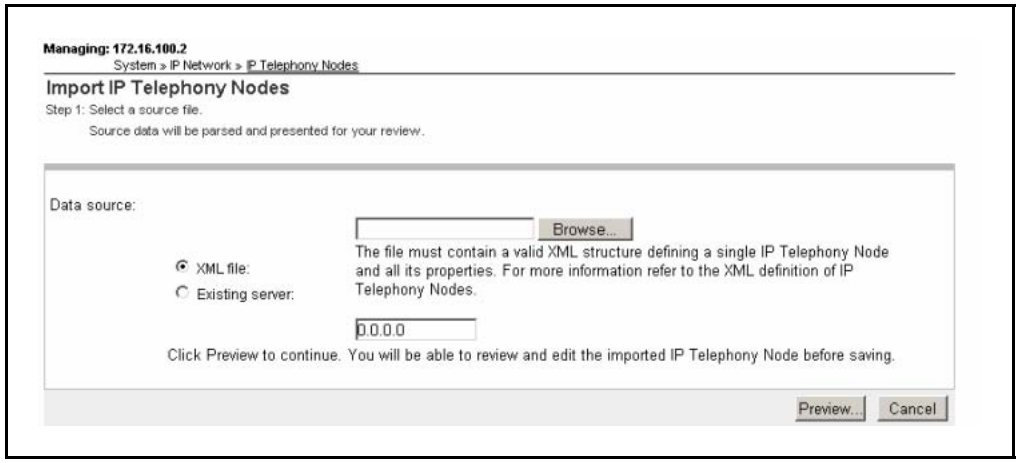
Figure 60
Import IP Telephony Nodes Web page



The selected XML file that is selected to import goes through two sets of validations before the file can be saved on to the system:

- An invalid XML file format is determined when you click the Preview button to preview the content, the UI will be displayed with a message indicating invalid XML file.
- If the file is valid, the next set of validations make sure that the content inside passes the filed and dependency validations. This validation is determined when you click the Save button to save the configuration to the Call Server.

Export IP Telephony Node file

You can export a previously configured IP Telephony Node to an XML file format and save it to a local desktop. The Export function is limited to one selected Node at a time. If you select more than one node, the Export button remains disabled.

To export a IP Telephony Node to an XML file select a Node on the **IP Telephony Nodes** Web page and click Export. The export saves the configuration files in an XML format file as shown in Figure 61 "Export IP Telephony Node file" (page 134).

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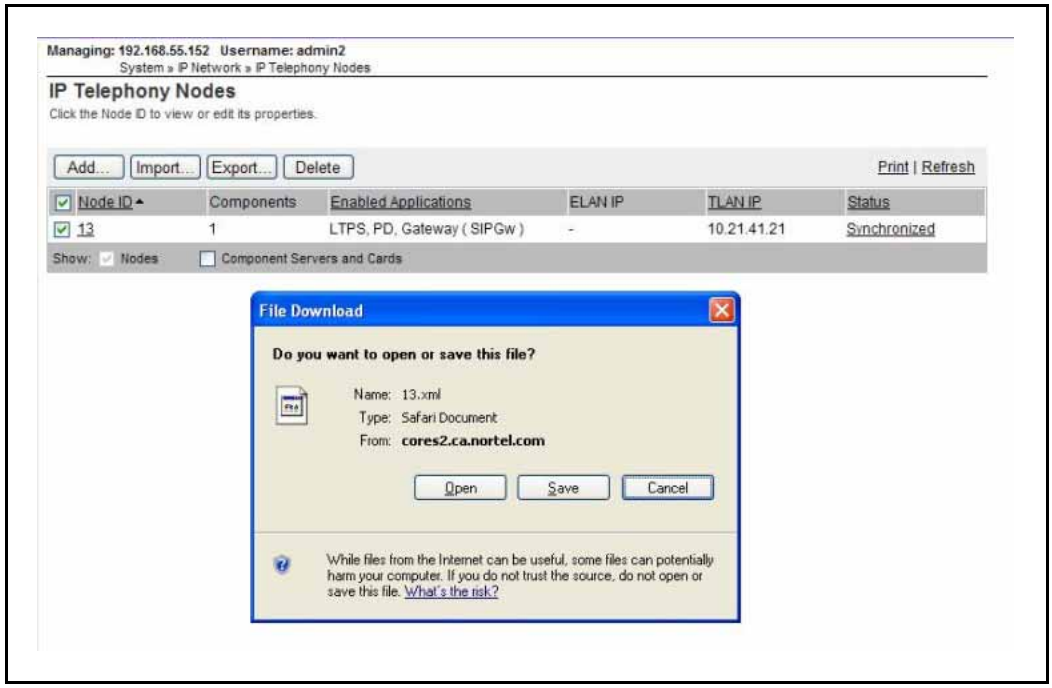
Figure 61
Export IP Telephony Node file



Delete an IP Telephony Node

To delete an IP Telephony Node select, the Node and click the **Delete** button. A confirmation window appears.

Node Details

Click the Node ID to view or edit the properties of the node. The **Node Details** Web page for the Node selected appears as shown in, Figure 62 "Node Details Web page" (page 135).

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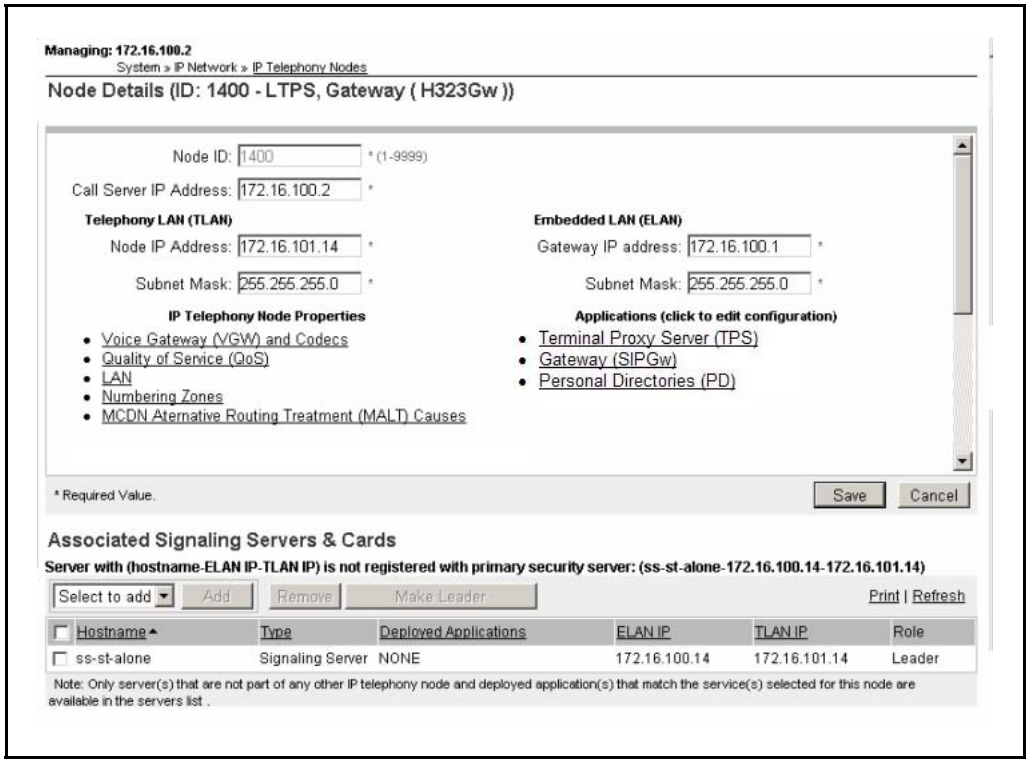
Figure 62
Node Details Web page



The **Node Details** Web page is organized to list the IP Telephony common Node properties on the left side of the page and Application Service sections are on the right side. These appear as links that you can click to dispay in to the configuration parameter page. For example clicking the **Voice Gateway (VGW) and Codecs** link displays in to the **Voice Gateway (VGW) and Codecs** Web page as shown in, Figure 63 "Voice Gateway (VGW) and Codecs Web page" (page 136).

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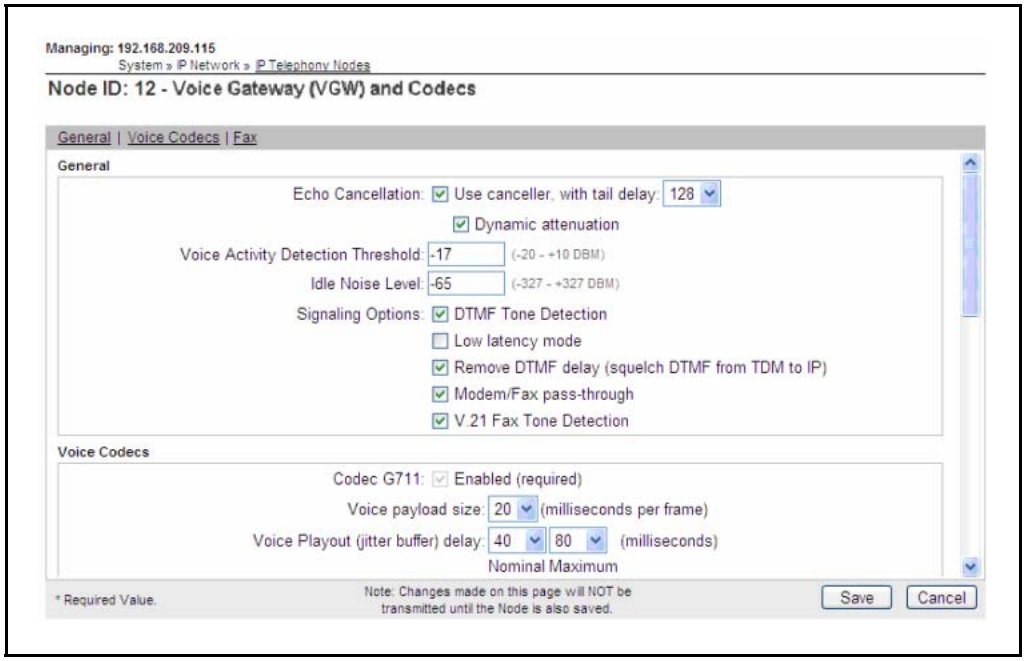
Figure 63
Voice Gateway (VGW) and Codecs Web page



Click the Save or Cancel to return you to the **Node Details** Web page. When you save on the **Voice Gateway (VGW) and Codecs** Web page saves only the codec parameters, you must click the Save button on the **Node Details** Web page to save the complete Node property.

You can configure the following IP Telephony Node Properties by clicking on the appropriate link on the **Node Details** Web page:

- Voice Gateway (VGW) and Codecs
- Quality of Service (QOS)
- LAN
- Numbering Zones
- MCDN Alternate Routing Treatment (MALT) Causes

You can configure the applications associated to the Node by clicking the appropriate link on the **Node Details** Web page. The applications associated to a Node appear on the left and can include applications such as the following:

- Terminal Proxy Server (TPS)
- Gateway (H323Gw or SIPGw)
- SIP Line

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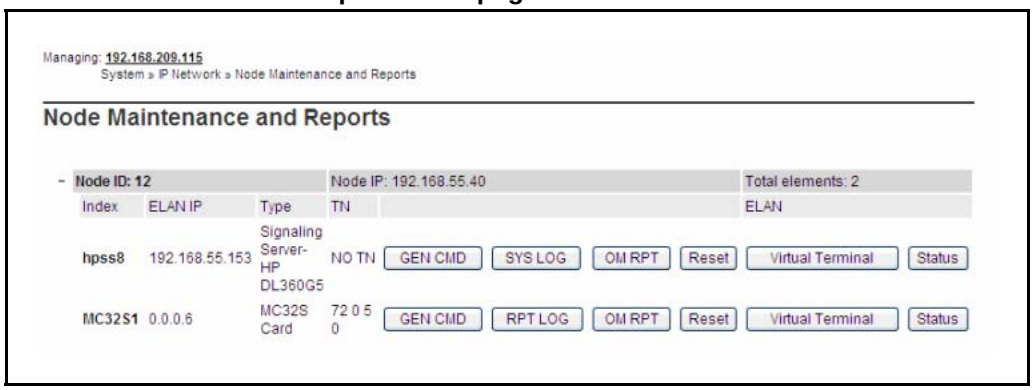
- LTPS
- Personal Directories (PD)

For complete information about IP Telephony Nodes configuration see, *Signaling Server IP Line Applications Fundamentals* (NN43001-125), *SIP Line Fundamentals* (NN43001-508), *Dialing Plans Reference* (NN43001-283), and *IP Peer Networking Installation and Commissioning* (NN43001-313).

Nodes: Servers, Media Cards

Click the **IP Network > Maintenance and Reports** link in the **System** branch of the Element Manager navigator to open the **Node Maintenance and Reports** Web page, as shown in Figure 64 "Node Maintenance and Reports Web page" (page 137).

Figure 64
Node Maintenance and Reports Web page



This Web page contains information about configured Signaling Servers and IP Telephony cards and is arranged by node. Click the **plus sign** (+) beside the Node ID number to view the elements assigned to the node.

For more information about IP Telephony, see *Signaling Server IP Line Application Fundamentals (NN43001-125)*.

Six buttons are located to the right of the TN column for each IP Telephony element:

- **GEN CMD** — Launches the **General Commands** Web page.
- **RPT LOG** — Launches the **Report Utility** Web page.
- **SYS LOG** — Launches the System log file Web page for Signaling Servers.
- **OM RPT** — Launches the **Operational Management Report** Web page.

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- **Reset** — Resets the element.

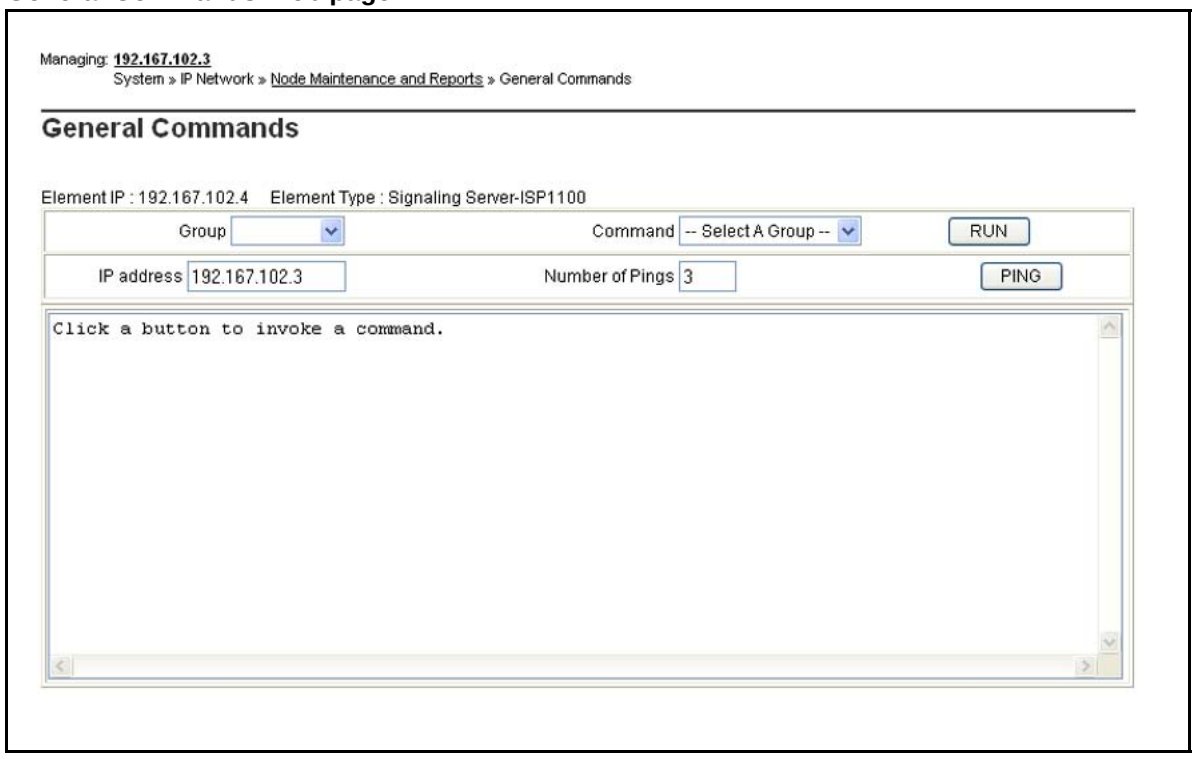
  Note: When resetting the Signaling Server on which the Web server is located, wait approximately five minutes before logging in again.

- **Virtual Terminal** — Opens a Telnet connection to the element over the Telephony Local Area Network (TLAN) subnet using the element's IP Address.
- **Status** — Displays the status of the element.

General Commands

Click the **GEN CMD** button, located beside the information for an IP Telephony element as shown in Figure 64 "Node Maintenance and Reports Web page" (page 137), to open the **General Commands** Web page for that element. See Figure 65 "General Commands Web page" (page 138).

Figure 65
General Commands Web page



From this Web page, users can issue commands to selected groups.

To issue an IP Line application command:

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Step	Action
1	Select a group from the left-hand **Group** drop-down list. The corresponding commands for that group display in the **Command** drop-down list.
2	Select a **Command** from the **Command** drop-down list.
3	Click **Run**. The results appear in the box at the bottom of the Web page.
	--End--

Detailed procedures for issuing General Commands can be found in *Signaling Server IP Line Application Fundamentals (NN43001-125)*.

Commands related to the node password include:

- nodePwdDisable — disables the node password
- nodePwdEnable — enables the node password
- nodePwdShow — displays the node password
- nodeTempPwdClear — clears the temporary node password
- nodePwdSet — sets the node password
- nodeTempPwdSet — sets the temporary node password

Passwords must conform to certain compositional rules.

To set the node password:

Step	Action
1	Select **nodePwd** from the **Group** drop-down list.
2	Select **nodePwdSet** from the **Command** drop-down list.
3	Enter the password in the **Node Password** text box. The password must be 6 - 14 characters in length. Valid entries are digits 0 through 9, and special character *.
4	Click **RUN**. If a non-zero length password is configured, all IP Phones that attempt to register after the password is set display a prompt

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requesting the node password before enabling the TN to be modified.

--End--

A temporary node password can be configured to give temporary user access to the TN for configuration. A temporary node password removes the need to distribute the node password and the requirement to change it afterwards. The temporary node password automatically deletes itself after it has been used the defined number of times or when the duration expires, whichever comes first.

To set a temporary node password:

Step	Action
1	Select **nodePwd** from the **Group** drop-down list.
2	Select **nodeTempPwdSet** from the **Command** drop-down list.
3	Enter the temporary password in the **Node Password** text box. The password must be 6 - 14 characters in length. Valid entries are digits 0 through 9, and special character *.
4	Enter the number of times that you want to enable the temporary password to be used in the **Uses** text box (maximum is 1000 times).
5	Enter the duration, in hours, for the temporary password in the **Timeout** text box (maximum is 240 hours).
6	Click **RUN**.

--End--

From the **General Commands** Web page, any IP address can be pinged from this element. The default IP address is the address of the Call Server.

To ping an IP address:

Step	Action
1	Verify that the entry in the IP address text box is correct.
2	Enter the number of pings that to send in the **Number of Pings** text box.

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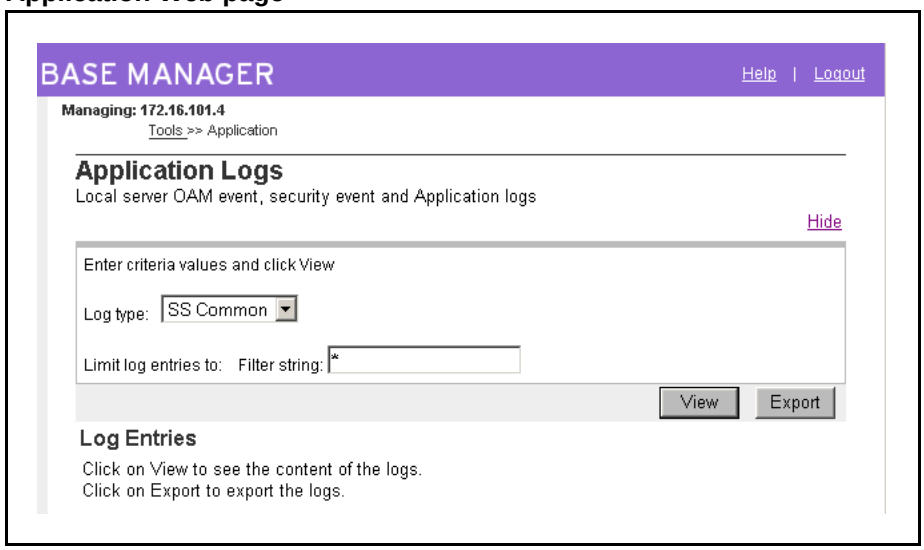
3 Click **Ping**.

--End--

System Log

Click the **SYS LOG** button, located beside the information for the Signaling Server, to open the **Application Logs** Web page for the Signaling Server, as shown in Figure 66 "Application Web page" (page 141). The Application logs are part of the Base Manager.

Figure 66
Application Web page



Element Manager redirects you to Base Manager to run the System Log for the Signaling Server. For more information about Application Logs and accessing Base Manager refer to *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315) and *Unified Communications Management Common Services Fundamentals* (NN43001-116).

Signaling Server commands

Element Manager provides support for executing Signaling Server command line interface (CLI) maintenance commands.

To run Signaling Server commands from Element Manager, select the **Maintenance and Reports** link in the IP Network branch of Element Manager navigator. The **Node Maintenance and Reports** Web page appears as shown in, Figure 64 "Node Maintenance and Reports Web page" (page 137).

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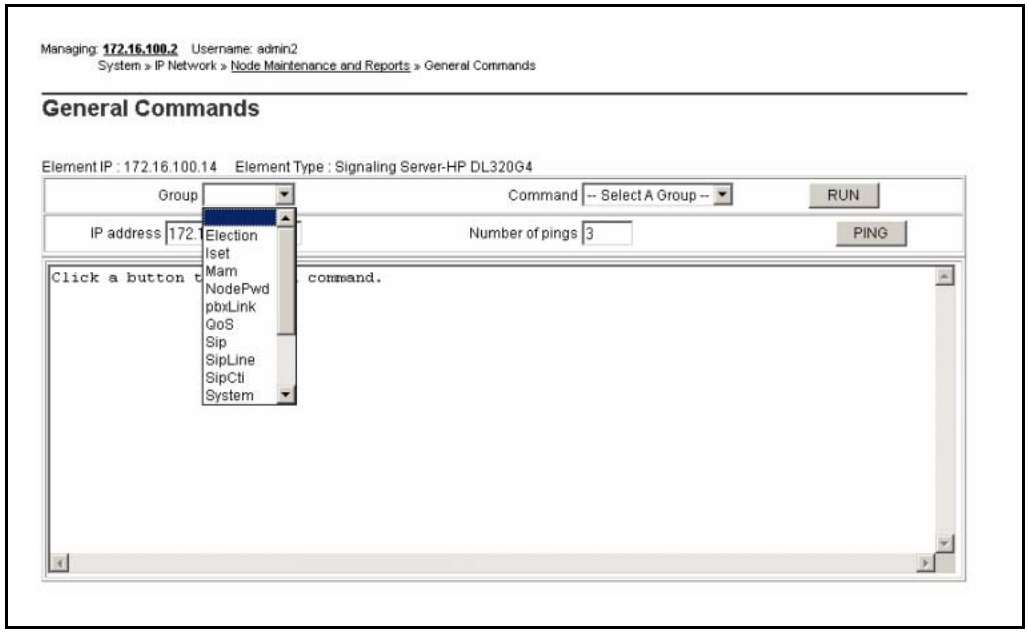
Procedure 80
Running Signaling Server commands

Step	Action
1	Choose a Signaling Server and click **GEN CMD** . The **General Commands** Web page appears. See, Figure 67 "Signaling Server General Commands" (page 142).
2	Select the Signaling Server CLI command group that you want to access from the **Group** drop-down list.
3	Choose a command from the **Command** drop-down list.
4	Click **Run** to execute the command.

--End--

Figure 67
Signaling Server General Commands



For a list of available Signaling Server commands that can be run using Element Manager, refer to *Software Input Output Reference — Maintenance* (NN43001-711).

Operational Measurement Reports

The **OM** (Operational Measurement Report) **RPT** button enables users to view OM information. Click the **OM RPT** button, located beside information for an IP Telephony element as shown in Figure 64 "Node Maintenance and Reports Web page" (page 137), to open the **OM Reports** Web page for that element, as shown in Figure 68 "OM Reports Web page" (page 143).

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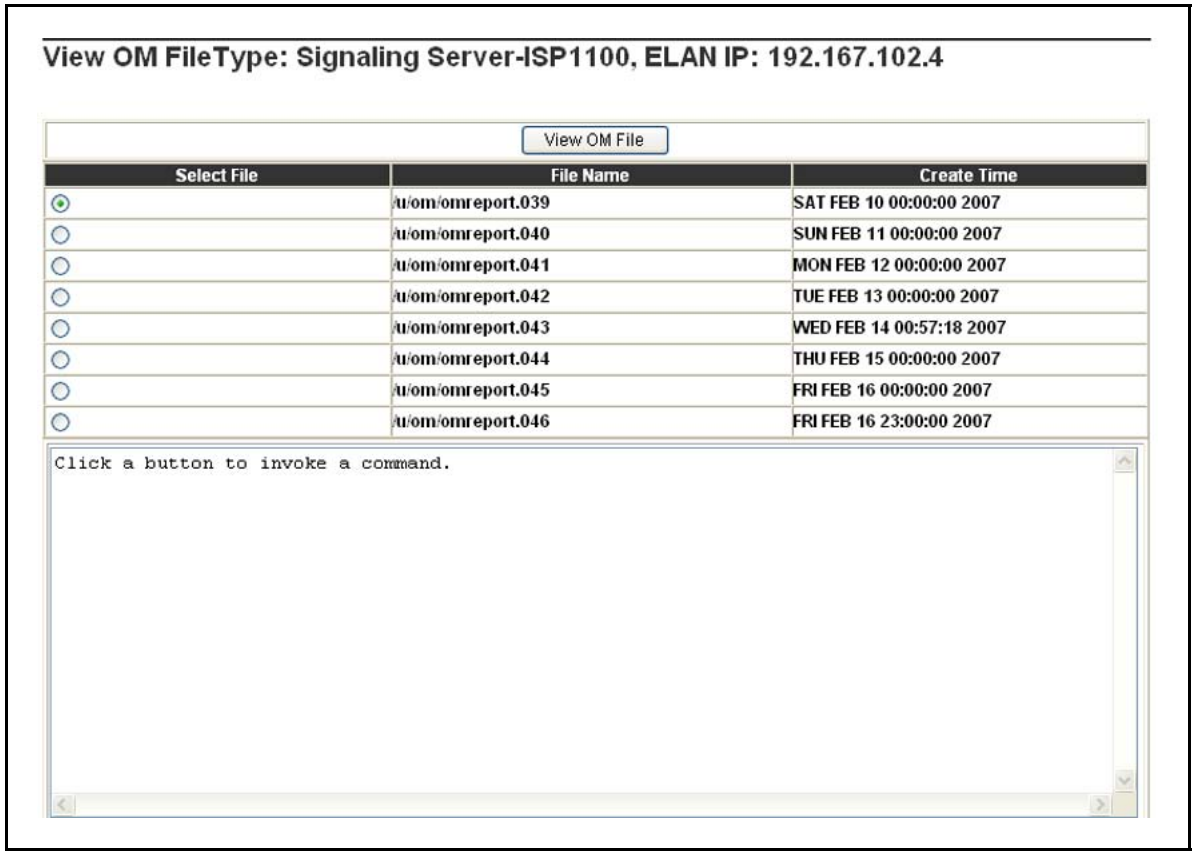
Figure 68
OM Reports Web page



To view an OM Report file:

Step	Action
1	In the Select File column, click the option button beside the OM Report to be viewed. ***Note:*** The limit of OM Report files is eight. Only the eight most recent OM Report files are available on the system.
2	Click **View OM File**.

--End--

The contents of the file appear in the box at the bottom of the Web page.

Virtual Terminal

The Virtual Terminal is an integral part of the enhanced navigation tools for Element Manager.

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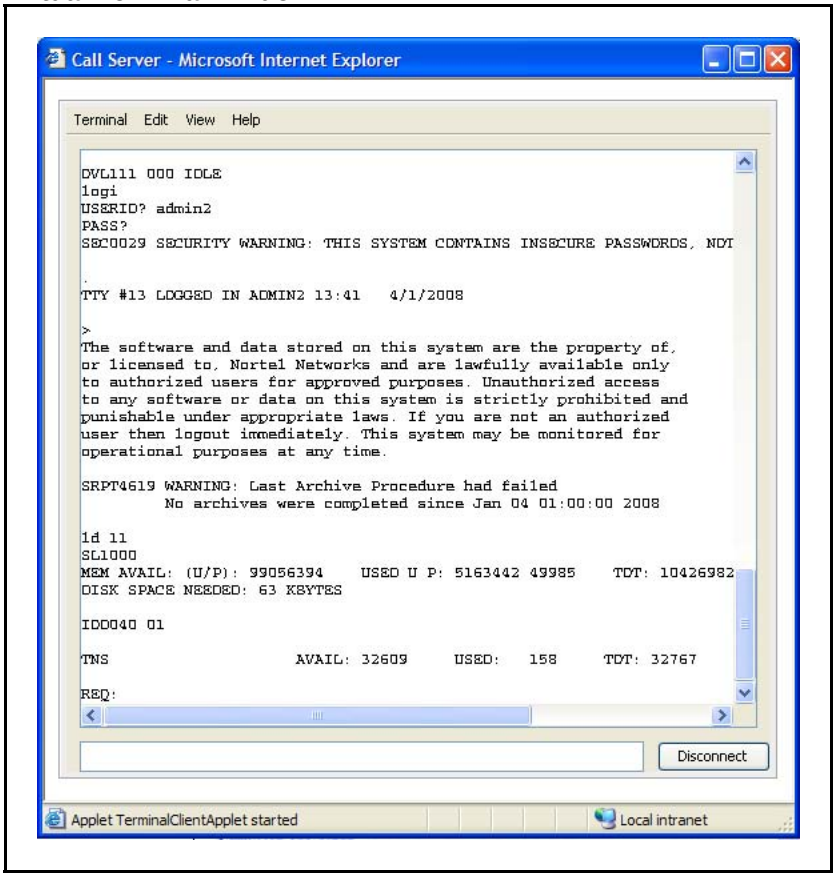
Click the **Virtual Terminal** button on the **Node Maintenance and Reports** Web page to open the **Virtual Terminal** window, as shown in Figure 69 "Virtual Terminal window" (page 144).

Figure 69
Virtual Terminal window



The Virtual Terminal is a Web-based window that enables access to the character-based interfaces supported by the components of the CS 1000system, including all overlays not supported by Element Manager Web pages. The Virtual Terminal can also be used to add new links to the system components or other Element Manager servers using the Bookmarks feature.

ATTENTION
Virtual Terminal requires the Java Runtime Environment (JRE).

To access the Virtual Terminal for a particular IP device:

Step	Action
1	Choose the IP device you want to access on the **Node Maintenance and Reports** Web page.

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2 Click the **Virtual Terminal** button beside that node.

3 Enter the user name and password.

--End--

For more information about accessing and using the Virtual Terminal, refer to “Virtual Terminals” (page 31).

Meridian Alternate Routing and Vacant Number Routing Causes

This feature deals with Vacant Number Routing (VNR) calls at the CS 1000 that is routed over H323/SIP. Assume that the call fails to route to the destination (for example, with reason: No entry present in the NRS/SPS or due to rejection from the destination side). With this development, the call gets disconnected with a cause which matches one of the Meridian Alternate Routing (MALT) cause codes, or disconnects with an indication to “use MALT”. Based on this information, MALT is performed at the Call Server to retry the call using an alternate route. If MALT exhausts all the MALT routes in the VNR Route List Index then the treatment corresponding to the disconnect cause is provided.

If the call clearing message has the cause as ‘unassigned number’ or ‘invalid Number format’ in all the accessed entries of the VNR RLI, then vacant number treatment will be provided.

With the default MALT handling, there are six causes which perform MALT at the CS1K:

- 3 – No route to destination
- 27 – Destination is out of service
- 34 – No circuit or channel available
- 38 – Network out of service
- 41 – Temporary failure
- 42 – Switching equipment congestion

A configurable option is provided in Element Manager for the different vendors (subdivided into “all Nortel Component” and “third party”, but potentially extensible, should the need be identified) in order to configure causes (other then MALT causes) to do MALT at CS 1000. The EM provisions the below causes to be configured to perform MALT. The unassigned number cause will be by default configured to perform MALT for Nortel and Third Party vendors.

- 01 – unassigned number
- 20 – subscriber absent

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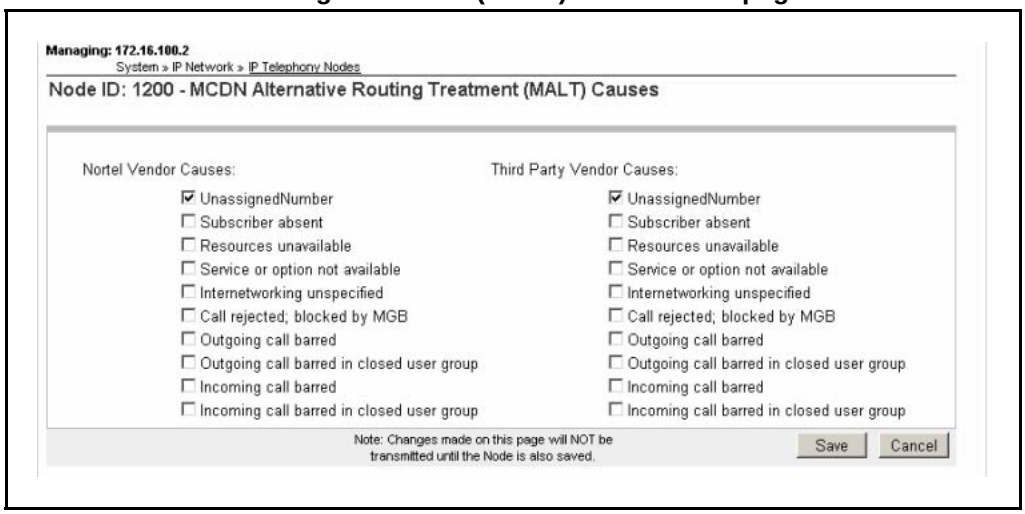
- 47 – Resources unavailable
- 51 – Call rejected; blocked by MBG
- 52 – Outgoing call barred
- 53 – Outgoing call barred in closed user group
- 54 – Incoming call barred
- 55 – Incoming call barred in closed user group
- 63 – service or option not available
- 127 – Interworking unspecified

To configure MALT, click the **IP Network > Nodes: Severs, Media Cards** link in the **System** branch of the Element Manager navigator. The **IP Telephony Nodes** Web page appears. Click the **Node ID** of the node you want to configure and select the **MCDN Aternative Routing Treatment (MALT) Causes** hyperlink, the **MCDN Aternative Routing Treatment (MALT) Causes** Web page appears as shown in Figure 70 "MCDN Aternative Routing Treatment (MALT) Causes Web page" (page 146).

Figure 70
MCDN Aternative Routing Treatment (MALT) Causes Web page



Media Gateways

To access Media Gateways in Element Manager select the **Media Gateways** link in the IP Network branch of Element Manager navigator. The **Media Gateways** Web page appears, as shown in Figure 71 "Media Gateways Web page" (page 147).

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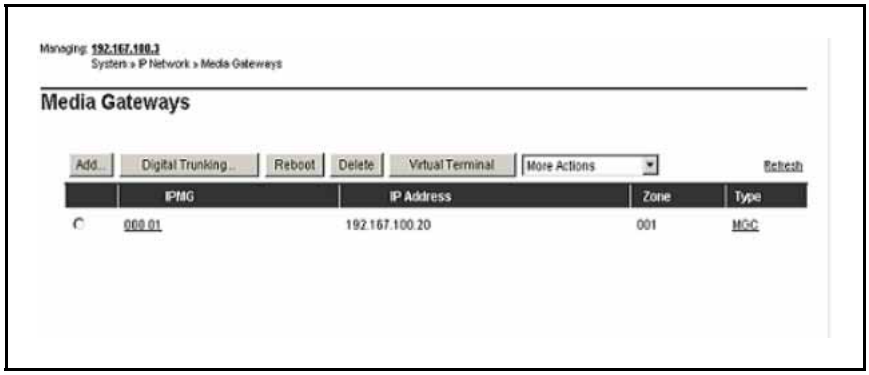
Figure 71
Media Gateways Web page



Media Gateway configuration

To view or configure the current settings of a Media Gateway Controller, select the **Media Gateways** link in the IP Network branch of Element Manager navigator. For information about the configuration of the Media Gateway Controller, refer to *Communication Server 1000E Installation and Commissioning* (NN43041-310), *Communication Server 1000E - Upgrades* (NN43041-458), and *Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310).

Media Gateway Controller commands

Element Manager provides support for executing the Media Gateway Controller (MGC) command line interface (CLI) maintenance commands.

Note: Not all MGC commands are supported from Element Manager as they affect basic system configuration parameters and are used by the system administrator to closely monitor the system using serial connection.

The following MGC CLI command groups are supported from Element Manager:

- General — General purpose commands
- System — MGC platform administration and maintenance commands
- Voice Gateway —- Voice Gateway application administration and maintenance commands
- Special — Special purpose PDT commands
- Security —- Intra-system and cryptographic key support commands

To run MGC commands from Element Manager, select the **Media Gateways** link in the IP Network branch of Element Manager navigator. The **Media Gateways** Web page appears. See, Figure 71 "Media Gateways Web page" (page 147).

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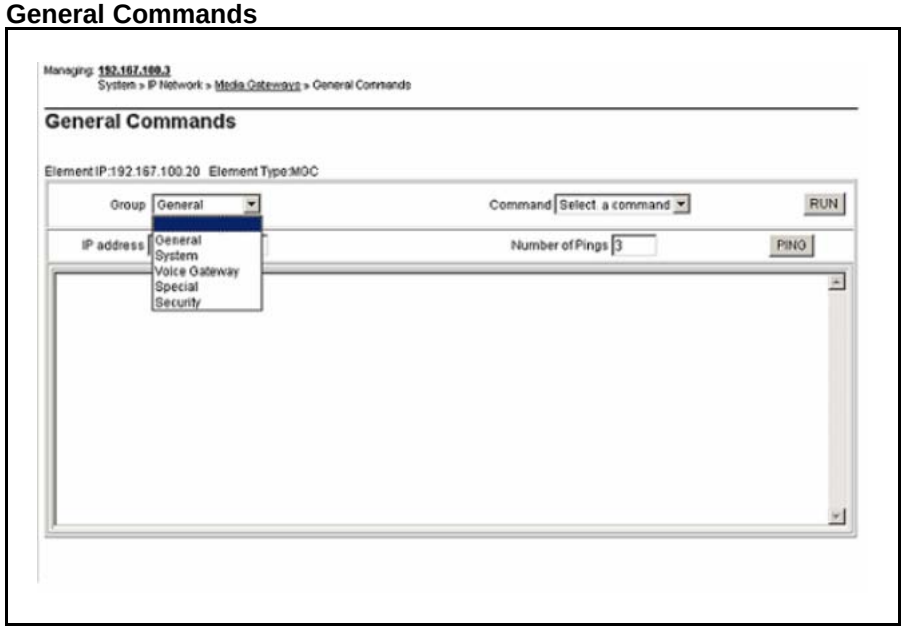
Procedure 81
Running MGC commands

Step	Action
1	Choose an MGC and select General Commands from the More Actions drop-down list. The **General Commands** Web page appears. See, Figure 72 "General Commands" (page 148).
2	Select the MGC CLI command group that you want to access from the **Group** drop-down list.
3	Choose a command from the **Command** drop-down list.
4	Click **Run** to execute the command.

--End--

Figure 72
General Commands



For a list of available MGC commands that can be run using Element Manager, refer to*Software Input Output Reference — Maintenance* (NN43001-711).

MGC Report logs

To generate MGC report logs from Element Manager, select the **Media Gateways** link in the IP Network branch of Element Manager navigator. The **Media Gateways** Web page appears. Choose an MGC and select **Report Log** from the **More Actions** drop-down list. The **MGC Report Log** Web page appears, as shown in Figure 73 "MGC Report Logs Web page" (page 150).

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The following buttons at the top of this Web page provide one-click access to the following functions:

- RDSCONVERT — Convert a report log file to text
- RDPREV — Open the previous log file
- RDNEXT — Open the next log file
- RDOPEN — Open the latest report file
- RDSHOW — Show a summary of the report file
- RDTAIL — Show x records up to the newest record in the report file (where x is the configured display size).
- RDHEAD — Show x records starting from the oldest record in the report file (where x is the configured display size).

To view selected detail data on records in the report file, use the text boxes, the drop-down lists, and the following buttons:

- RDGO — Displays the record specified in the adjacent text box (where -1 is the oldest record and 1000 is the most recent).
- RD — Browses the report records. Enter the number of records to skip and the number of records to display in the adjacent text boxes.
- RDS — Browses the report records with (symbolic) memory dump. Enter the number of records to skip, and select the number of records to display using the adjacent text box and drop-down list.
- VIEW — Views selected records. Enter a starting record number and select the number of records to view using the adjacent text box and drop-down list. Negative numbers indicate records previous to the starting record.

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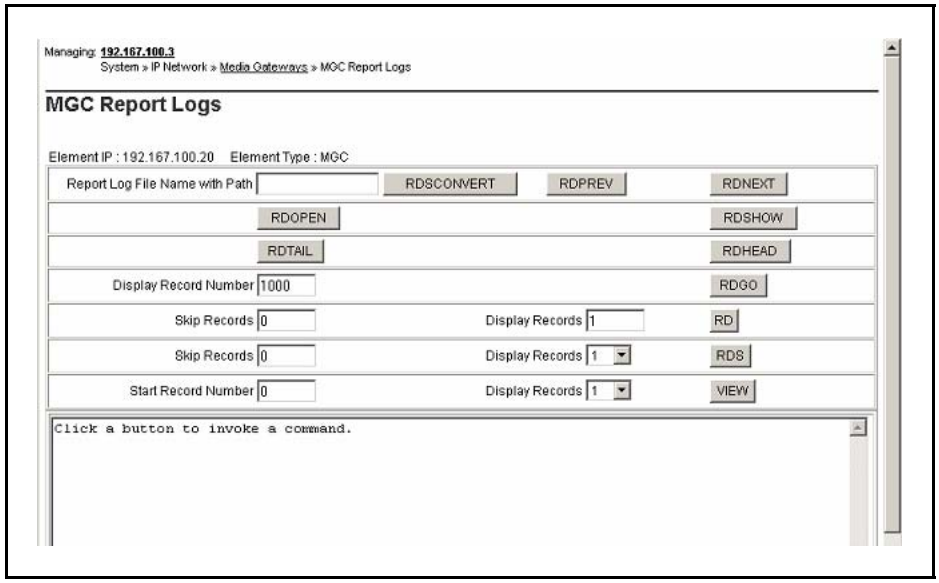
Figure 73
MGC Report Logs Web page



For more information about Media Gateway commands see, *Software Input Output Reference — Maintenance* (NN43001-711).

32 Channel Secure Media Card (MC32S) commands

Element Manager provides support for executing MC32S command line interface (CLI) maintenance commands.

The following MC32S CLI command groups are supported from Element Manager:

- General — General purpose commands
- System — System commands
- Voice Gateway — Voice Gateway application administration and maintenance commands
- Special — Special purpose (PDT commands)
- Security — Intra-system and cryptographic key support commands

Note: Not all MC32S commands are supported from Element Manager as they affect basic system configuration parameters and are used by the system administrator to closely monitor the system using serial connection.

To run MC32S commands from Element Manager, select the **Maintenance and Reports** link in the IP Network branch of Element Manager navigator. The **Node Maintenance and Reports** Web page

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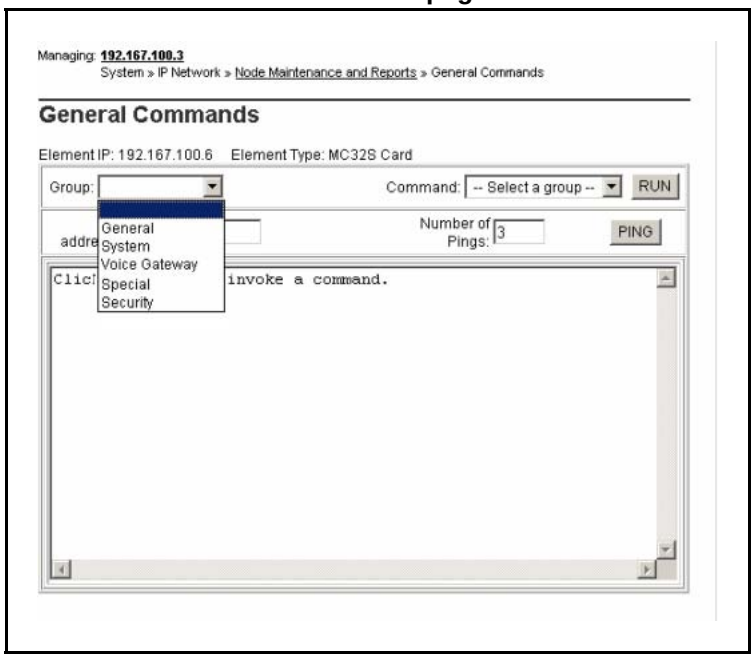
appears. Click **GEN CMD** for the MC32S card from the list. The **General Commands** Web page appears for the MC32S card, as shown in Figure 74 "MC32S General Commands Web page" (page 151).

Figure 74
MC32S General Commands Web page



Procedure 82
Running MC32S commands

Step	Action
1	Select the MC32S CLI command group that you want to access from the **Group** drop-down list.
2	Choose a command from the **Command** drop-down list.
3	Click **Run** to execute the command.

--End--

For a list of available MC32S commands that can be run using Element Manager, refer to*Software Input Output Reference — Maintenance* (NN43001-711).

Report logs

To generate MC32S report logs from Element Manager, select the **Maintenance and Reports** link in the IP Network branch of Element Manager navigator. The **Node Maintenance and Reports** Web page

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appears. Choose an MC32S card and click **RPT Log**. The **Node Report Logs** Web page appears, as shown in Figure 75 "MC32S Node Report Logs Web page" (page 153).

The following buttons at the top of this Web page provide one-click access to the following functions:

- RDSCONVERT — Convert a report log file to text
- RDPREV — Open the previous log file
- RDNEXT — Open the next log file
- RDOPEN — Open the latest report file
- RDSHOW — Show a summary of the report file
- RDTAIL — Show x records up to the newest record in the report file (where x is the configured display size).
- RDHEAD — Show x records starting from the oldest record in the report file (where x is the configured display size).

To view selected detail data on records in the report file, use the text boxes, the drop-down lists, and the following buttons:

- RDGO — Displays the record specified in the adjacent text box (where -1 is the oldest record and 1000 is the most recent).
- RD — Browses the report records. Enter the number of records to skip and the number of records to display in the adjacent text boxes.
- RDS — Browses the report records with (symbolic) memory dump. Enter the number of records to skip, and select the number of records to display using the adjacent text box and drop-down list.
- VIEW — Views selected records. Enter a starting record number and select the number of records to view using the adjacent text box and drop-down list. Negative numbers indicate records previous to the starting record.

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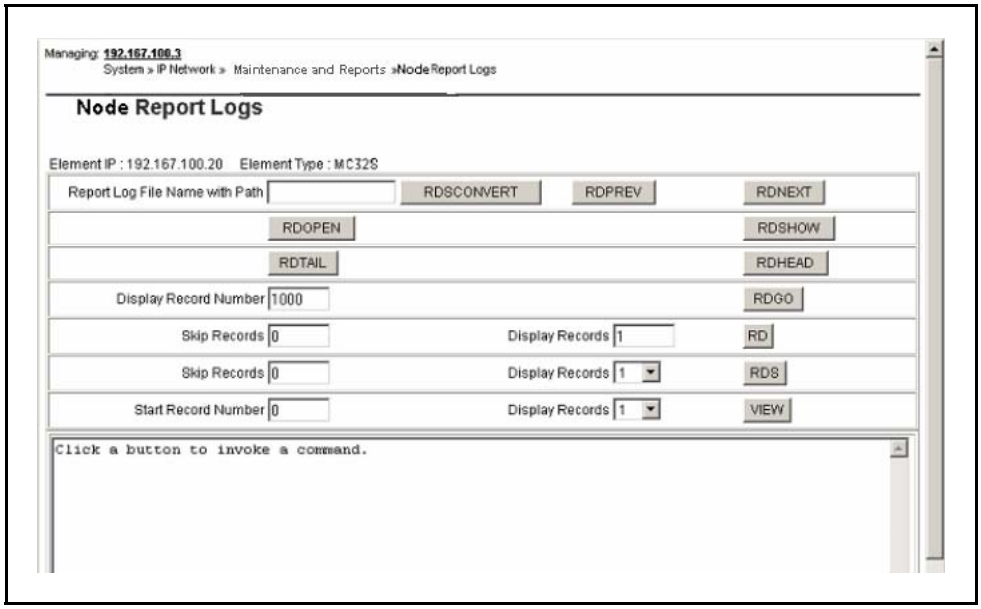
Figure 75
MC32S Node Report Logs Web page

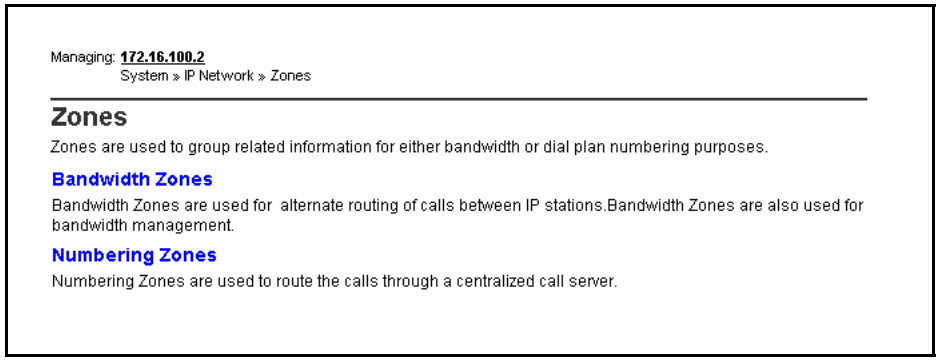


For more information about MC32S commands see, *Software Input Output Reference - Maintenance* (NN43001-711).

Zones

To configure or edit Bandwidth Zone information or Numbering Zone information, click the **Zones** link in the **IP Network** branch of the Element Manager navigator. The **Zones** Web page appears as shown in Figure 76 "Zones Web page" (page 153).

Figure 76
Zones Web page



Bandwidth Zones are used for alternate call routing between IP stations and for Bandwidth management. Numbering Zones are used to route calls through a centralized call server.

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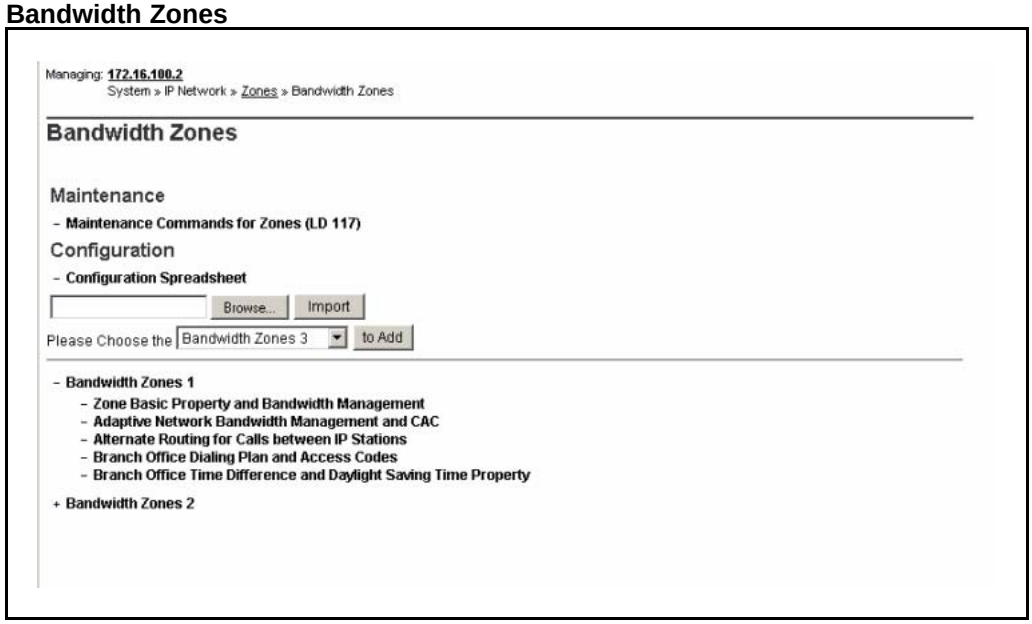
To view, configure, or edit Bandwidth Zones click on the Bandwidth Zones link of **Zones** Web page. The **Bandwidth Zones** Web page appears as shown in the following figure.

Figure 77
Bandwidth Zones



The user can view a spreadsheet with the configuration values of the Zone Basic Property and Bandwidth Management pages of all the configured zones in the Call Server. Click the **Configuration Spreadsheet** link. A Microsoft Excel spreadsheet appears, which can be saved to the user's local drive.

Note: Enter all rows sequentially in the Microsoft Excel spreadsheet. If a blank row is encountered further rows are ignored.

To add zones on the **Zones** Web page, select a Zone number from the list and click to Add.

This Web page contains links to the six categories of Zone configuration data for each Zone configured. Click the plus sign to the left of next to the Zone number to see the following information:

- Basic Property and Bandwidth Management
- Adaptive Network Bandwidth Management and CAC
- Alternate Routing for Calls between IP Stations
- Branch Office Dialing Plan and Access Codes
- Branch Office Time Difference and Daylight Saving Time Property

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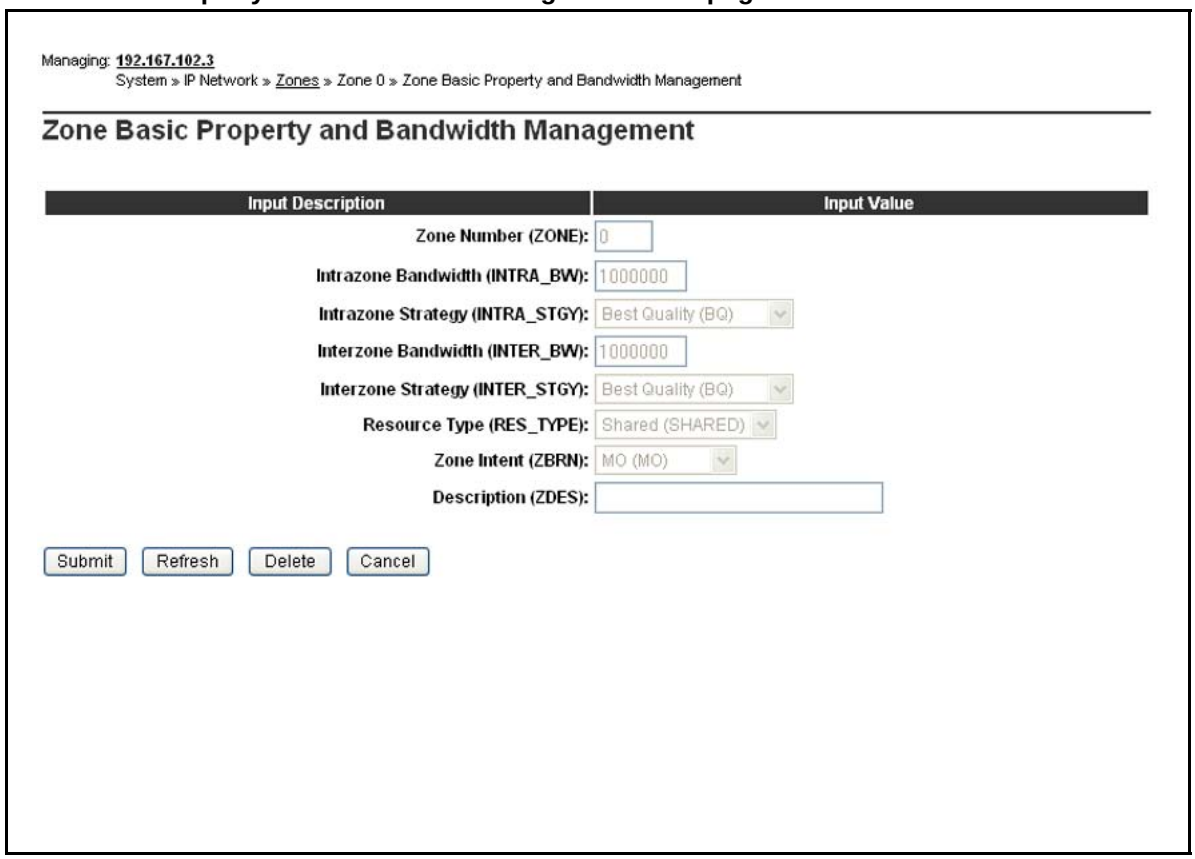
For information about configuring the MG 1000B, see *Branch Office Installation and Commissioning* (NN43001-314).

To edit basic properties, click the **Zone Basic Property and Bandwidth Management** link. The **Zone Basic Property and Bandwidth Management** Web page appears. See Figure 78 "Zone Basic Property and Bandwidth Management Web page" (page 155).

Figure 78
Zone Basic Property and Bandwidth Management Web page



The information entered on this Web page corresponds to the ZONE, ZBRN, and ZDES data traditionally configured using LD 117 - Ethernet and Alarm Management.

To save changes made in **Zone Basic Property and Bandwidth Management** parameters, click Submit at the bottom of the Web page.

To return to the **Zones** Web page, click the Zones link in the navigation path at the top of the Web page.

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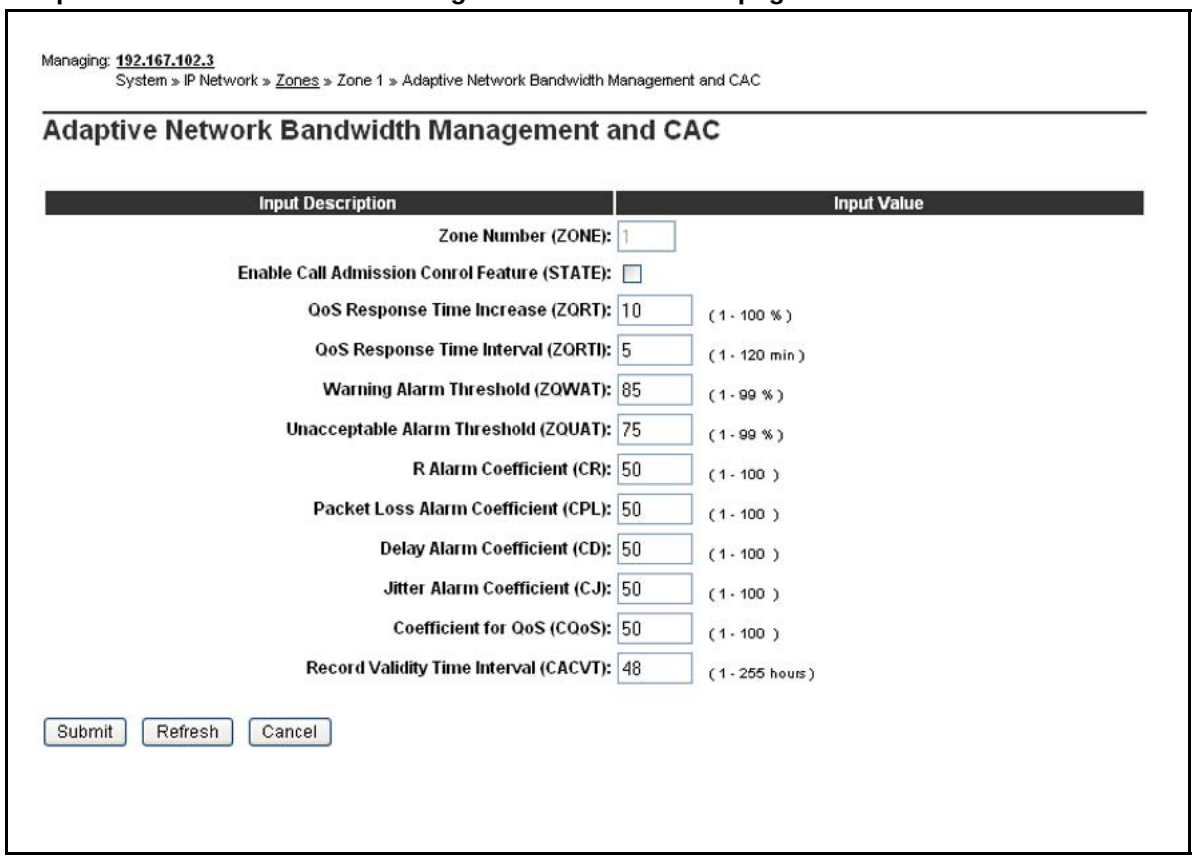
To configure the Adaptive Network Bandwidth Management feature, click the **Adaptive Network Bandwidth Management and CAC** link. The **Adaptive Network Bandwidth Management and CAC** Web page appears, as shown in Figure 79 "Adaptive Network Bandwidth Management and CAC Web page" (page 156).

Note: Do not configure ANBWM for Zone 0 or Virtual Trunk zones. ANBWM is not supported in Zone 0 or VTRK zone.

Figure 79
Adaptive Network Bandwidth Management and CAC Web page



If the Adaptive Network Bandwidth Management feature is enabled using the **Enable Call Admission Control Feature (STATE)** check box, then the other parameters can be adjusted as required:

- QoS Response Time Increase (ZQRT): Bandwidth limit increment, as a percentage of the QoS factor for the zone
- QoS Response Time Interval (ZQRTI): Time (in minutes) between bandwidth limit increments
- Warning Alarm Threshold (ZQWAT): A QoS value, which is lower than this value, but higher than the Critical (Unacceptable) Alarm Threshold, triggers a Major Alarm.

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- Critical Alarm Threshold (ZQUAT): A QoS value, which is lower than this value, triggers an Unacceptable (Critical) Alarm.
- R Alarm Coefficient (CR): Value used to calculate the QoS value for the zone.
- Packet Loss Alarm Coefficient (CPL): Value used to calculate the QoS value for the zone.
- Delay Alarm Coefficient (CD): Value used to calculate the QoS value for the zone.
- Jitter Alarm Coefficient (CJ): Value used to calculate the QoS value for the zone.
- Coefficient of QoS (CQoS): Value used to calculate the overall QoS value for the zone.
- Recent Validity Time Interval (CACVT): Amount of time (in hours) for zone-to-zone record validity. When this interval expires, records for unused zones are purged from the tables.

To configure the Alternate Routing feature, click the Alternate Routing for Calls between IP Stations link. The **Alternate Routing for Calls between IP Stations** Web page appears, as shown in Figure 80 "Alternate Routing for Calls between IP Stations" (page 158).

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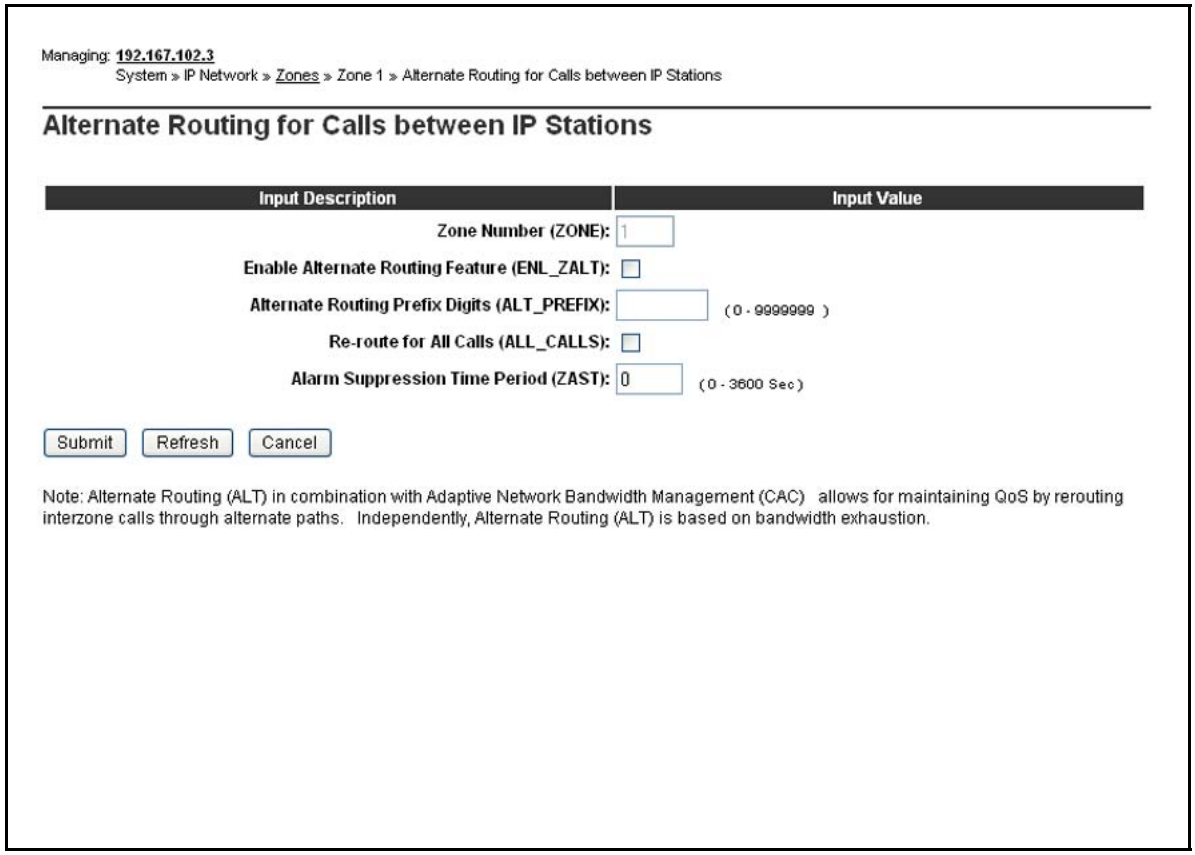
Figure 80
Alternate Routing for Calls between IP Stations



- Select the **Enable Alternate Routing feature (ENL_ZALT)** check box to enable the Alternative Call Routing for NBWM feature.
- Enter a maximum of 7 digits in **Alternate Routing Prefix Digits** (ALTPrefix).
- Select the **Re-route for All Calls (ALL_CALLS)** check box to enable the feature for all calls.
- Enter an Alarm Suppression Time Period (ZAST).
- Click **Submit** to enter the data.

To edit dialing plan and access code parameters for a Zone's MG 1000B offices, click the **Branch Office Dialing Plan and Access Codes** link on the **Zones** Web page. The **Zone Dialing Plan and Access Codes** Web page appears. See Figure 81 "Zone Dialing Plan and Access Codes Web page" (page 159).

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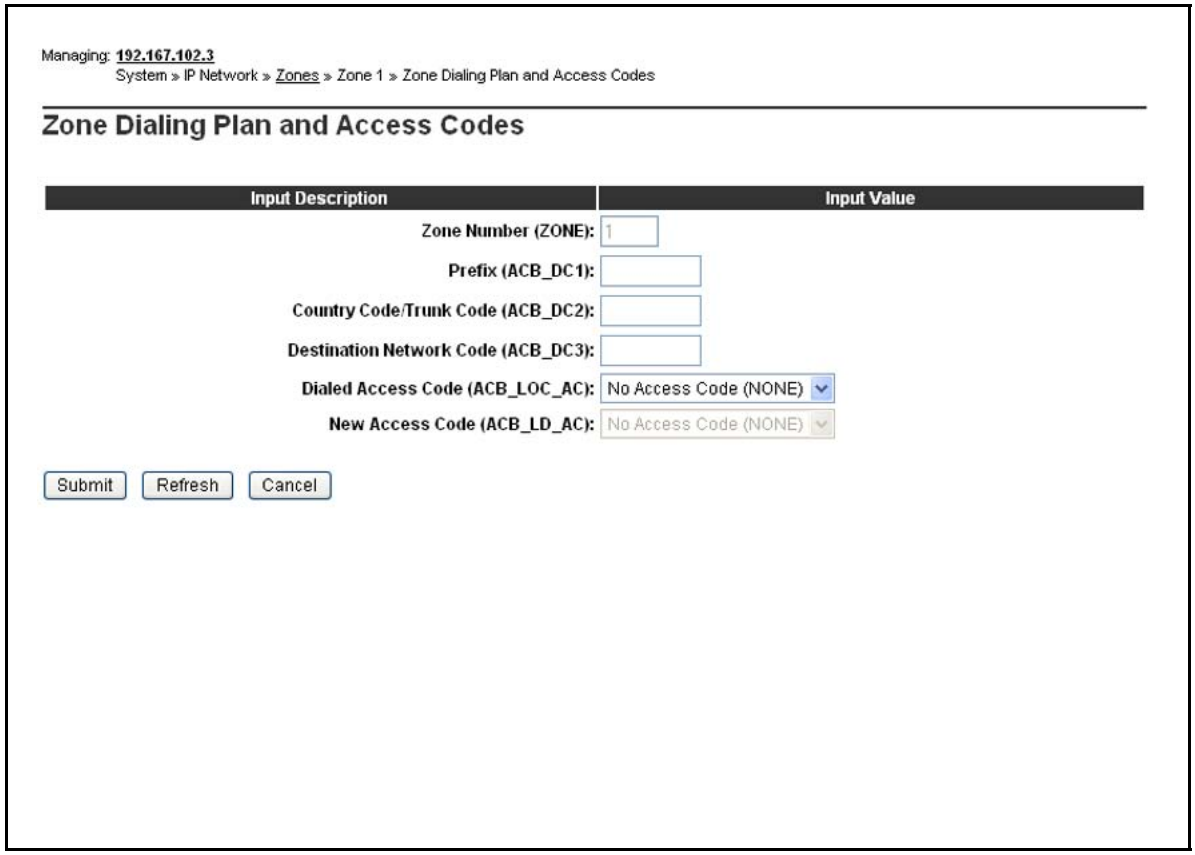
Figure 81
Zone Dialing Plan and Access Codes Web page



The information entered on this Web page corresponds to the Zone Dialing Plan and Access Codes (ZACB) command available in LD 117 - Ethernet and Alarm Management.

To save changes made in **Zone Dialing Plan and Access Code** parameters, click **Submit** at the bottom of the Web page.

To return to the **Zones** Web page, click the **Zones** link in the navigation path at the top of the page.

To access the time difference and daylight saving time properties for a Zone's MG 1000B Offices, click the **Branch Office Time Difference and Daylight Saving Time Property** link on the **Zone List** Web page. The **Time Difference and Daylight Saving Time Property** Web page appears (see Figure 82 "Time Difference and Daylight Saving Time Property Web page" (page 160)).

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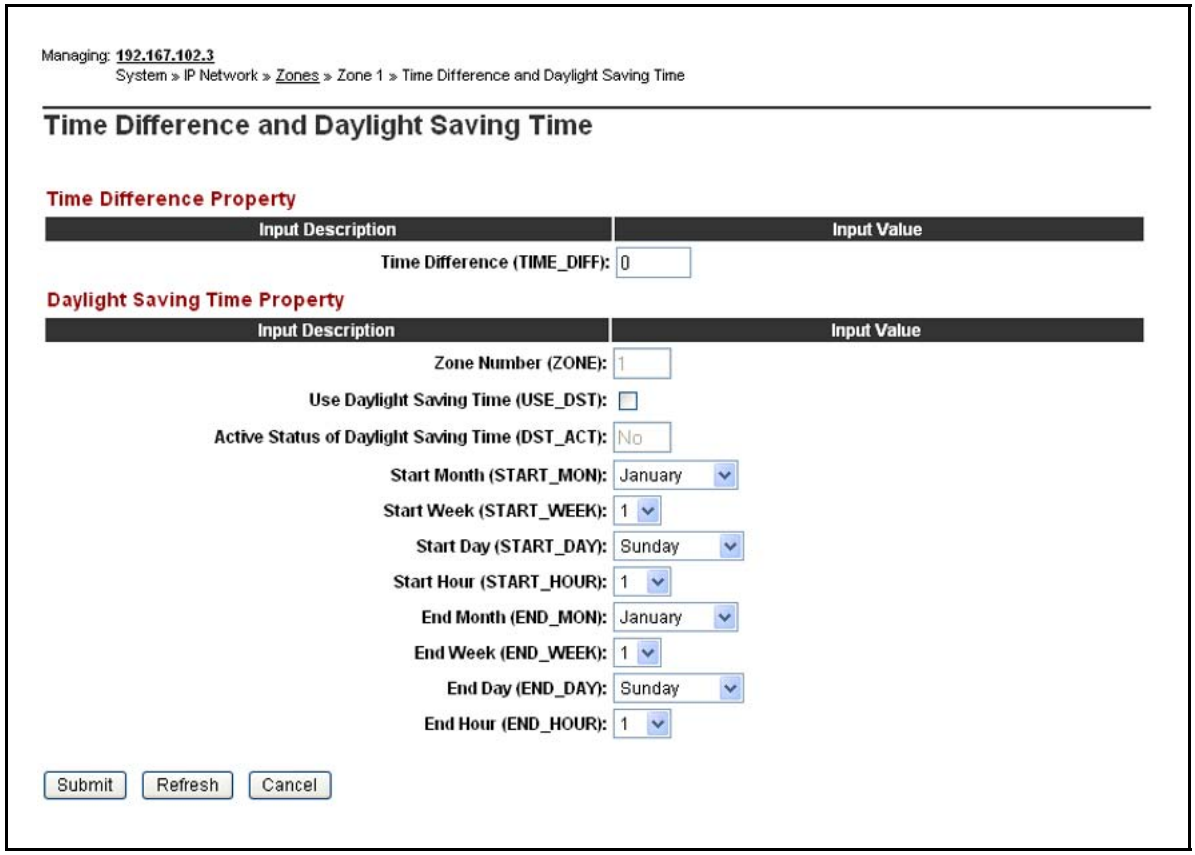
Figure 82
Time Difference and Daylight Saving Time Property Web page



The information entered on this Web page corresponds to the ZTDF and ZDST command data traditionally configured using LD 117 - Ethernet and Alarm Management.

To save changes made in Time Difference and Daylight Saving Time properties, click **Submit** at the bottom of the Web page.

To return to the **Zones** Web page, click the **Zones** link in the navigation path at the top of the page.

Numbering Zones

Numbering Zones provides you with an interface to configure various parameters for Zones-based Parameters, Flexible Dial Plan, and Direct Inward Dial number and provides an option for every customer to enable the Zone Based Dialing (ZBD) feature.

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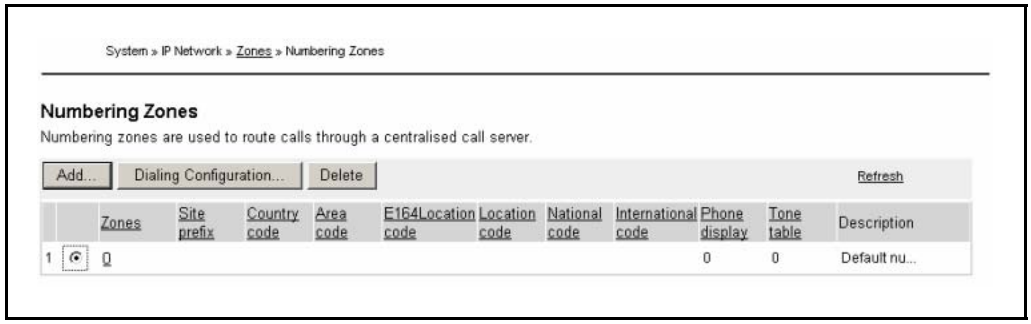
Element Manager provides the following capabilities to configure NUMZONE for the ZBD feature:

- adding a new Numbering Zone
- deleting a Numbering Zone
- editing the Zone Based Parameters
- flexible Dial Plan and Direct Inward Dial Number Configurations
- config.ini changes in Nodes page
- enabling Numbering Zones for every customer in Feature Options

To view, configure, or edit Numbering Zones click on the Numbering Zones link of **Zones** Web page. The **Numbering Zones** Web page appears as shown in the following figure.

Figure 83
Numbering Zones Web page



For information about configuring of ZBD in the **IP Telephony Nodes** Web page and configuration of a Numbering Zone, see *Dialing Plans Reference* (NN43001-283).

Host and Route Tables

Host and Route tables are located on the Ethernet LAN configuration page, that is used to configure and list the Ethernet LAN settings of the Call Server.

A host name can be up to 16 characters in length. The first character of a host name must be a letter of the alphabet. A character may be a letter, number or underscore (_). A period is used as a delimiter between domain names. Spaces and tabs are not permitted. No distinction is made between upper and lower case.

To access the Host and Route Tables click Host and Route Tables link of the IP Network branch of the Element Manager navigator. The **Host and Route Tables** Web page appears as shown in the following figure.

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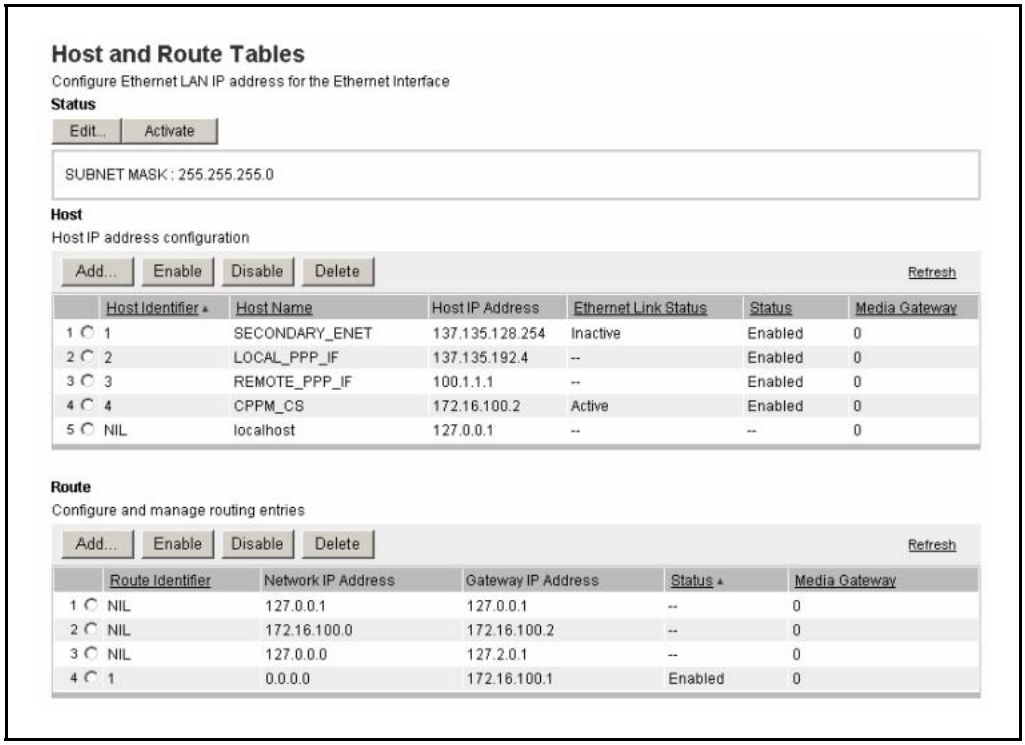
For more information refer to *Signaling Server IP Line Applications Fundamentals* (NN43001-125).

Figure 84
Host and Route Tables Web page



Network Address Translation (NAT)

To configure or edit Network Address Translation (NAT) information, click the **Network Address Translation** link in the **IP Network** branch of the Element Manager navigator. The **Network Address Translation (NAT)** Web page appears, as shown in Figure 85 "Network Address Translation (NAT) Web page" (page 163).

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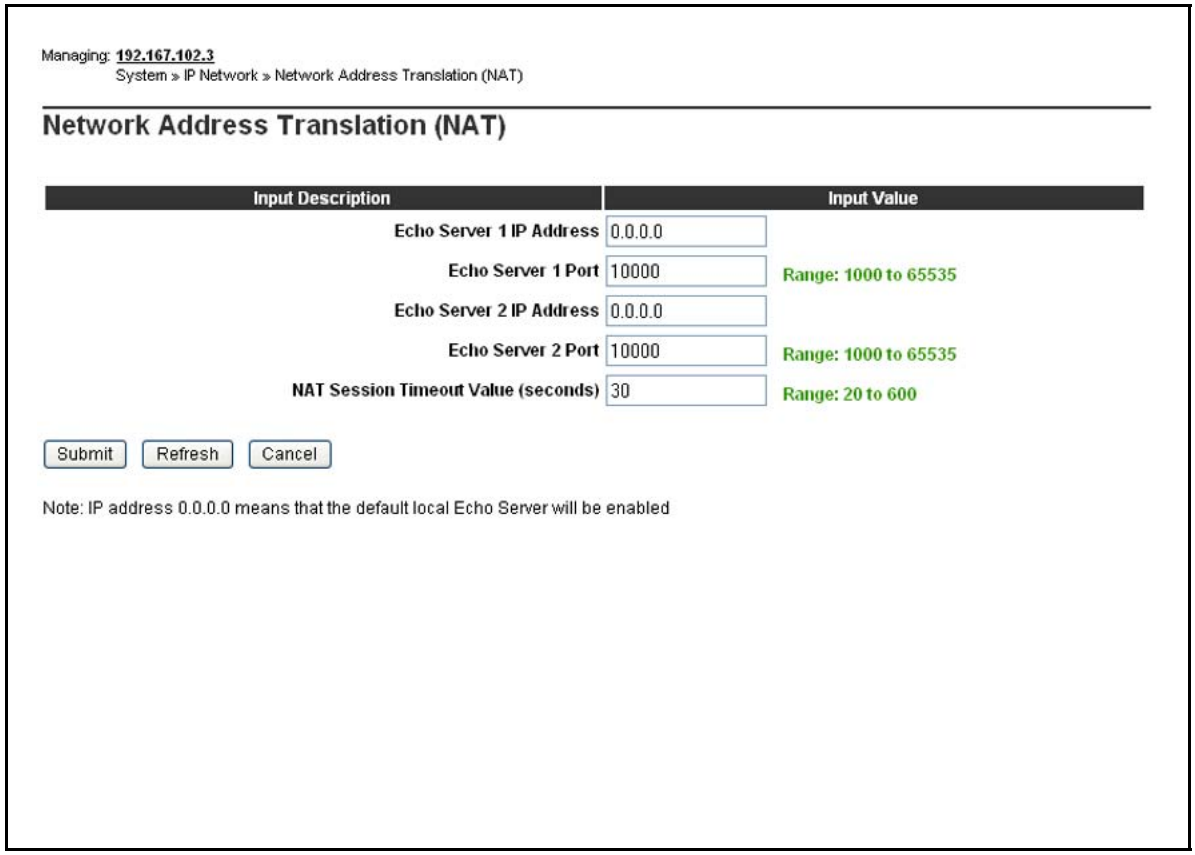
Figure 85
Network Address Translation (NAT) Web page



The information entered on this Web page corresponds to data traditionally configured using LD 117 - Ethernet and Alarm Management.

To configure the Echo Server 1 and 2 IP addresses and port numbers, enter the values in corresponding input fields.

> ***Note:*** Echo Server 1 and 2 default IP addresses use the TLAN network interface IP address of the LTPS card.

Enter the NAT session timeout value. Click the **Submit** button to save the changes. For more information, see *Signaling Server IP Line Application Fundamentals (NN43001-125)*.

Quality of Service Thresholds (QoS)

The threshold values chosen provide accurate statistics without unnecessary network loading. If you increase your sample rate or your sample duration you will utilize/consume more of the bandwidth.

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Nortel recommends that you use the default values. You can change thresholds depending on the voice quality level you want to have without alarms reported. For example, Call Packet Loss Unacceptable Threshold (UPKL) - default is 7 percent (entered as 70).

The zone basis threshold parameters allow for an overall level of alerts based on aggregated data for the zone. QoS samples are collected from active sets in the zone periodically by polling or received asynchronously, depending on the set firmware. The statistics received are compared to the call basis thresholds and violations are counted. The zone basis threshold parameters define the level at which alarms are sent out. These indicate the percentage of the samples that may exceed the defined per call thresholds for the different QoS metrics. For example, if the zone threshold for a particular metric is set to 2 percent, then zone alarms are issued if over 2 percent of the samples for that metric exceed the per call unacceptable threshold set for that metric.

The zone defaults for the warning items are higher than those for the unacceptable items (20 percent compared to 2 percent). The assumption is that the per call warnings thresholds are set at levels such that several warning alarms are normally issued. However, an overall problem with the zone should only be indicated if there are a significant number of such violations. On the other hand, there should be almost no unacceptable alarms and it is appropriate that these be set to a far lower zone percentage threshold.

The per call thresholds should be first adjusted to a level appropriate for the installation. After that the zone thresholds should be set, taking into consideration the per call threshold settings. If the per call thresholds are set low then more violations are to be expected, and the zone thresholds should be set higher to compensate. The converse is true for high per call threshold settings.

To configure or edit Quality of Service Threshold information, click the **Quality of Service Thresholds (QoS)** link in the **IP Network** branch of the Element Manager navigator. The **Quality of Service (QoS) Thresholds** Web page appears (see Figure 86 "Quality of Service (QoS) Thresholds Web page" (page 165)).

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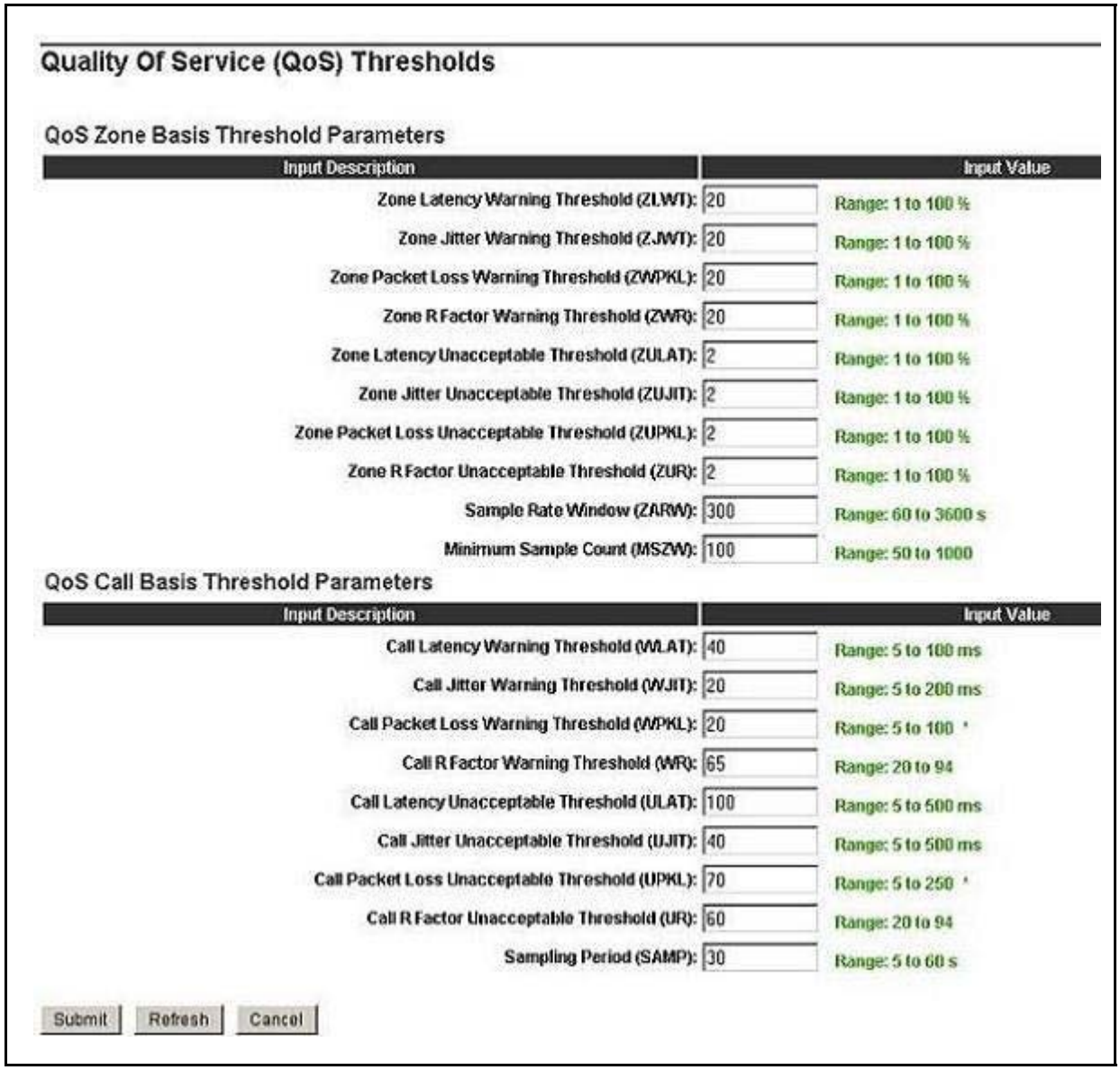
Figure 86
Quality of Service (QoS) Thresholds Web page



From this Web page, Quality of Service (QoS) Thresholds can be viewed and edited. Every node in the system has the same threshold values.

The information entered on this Web page corresponds to data traditionally configured using LD 117 - Ethernet and Alarm Management.

The threshold parameters are grouped as follows:

- QoS Zone Basis Threshold Parameters
- QoS Call Basis Threshold Parameters

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To save changes made to the threshold parameters, click **Submit** at the bottom of the Web page.

For more information, see *Software Input Output Reference - Maintenance (NN43001-711)*.

ATTENTION
Changes to Quality of Service parameters do not take effect until a Call Server data dump is performed.

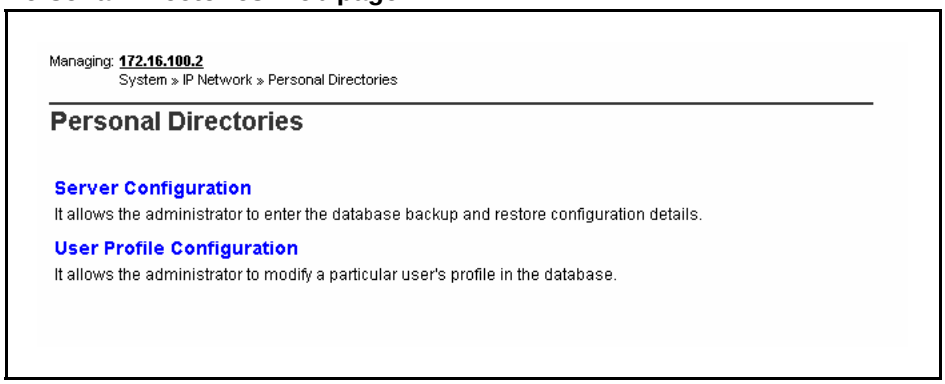
Personal Directories

The Personal Directories Web page provides access to two links:

- **Server Configuration**: allows the administrator to enter the database backup and restore configuration details
- **User Profile Configuration**: allows the administrator to modify a user profile in the database

To access the **Personal Directories** Web Page click the IP Network > Personal Directories link in the System branch of the Element Manager navigator.

Figure 87
Personal Directories Web page



For more information about Personal Directories, Redial List, and Callers List, see *Signaling Server IP Line Application Fundamentals (NN43001-125)*.

Unicode Name Directory

The Unicode Name Directory feature enables the displaying of called or caller party name in Unicode format and use languages other than English for name displaying. It enhances the functionality of Unicode display capable Unistim terminals

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The Unicode Name Directory System Management Solution (SMS) provides a solution to provision localized names (up to seven different languages) on subscriber base and generate subscriber telephony account's calling line IDs/URIs (CLID/URI) in network level to serve Unicode Name Directory server.

To successfully configure Unicode Name Directory on the Call Server side, enable the Name Directory Application and configure Lightweight Directory Access Protocol (LDAP) synchronization parameters. Name Directory Application is enabled in the Call Server only if Personal Directory Application Server is configured.

Management of Unicode Name Directory is an integral part of Subscriber Manager, for more information on Unicode Name Directory and the role of Subscriber Manager refer to *Subscriber Manager Fundamentals* (NN43001-120).

For information about Unicode Name Directory and its configuration, see *Signaling Server IP Line Application Fundamentals (NN43001-125)*.

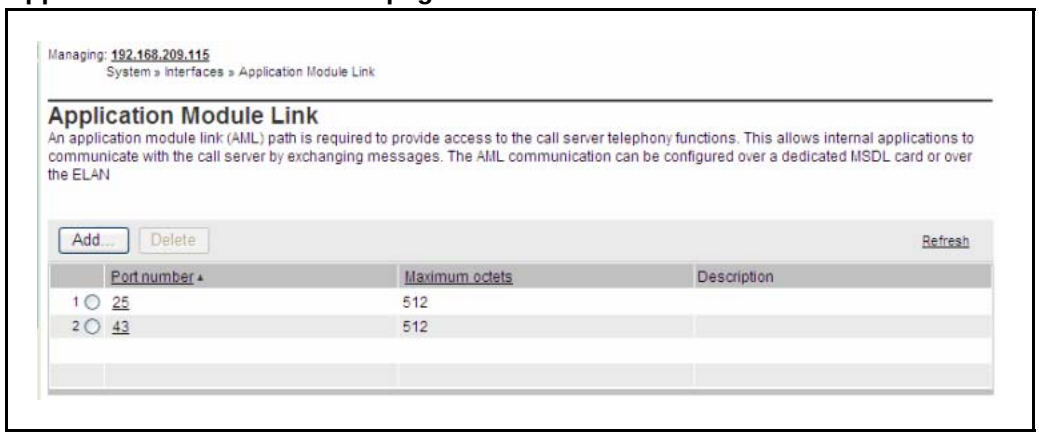
Interfaces

Element Manager supports the Value Added Server and Property Management System data blocks traditionally configured in LD 17.

Application Module Link

To access Application Module Link click Interfaces > Application Module Link in the System branch of the Element Manager navigator. The **Application Module Link** Web page appears as shown in Figure 88 "Application Module Link Web page" (page 167).

Figure 88
Application Module Link Web page



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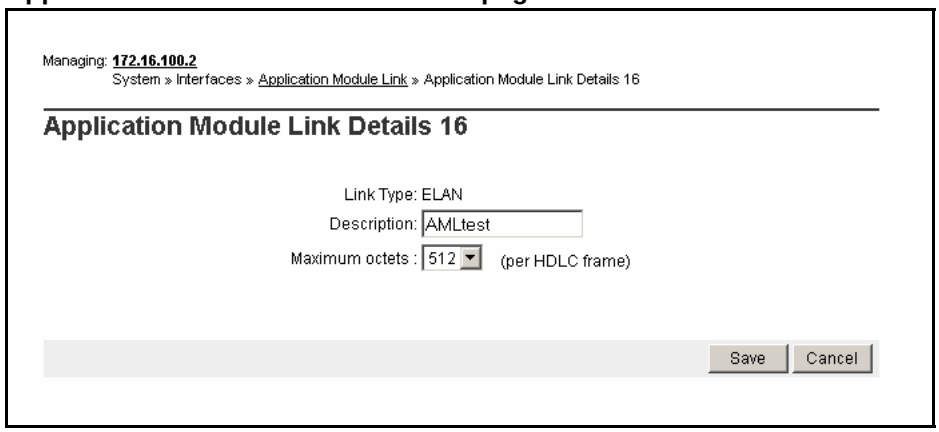
To view or edit an Application Module Link click a port number. The **Application Module Link Details** Web page appears as shown in Figure 89 "Application Module Link Details Web page" (page 168).

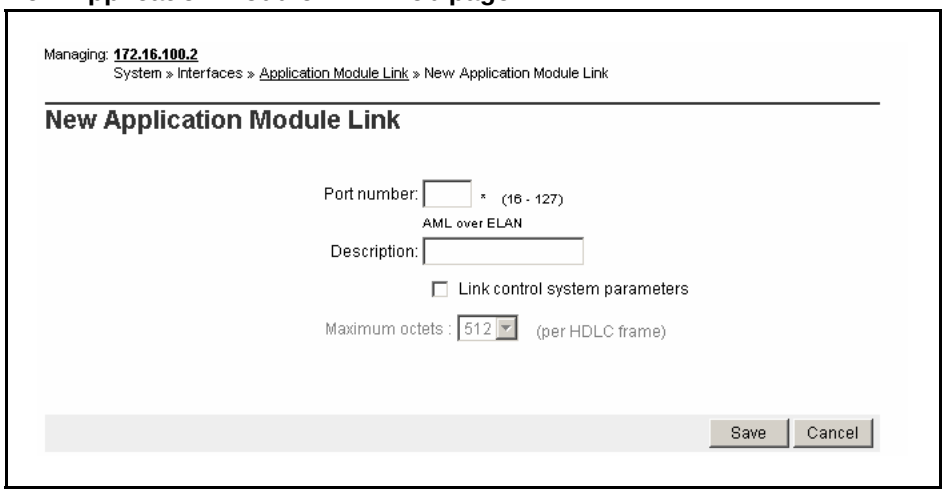
Figure 89
Application Module Link Details Web page



To edit the information, enter the appropriate values and click **Save**.

To Add a new Application Module Link click the Add button in the **Application Module Link** Web page. The **New Application Module Link** Web page appears as shown in Figure 90 "New Application Module Link Web page" (page 168).

Figure 90
New Application Module Link Web page



To create a new Application Module Link, enter the appropriate information and click Save.

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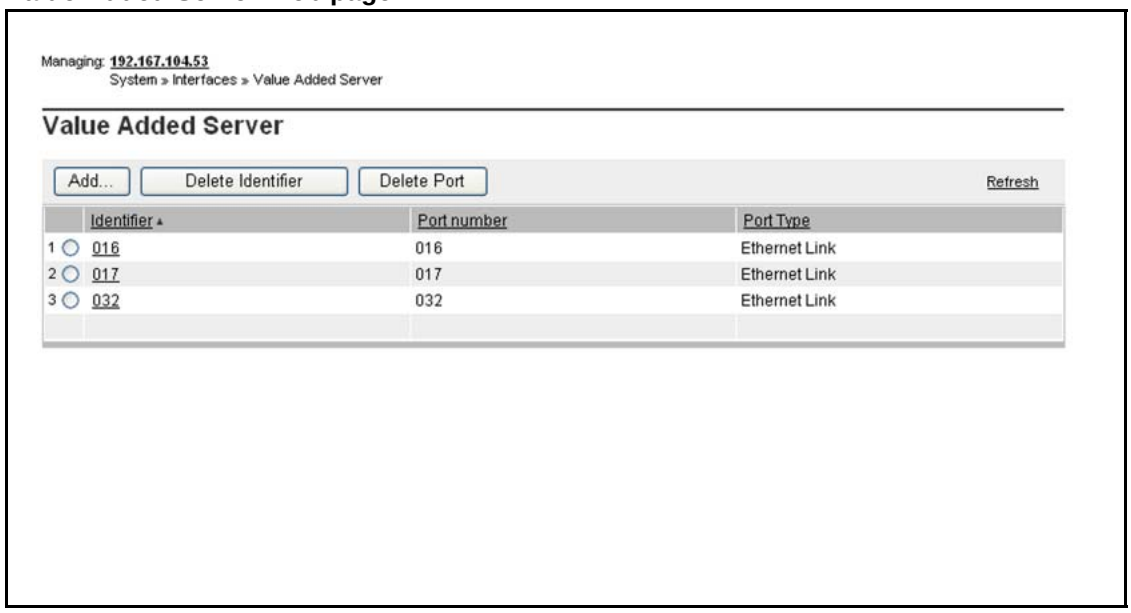
Value Added Server

Click the **Interfaces > Value Added Server** link in the **System** branch of the Element Manager navigator. The **Value Added Server** Web page appears as shown in Figure 91 "Value Added Server Web page" (page 169).

Figure 91
Value Added Server Web page



To add a Value Added Server, click **Add**. The **Add Value Added Server** Web page appears, as shown in Figure 92 "Add Value Added Server Web page" (page 170).

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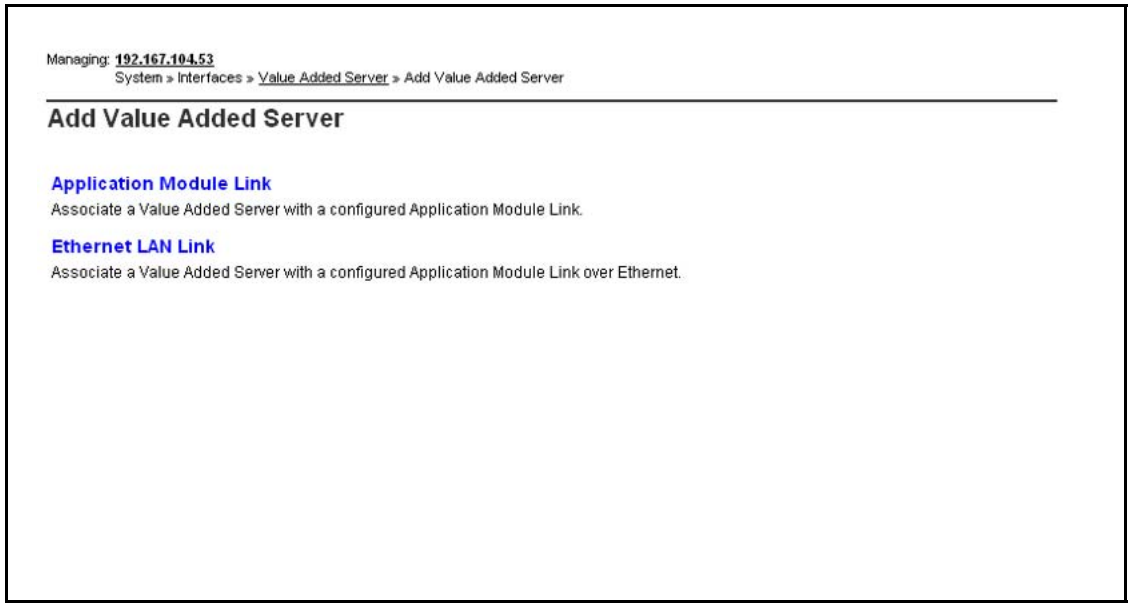
Figure 92
Add Value Added Server Web page



To associate a Value Added Server with a configured Application Module Link, click **Application Module Link**. The **Application Module Link** Web page appears, as shown in Figure 93 "Application Module Link Web page" (page 170).

Figure 93
Application Module Link Web page

Enter the parameters for the new Value Added Server and click **Save**.

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To associate a Value Added Server with a configured Application Module Link over Ethernet, from the **Add Value Added Server** Web page click **Ethernet LAN Link**. The **Ethernet Link** Web page appears, as shown in Figure 94 "Ethernet Link Web page" (page 171).

Figure 94
Ethernet Link Web page

Enter the parameters for the new Value Added Server and click **Save**.

Property Management System

Click the **Interfaces > Property Management System** link in the **System** branch of the Element Manager navigator. The **Property Management System** Web page appears, as shown in Figure 95 "Property Management System Web page" (page 172).

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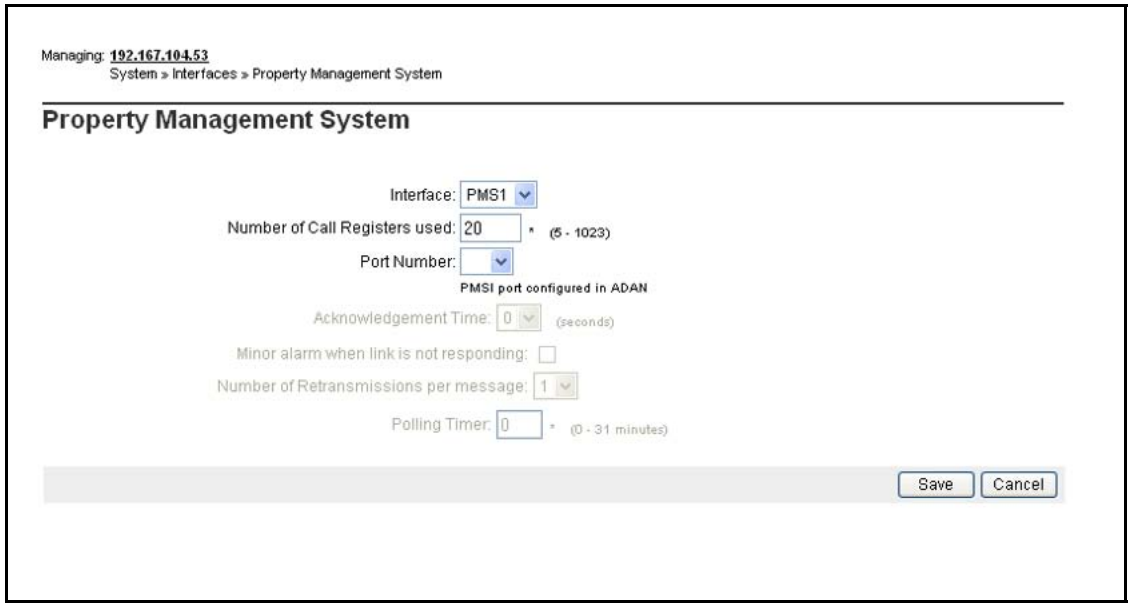
Figure 95
Property Management System Web page



Enter the parameters for the new Property Management System and click **Save**.

Engineered Values

The configuration of the system depends on the value of certain parameters. To configure and edit system parameters, click the **Engineered Values** link in the **System** branch of the Element Manager navigator. The **Engineered Values** Web page appears as shown in Figure 96 "Engineered Values Web page" (page 173).

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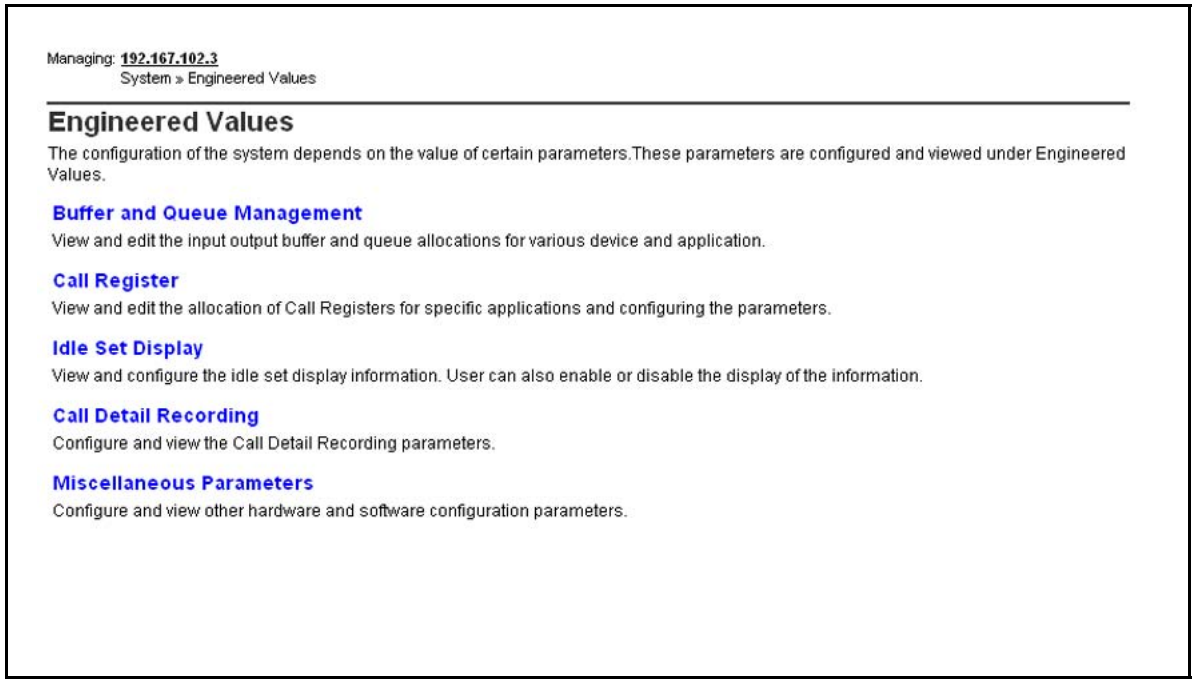
Figure 96
Engineered Values Web page



To configure the input/output buffer and queue allocations for various devices and applications, click **Buffer and Queue Management**. The **Buffer and Queue Management** Web page appears as shown in Figure 97 "Buffer and Queue Management Web page" (page 174).

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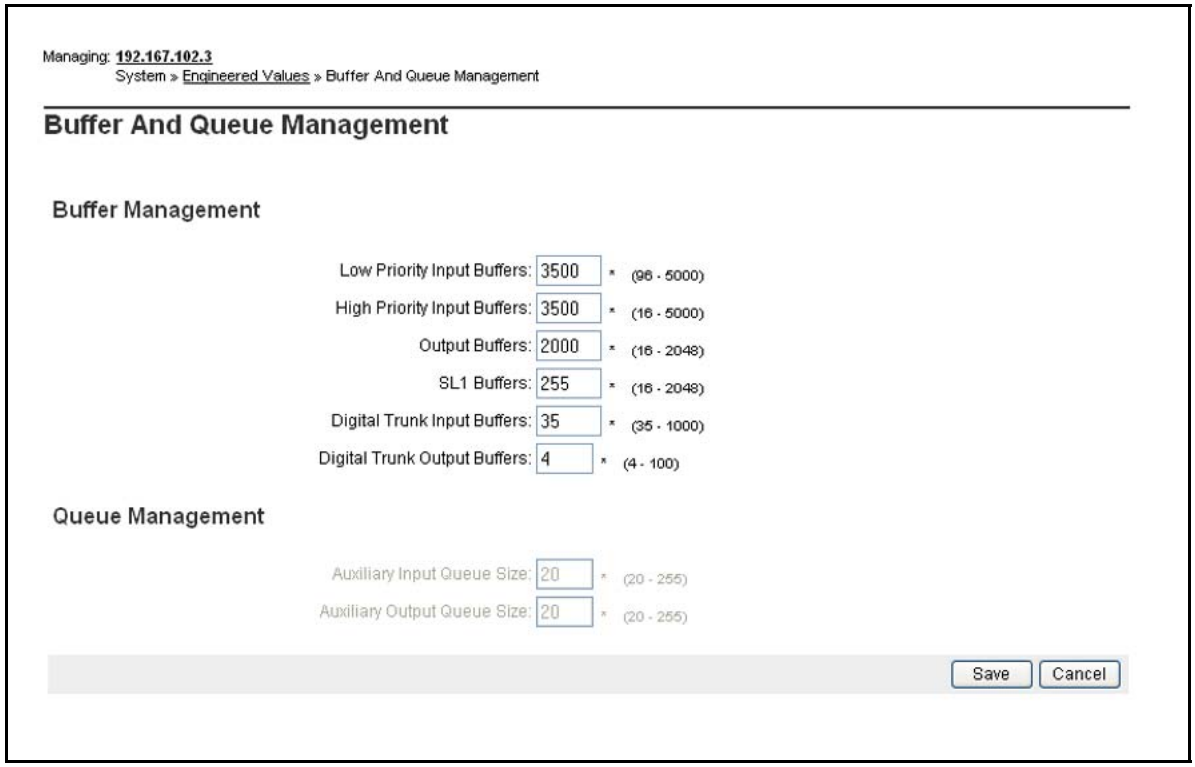
Figure 97
Buffer and Queue Management Web page



Enter the desired parameters within the ranges indicated and click **Save**.

To configure the allocation of Call Registers for specific applications, from the **Engineered Values** Web page click **Call Registers**. The **Call Registers** Web page appears as shown in Figure 98 "Call Register Web page" (page 175).

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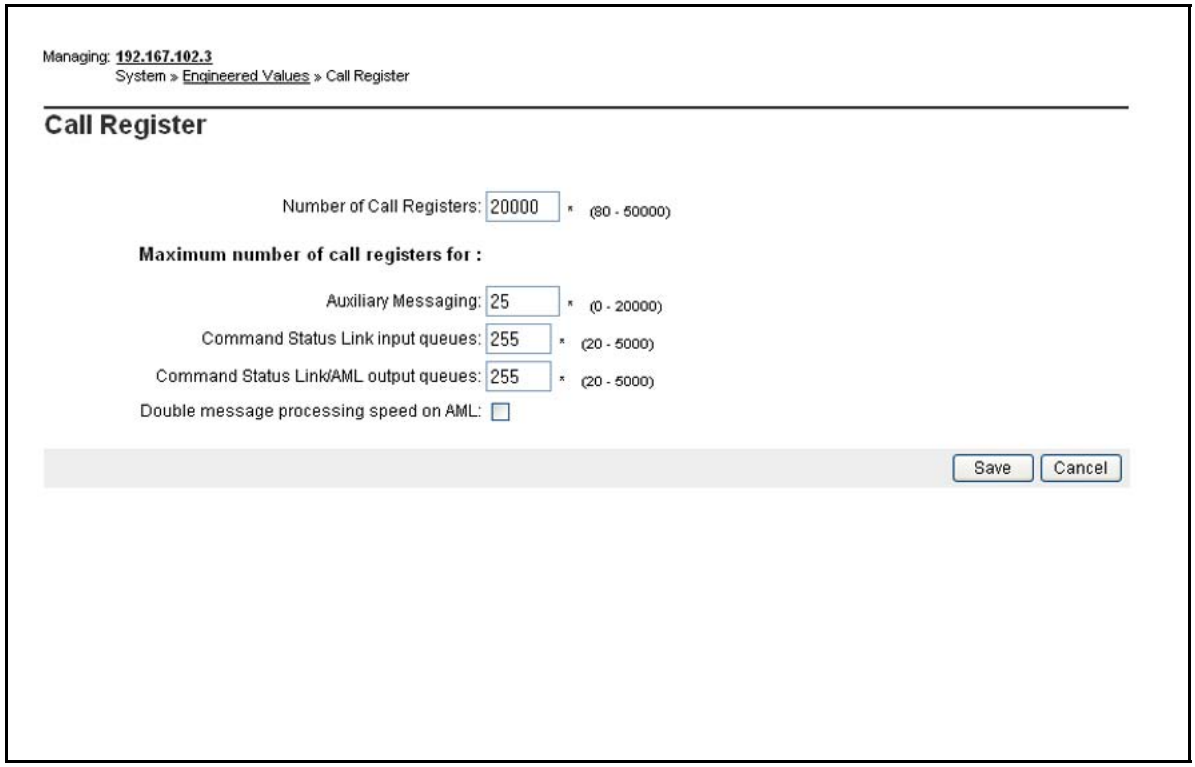
Figure 98
Call Register Web page



Enter the desired parameters within the ranges indicated and click **Save**.

To configure idle set display information, from the **Engineered Values** Web page click **Idle Set Display**. The **Idle Set Display** Web Page appears as shown in Figure 99 "Idle Set Display Web page" (page 176).

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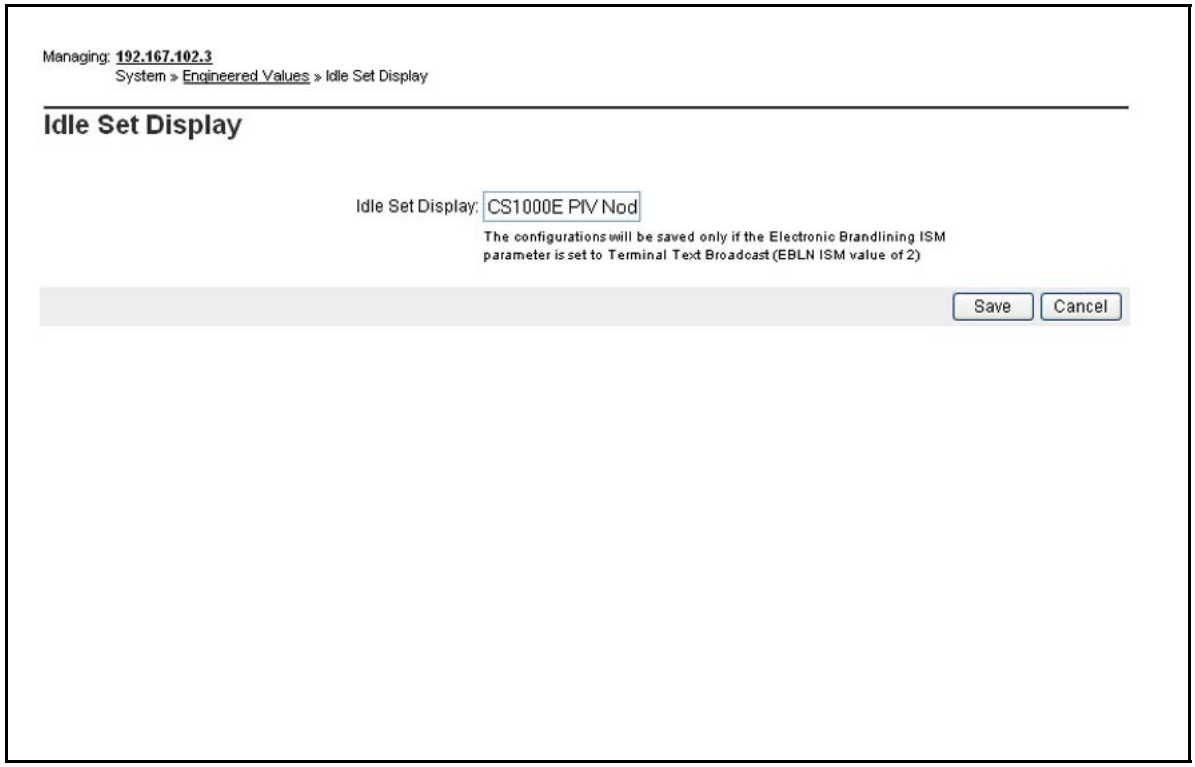
Figure 99
Idle Set Display Web page



Enter the desired display information and click **Save**.

To configure Call Detail Recording parameters, from the **Engineered Values** Web page click **Call Detail Recording**. The **Call Detail Recording** Web page appears as shown in Figure 100 "Call Detail Recording Web page" (page 177).

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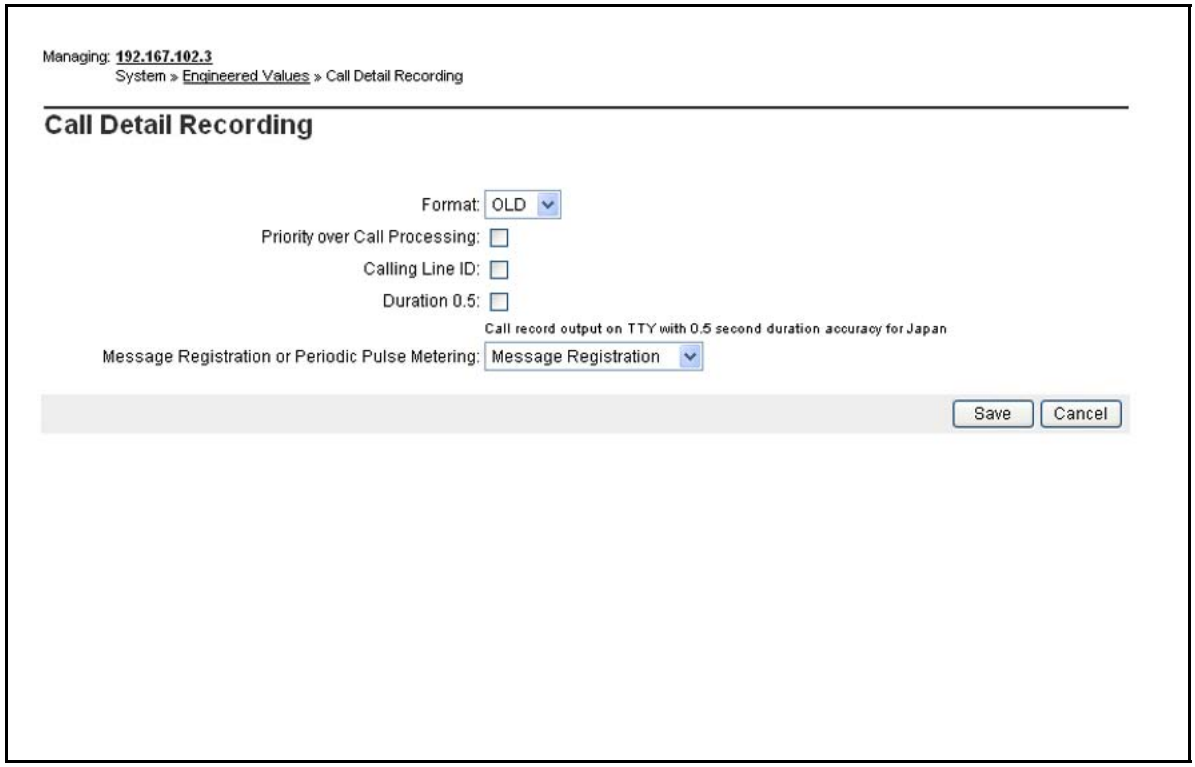
Figure 100
Call Detail Recording Web page



Enter the desired parameters and click **Save**.

To configure other hardware and software parameters, from the **Engineered Values** Web page click **Miscellaneous Parameters**. The **Miscellaneous Parameters** Web page appears as shown in Figure 101 "Miscellaneous Parameters Web page" (page 178).

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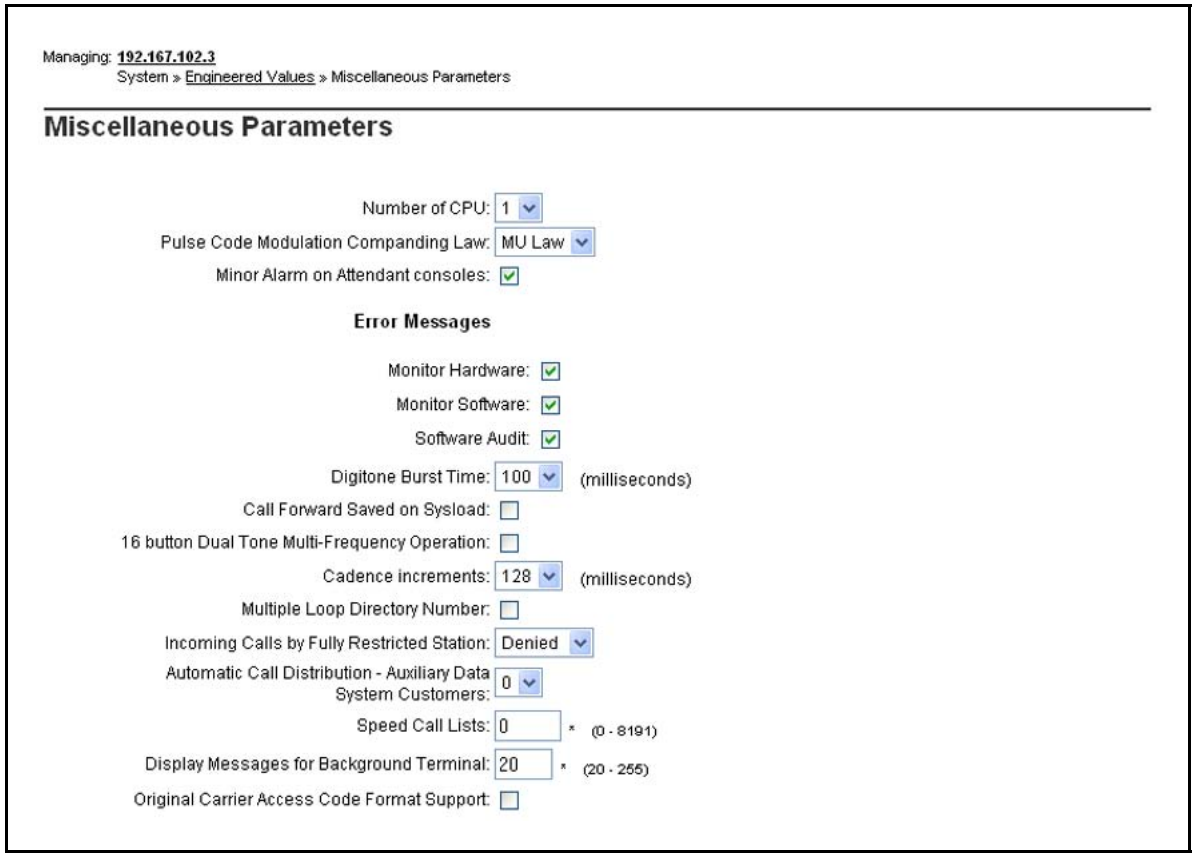
Figure 101
Miscellaneous Parameters Web page



Enter the desired parameters and click **Save**.

Emergency Services

Element Manager supports the Emergency Services Client Mobility feature, which allows users to manage the location of phones, and to process emergency calls according to the caller's current data.

Service Parameters

The **Service Parameters** Web page allows users to modify system-wide configuration settings.

Click the **Emergency Services > Service Parameters** link in the **System** branch of the Element Manager navigator to open the **Service Parameters** Web page, as shown in Figure 102 "Service Parameters Web page" (page 179).

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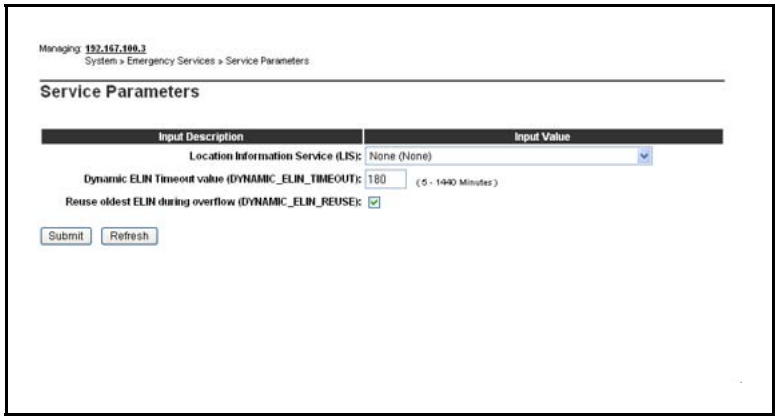
Figure 102
Service Parameters Web page



- Choose a **Location Information Service** from the first drop-down list.
  - If Internal Subnet Location Information Service is selected, the **Lookup Private Address for Subnet** check box is displayed.
  - If External Discovery Manager is selected, the **External Location Update Timeout** text box is displayed.
- Enter a **Dynamic ELIN Timeout value**.
- Check **Reuse oldest ELIN during overflow**, if necessary.
- Click **Submit**.

Access Numbers and Routing

The **Access Numbers and Routing** Web page allows users to process Emergency Service information which are specific to each Customer.

Click the **Emergency Services > Access Numbers and Routing** link in the **System** branch of the Element Manager navigator to open the **Access Numbers and Routing** Web page, as shown in Figure 103 "Access Numbers and Routing Web page" (page 180).

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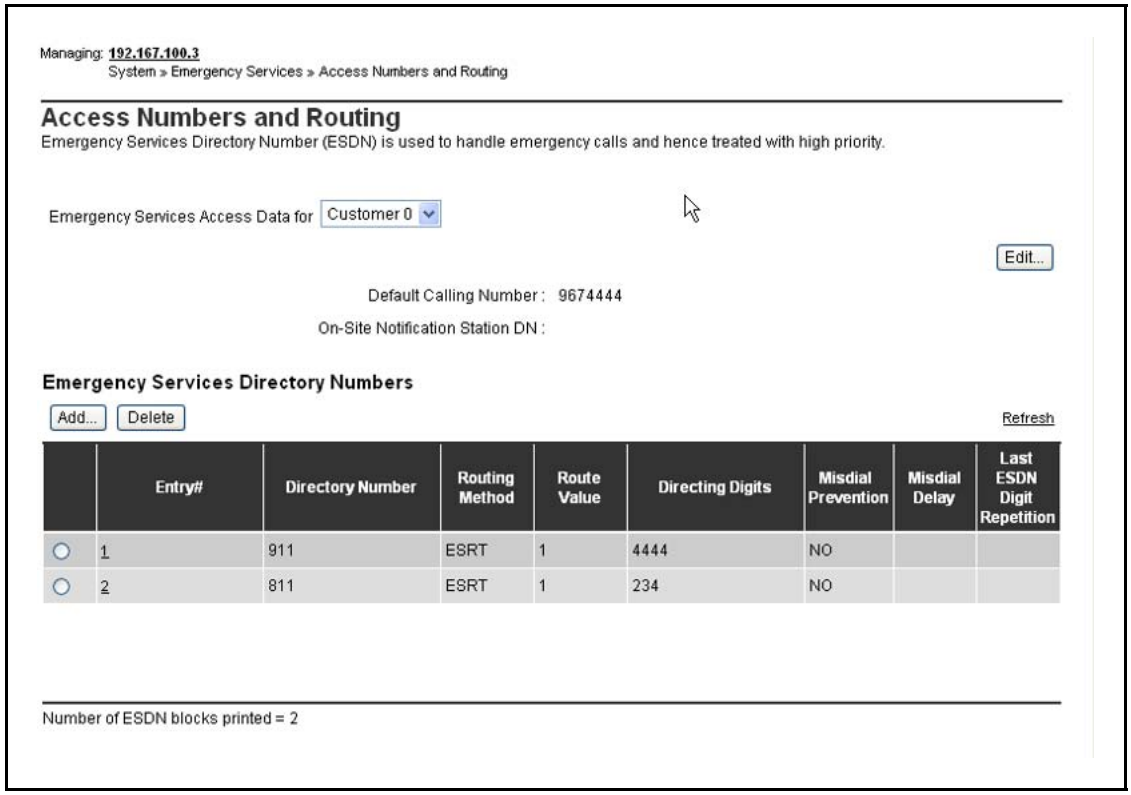
Figure 103
Access Numbers and Routing Web page



To add an Emergency Services Directory Number, click **Add**. The **Add Emergency Services Directory Number** Web page appears, as shown in Figure 104 "Add Emergency Services Directory Number Web page" (page 181).

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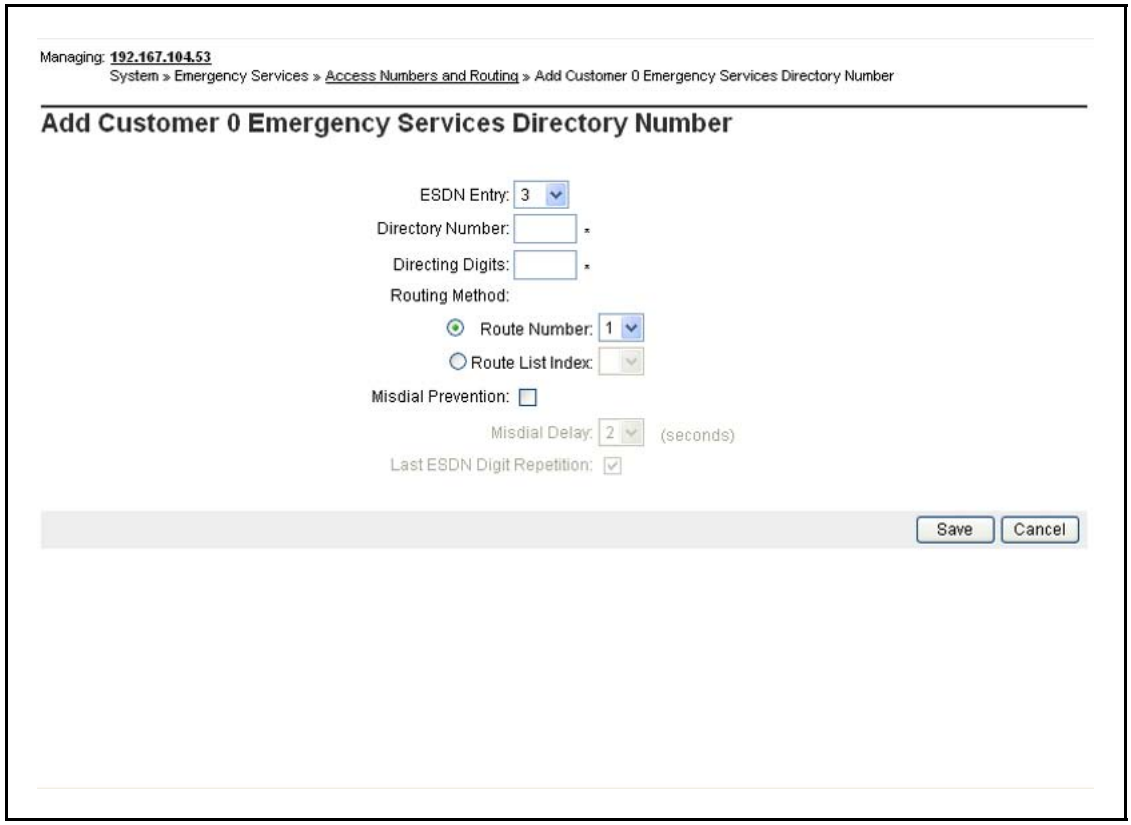
Figure 104
Add Emergency Services Directory Number Web page



To edit an existing Emergency Services Directory Number, from the **Access Numbers and Routing** Web page click the **Entry#**. The **Edit Emergency Services Directory Number** Web page appears, as shown in Figure 105 "Edit Emergency Services Directory Number Web page" (page 182).

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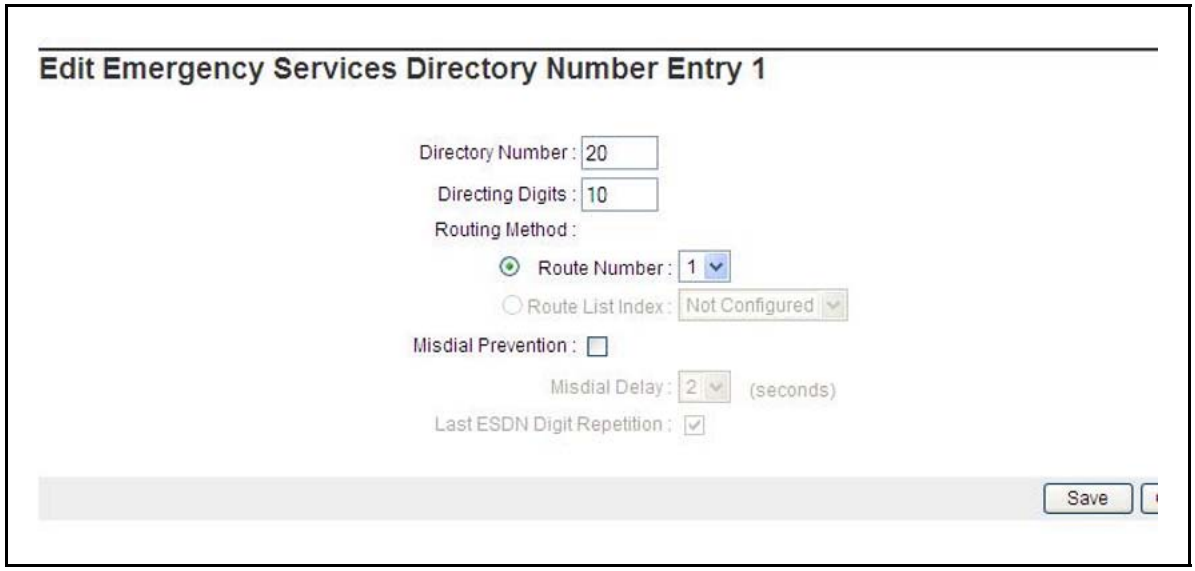
Figure 105
Edit Emergency Services Directory Number Web page



To edit the CLID configuration for a Customer, select a Customer from the **Choose a customer** drop-down list and click **Edit**. The **Edit Access Numbers and Routing** Web page appears, as shown in Figure 106 "Edit Access Numbers and Routing Web page" (page 183).

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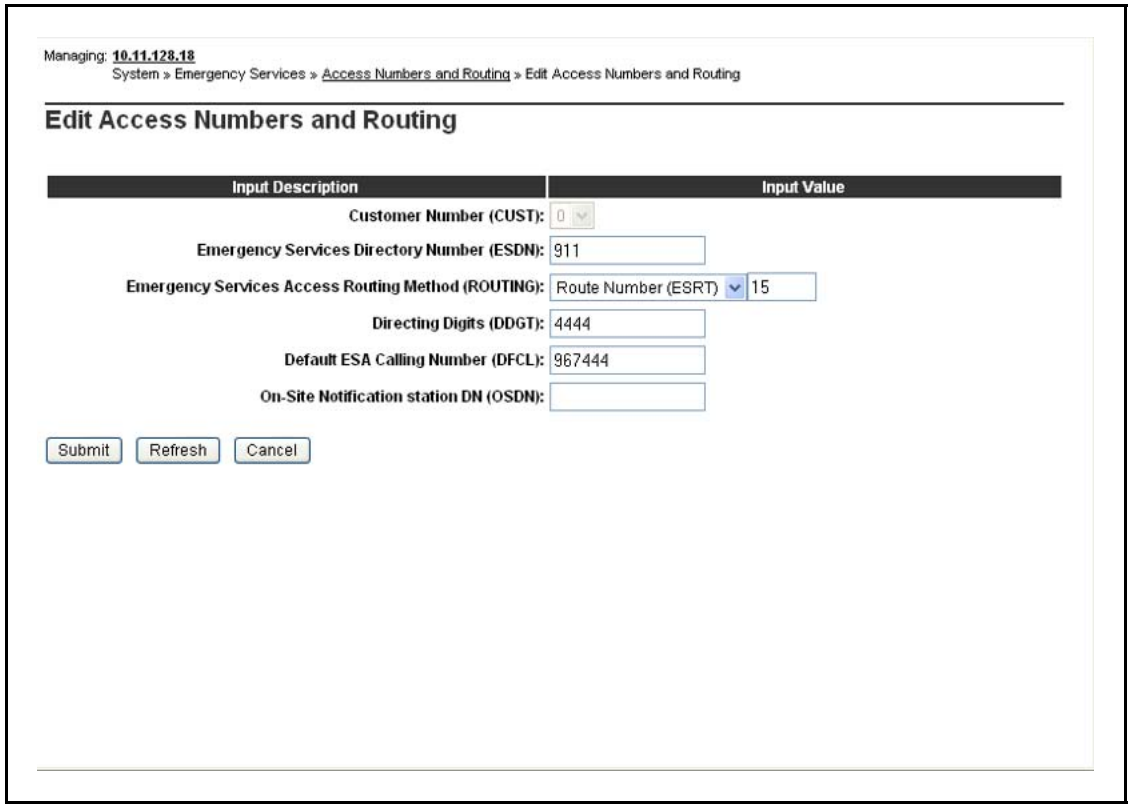
Figure 106
Edit Access Numbers and Routing Web page



To add a new CLID configuration for a Customer, from the **Access Numbers and Routing** Web page click **Add**. The **Add Access Numbers and Routing** Web page appears, as shown in Figure 107 "Add Access Numbers and Routing Web page" (page 184).

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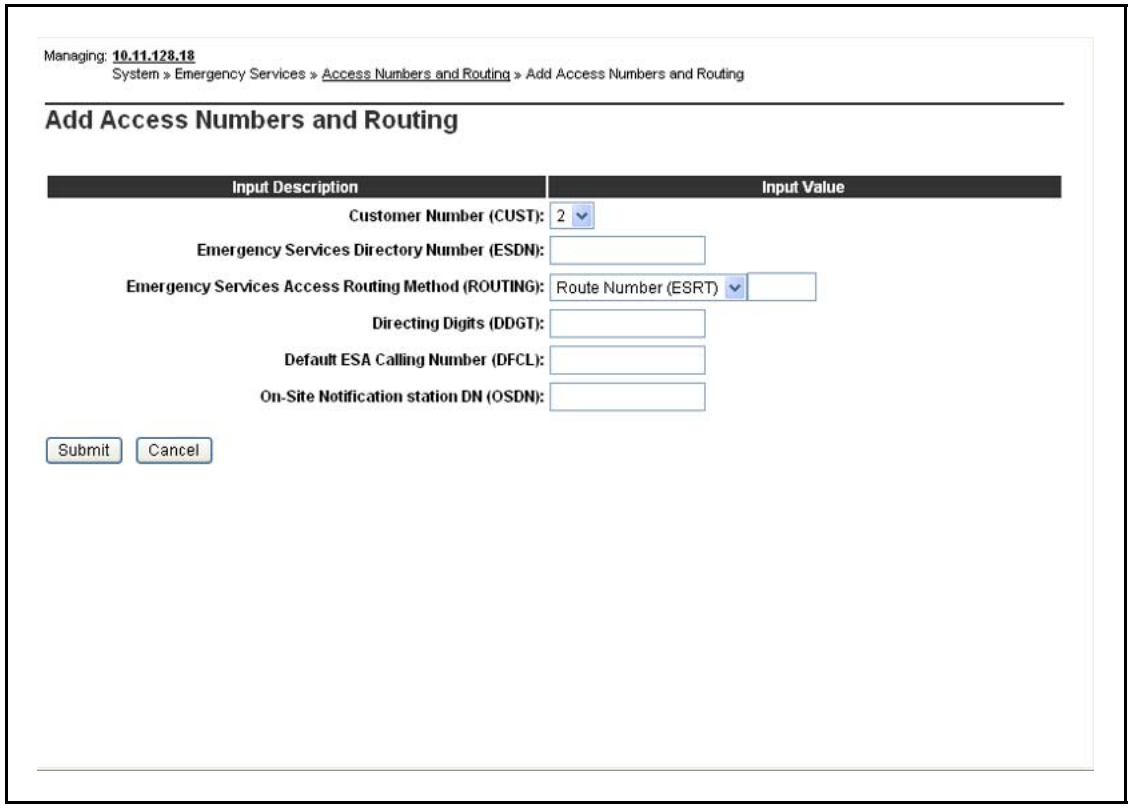
Figure 107
Add Access Numbers and Routing Web page



Choose a Customer from the **Customer Number** drop-down list. Complete the information in the remaining fields and click **Submit**.

To delete the CLID configuration for a customer, from the **Access Numbers and Routing** Web page click **Delete**.

Response Locations

Click the **Emergency Services > Emergency Response Locations** link in the **System** branch of the Element Manager navigator to open the **Emergency Response Location** Web page, as shown in Figure 108 "Emergency Response Location Web page" (page 185).

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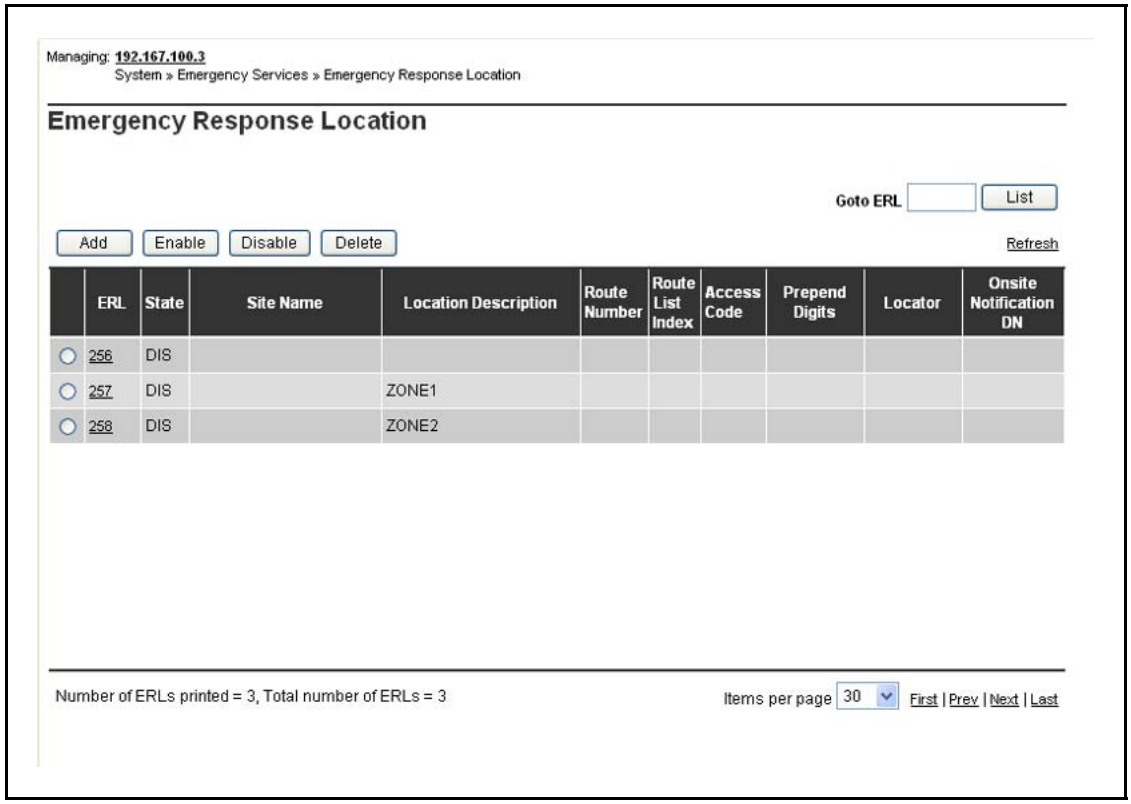
Figure 108
Emergency Response Location Web page



This Web page allows users to add, enable, disable, or delete Emergency Response Locations (ERLs).

To add an ERL, click the radio button for the ERL and click **Add**.

To enable an ERL, click the radio button for the ERL and click **Enable**.

To disable an ERL, click the radio button for the ERL and click **Disable**.

To delete an ERL, click the radio button for the ERL and click **Delete**.

To edit an ERL, click the ERL number. The **Edit Emergency Response Location** Web page appears, as shown in Figure 109 "Edit Emergency Response Location Web page" (page 186).

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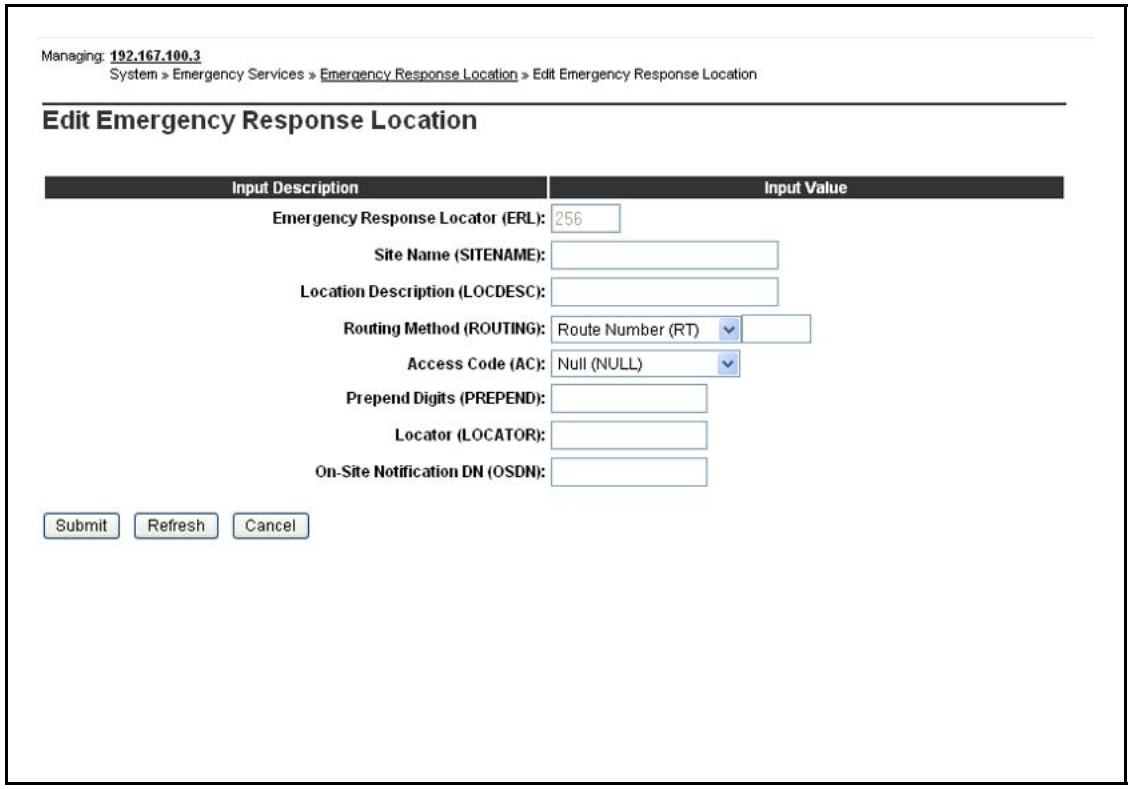
Figure 109
Edit Emergency Response Location Web page



To add an ERL, from the **Emergency Response Location** Web page click **Add**. The **Add Emergency Response Location** Web page appears, as shown in Figure 110 "Add Emergency Response Location Web page" (page 187).

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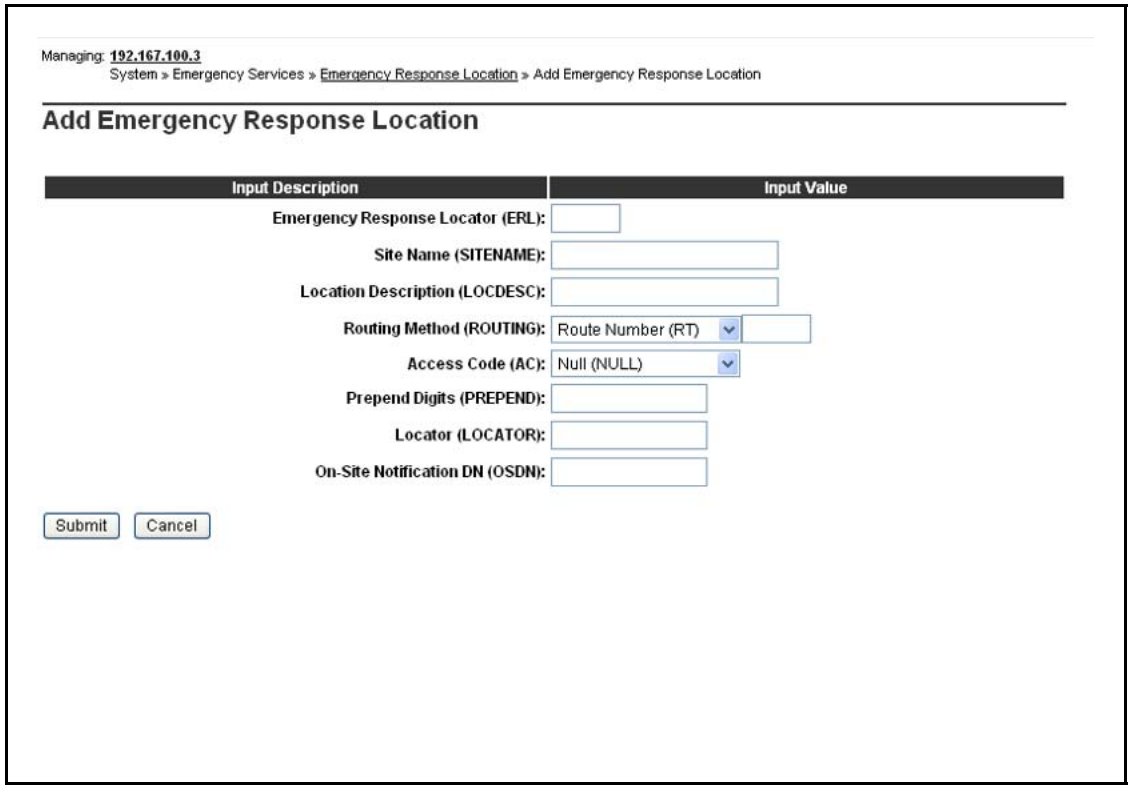
Figure 110
Add Emergency Response Location Web page



Enter the information for the new ERL and click **Submit**.

Subnet Information

The Subnet Location Information Web pages allow users to modify subnet information.

Click the **Emergency Services > Subnet Information** link in the **System** branch of the Element Manager navigator to open the **Subnet Location Information Service** Web page, as shown in Figure 111 "Subnet Location Information Service Web page" (page 188).

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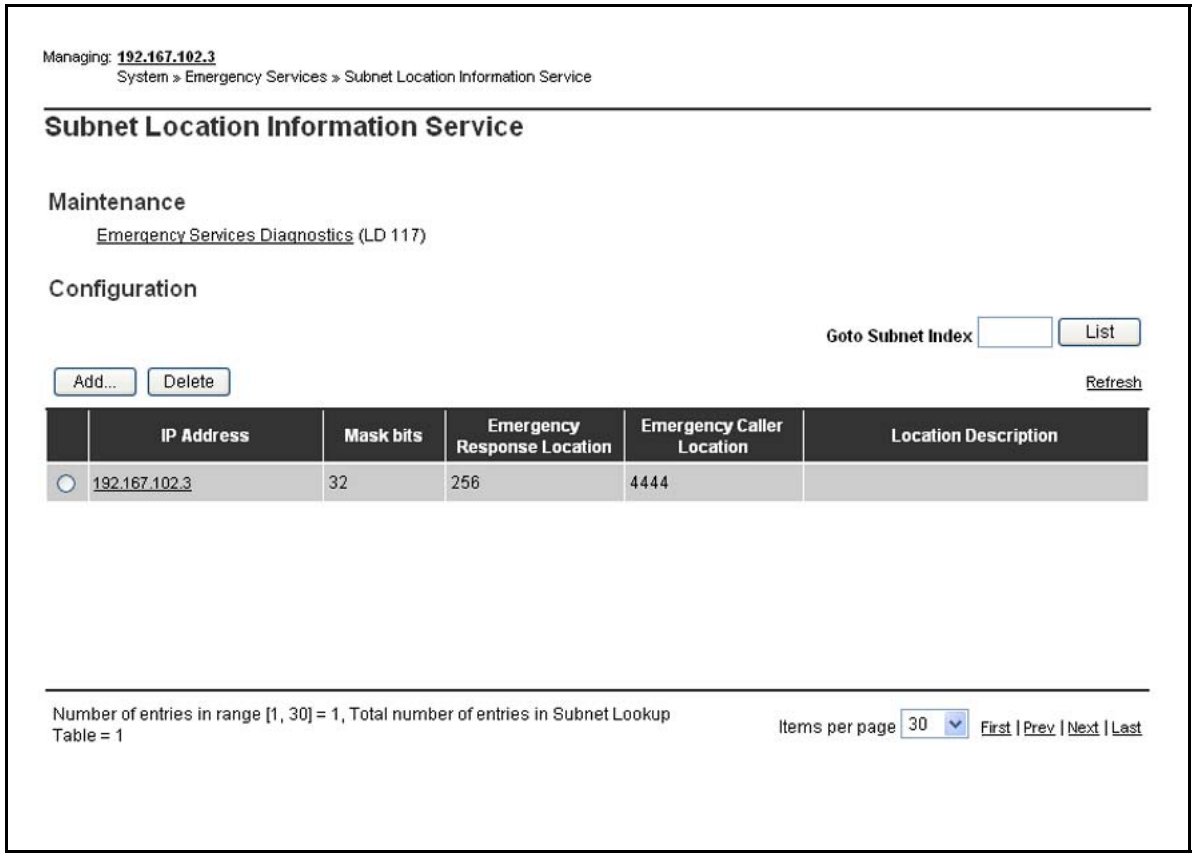
Figure 111
Subnet Location Information Service Web page



The Maintenance section contains a link to the **Emergency Services Diagnostics** Web page. See “Emergency Services Diagnostics” (page 75).

The Configuration section lists the configured subnet entries. To delete a configured Subnet Location, select the appropriate radio button beside an IP Address and click **Delete**.

To edit a configured Subnet Location, click the Subnet Location **IP Address**. The **Edit Subnet Location Information** Web page appears, as shown in Figure 112 "Edit Subnet Location Information Web page" (page 189).

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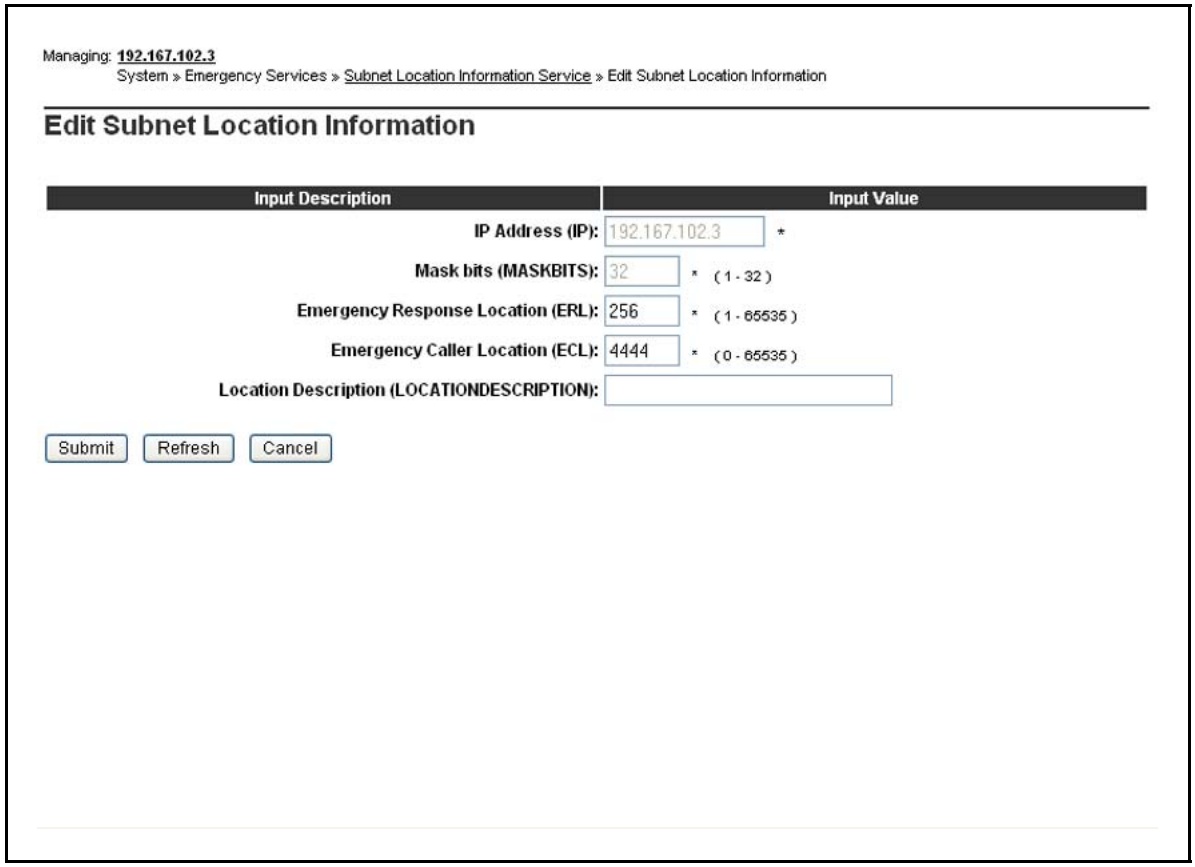
Figure 112
Edit Subnet Location Information Web page



To add a Subnet Location, from the **Subnet Location Information Service** Web page click **Add**. The **Add Subnet Location Information** Web page appears, as shown in Figure 113 "Add Subnet Location Information Web page" (page 190).

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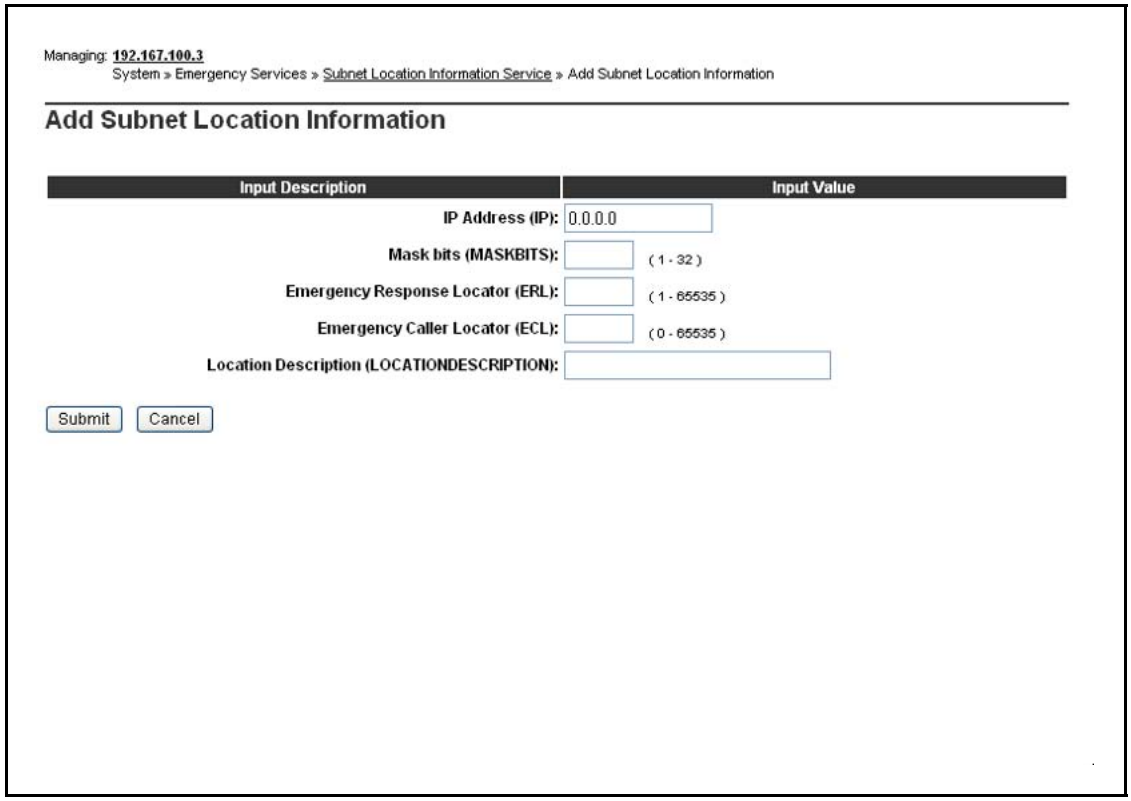
Figure 113
Add Subnet Location Information Web page



Enter the information for the new Subnet Location and click **Submit**.

Dynamic ELIN

The Dynamic Identification Web pages allow users to modify Dynamic Emergency Location information.

Click the **Emergency Services > Dynamic ELIN** link in the **System** branch of the Element Manager navigator to open the **Dynamic ELIN** Web page, as shown in Figure 114 "Dynamic ELIN Web page" (page 191).

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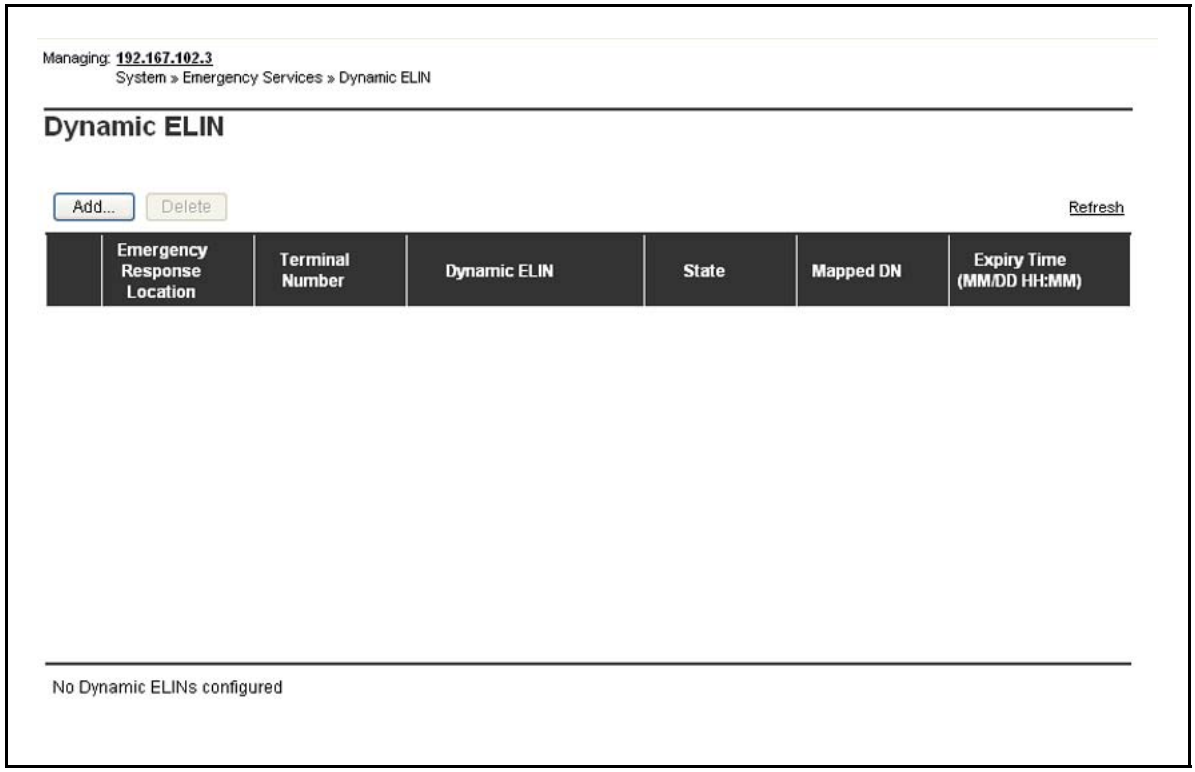
Figure 114
Dynamic ELIN Web page

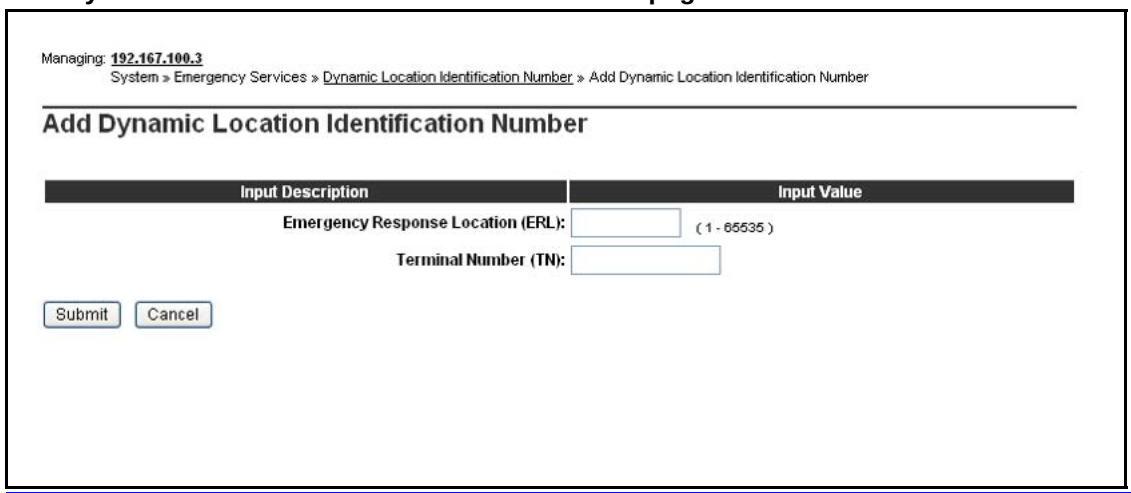


This Web page lists the configured Dynamic ELINs.

To delete an ELIN, click the radio button for the ELIN and click **Delete**.

To add an ELIN, click **Add**. The **Add Dynamic Location Identification Number** Web page appears, as shown in Figure 115 "Add Dynamic Location Identification Number Web page" (page 191).

Figure 115
Add Dynamic Location Identification Number Web page



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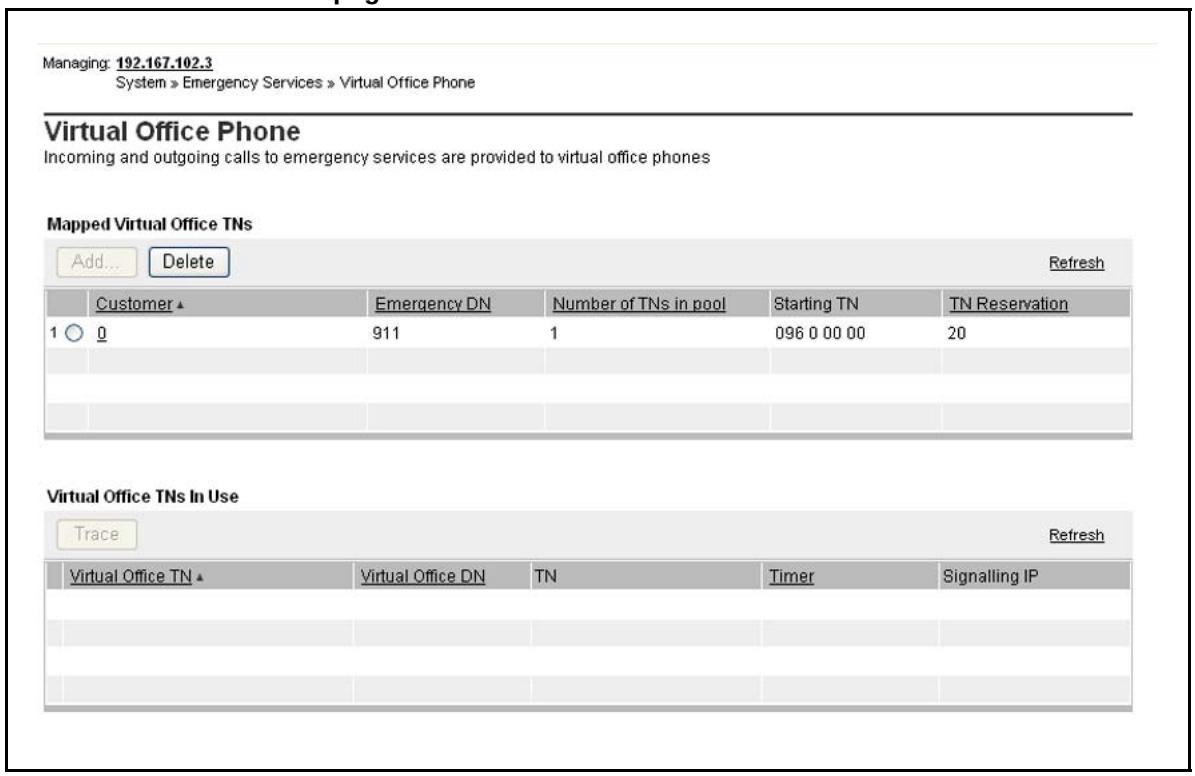
Enter the information for the new ELIN and click **Submit**.

Virtual Office Phone

The Virtual Office Phone Web pages allow users to maintain lists of mapped and unused Virtual Office TNs.

Click the **Emergency Services > Virtual Office Phone** link in the **System** branch of the Element Manager navigator to open the **Virtual Office Phone** Web page, as shown in Figure 116 "Virtual Office Phone Web page" (page 192).

Figure 116
Virtual Office Phone Web page



To delete a Mapped Virtual Office TN, click the radio button for the Customer and click **Delete**.

To Add a Mapped Virtual Office TN, click **Add**, enter the information for the new Virtual Office TN, and click **Save**.

This Web page includes two sections listing Mapped Virtual Office TN Pools and Virtual Office TNs in use.

Geographic Redundancy

Geographic Redundancy is available only on CPP IV and CP PM systems.

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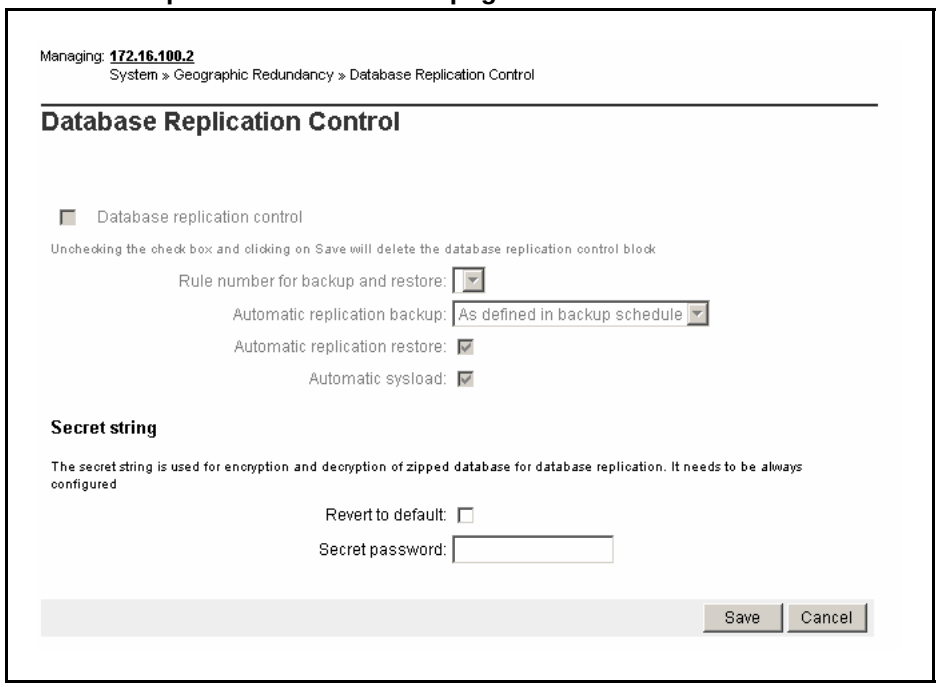
Database Replication Control

To configure or edit Database Replication information, click the Geographic Redundancy > Database Replication Control link in the System branch of the Element Manager navigator. The **Database Replication Control** Web page appears as shown in Figure 117 "Database Replication Control Web page" (page 193).

Figure 117
Database Replication Control Web page



On the **Database Replication Control** Web page, you can configure the following information:

- Rule Number for backup and Restore
- Automatic Replication Backup (ABKUP)
- Automatic Replication restore
- Automatic Sysload

Note: You must configure one SCS backup rule before **Database Replication Control** Web page can be configured.

You can also create a Secret string. You create a mandatory Secret string for encryption and decryption of a zipped database and database replication.

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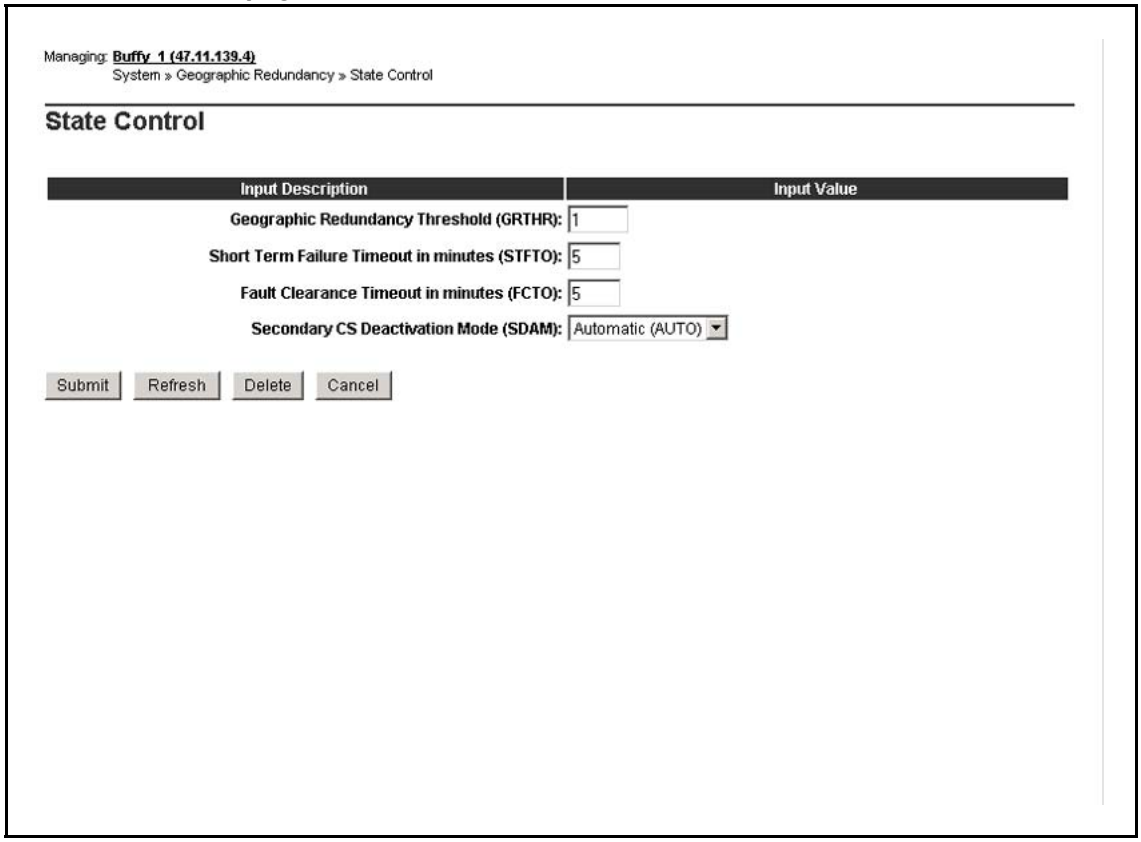
State Control

To configure State Control information, click the **Geographic Redundancy > State Control** link in the **System** branch of the Element Manager navigator. The **State Control** Web page appears as shown in Figure 118 "State Control Web page" (page 194).

Figure 118
State Control Web page



On the **State Control** Web page, users can configure:

- Associated Secondary Call Server
- Threshold1 (Number Of IP phones registered)
- Threshold2 (Number of Media Gateways registered)
- Short Term Failure Timeout in minutes
- Fault Clearance Timeout in minutes
- Secondary CS Deactivation Mode

The information entered on this Web page corresponds to the commands available in LD 117.

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For more information about Geographic Redundancy, see *System Redundancy Fundamentals (NN43001-507)*.

Software

The **Software** link of the **System** branch of the Element Manager navigator can be used to perform patching of the Call Server or the Media Gateway.

To have access to the patching feature, you must enter the administration password configured in LD 17 and have PDT access. Patches can be downloaded from the Nortel web site using any web browser.

For MGC and VGMC loadware distribution and functionality instructions, refer to the "Enterprise Voice Solutions Patch Reference and Best Practice Guidelines" located on the Enterprise Solutions PATCH Library (ESPL) page at www.nortel.com/espl. Authorized users can log in to the ESPL using their e-mail address as Login ID, SAM ID or Norpass password. If the user does not have access to the ESPL page, it will show as "Not available". Users who do not have access can contact Nortel ESPL support for assistance, or can follow the New User Registration link from the main ESPL Login page.

Call Server PEPs

Perform Call Server patching by clicking the **Software > Call Server PEPs** link in the **System** branch of the Element Manager navigator. The **Call Server** Web page appears, as shown in Figure 119 "Call Server Web page" (page 196).

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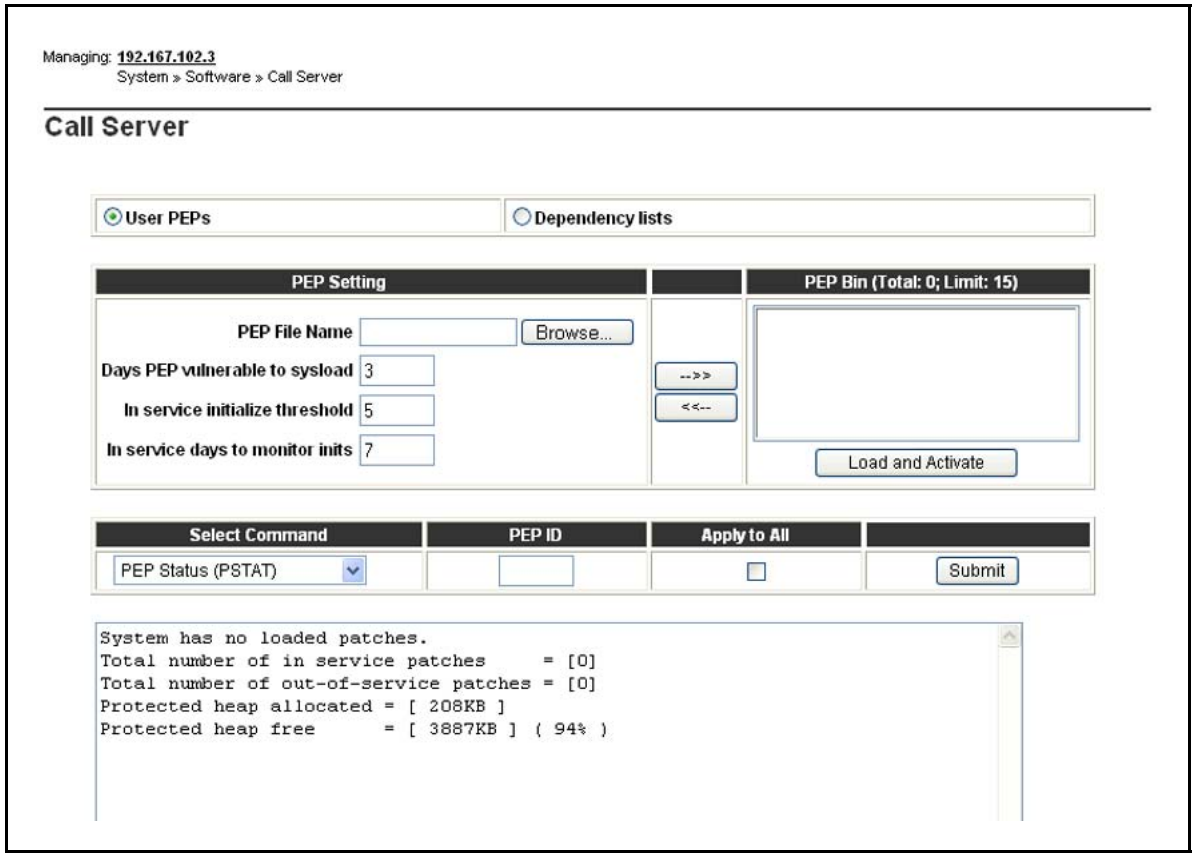
Figure 119
Call Server Web page



From the **Call Server** Web page, the user can:

- load and activate a new Product Enhancement Package (PEP)
- get the status of a single PEP or all PEPs (PSTAT)
- activate a single PEP or all PEPs (PINS)
- deactivate a single PEP or all PEPs (POOS)
- remove a single PEP or all PEPs (POUT)
- view the details on a PEP (PLIS)

The **PEP Setting** section at the top left of the Web page enables the user to select files and choose settings. Clicking the right arrow (->>) button moves PEP files into the **PEP Bin** section. Clicking the left arrow (<<-) button moves PEP files out of the **PEP Bin** section. Click **Load and Activate** to submit the selected PEP to the call server. Results are displayed at the bottom of the screen.

Note: The user can download only 15 PEP files at a time. To install more than 15 PEPs on a single entity, the user must run the utility again.

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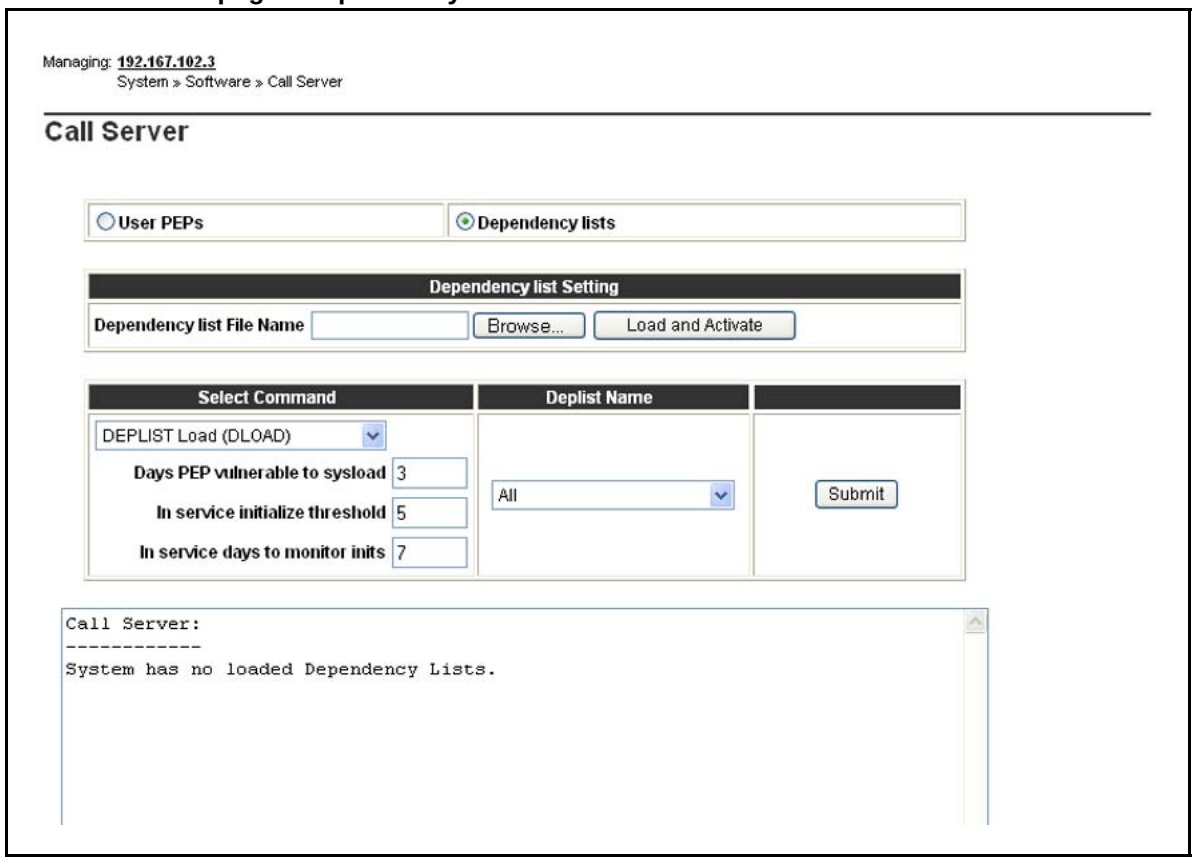
All PEP commands require the PEP ID. After selecting the PEP command from the drop-down list, enter the **PEP ID** in the text box.

The **Apply to All** check box is enabled for all commands with the exception of the PLIS command. Clicking the **Submit** button executes the command. Results are displayed at the bottom of the screen.

PEP Management can be applied to Call Servers. Element Manager enables users to load Matrix DepLists (MDP) to the Call Server and manage the MDPs by using the Management DepList commands. Click the **Dependency lists** radio button. See Figure 120 "Call Server Web page - Dependency Lists" (page 197).

Figure 120
Call Server Web page - Dependency Lists



PEP lists are populated with individual PEPs contained in an update when a Matrix DepList is opened. The **Refresh** command refreshes the contents of an MDP on a target system and enables the user to load MDPs properly.

PEP Management supports the following commands:

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- load and activate a new PEP (DLOAD)
- get the status of a single PEP or all PEPs (DSTAT)
- activate a single PEP or all PEPs (DINS)
- deactivate a single PEP or all PEPs (DOOS)
- remove a single PEP or all PEPs (DOUT)
- view the details on a PEP (DLIS)

Each PEP in the Matrix DepList has its own PEP handle and can be uninstalled, similar to current multipatch functionality.

Loading and Activating PEP Settings on the Call Server

Step	Action
1	Select the **User PEPs** radio button on the **Call Server** page.
2	Click **Browse**. The **Choose file** window appears.
3	Choose a file to be downloaded and click **Open**.
4	Enter the number of **Days PEP vulnerable to sysload**.
5	Enter the **In service initialize threshold**.
6	Enter the **In service days to monitor inits**.
7	Click the **-->>** (right arrow) button to move the PEP files into the PEP Bin section.
8	Click **Load and Activate** to submit the selected PEPs to the call server. Results are displayed at the bottom of the screen.

--End--

Additional Commands

From the **Select Command** list select one of the following:

- **PEP Status (PSTAT)** - Shows the status of the PEP
- **PEP In-Service (PINS)** - Places the PEP in service
- **PEP Out-Of-Service (POOS)** - Takes the PEP out of service
- **PEP Out (POUT)** - Unloads the PEP
- **PEP List (PLIS)** - Lists information about the PEP

Once the appropriate command has been selected, select either **PEP ID** and enter the PEP ID that you want to execute the command on or select **Apply to All** to execute the selected command on all of the PEPs. Once this has been completed, select **Submit**.

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Loading and Activating Dependency lists on the Call Server

Step	Action
1	Select the **Dependency lists** radio button on the **Call Server** page.
2	Click **Browse**. The **Choose file** window appears.
3	Choose a file to be downloaded and click **Open**.
4	Click **Load and Activate** to submit the selected Deplist to the call server.

--End--

Additional Commands

From the **Select Command** box select one of the following:

- **DEPLIST Load (DLOAD)** - Loads the Deplist
- **DEPLIST Status (DSTAT)** - Shows the status of the Deplist
- **DEPLIST In-Service (DINS)** - Places the Deplist in service
- **DEPLIST Out-Of-Service (DOOS)** - Takes the Deplist out of service
- **DEPLIST Out (DOUT)** - Unloads the Deplist
- **DEPLIST List (DLIS)** - Lists information about the Deplist

Once the appropriate command has been selected, select the**Deplist Name** that you would like to execute the command on. Once this has been completed, select **Submit**.

The following other changes can be executed when loading a Deplist:

- Enter the number of **Days PEP vulnerable to sysload**
- Enter the **In service initialize threshold**
- Enter the **In service days to monitor inits**

WARNING
Service updates that contain many PEPs can take time to install.

Software

The **Software** link of the **System** branch of the Element Manager navigator can also be used to upload and store files, upgrade firmware, and perform patching activities.

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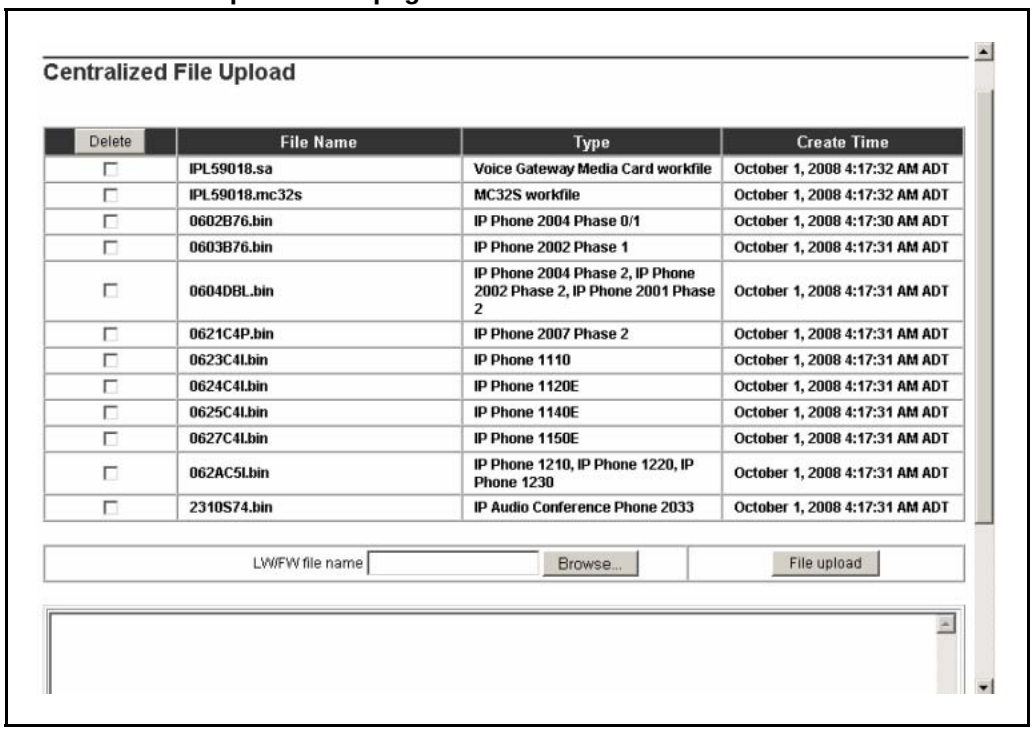
Centralized File Upload

The file upload function enables users to upload and store loadware and firmware files on the Signaling Server. These files can then be downloaded to network elements, using the functions available under the **Software > File Upload** link in the **System** branch of the navigator. The **Centralized File Upload** Web page appears as shown in

Figure 121
Centralized File Upload Web page



For more information about the file upload function, see *Signaling Server IP Line Application Fundamentals (NN43001-125)*.

IP Phone Firmware

The **Software > IP Phone Firmware** link in the **System** branch of the Element Manager navigator allows users to upgrade IP Phone firmware. For more information, see *Signaling Server IP Line Application Fundamentals (NN43001-125)*.

Media Cards

Click the **Software > Media Cards PEPs** link in the **System** branch of the Element Manager navigator to open the **Media Cards** Web page as shown in Figure 122 "Media Cards Web page" (page 201).

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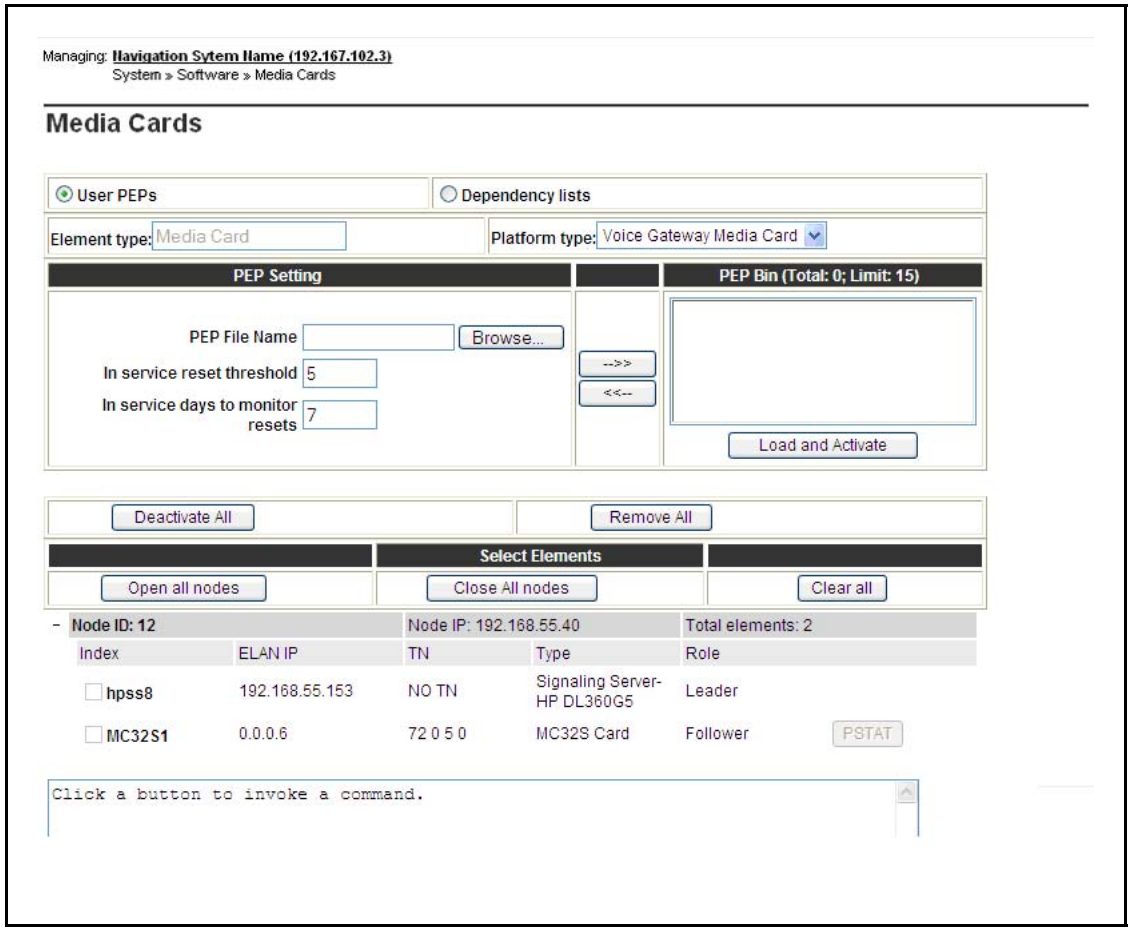
Figure 122
Media Cards Web page



From this Web page the following functions can be performed:

- load and activate a new PEP
- view the status of a single PEP or all PEPs (PSTAT)
- activate a single PEP or all PEPs (PINS)
- deactivate a single PEP or all PEPs (POOS)
- remove a single PEP or all PEPs (POUT)
- view the details on a PEP (PLIS)

The **PEP Setting** section at the top left of the Web page enables users to select files and choose settings.

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Procedure 83
Loading and Activating PEP Settings to the Signaling Server

Step	Action
1	Select the correct **Element** type and then **Platform** type.
2	Click **Browse**. The **Choose file** window appears.
3	Choose a file to be downloaded and click **Open**.
4	Enter the number of **Days PEP vulnerable to sysload**.
5	Enter the **In service initialize threshold**.
6	Enter the **In service days to monitor inits**.
7	Click the **-->>** (right arrow) button to move the PEP files into the PEP Bin section.
8	Click **Load and Activate** to submit the selected PEPs to the call server. Results are displayed at the bottom of the screen.

--End--

Clicking the -->> (right arrow) button moves PEP files into the **PEP Bin** section. Likewise, clicking the <<-- (left arrow) button moves PEP files out of the **PEP Bin** section. Click **Load and Activate** to submit the selected PEPs to the call server. Results are displayed at the bottom of the screen.

Note: A maximum of 15 PEP files can be downloaded at a time. If more than 15 PEPs must be installed on a single entity, the utility must be run again.

Click the **PSTAT** button to open the **Type** Web page for the selected element.

All PEP commands require the PEP ID. After selecting the PEP **Command** from the drop-down list, enter the **PEP ID** in the text box.

The **Apply to All** check box is enabled for all commands with the exception of the PLIS command. Clicking the **Submit** button executes the command. Results are displayed at the bottom of the screen.

Additional Commands:

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Customers, Routes and Trunks

Contents

This section contains information about the following topics:

“Introduction” (page 203)

“Customers” (page 203)

“Route and Trunk Configuration” (page 230)

    “Routes and Trunks” (page 230)

“D-channels” (page 240)

“Digital Trunk Interface” (page 244)

Introduction

The **Customers** and **Routes and Trunks** branches of the Element Manager navigator are used to launch Web pages that enable the user to configure and edit data relating to customers and their equipment.

Customers

When the user clicks the **Customers** branch of the Element Manager navigator, the **Customers** Web page appears, as shown in Figure 123 "Customers Web page" (page 204). To configure customer data, click the **Customer Number**.

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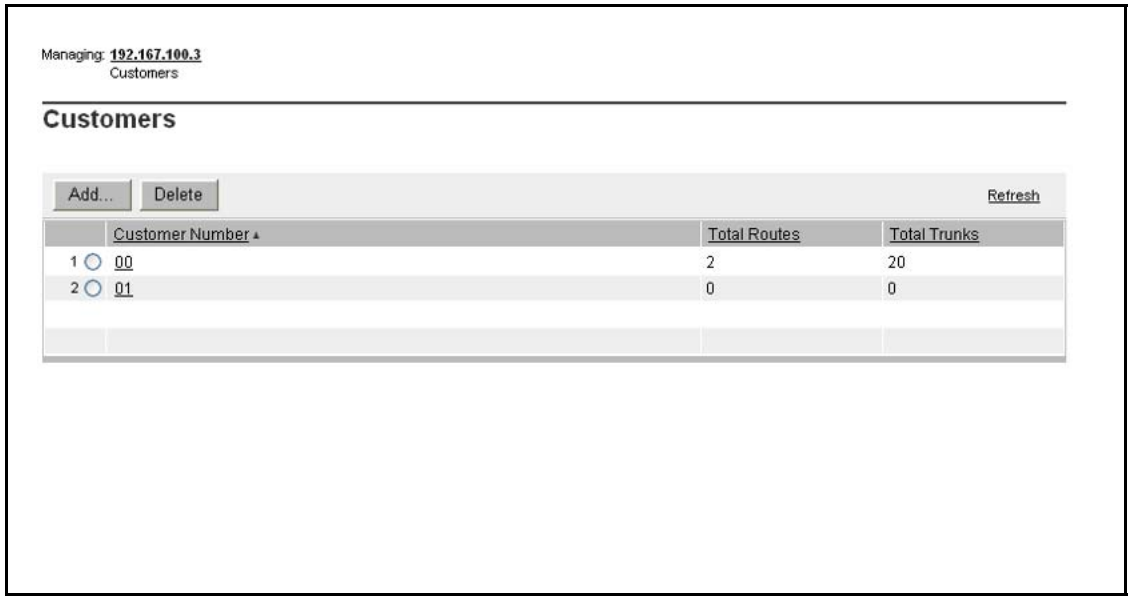
Figure 123
Customers Web page



Note: To create a new customer, you must create a new role in Unified Communications Management (UCM) and modify the permissions for that role so that Customer Tenant Mappings reflect permissions for all customers to be added.For information about creating a new roll in UCM, refer to*Unified Communications Management Common Services Fundamentals* (NN43001-116).

To add a new customer, click **Add**.

The **Basic Configuration** Web page appears, as shown in Figure 124 "Basic Configuration Web page" (page 205).

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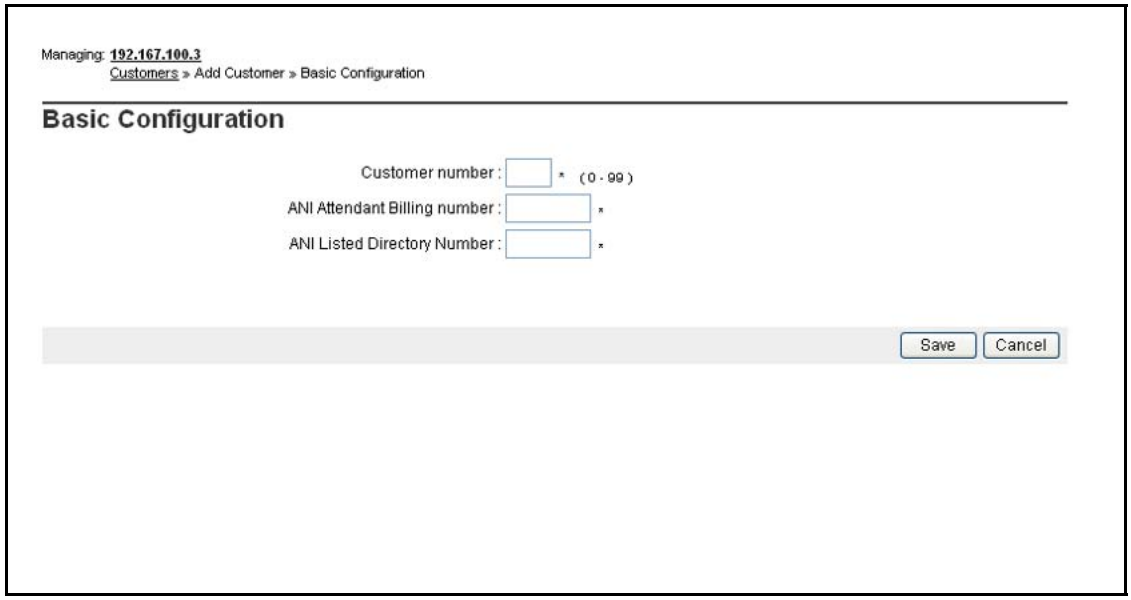
Figure 124
Basic Configuration Web page



The information entered in this Web page corresponds to Default Customer Data Block information traditionally configured using LD 15 - Customer Data Block.

Enter the required information in the three fields and click **Save**.

The **Edit** Web page appears, as shown in Figure 125 "Edit Customer Web page" (page 206).

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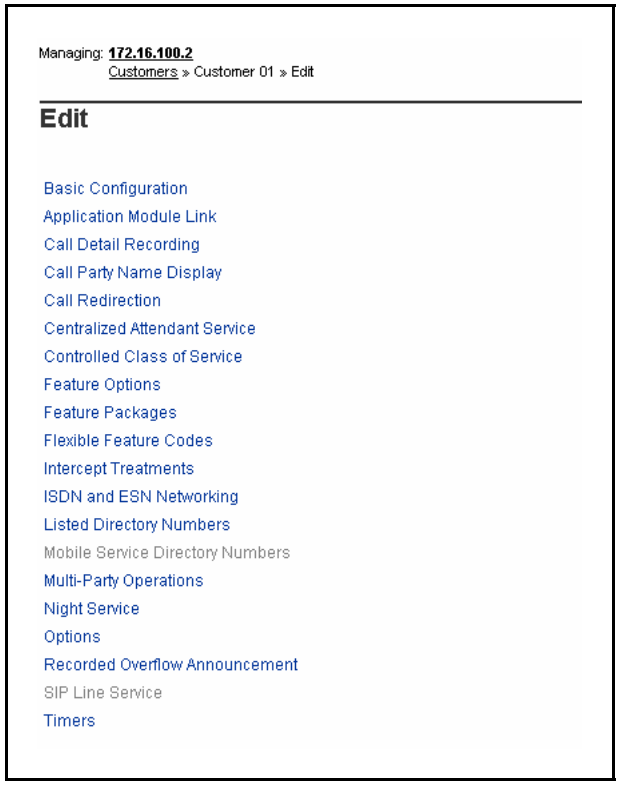
Figure 125
Edit Customer Web page



This Web page contains links to Web pages where users can configure additional parameters for each route data block.

Application Module Link

The **Application Module Link** Web page allows users to configure the Application Module Link data block for a customer. Click **Application Module Link** to open this Web page, as shown in Figure 126 "Application Module Link Web page" (page 207).

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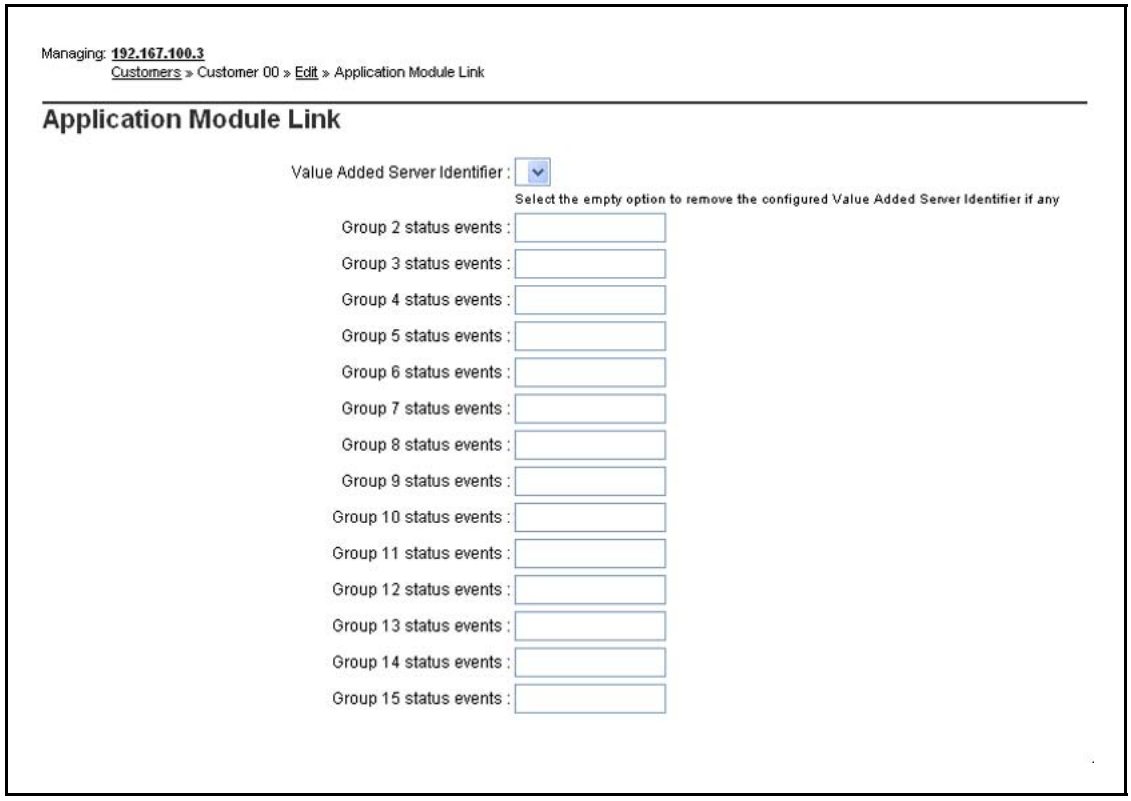
Figure 126
Application Module Link Web page



Enter the **Value Added Service Identifier** and Group status events information and click **Save**.

Call Detail Recording

The **Call Detail Recording** Web page allows users to configure the Call Detail Recording data block for a customer. Click **Call Detail Recording** to open this Web page, as shown in Figure 127 "Call Detail Recording Web page" (page 208).

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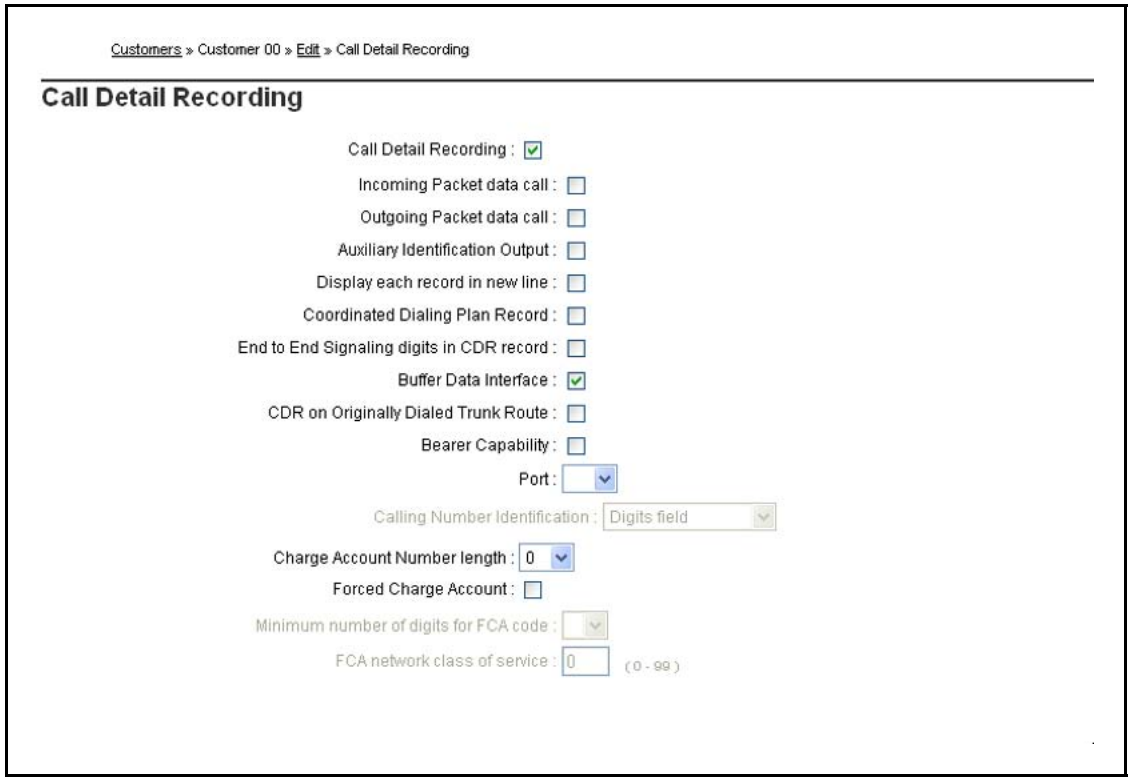
Figure 127
Call Detail Recording Web page



Enter the appropriate information and click **Save**.

Call Party Name Display

The **Call Party Name Display** Web page allows users to configure the Call Party Name Display data block for a customer. Call Party Name Display names for Incoming Digit Conversion (IDC) are supported on this Web page. Click **Call Party Name Display** to open this Web page, as shown in Figure 128 "Call Party Name Display Web page" (page 209).

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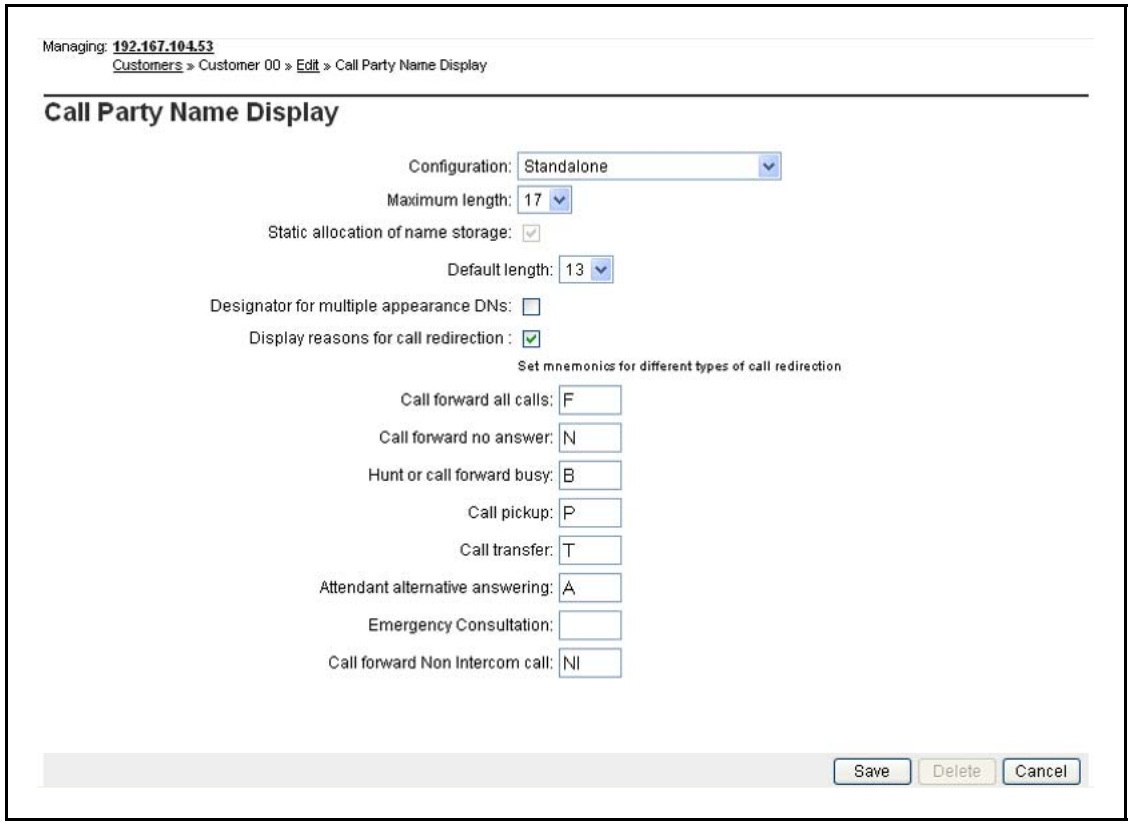
Figure 128
Call Party Name Display Web page



Enter the appropriate information and click **Save**.

Note: The **Static Allocation of name storage** check box will be checked and not editable if the BGD package is enabled.

Call Redirection

The **Call Redirection** Web page allows users to configure the Call Redirection data block for a customer. Click **Call Redirection** to open this Web page, as shown in Figure 129 "Call Redirection Web page" (page 210).

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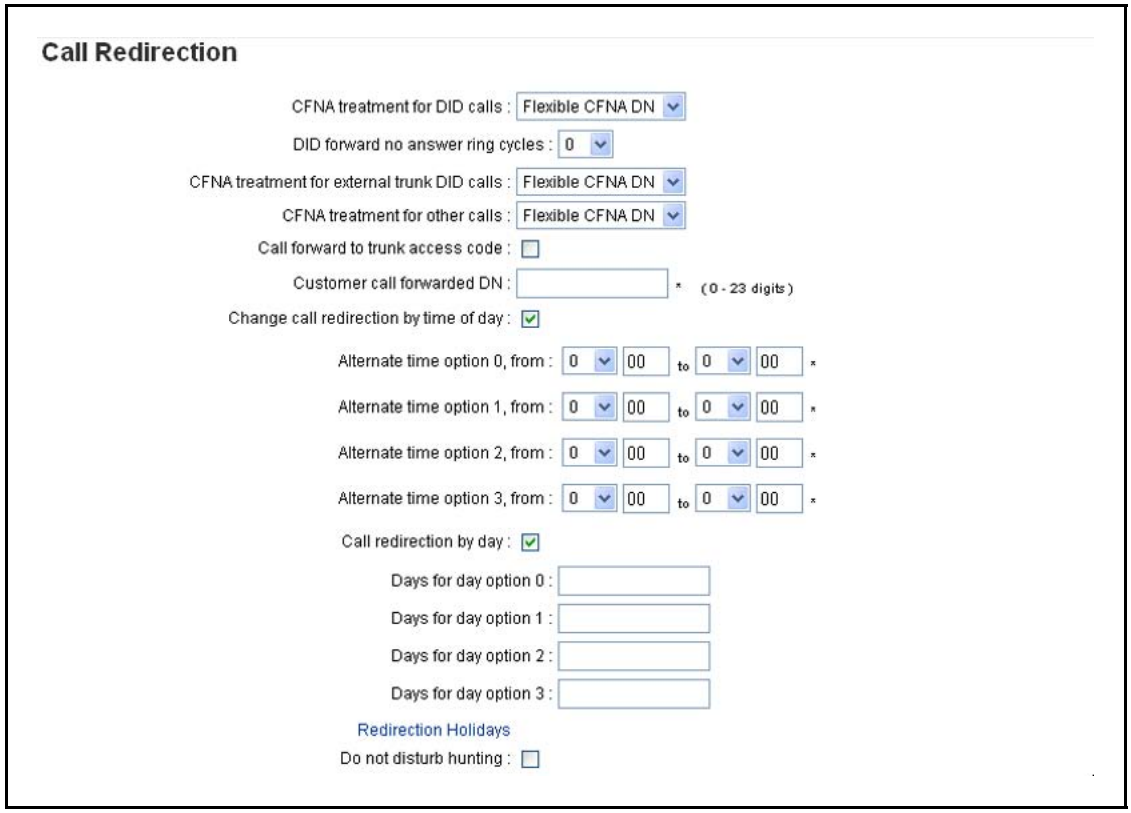
Figure 129
Call Redirection Web page



Enter the appropriate information and click **Save**.

Click **Redirection Holidays** to open the **Redirection Holidays** Web page, as shown in Figure 130 "Redirection Holidays Web page" (page 211).

This Web page displays holiday redirections for existing dates and allows users to add, edit, or delete holidays.

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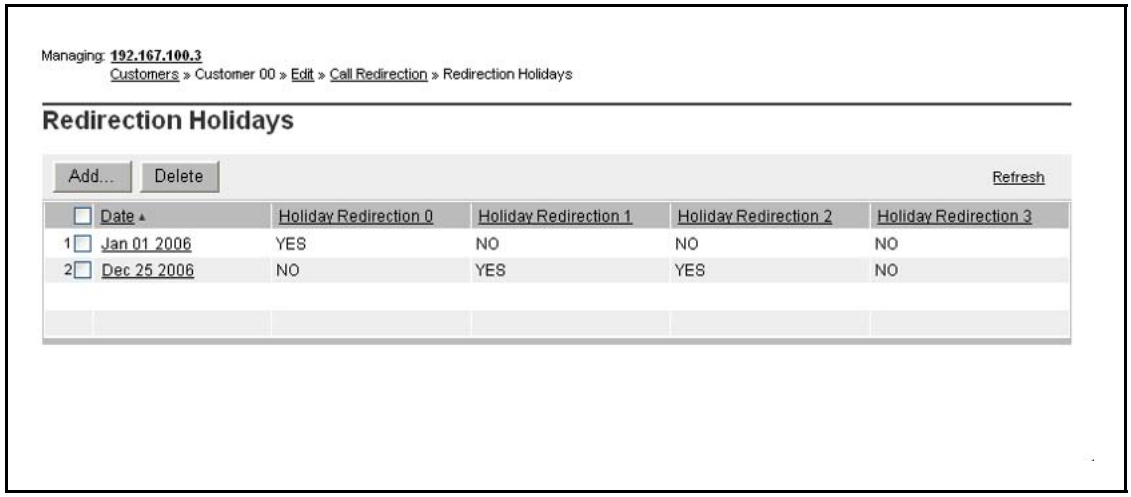
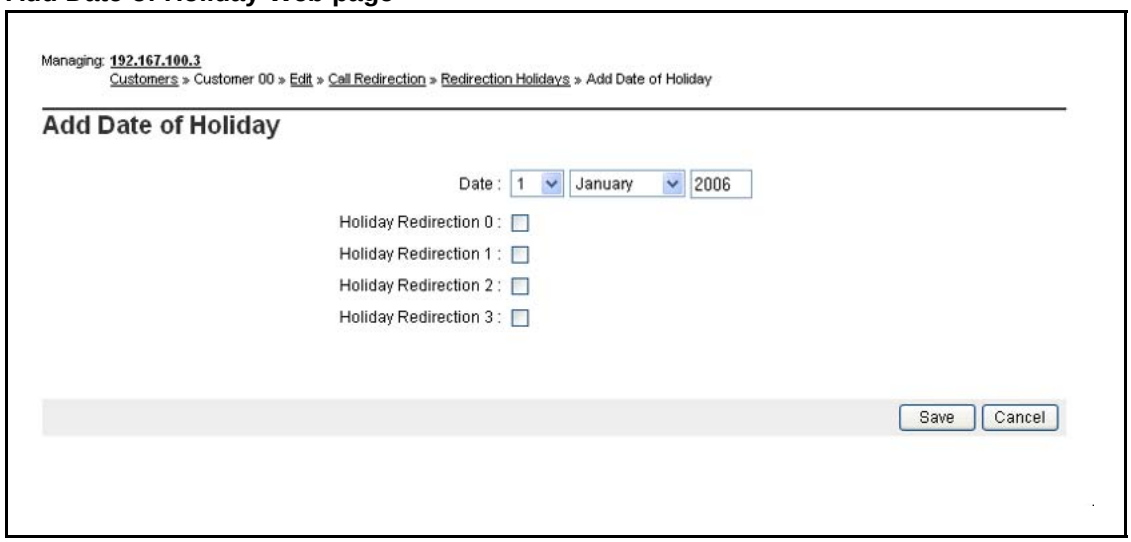
Figure 130
Redirection Holidays Web page



To add a holiday, click **Add**. The **Add Date of Holiday** Web page appears, as shown in Figure 131 "Add Date of Holiday Web page" (page 211).

Figure 131
Add Date of Holiday Web page



Use this Web page to configure holiday redirections for a customer. Enter the holiday information and click **Save**.

Centralized Attendant Service

The **Centralized Attendant Service** Web page allows users to centralize their attendant services at a single location. From the **Edit** Web page, click **Centralized Attendant Service** to open this Web page, as shown in Figure 132 "Centralized Attendant Service Web page" (page 212).

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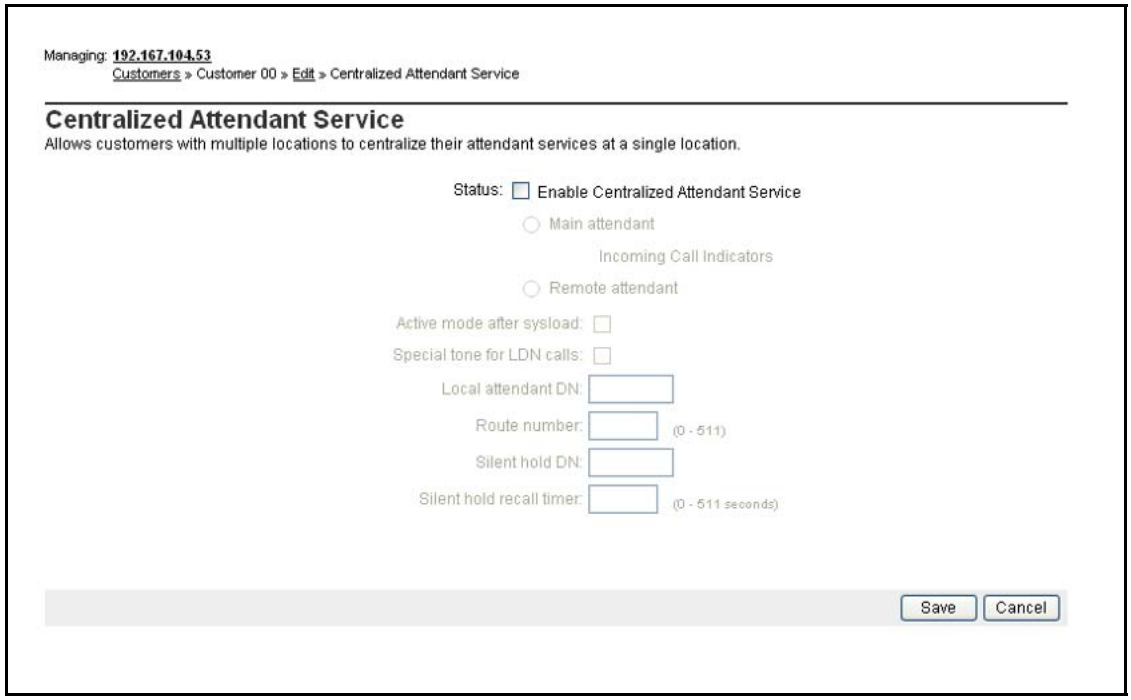
Figure 132
Centralized Attendant Service Web page



Enter the appropriate information and click **Save**.

To edit the Attendant Incoming Call Indicators, click the **Main attendant** radio button, and click **Incoming Call Indicators**. The **Edit Attendant ICI** Web page appears, as shown in Figure 133 "Edit Attendant ICI Web page" (page 213).

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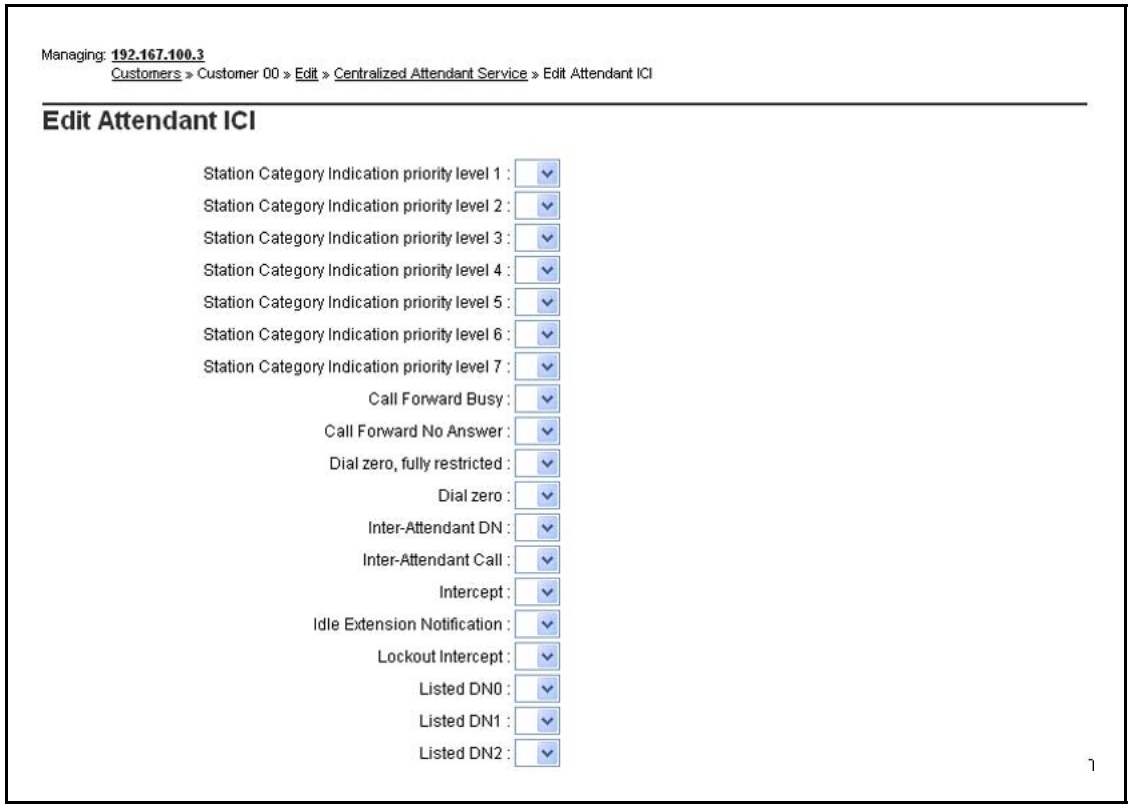
Figure 133
Edit Attendant ICI Web page



Enter the appropriate information and click **Save**.

Controlled Class of Service

The **Controlled Class of Service** Web page allows users to configure the Controlled Class of Service data block for a customer. Click **Controlled Class of Service** to open this Web page, as shown in Figure 134 "Controlled Class of Service Web page" (page 214).

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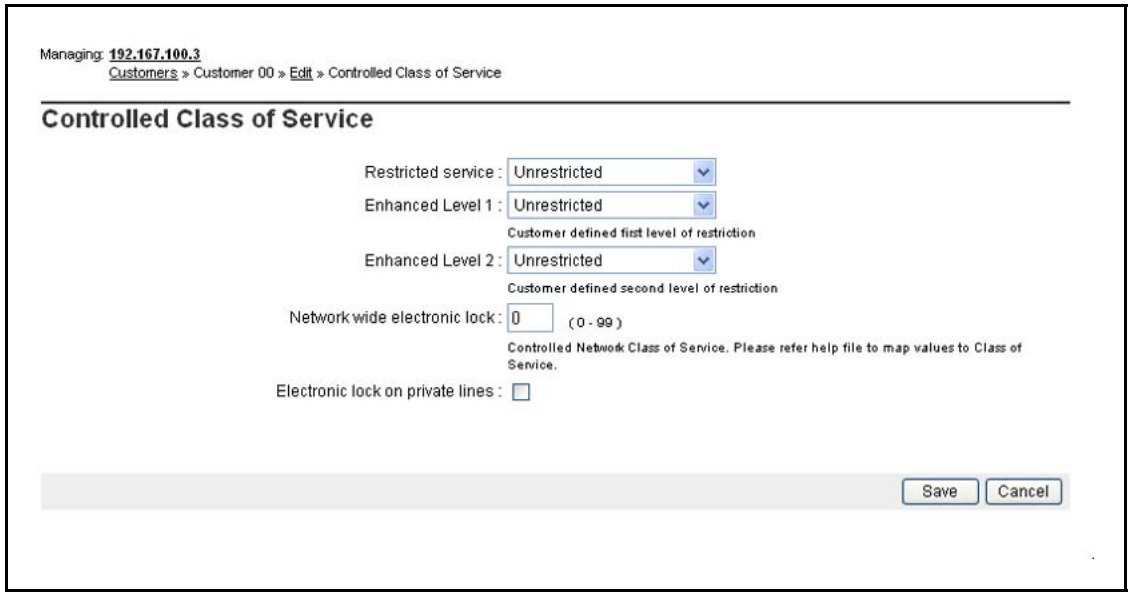
Figure 134
Controlled Class of Service Web page



Enter the appropriate information and click **Save**.

Flexible Feature Codes

The **Flexible Feature Codes** Web page allows users to configure the Flexible Feature Codes (FFC) data block for a customer. To access the **Flexible Feature Codes** Web page for a customer, click the **Flexible Feature Codes** link of the **Edit** Web page to open the Web page shown in Figure 135 "Flexible Feature Codes Web page" (page 215).

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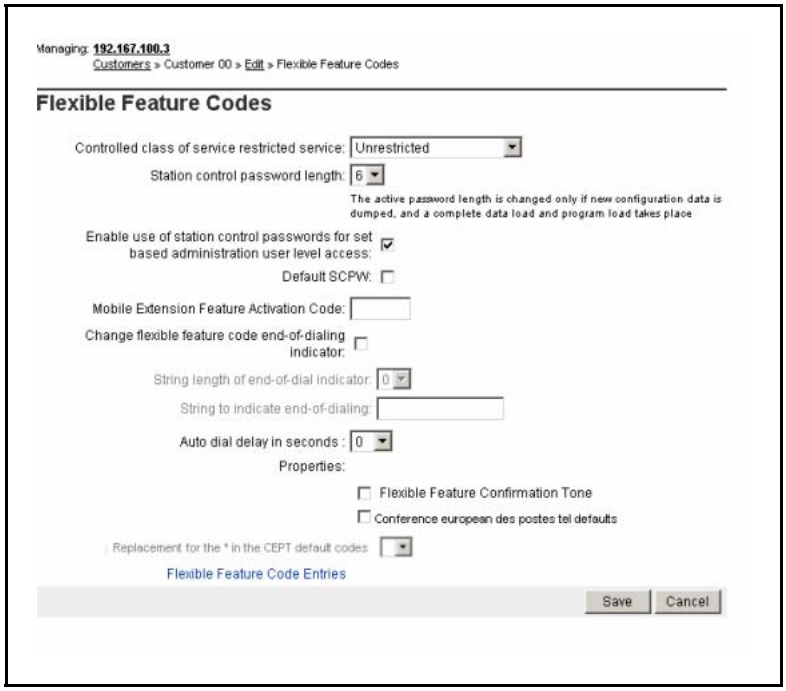
Figure 135
Flexible Feature Codes Web page



To configure Change Flexible Feature Code end-of-dialing indicator, select the **Change Flexible Feature Code end-of-dialing indicator** checkbox.

Enter the appropriate information and click **Save**.

Flexible Feature Code Entries

To access Flexible Feature Code Entries click on the **Flexible Feature Code Entries** hyperlink. The **Search for Flexible Feature Code Entries** Web page appears as shown in Figure 136 "Search for Flexible Feature Code Entries Web page" (page 216).

Note: To access **Flexible Feature Code Entries** Web page for a Customer the FCC data block must be configured, see Procedure 87 “Configuring Flexible Feature Codes” (page 217). If you click the Flexible Feature Code Entries hyperlink before configuring the FCC data block, the message *"FCC Block is not configured. Click on [OK] to configure the FCC block for the customer."* appears. Click **OK** to automatically configure the FCC data block and open the **Flexible Feature Code Entries** Web page.

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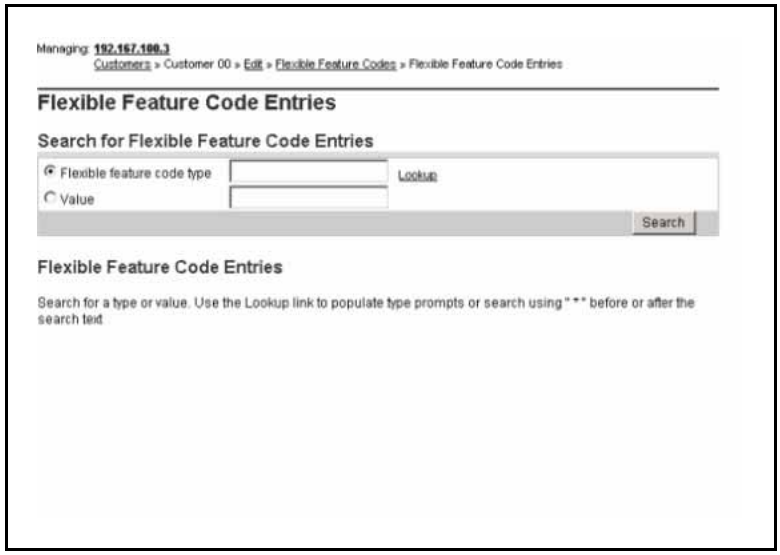
Figure 136
Search for Flexible Feature Code Entries Web page



To search for specific Flexible Feature Codes, follow the steps in Procedure 84 “Searching for Flexible Feature Codes” (page 216).

Procedure 84
Searching for Flexible Feature Codes

Step	Action
1	Click the **Flexible feature code type** radio button to activate search for Flexible Feature Codes.
2	Click the **Look up** hyperlink. The **Flexible Feature Code Lookup** pop up window appears.
3	Click the check box of the required features and click **Assign**. The selected feature prompt names are displayed in the **Specific Feature Code type** input box.
4	Click **Search**. The datagrid lists only the codes for the selected feature.

--End--

To search for Flexible Feature Codes by Value, follow the steps in Procedure 85 “Searching for Flexible Feature Codes by Value” (page 217).

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Procedure 85
Searching for Flexible Feature Codes by Value

Step	Action
1	Enter the configured Flexible Feature Code value in the **Value** input box.
2	Check the **Value** radio button, the **Search** button is enabled.
3	Click the **Search** button. The flexible feature code, type, and the value are listed in the datagrid.

--End--

To search for Flexible Feature Codes using Advanced Search, follow the steps in Procedure 86 “Searching for Flexible Feature Codes (Advanced)” (page 217).

Procedure 86
Searching for Flexible Feature Codes (Advanced)

Step	Action
1	Enter the wildcard character ***** before or after the search text in the ‘Flexible feature code type’ input box.
2	Check the **Flexible feature code type** radio button, the **Search** button is enabled.
3	Click the **Search** button. All the flexible feature code type with the configured values that match the given search text are listed in the datagrid.

--End--

To configure Flexible Feature Codes for a customer, follow the steps in Procedure 87 “Configuring Flexible Feature Codes” (page 217).

Procedure 87
Configuring Flexible Feature Codes

Step	Action
1	In the **Flexible Feature Codes** Web page, check the box **Flexible Feature Confirmation Tone** and **Conference European Des Postes Tel (CEPT) defaults**. The **Replacement for * in CEPT default codes** appears as a sub prompt for **Conference European Des Postes Tel (CEPT) defaults** prompt and should be enabled only when **Conference European Des Postes Tel (CEPT) defaults** prompt is checked.

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2 To complete the configuration, click **Save**.

3 Click **Cancel** to cancel the action. The **Edit** Web page is displayed.

--End--

To add Flexible Feature Codes to the Customer, follow the steps in Procedure 88 “Adding Flexible Feature Codes” (page 218).

Procedure 88
Adding Flexible Feature Codes

Step	Action
1	Click on the **Flexible Feature Code Entries** hyperlink on the Flexible Feature Code Web page. The Flexible Feature Code Entries Web page appears.
2	Click **Add** in the **Flexible Feature Code Entries** Web page. The **Add Flexible Feature Code** Web page appears.
3	Click the **Look up** hyperlink adjacent to the **Flexible feature code type** input box. The **Flexible Feature Code Lookup** popup window appears and lists all the Flexible Feature Codes.
4	Click on a **Flexible Feature Code** to add to the **Flexible feature code type** input box.
5	Enter a value in the **Value** box.
6	Click **Save**, to add the Flexible Feature Code. The new Flexible Feature Code is displayed in the **Flexible Feature Code Entries** Web page.

--End--

Feature Options

The **Feature Options** Web page allows users to configure the Feature Options data block for a customer. Click **Feature Options** to open this Web page, as shown in Figure 137 "Feature Options Web page" (page 219).

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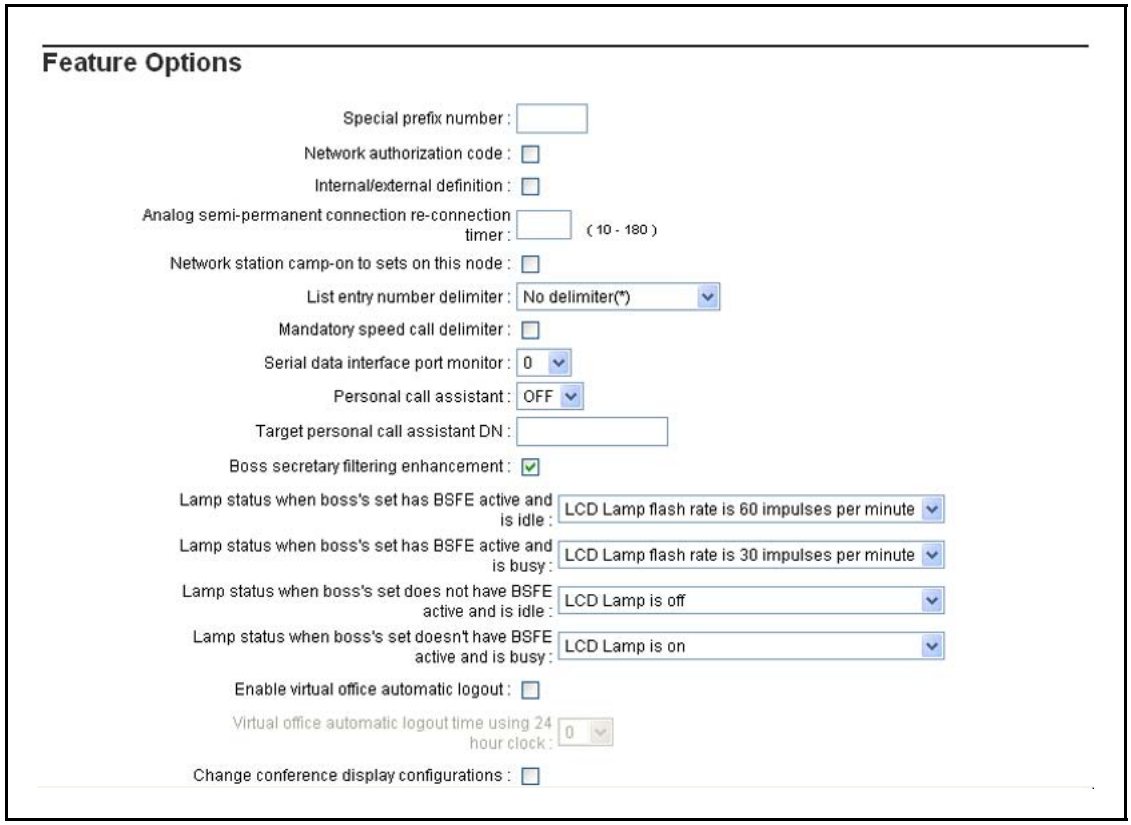
Figure 137
Feature Options Web page



To configure Boss Secretary Filtering Enhancement, select the **Boss Secretary Filtering Enhancement** checkbox.

To configure Virtual Office Automatic Logout, select the **Enable Virtual Office Automatic Logout** checkbox

To configure Conference Display, select the **Change conference display configurations** checkbox.

Enter the appropriate information and click **Save**.

Listed Directory Numbers

The **Listed Directory Numbers** Web page allows users to configure the Listed Directory Numbers data block for a customer. Click **Listed Directory Numbers** to open this Web page, as shown in Figure 138 "Listed Directory Numbers Web page" (page 220).

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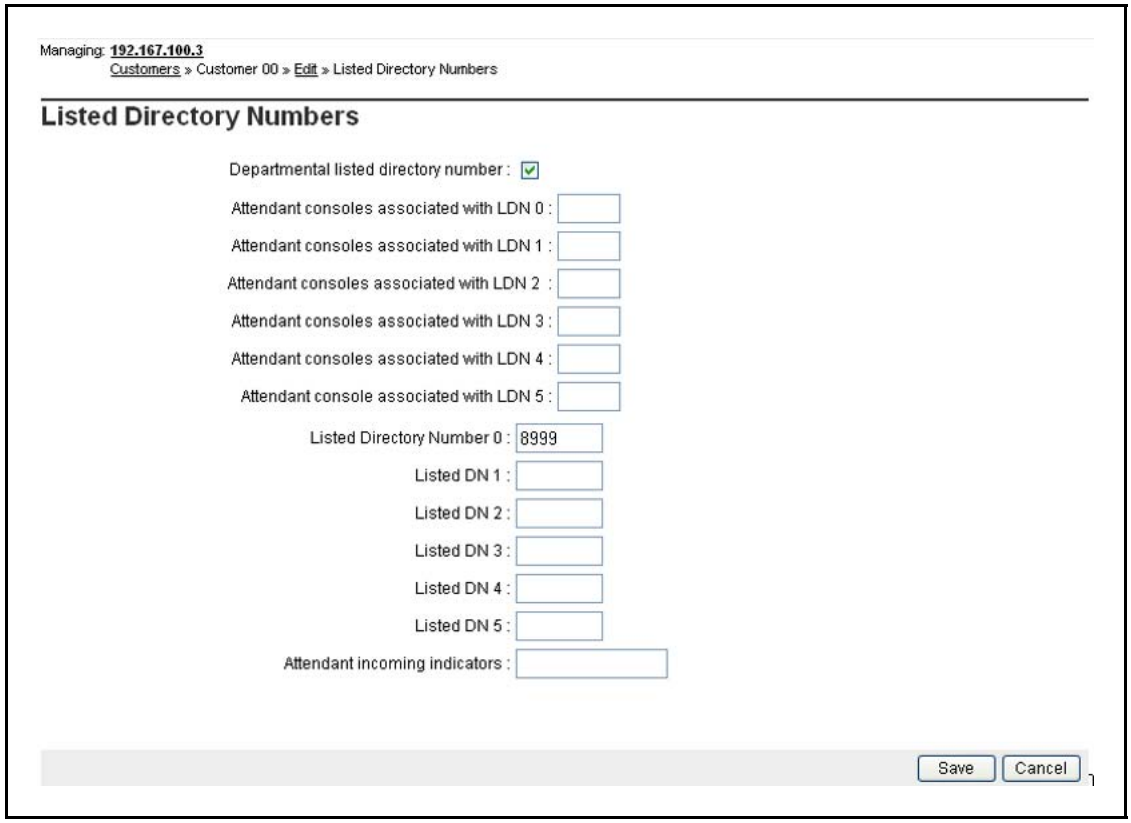
Figure 138
Listed Directory Numbers Web page



To configure attendant consoles associated with Listed Directory Numbers, select the **Departmental listed directory number** checkbox.

Enter the appropriate information and click **Save**.

Mobile Service Directory Number

The **Mobile Service Directory Numbers** Web page allows users to view, edit, add, and delete Mobile Service Directory Numbers. Click **Mobile Service Directory Numbers** to open this Web page, as shown in Figure 139 "Mobile Service Directory Numbers Web page" (page 221). For more information about Mobile Directory Service Numbers and Mobile Extension, refer to *Features and Services Fundamentals - Book 4 of 6* (NN43001-106-B6).

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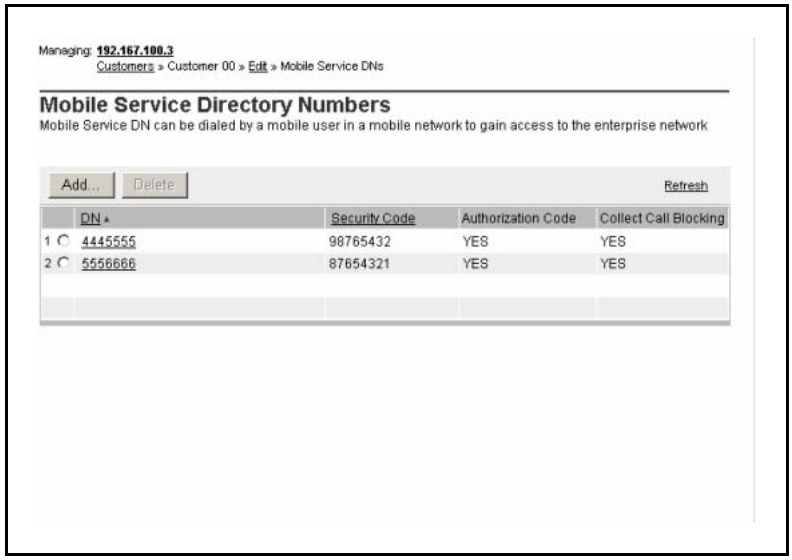
Figure 139
Mobile Service Directory Numbers Web page



ISDN and ESN Networking

The **ISDN and ESN Networking** Web page allows users to configure the ISDN and ESN Networking data block for a customer. Click **ISDN and ESN Networking** to open this Web page, as shown in Figure 140 "ISDN and ESDN Networking Web page" (page 222).

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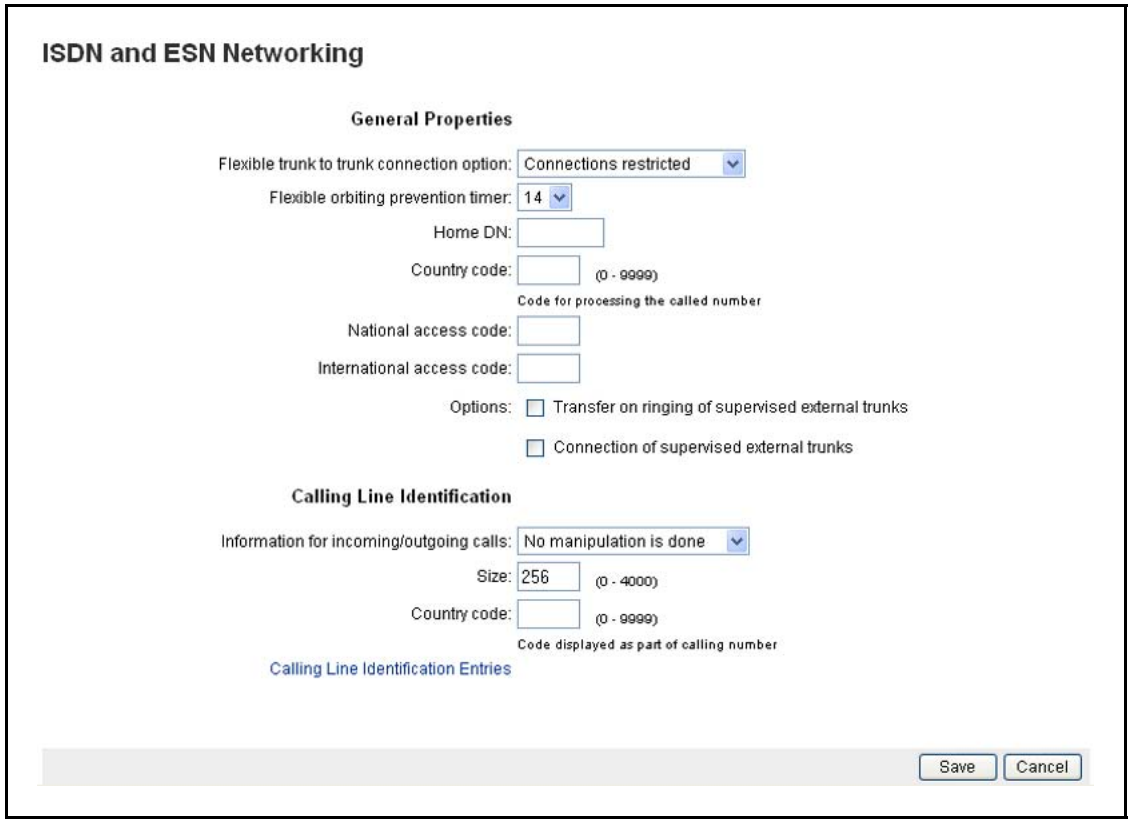
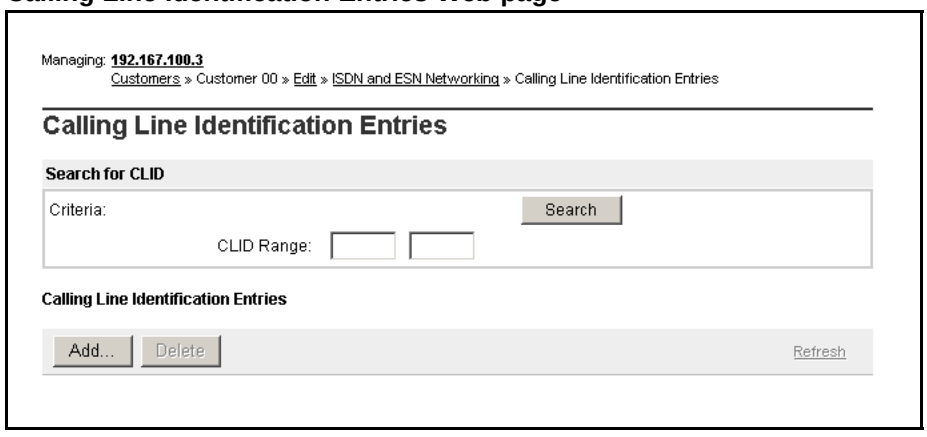
Figure 140
ISDN and ESDN Networking Web page



Enter the appropriate information and click **Save**.

To configure Calling Line Identification (CLID) parameters, click **Calling Line Identification Entries**. The **Calling Line Identification Entries** Web page appears, as shown in Figure 141 "Calling Line Identification Entries Web page" (page 222).

Figure 141
Calling Line Identification Entries Web page



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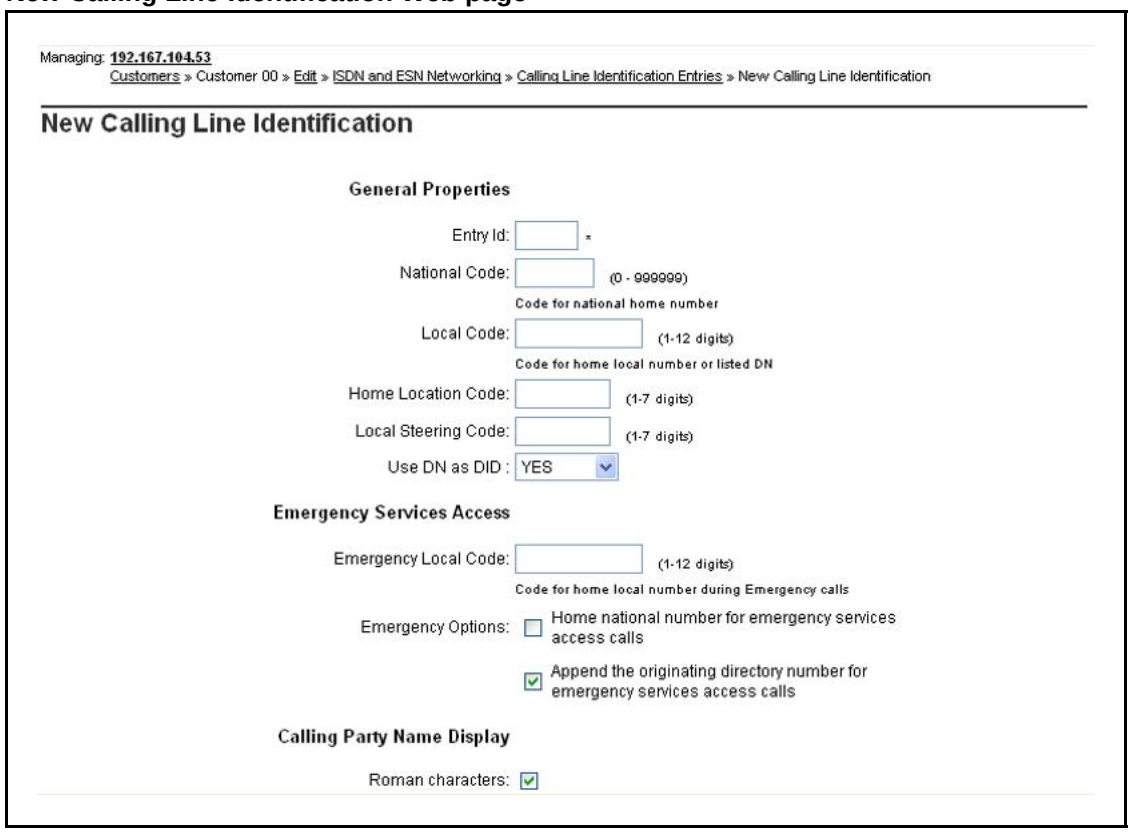
To search for a CLID, enter the **CLID Range** and click **Search**.

To add a CLID, click **Add**. The **New Calling Line Identification** Web page appears, as shown in Figure 142 "New Calling Line Identification Web page" (page 223).

Figure 142
New Calling Line Identification Web page



Enter the parameters for the new CLID and click **Save**.

Night Service

The **Night Service** Web page allows users to configure the Night Service data block for a customer. Click **Night Service** to open this Web page, as shown in Figure 143 "Night Service Web page" (page 224).

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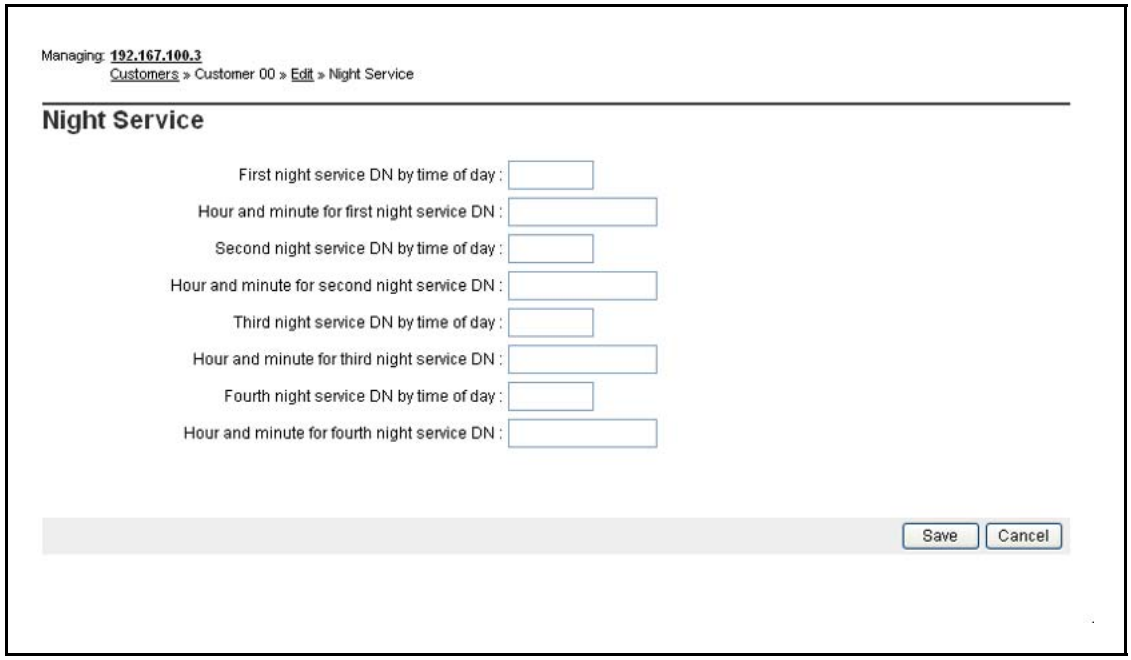
Figure 143
Night Service Web page



Enter the appropriate information and click **Save**.

Feature Packages

The **Feature Packages** Web page allows users to view and edit the parameters associated with feature packages. Click **Feature Packages** to open this Web page.

Click the plus sign located to the left of the Feature Packages heading to expand the feature packages, as shown in Figure 144 "Feature Packages Web page" (page 225).

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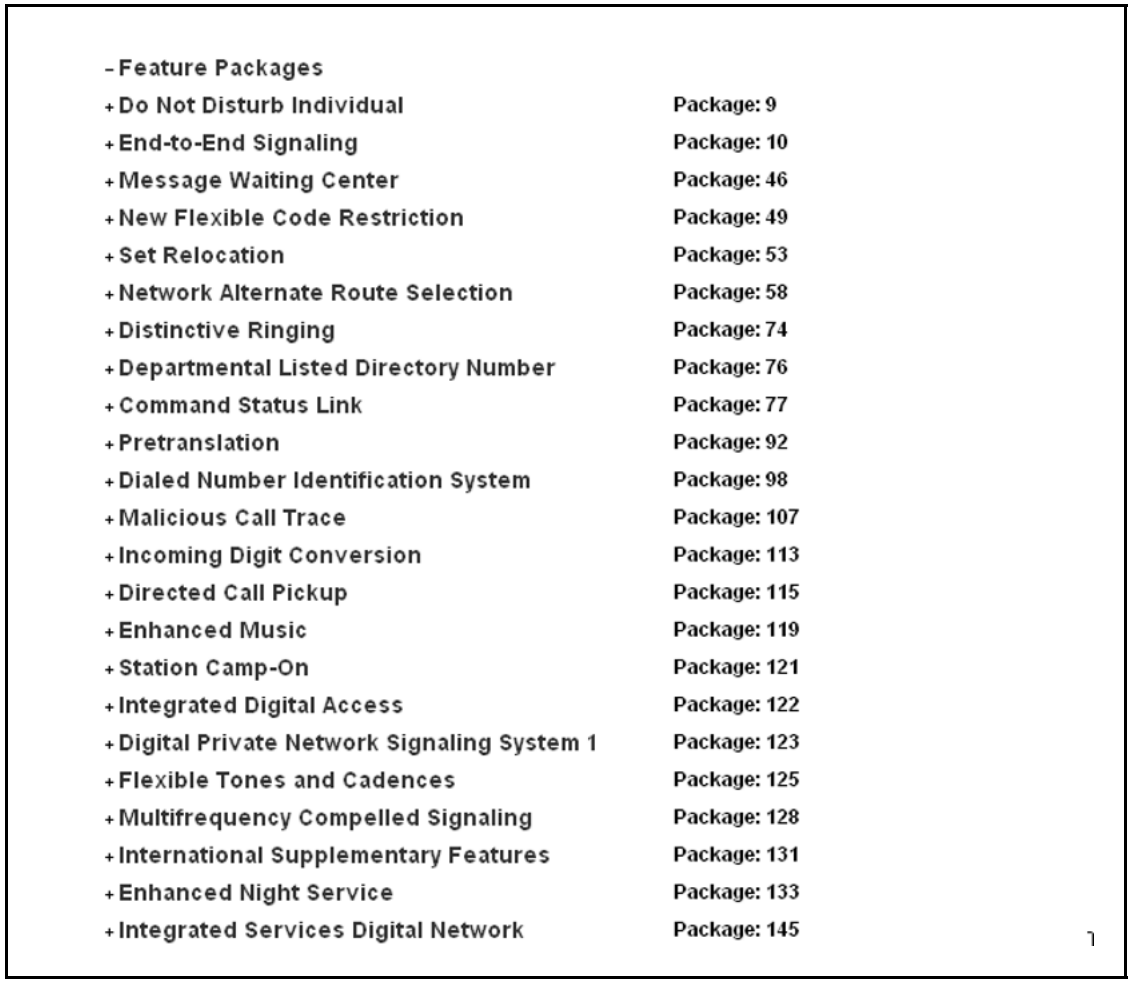
Figure 144
Feature Packages Web page



Note: The only feature packages whose parameters can be viewed and edited are those that have been enabled on the system. Feature packages cannot be removed or added from Element Manager.

Click the plus sign located to the left of the feature package name to view and edit the parameters associated with the feature package. For feature packages that are not equipped for the customer, Element Manager includes a button labeled **To Order**. This button provides a link to information on how to order the feature package.

Enter the appropriate information and click **Save**.

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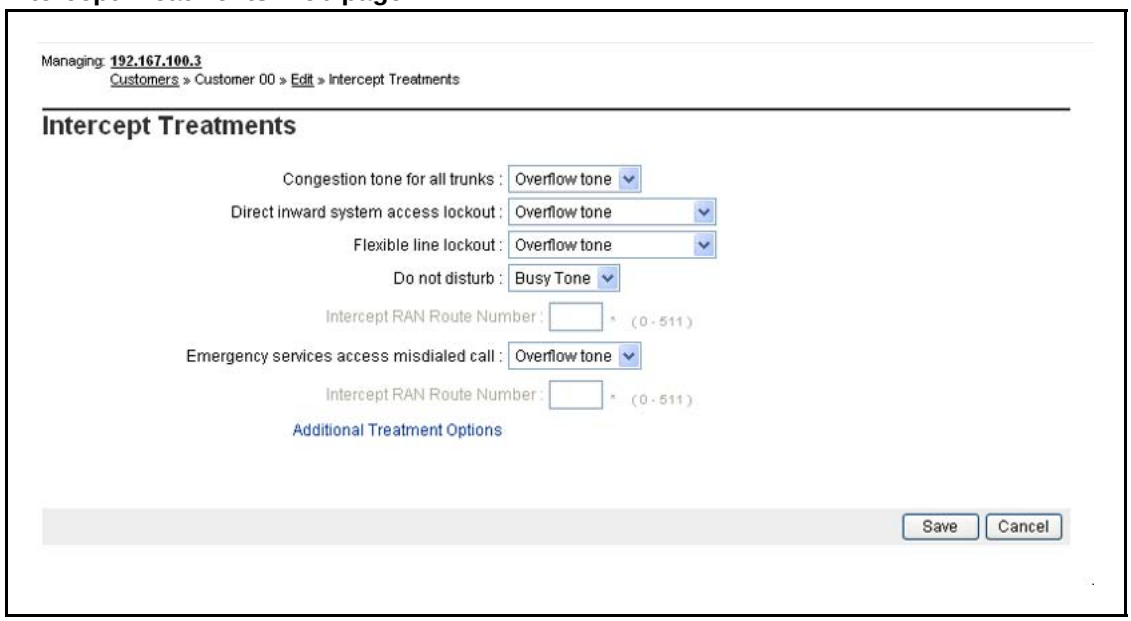
ATTENTION
If configuring M3900 System Initiated Language (Package 386) and Japanese is selected as the default language, the user must explicitly configure the set-to-set-messages (MSG 1 to MSG10). Otherwise, the customer information does not load when clicking **Submit** and does not display.

Intercept Treatments

The **Intercept Treatments** Web page allows users to configure the Intercept Treatments data block for a customer. Click **Intercept Treatments** to open this Web page, as shown in Figure 145 "Intercept Treatments Web page" (page 226).

Figure 145
Intercept Treatments Web page



Enter the appropriate information and click **Save**.

To configure additional prompts for Intercept Treatments, click **Additional Treatment Options** . The **Intercept Treatments Options** Web page appears, as shown in Figure 146 "Intercept Treatments Options Web page" (page 227).

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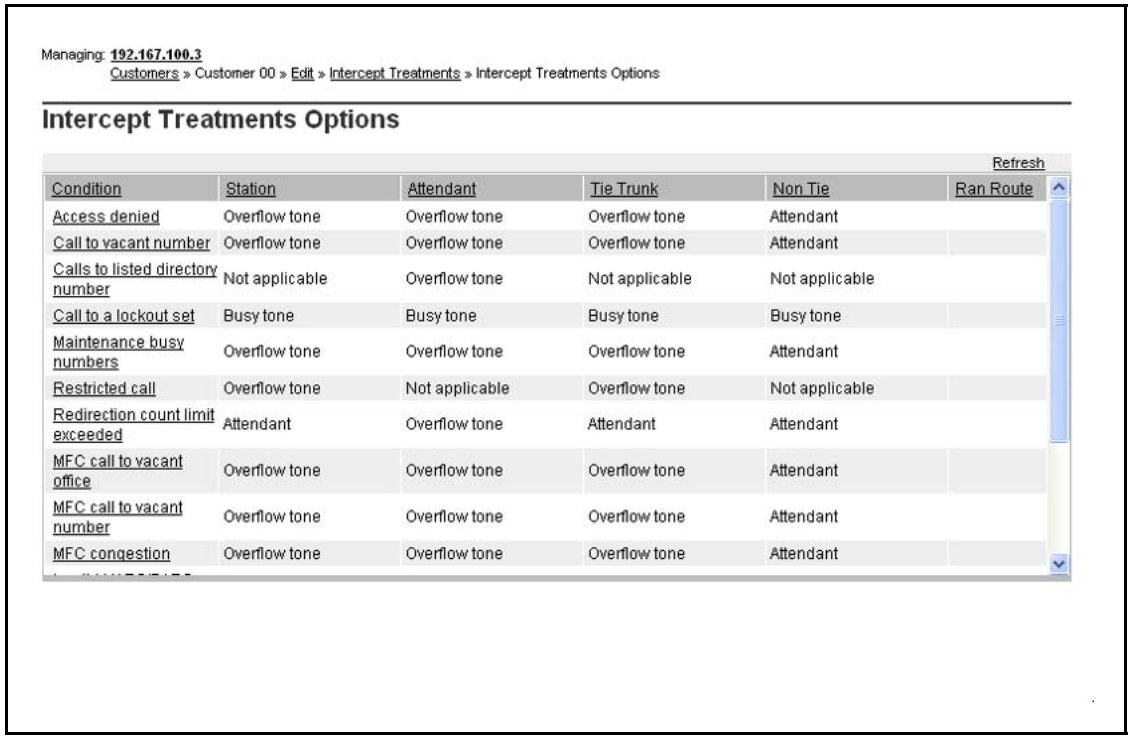
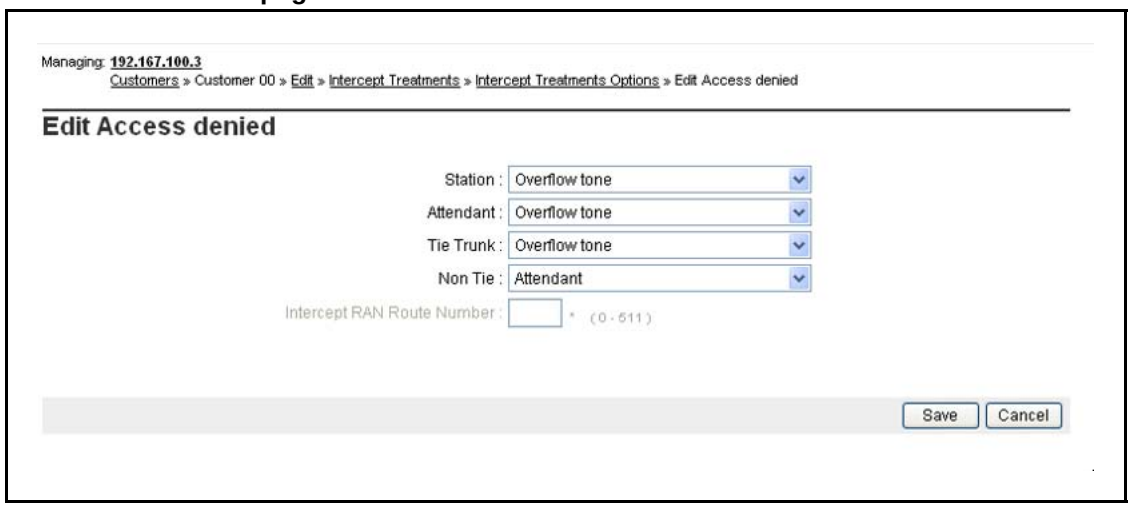
Figure 146
Intercept Treatments Options Web page



To edit an Intercept Treatment for a customer, click the **Condition**. The **Edit** Web page for that Condition is displayed, as shown in Figure 147 "Edit Condition Web page" (page 227).

Figure 147
Edit Condition Web page



Enter the appropriate information and click **Save**.

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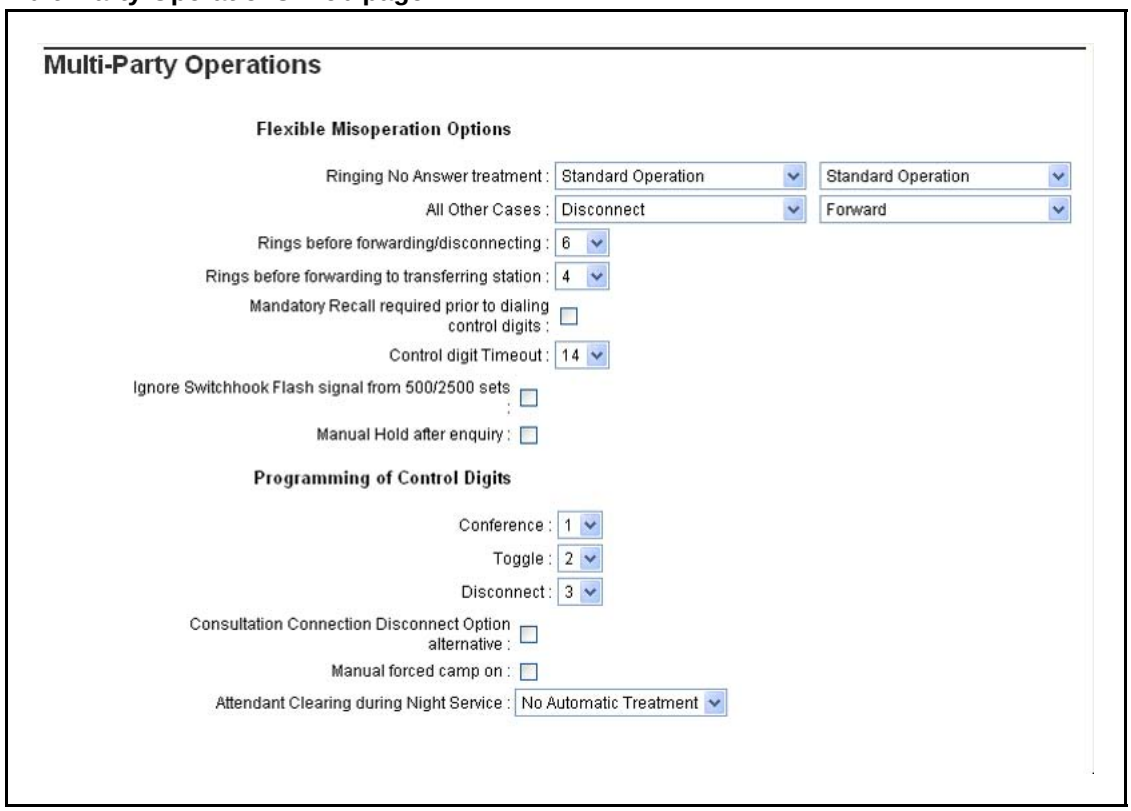
Multi Party Operations

The **Multi Party Operations** Web page allows users to configure the Multi Party Operations data block for a customer. Click **Multi Party Operations** to open this Web page, as shown in Figure 148 "Multi Party Operations Web page" (page 228).

Figure 148
Multi Party Operations Web page



Enter the appropriate information and click **Save**.

Recorded Overflow Announcement

The **Recorded Overflow Announcement** Web page allows users to configure the Recorded Overflow Announcement data block for a customer. Click **Recorded Overflow Announcement** to open this Web page, as shown in Figure 149 "Recorded Overflow Announcement Web page" (page 229).

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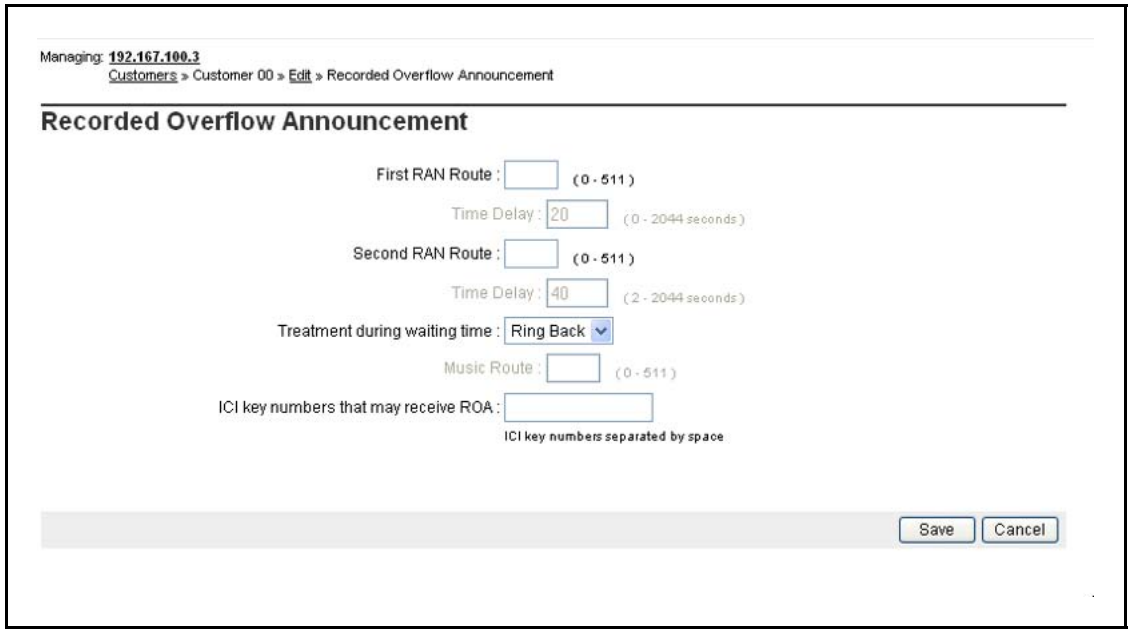
Figure 149
Recorded Overflow Announcement Web page



Enter the appropriate information and click **Save**.

SIP Line Service

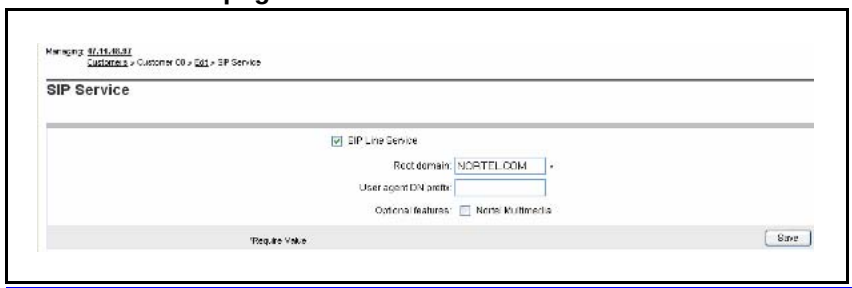
The SIP Line Service package 417 must be equipped in order to enable SIP Line Service on CS 1000 system.

The **SIP Service** Web page allows users to configure SIP Line Service parameters.

You can enable or disable SIP Line Service by clicking the check box. Once the service is enabled, the rest of the SIP Line service parameters are displayed. The SIP root domain is a mandatory field when SIP Line service is enabled. The User Agent DN is an optional field but when this DN prefix is configured in the customer page, it is used to build the HOT U key information on the **Phones** Web page for SIPL Phones.

For more information, see *SIP Line Fundamentals* (NN43001-508).

Figure 150
SIP Service Web page



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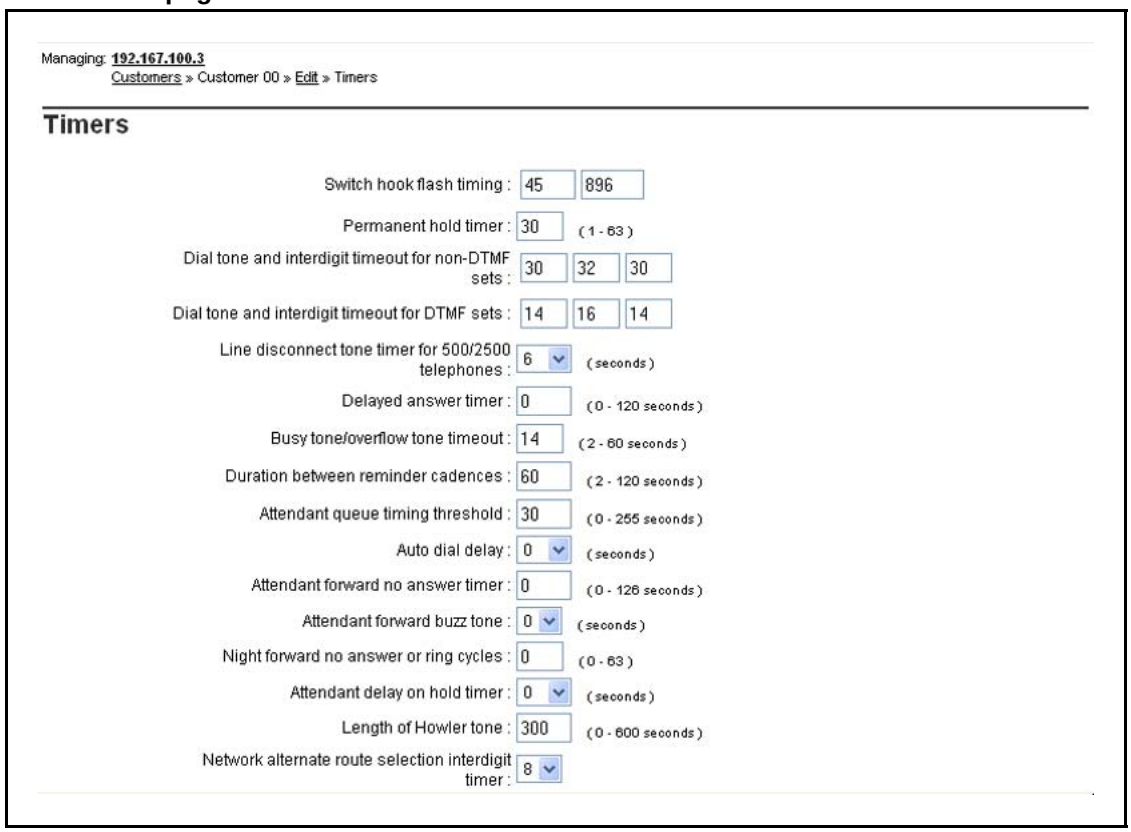
Timers

The **Timers** Web page allows users to configure the Timers data block for a customer. Click **Timers** to open this Web page, as shown in Figure 151 "Timers Web page" (page 230).

Figure 151
Timers Web page



Enter the appropriate information and click **Save**.

Note: The **Attendant forward no answer timer** and **Attendant forward buzz tone** must be even numbers.

Route and Trunk Configuration

There are three options in the **Routes and Trunks** branch of the Element Manager navigator.

Routes and Trunks

Click the **Routes and Trunks** link on the **Routes and Trunks** branch of the Element Manager navigator to open the **Routes and Trunks** Web page, as shown in Figure 152 "Routes and Trunks Web page" (page 231). From this Web page, users can view information about existing customers, routes, and trunks.

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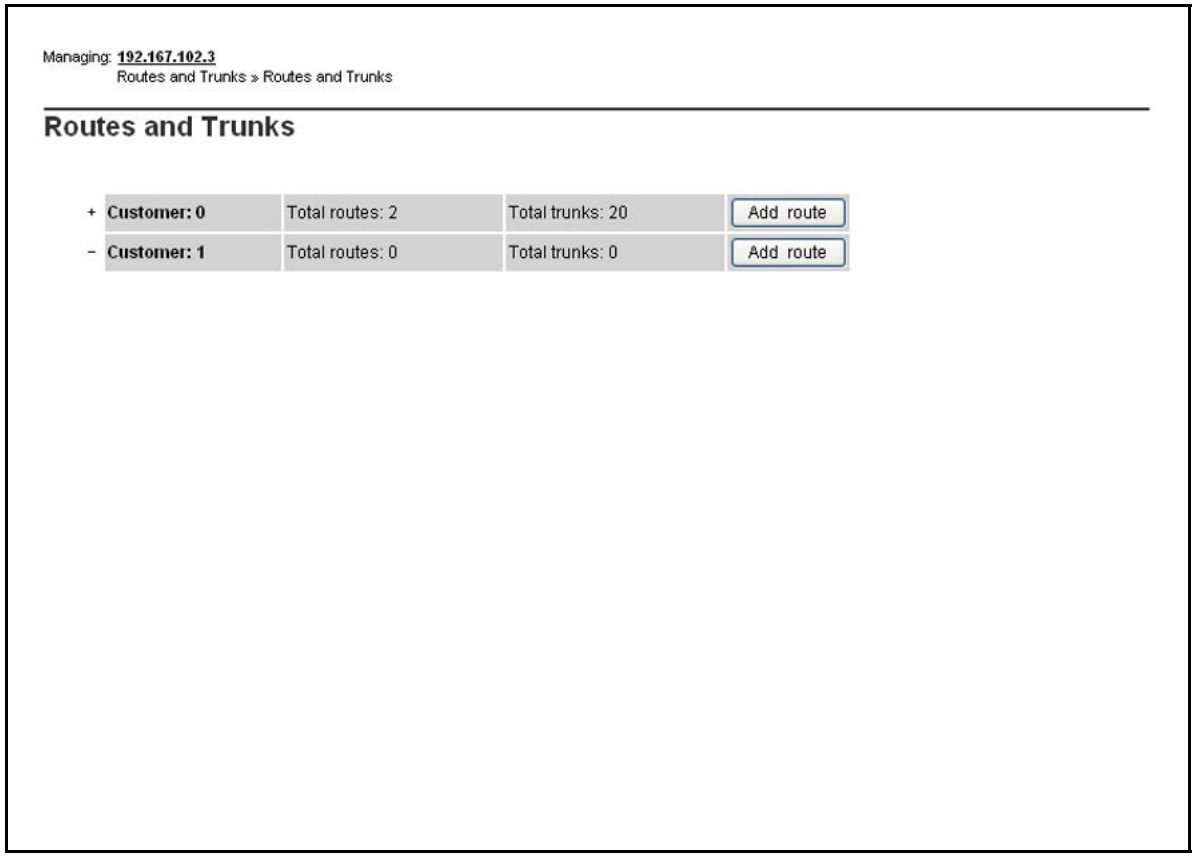
Figure 152
Routes and Trunks Web page



This Web page also contains buttons that link to additional Web pages. Follow these links to

- add a new route
- edit route data
- add a new trunk
- edit trunk data
- delete multiple trunks

Route Properties

Click the **Edit** button beside a Route row to open the **Route Property Configuration** Web page for the selected customer and route. See Figure 153 "Route Property Configuration Web page" (page 232).

Note: If there are a large number of routes or trunks, this Web page can be slow to load.

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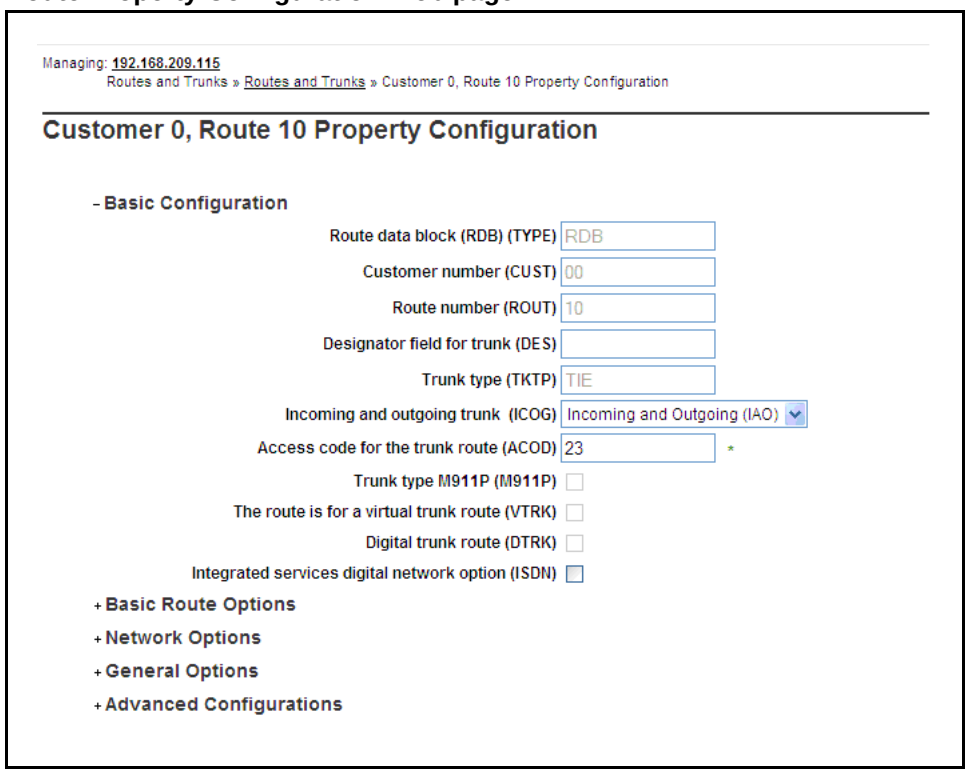
The information entered in the **Basic Configuration** section of this Web page corresponds to Route Data Block information traditionally configured using LD 16 - Route Data Block.

Note: H.323 and SIP must not use the same route.

For information about configuring routes, see *IP Peer Networking Installation and Commissioning (NN43001-313)*.

Figure 153
Route Property Configuration Web page



Basic Configuration

In the **Basic Configuration** section of this Web page (see Figure 154 "Basic Configuration for routes" (page 233)), the following functions can be performed:

- Assign a **Route Number** (ROUT) using the drop-down list.
- Enter a **Designation** (DES) for the route.
- Select a **Trunk Type** (TKTP) from the drop-down list.
- Use the drop-down list to indicate that the trunk is **Incoming and/or Outgoing** (ICOG).
- Assign an **Access Code** (ACOD) to the trunk route.

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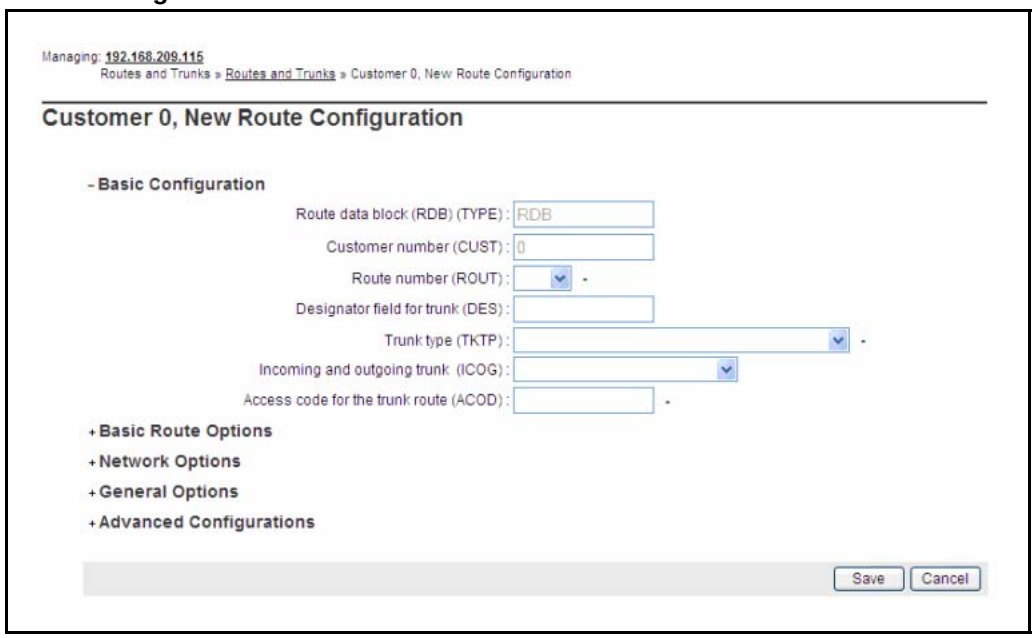
Element Manager may request that users enter data for additional parameters, depending on what is entered in the Basic Configuration fields. Choices in the drop-down lists for every parameter in the Basic Configuration fields are determined by the data entered above that field.

Figure 154
Basic Configuration for routes



To save changes made in this section, click **Submit** at the bottom of the **Route Property Configuration** Web page.

Basic Route Options

In the Basic Route Options section (see Figure 155 "Basic Route Options configuration" (page 234)), use the check boxes to activate the following options for this route:

- Billing Number Required (BILN)
- Call Detail Recording (CDR)
- Controls or timers (CNTL)
- Conventional (TIE trunk only) (CNVT)
- Incoming DID Digit Conversion (IDC)
- Process Notification Networked Calls (PNNC)

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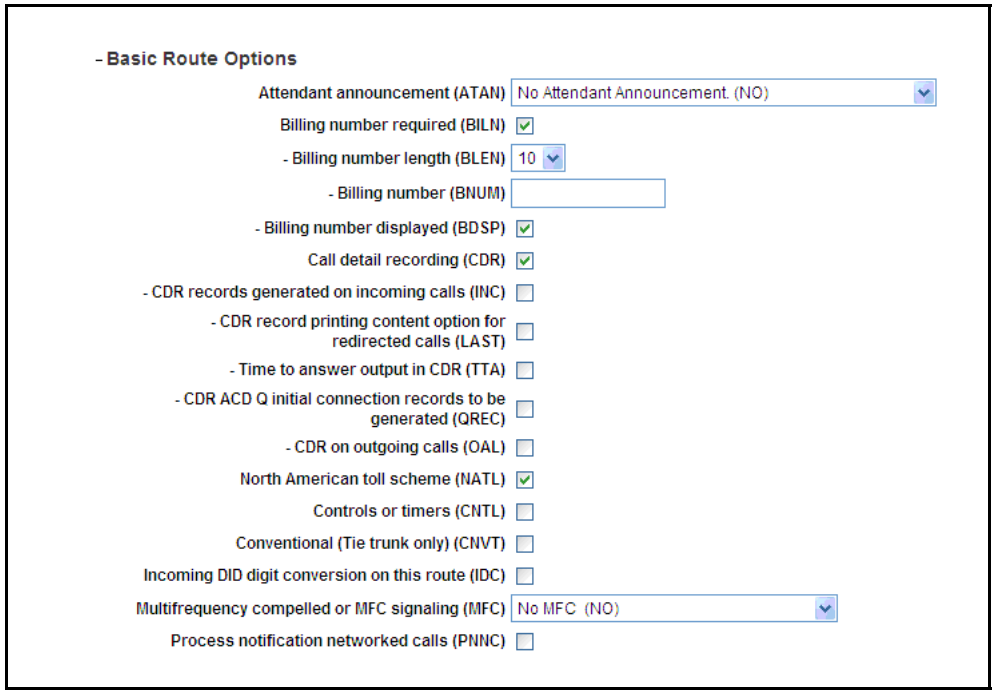
In addition, use the drop-down list to select a Multi-frequency Compelled or MFC Signaling (MFC) type.

> ***Note:*** The route used in this example is a TIE trunk route. The inputs requested by Element Manager vary depending on the responses to earlier input requests, including Trunk Type (TKTP).

Depending on which boxes are selected in the preceding list, Element Manager requests that users enter data for additional parameters, as shown in Figure 155 "Basic Route Options configuration" (page 234).

Figure 155
Basic Route Options configuration



To save changes made in this section, click **Submit** at the bottom of the **Route Property Configuration** Web page.

Network Options

Figure 156 "Network Options for routes" (page 235) provides an example of the input requested in the **Network Options** section for the route shown in Figure 153 "Route Property Configuration Web page" (page 232). The actual input that Element Manager requests varies depending on the type of route and the responses to earlier input requests.

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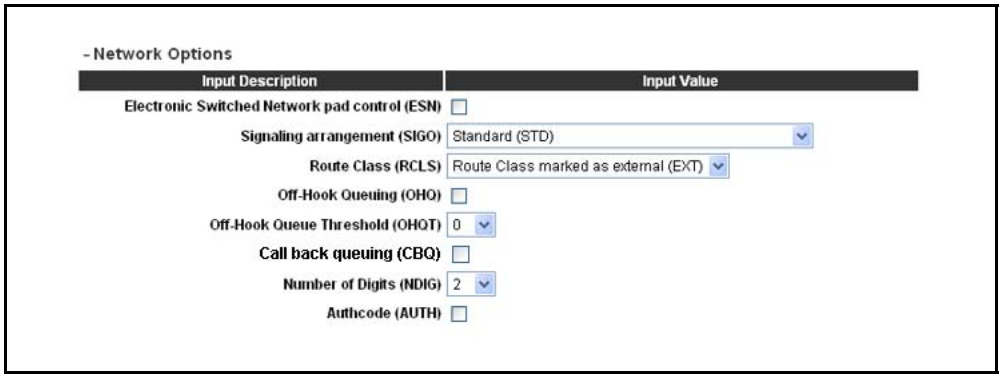
Figure 156
Network Options for routes

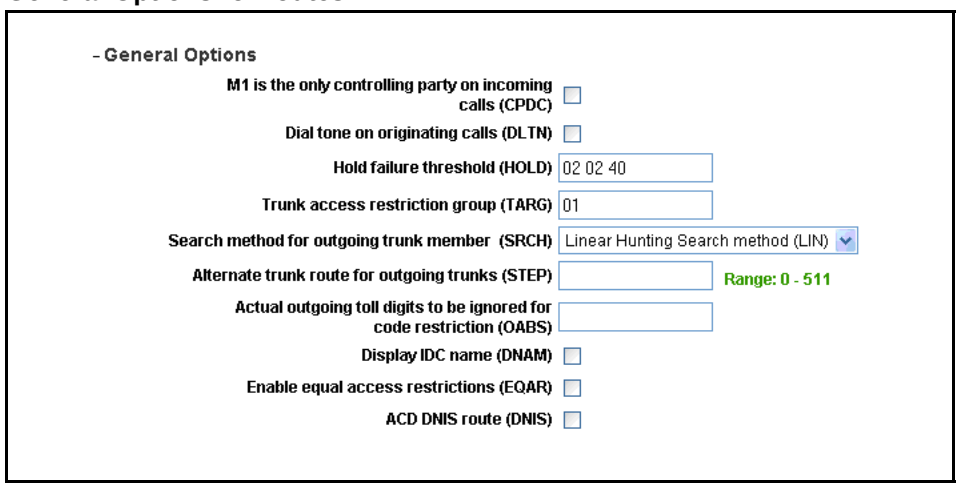


To save changes made in this section, click **Submit** at the bottom of the **Route Property Configuration** Web page.

General Options

Figure 157 "General Options for routes" (page 235) provides an example of the input requested in the **General Options** section for the route shown in Figure 153 "Route Property Configuration Web page" (page 232). The actual input that Element Manager requests varies depending on the type of route and the responses to earlier input requests.

Figure 157
General Options for routes



To save changes made in this section, click **Submit** at the bottom of the **Route Property Configuration** Web page.

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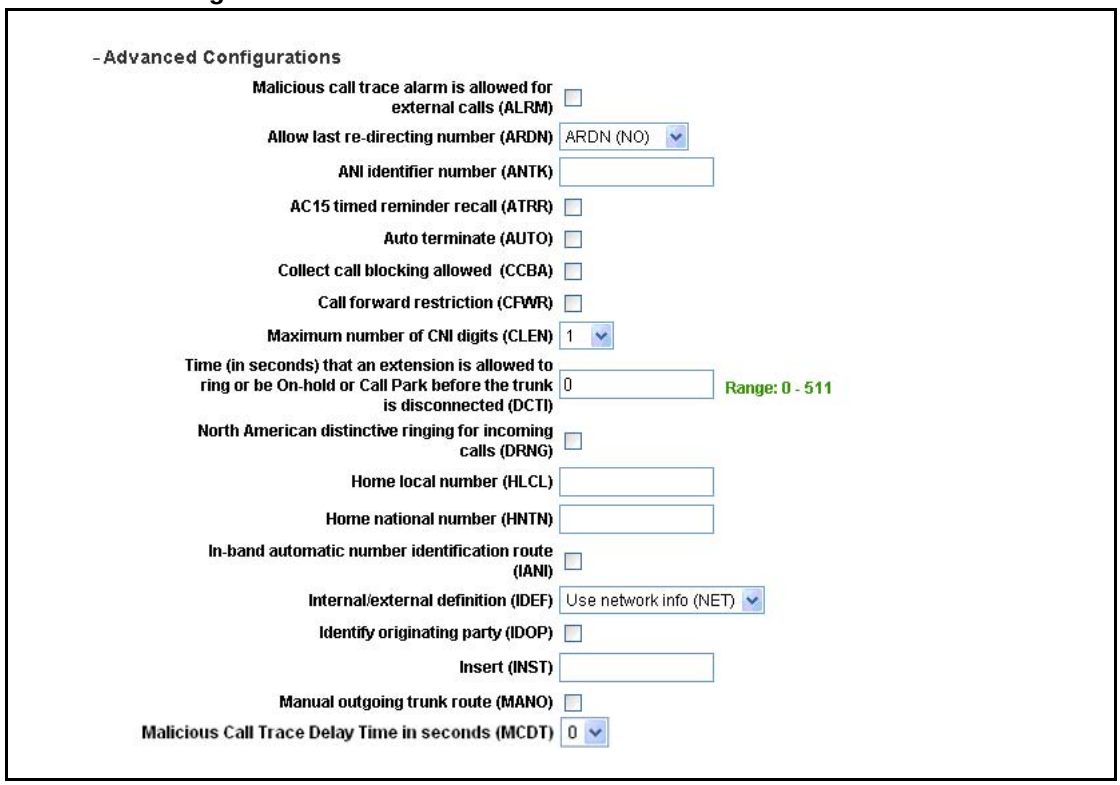
Advanced Configurations

Figure 158 "Advanced Configurations for routes" (page 236) provides an example of the input requested in the **Advanced Configurations** section for the route shown in Figure 153 "Route Property Configuration Web page" (page 232). The actual input that Element Manager requests varies depending on the type of route and the responses to earlier input requests.

Figure 158
Advanced Configurations for routes



To save changes made in this section, click **Submit** at the bottom of the **Route Property Configuration** Web page.

New Trunk Configuration

Click the **Add Trunk** button beside a Customer Row or a Trunk Row to open the **New Trunk Configuration** Web page for the selected customer, route, and trunk, as shown in Figure 159 "New Trunk Configuration Web page" (page 237).

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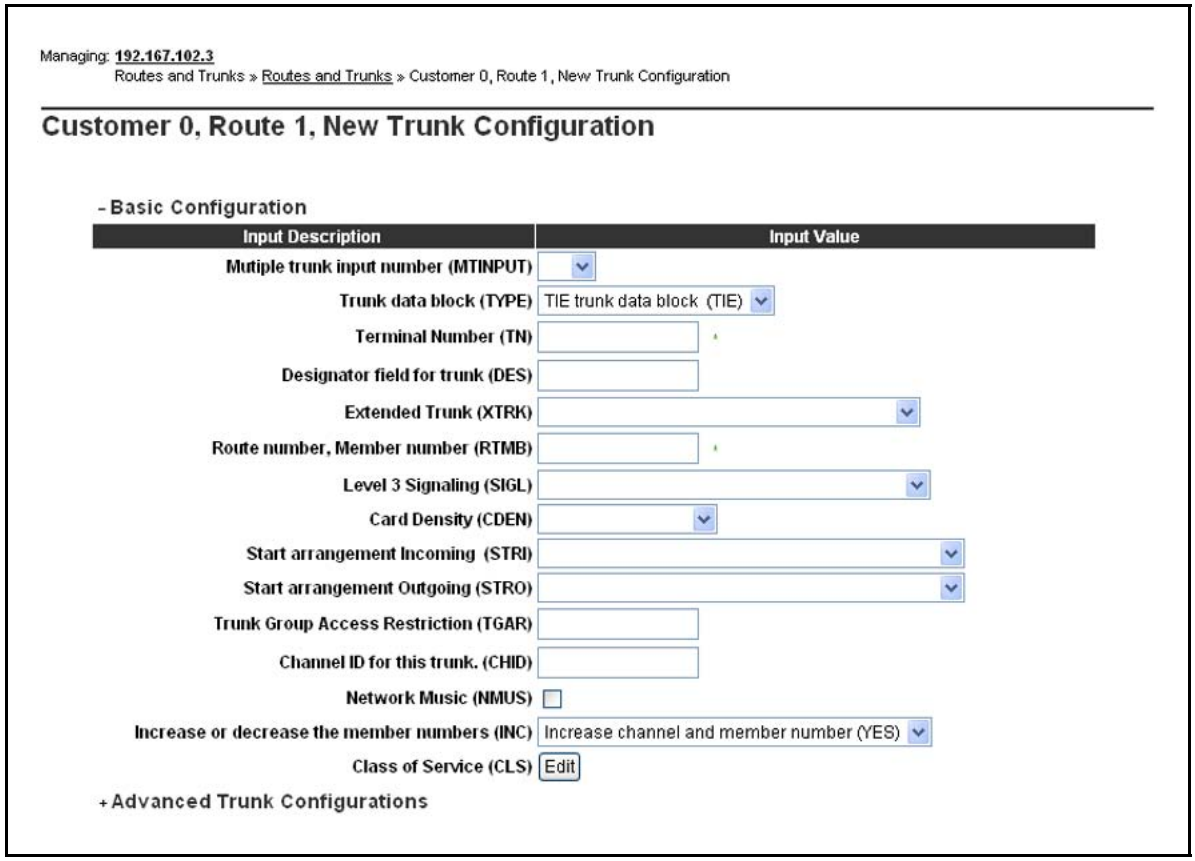
Figure 159
New Trunk Configuration Web page



The **New Trunk Configuration** Web pages are divided into two categories:

1. Basic Configuration
2. Advanced Trunk Configurations

Basic Configuration

In the **Basic Configuration** section of these Web pages (see Figure 159 "New Trunk Configuration Web page" (page 237)), users can perform the following tasks:

- Enter a **Designator field (DES)** for the trunk.
- Select an **Extended Trunk (XTRK)** card type from the drop-down list.
- Edit the route or member number in the **Route number, Member number (RTMB)** text box. The range is 0-4000.
- Use the **Level 3 Signaling (SIGL)** drop-down list to select a Level 3 signaling method.

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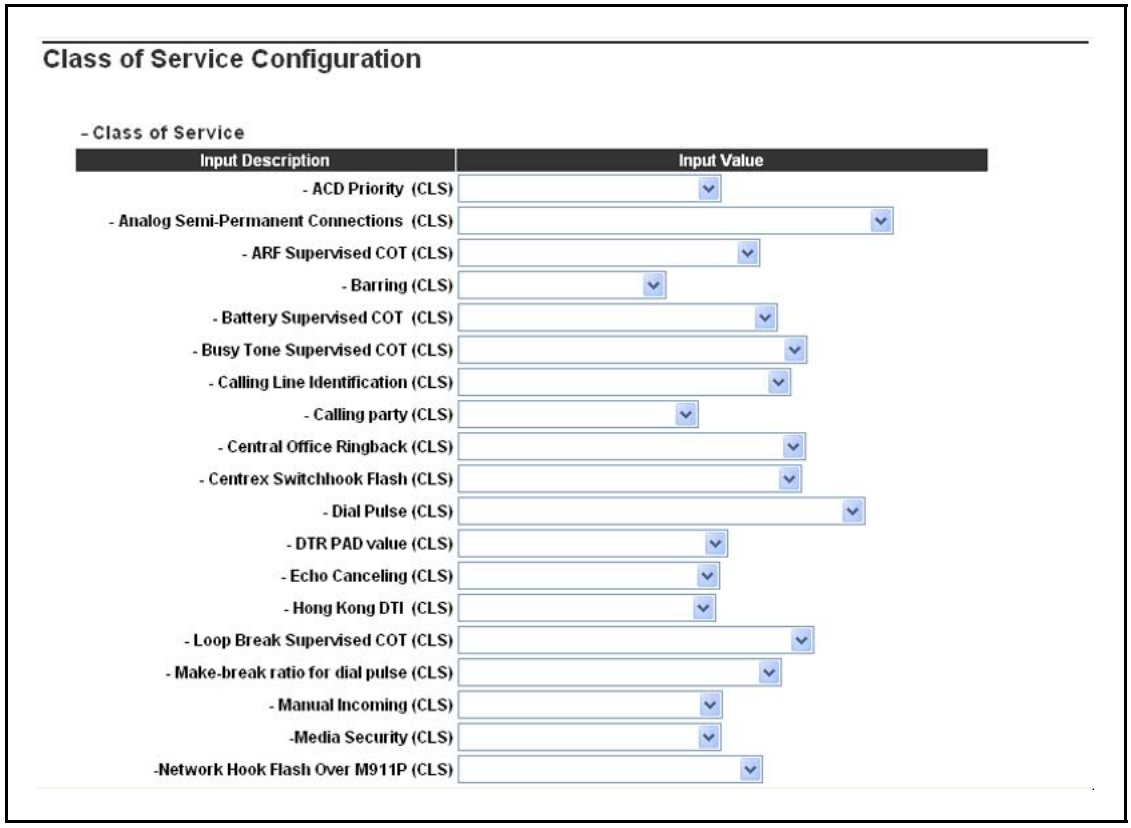
- Use the **Start arrangement Incoming (STRI)** drop-down list to select a start arrangement for incoming calls.
- Use the **Start arrangement Outgoing (STRO)** drop-down list to select a start arrangement for outgoing calls.
- Use the **Increase or decrease the member numbers (INC)** drop-down list to select either increasing channel numbers and member numbers or increasing channel numbers and decreasing member numbers.
- Click the **Class of Service (CLS) Edit** button to view Class of Service information for the trunk. See Figure 160 "Class of Service Configuration Web page" (page 238).

Figure 160
Class of Service Configuration Web page



Note: The member used in this example is a TIE trunk. The inputs requested by Element Manager may vary depending on the responses to earlier input requests.

To save changes made in this section, click **Submit** at the bottom of the New **Member Configuration** Web page.

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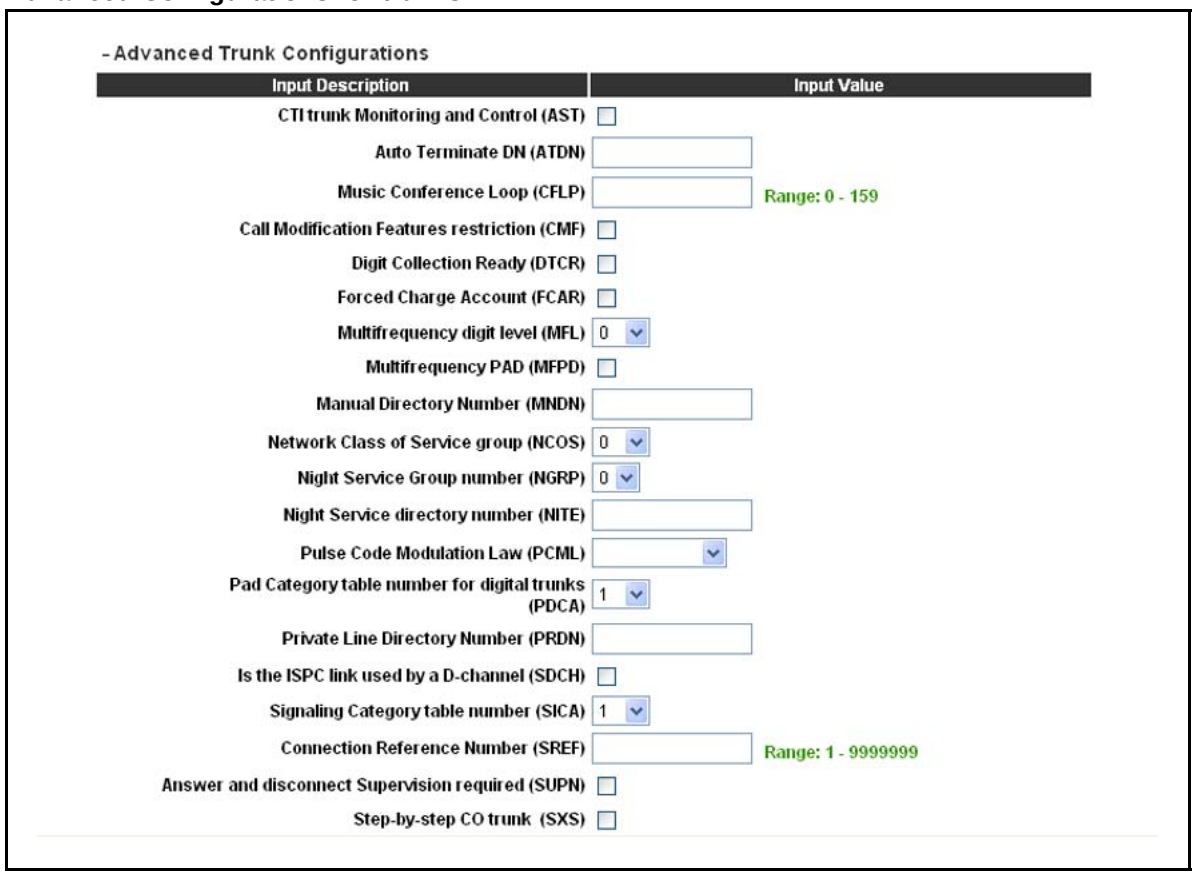
Advanced Trunk Configurations

Figure 161 "Advanced Configurations for trunks" (page 239) provides an example of the input requested in the **Advanced Trunk Configurations** section for the TIE Trunk shown in Figure 159 "New Trunk Configuration Web page" (page 237).

Figure 161
Advanced Configurations for trunks



Note: The member used in this example is a TIE trunk. The inputs requested by Element Manager may vary depending on the responses to earlier input requests.

To save changes made in this section, click **Submit** at the bottom of the Web page.

Delete multiple trunk members

Click **Multi-Del** located beside a member row to open the **Delete multiple trunk members** Web page for the selected member, as shown in Figure 162 "Delete multiple trunk members page" (page 240). On this Web page, the information for the Parent Route is read-only.

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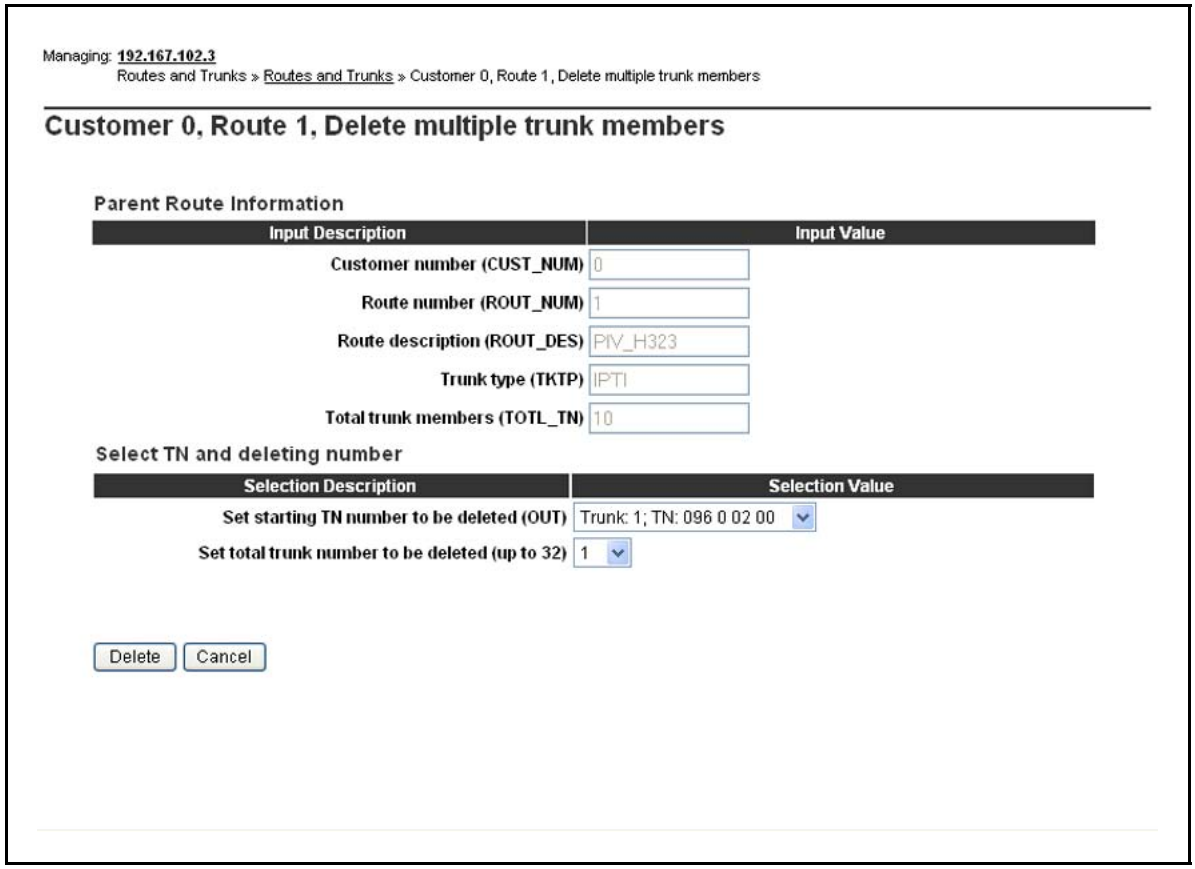
Figure 162
Delete multiple trunk members page



To delete multiple trunk members using this Web page:

Step	Action
1	Use the **Set starting TN to be deleted** drop-down list to determine the start of the deletion list.
2	Use the **Set total trunk number to be deleted** drop-down list to indicate the total number of trunks to be deleted (up to 32).
3	Click **Delete**.

--End--

D-channels

Click the **D-Channels** link on the **Routes and Trunks** branch of the Element Manager navigator to open the **D-Channels** Web page. This Web page allows users to configure or edit D-channel information, as shown in Figure 163 "D-Channels Web page" (page 241).

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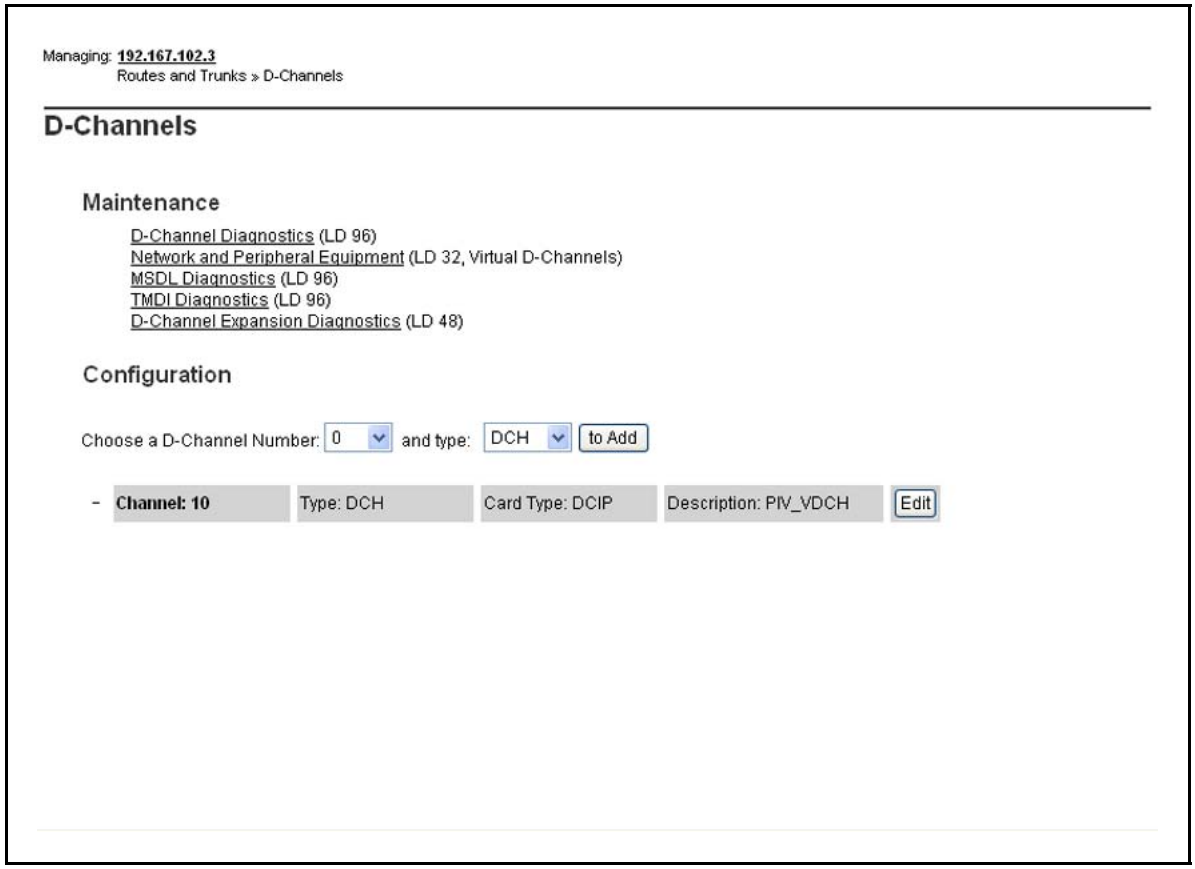
Figure 163
D-Channels Web page



Maintenance

This sections contains links to the following commands:

- D-Channel Diagnostics (LD 96)
- Network and Peripheral Equipment (LD 32, Virtual D-Channels)
- MSDL Diagnostics (LD 96)
- TMDI Diagnostics (LD 96)
- D-Channel Expansion Diagnostics (LD 48)

For more information about these commands, see “System” (page 35).

Configuration

From the **D-Channels** Web page users can view basic information about existing D-channels.

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This Web page also contains buttons that link to additional Web pages. Follow these links to do the following:

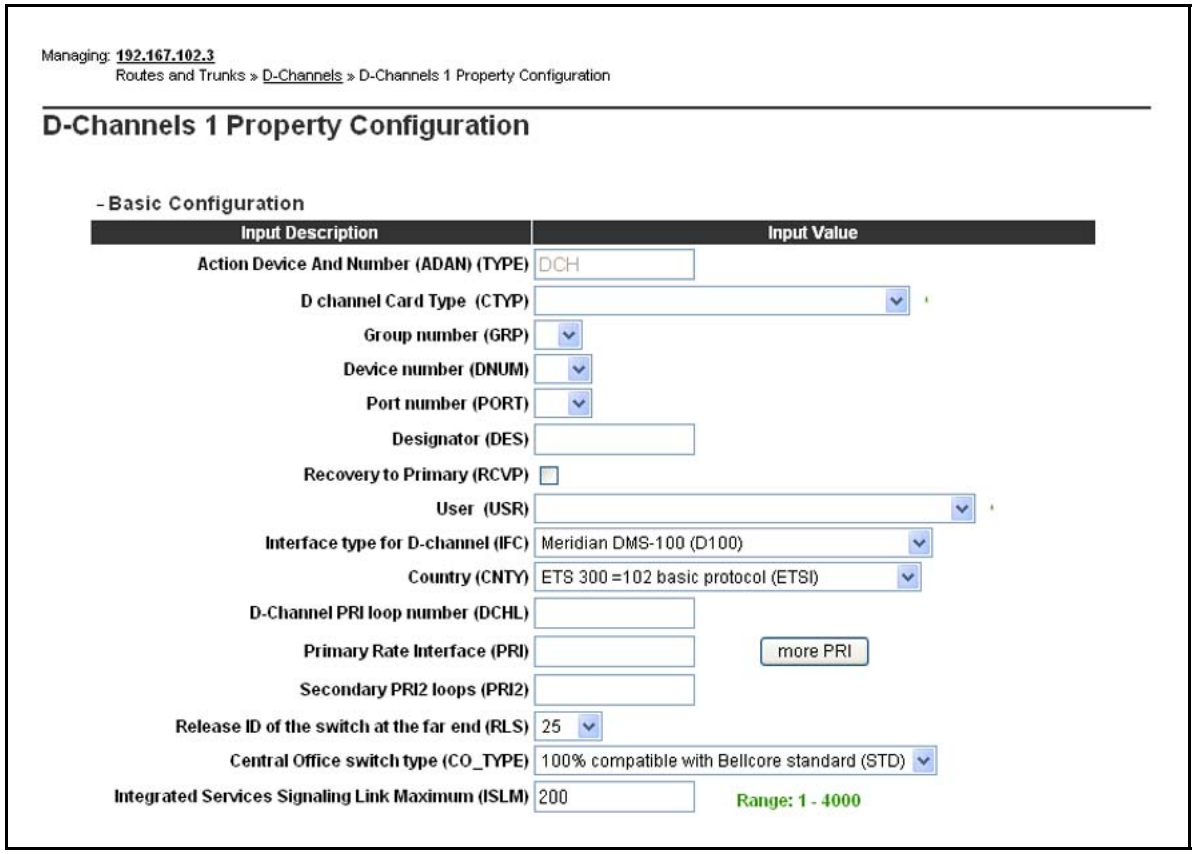
- add a new D-channel
- edit D-channel data

To add a new D-channel, select a number from the **Choose a D-channel Number** drop-down list, select a D-channel **type** from the type drop-down list, and click **to Add**. To edit the configuration information about an existing D-channel, click the **Edit** button located to the right of the Description field.

Click the **to Add** button, or any of the **Edit** buttons, to open the **D-Channels Property Configuration** Web page for that channel, as shown in Figure 164 "D-Channels Property Configuration Web page" (page 242)).

Note: H.323 and SIP can use the same D-channel.

Figure 164
D-Channels Property Configuration Web page



In the **D-Channels Property Configuration** Web page, users can:

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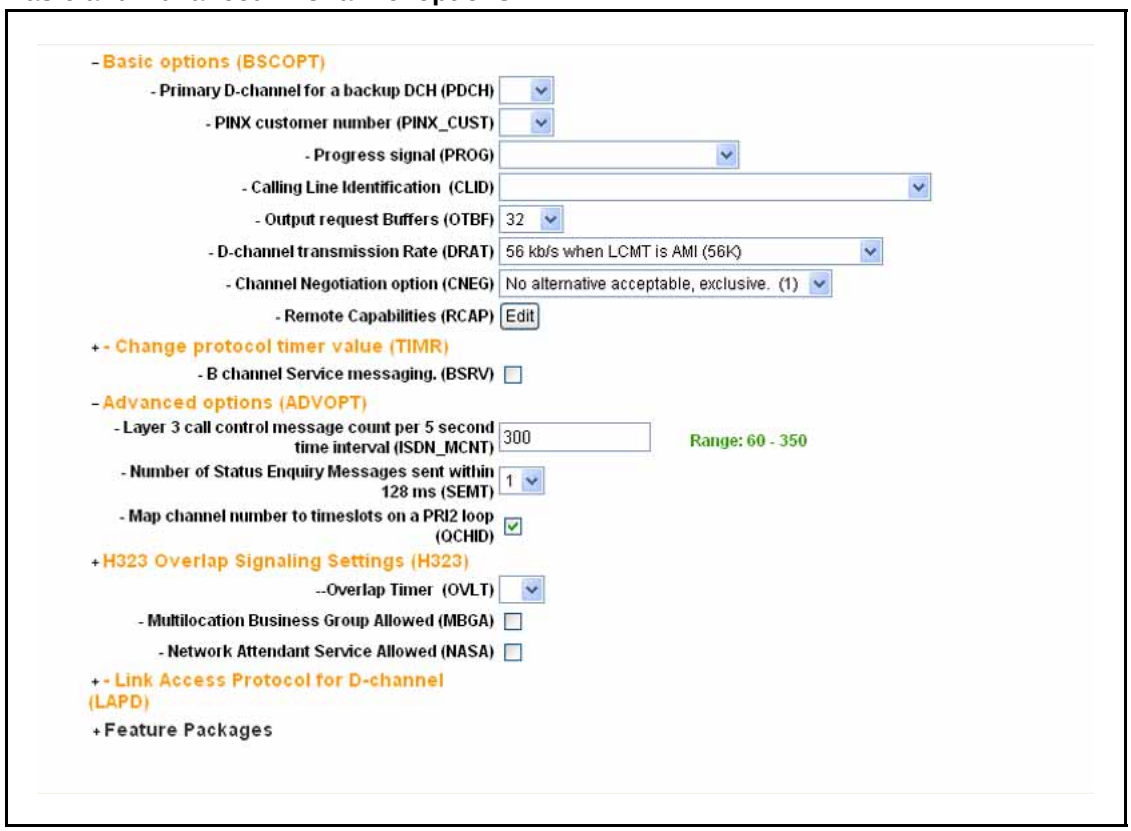
- Enter information about the **Basic Configuration** Web page.
  - The information entered in this section corresponds to ADAN and ADAN DCH (Action Device and Number, D-channel and back-up D-channels) data traditionally configured using LD 17 - Configuration Record 1. In addition to basic D-channel configuration, additional information can be entered for optional settings in the following two categories:
    - Basic D-channel options (BSCOPT)
    - Advanced D-channel options (ADVOPT)

These options are shown in Figure 165 "Basic and Advanced D-Channel options" (page 243).

Figure 165
Basic and Advanced D-Channel options



- Configure information about the **Feature Packages** Web page.
  - Digital Private Networking Signaling System 1 (Package 123)
  - Virtual Network Services (Package 183)

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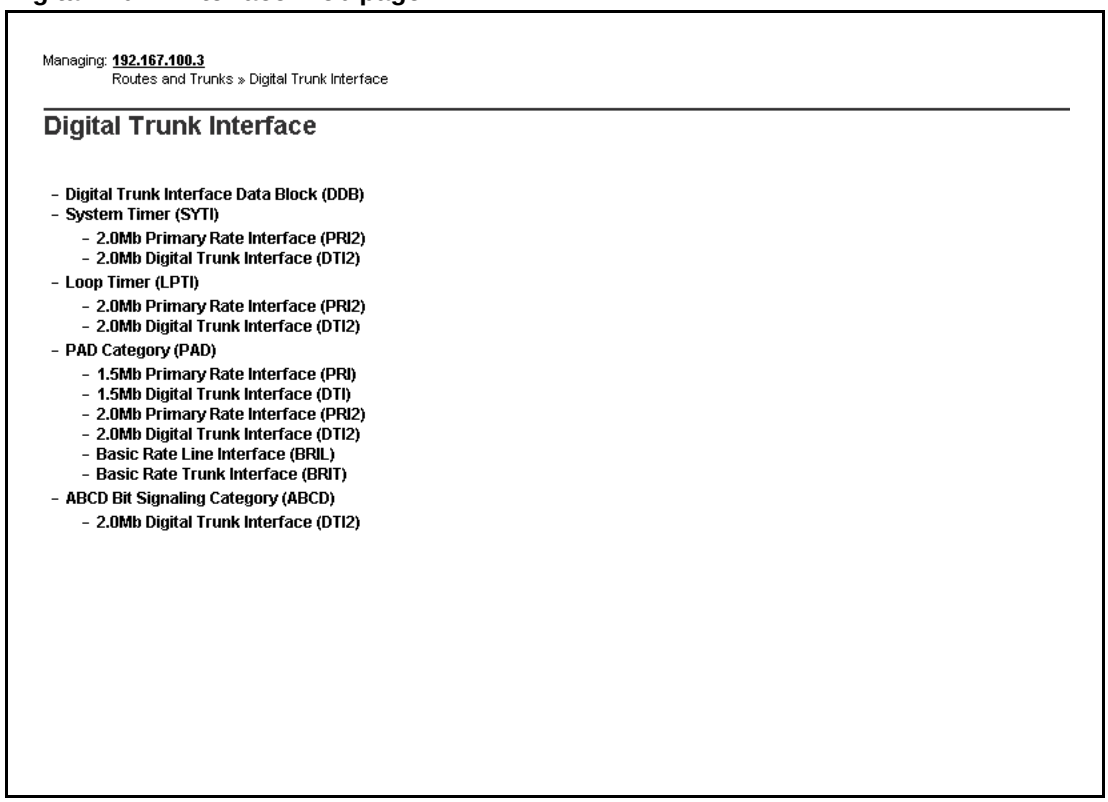
To save changes made in this section, click **Submit** at the bottom of the **D-channels Property Configuration** Web page.

Digital Trunk Interface

When the user clicks the **Digital Trunk Interface** link on the **Routes and Trunks** branch of the Element Manager navigator, the **Digital Trunk Interface** Web page appears, as shown in Figure 166 "Digital Trunk Interface Web page" (page 244). This Web page allows the user to configure or edit Digital Trunk Interface information.

Figure 166
Digital Trunk Interface Web page



From this Web page, users can access additional Web pages to perform the following functions:

- configure Digital Trunk Interface Data Block (DDB) information
- configure System Timer (SYSTI) parameters for:
  - 2.0 Mb Primary Rate Interface (PRI2)
  - 2.0 Mb Digital Trunk Interface (DTI2)
- configure Loop Timer (LPTI) parameters for:
  - 2.0 Mb Primary Rate Interface (PRI2)
  - 2.0 Mb Digital Trunk Interface (DTI2)

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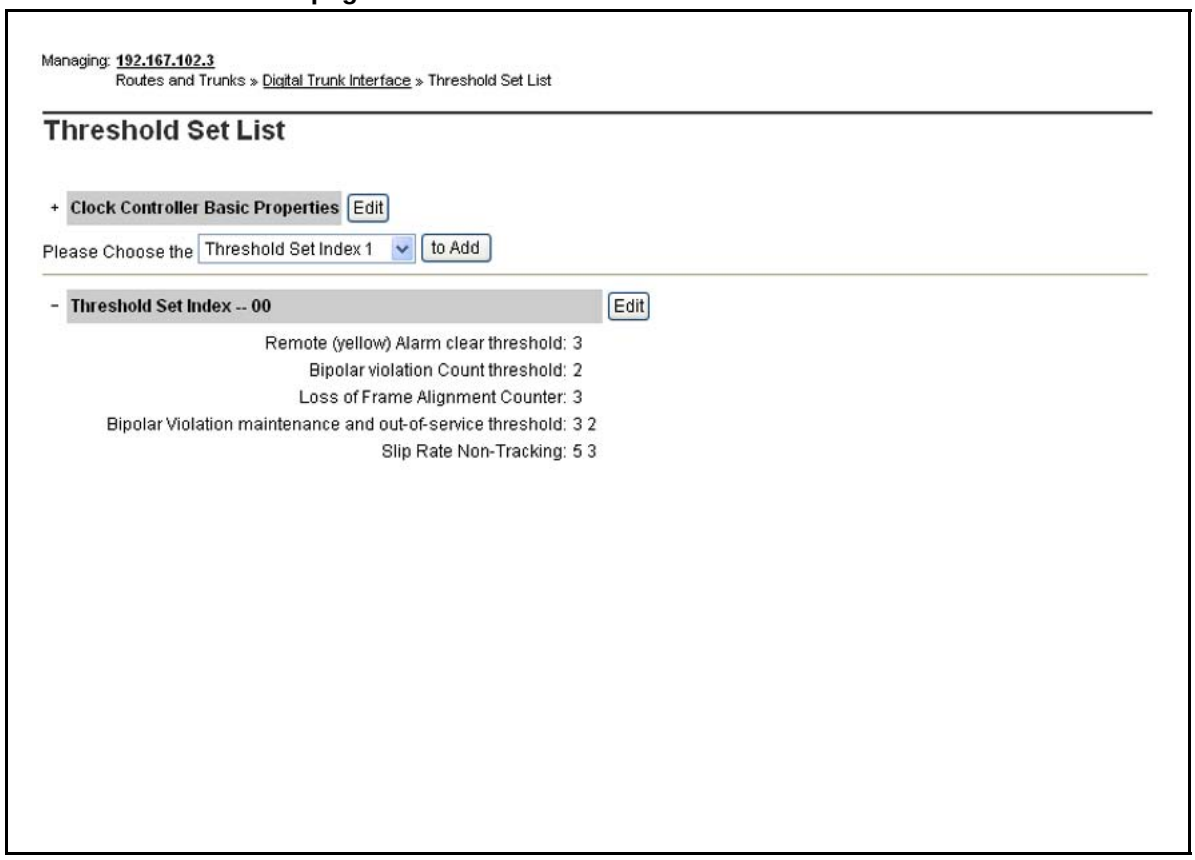
- configure PAD Category (PAD) parameters for:
  - 1.5 Mb Primary Rate Interface (PRI)
  - 1.5 Mb Digital Trunk Interface (DTI)
  - 2.0 Mb Primary Rate Interface (PRI2)
  - 2.0 Mb Digital Trunk Interface (DTI2)
  - Basic Rate Line Interface (BRIL)
  - Basic Rate Trunk Interface (BRIT)
- configure ABCD Bit Signaling Category (ABCD) parameters for the 2.0 Mb Digital Trunk Interface (DTI2)

To configure or edit Digital Trunk Interface Data Block (DDB) information, click **Digital Trunk Interface Data Block (DDB)**. The **Threshold Set List** Web page appears. See Figure 167 "Threshold Set List Web page" (page 245).

Figure 167
Threshold Set List Web page



From this Web page, users can access additional Web pages to perform the following functions:

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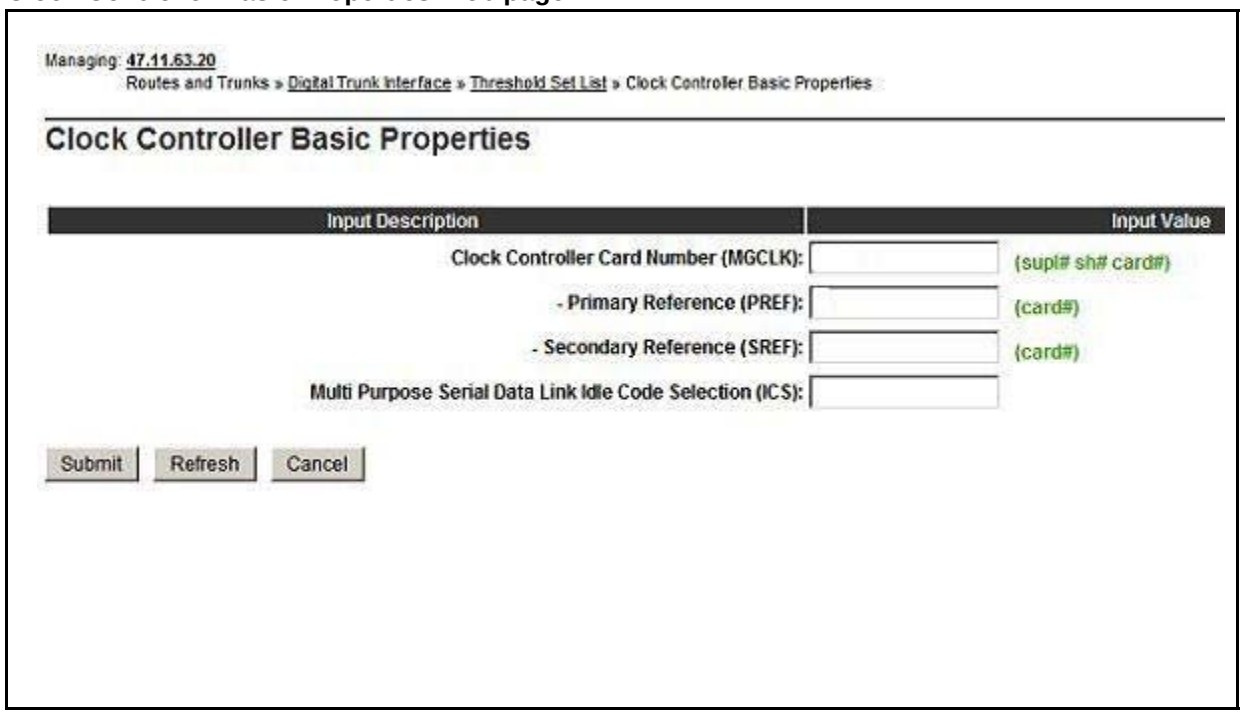
- edit Clock Controller Basic Properties
- add a Threshold Set Index
- edit an existing Threshold Set Block

Users can edit Clock Controller properties by clicking the **Edit** button next to the **Clock Controller Basic Properties** button. The **Clock Controller Basic Properties** Web page appears, as shown in Figure 168 "Clock Controller Basic Properties Web page" (page 246).

Figure 168
Clock Controller Basic Properties Web page



Users can then enter the required information in the text boxes.

To add or edit a Threshold Set Index, follow the steps in Procedure 89 “Adding or editing a Threshold Set Index” (page 246).

Procedure 89
Adding or editing a Threshold Set Index

Step	Action
	To add a Threshold Set Index
1	Select a **Threshold Set Index** from the drop-down list.
2	Click **to Add**.

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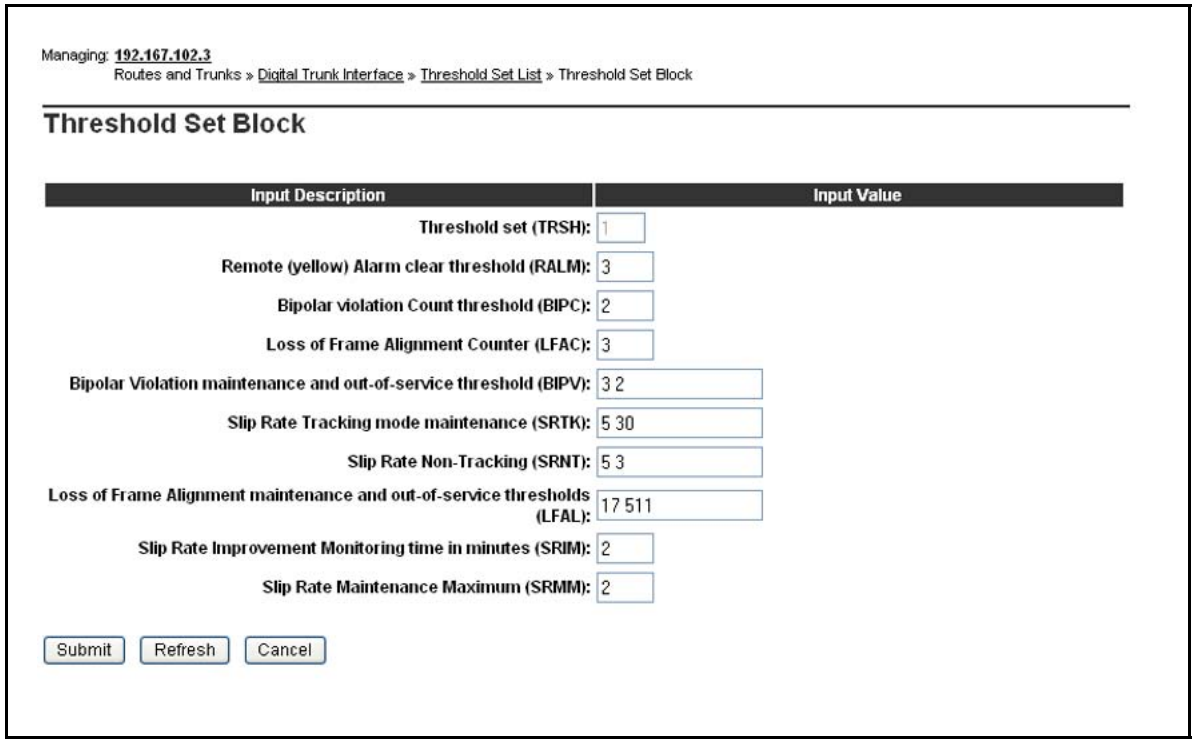
To edit the configuration information in an existing Threshold Set Block, click **Edit** located to the right of the index number.

--End--

When the **to Add** button or a Threshold Set Index Edit button is clicked on Figure 167 "Threshold Set List Web page" (page 245), the **Threshold Set Block** Web page for that index appears, as shown in Figure 169 "Threshold Set Block Web page" (page 247).

Figure 169
Threshold Set Block Web page



The information entered in this section corresponds to DDB (Digital Trunk Interface Data Block) information traditionally configured using LD 73 - Digital Trunk Interface.

To save changes made in this section, click **Submit** at the bottom of the **Threshold Set Block** Web page.

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Dialing and Numbering Plans

Contents

This section contains information about the following topics:

"Introduction" (page 249)

"Electronic Switched Network" (page 249)

"Flexible Code Restriction" (page 252)

"Incoming Digit Translation" (page 255)

Introduction

Element Manager enables users to configure the Dialing and Numbering Plans for the Call Server and the Network Routing Service (NRS) Manager. The information configured in the Dialing and Numbering Plans corresponds to the Command Line Interface (CLI) prompts and responses for Electronic Switched Network (ESN) data traditionally configured in LD 86, LD 87, and LD 90.

For more information about the overlays referred to in this chapter, see *Software Input Output Administration (NN43001-611)* and *Software Input Output Reference - Maintenance (NN43001-711)*.

Electronic Switched Network

To configure or edit the Dialing and Numbering Plan for the Electronic Switched Network, click the **Electronic Switched Network** link in the **Dialing and Numbering Plans** branch of the Element Manager navigator. The **Electronic Switched Network (ESN)** Web page appears as shown in Figure 170 "Electronic Switched Network (ESN) Web page" (page 250). From this Web page users can configure the Dialing and Numbering Plan for each customer on the Electronic Switched Network.

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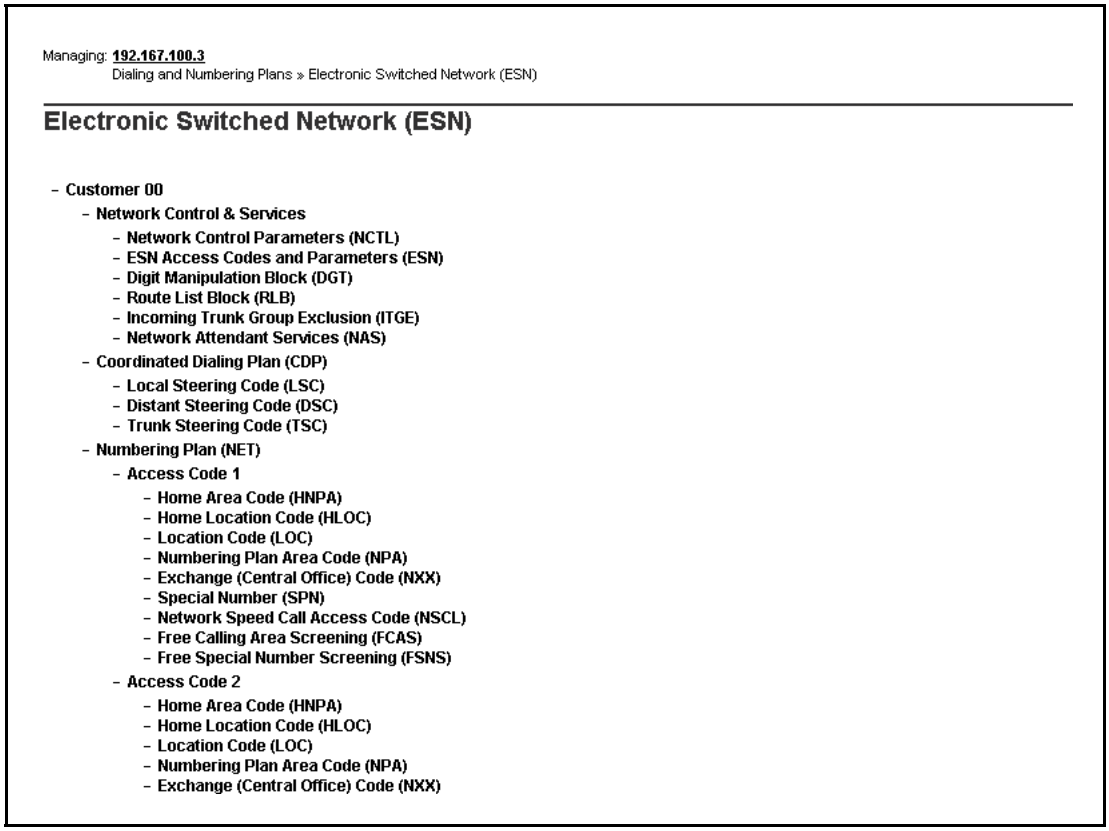
Element Manager provides access to the following Dialing and Numbering Plan parameters:

- Network Control & Services
- Coordinated Dialing Plan (CDP)
- Numbering Plan (NET)

Figure 170
Electronic Switched Network (ESN) Web page



Network Control and Services

Under Network Control and Services, users can click the links to configure or modify the parameters associated with the following items:

- Network Control Parameters (NCTL)
- ESN Access Codes and Parameters (ESN)
- Digit Manipulation Block (DGT)
- Route List Block (RLB)
- Incoming Trunk Group Exclusion (ITGE)
- Network Attendant Services (NAS)

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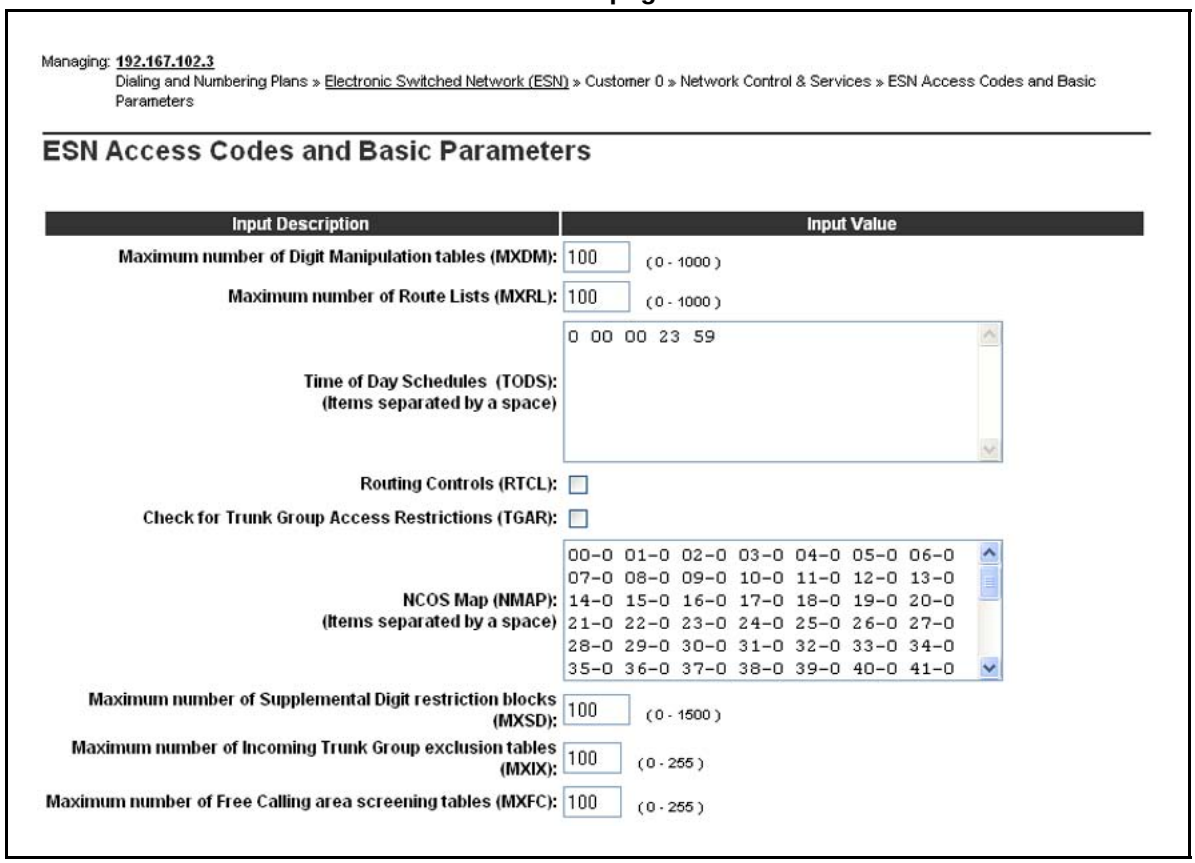
The Network Control Parameters (NCTL) that are configurable using Element Manager correspond to data traditionally configured in LD 87. The settings for the remaining five items under Network Control & Services correspond to CLI prompts and responses in LD 86.

To view the total free and used Location Codes (LOCs), click **Customer xx > Network Control & Services > ESN Access Codes and Basic Parameters**. The **ESN Access Codes and Basic Parameters** Web page appears as shown in Figure 171 "ESN Access Codes and Basic Parameters Web page" (page 251).

Figure 171
ESN Access Codes and Basic Parameters Web page



This feature has its own packaging (LOCX). The package must be added under **Customers > Customer xx Property Configuration > Feature Packages**. This package can be activated only when the FNP package is enabled.

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Coordinated Dialing Plan

Under Coordinated Dialing Plan (CDP), users can click links to configure or modify parameters associated with the following codes:

- Local Steering Code (LSC)
- Distant Steering Code (DSC)
- Trunk Steering Code (TSC)

The Coordinated Dialing Plan parameters that are configurable using Element Manager correspond to data traditionally configured in LD 87.

Numbering Plan

Under Numbering Plan (NET), users can click links to configure or modify parameters associated with the following codes:

- Home Area Code (HNPA)
- Home Location Code (HLOC)
- Location Code (LOC). Maximum number of LOCs is 16 000.
- Numbering Plan Area Code (NPA)
- Exchange (Central Office) Code (NXX)
- Special Number (SPN)
- Network Speed Call Access Code (NSCL)

These codes can also be configured using the prompts and responses in LD 90.

Numbering Plan (NET) is also used to configure the following two LD 87 features:

- Free Calling Area Screening (FCAS)
- Free Special Number Screening (FSNS)

Flexible Code Restriction

To configure or edit Flexible Code Restriction information, click the **Flexible Code Restriction** link in the **Dialing and Numbering Plans** branch of the Element Manager navigator. The **Flexible Code Restriction** Web page appears, as shown in Figure 172 "Flexible Code Restriction Web page" (page 253).

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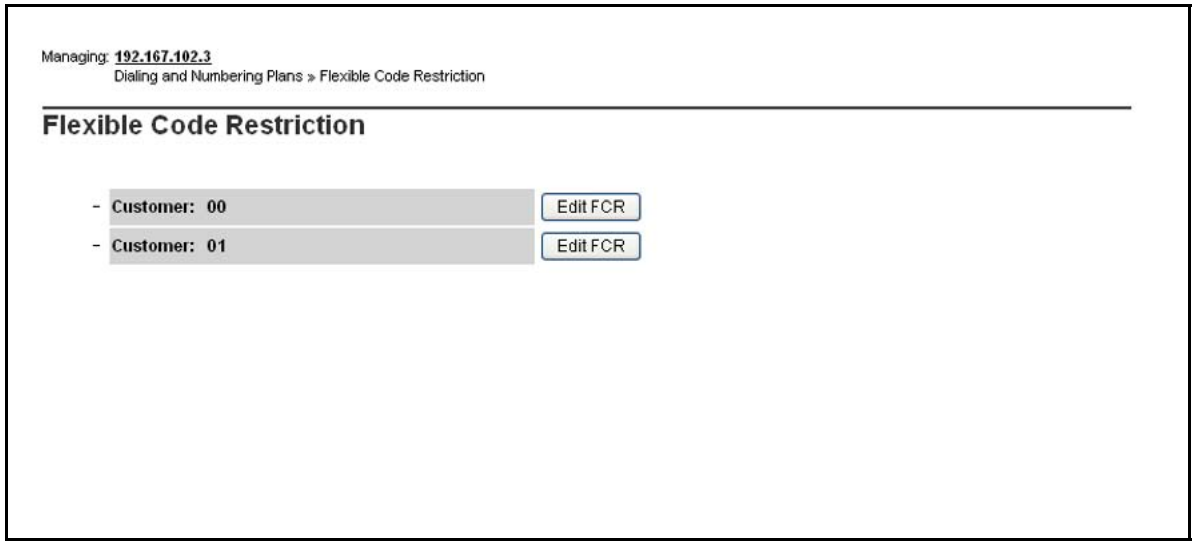
Figure 172
Flexible Code Restriction Web page



This Web page contains **Edit FCR** buttons that link to **Flexible Code Restriction Property** Web pages for each of the customers configured on the Call Server.

To view the list of Flexible Code Restriction Trees for a customer, click the **Edit FCR** button located beside the customer number. The **Flexible Code Restriction** Property Web page for the selected customer opens (see Figure 173 "Flexible Code Restriction Property Web page" (page 254)).

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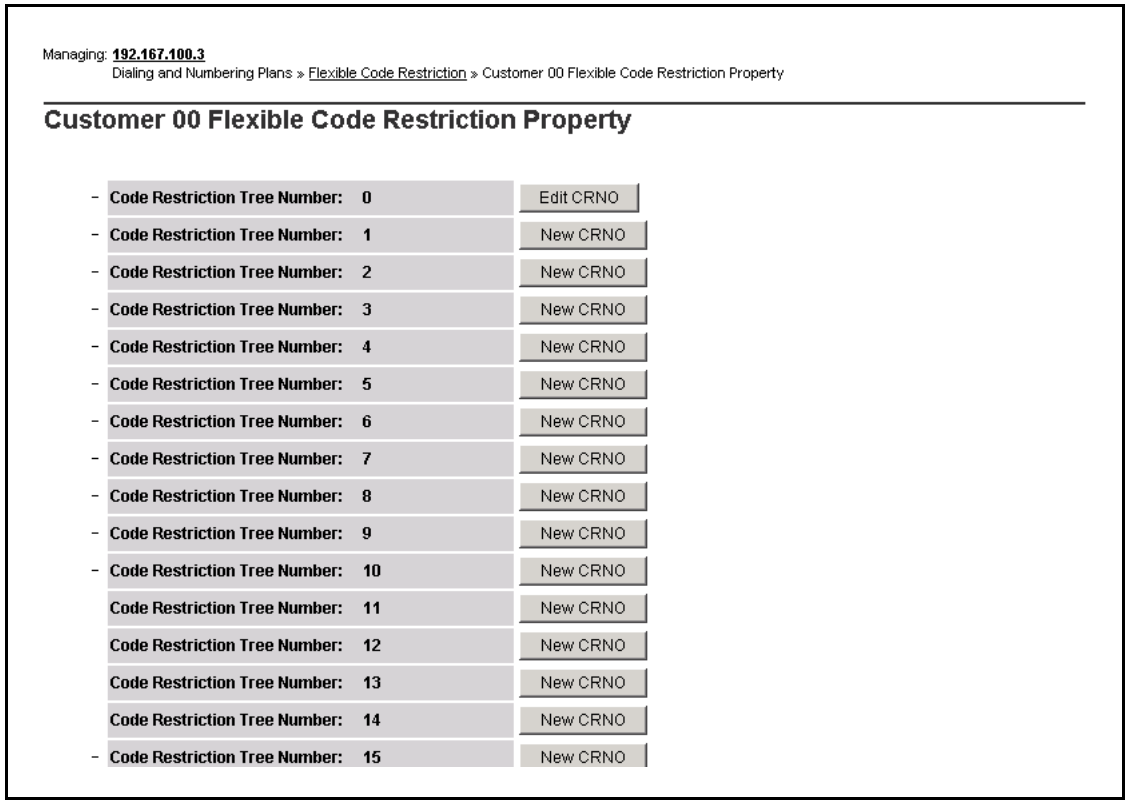
Figure 173
Flexible Code Restriction Property Web page



The **Flexible Code Restriction Property** Web page contains buttons that link to Code Restriction Tree Configuration Web pages for each Code Restriction Tree Number (CRNO). If there is an existing configuration for the CRNO, the button is labeled **Edit CRNO**. If a configuration has not been defined for the CRNO, the button is labeled **New CRNO**. Click the **Edit CRNO/New CRNO** button to open the **Code Restriction Tree Configuration** Web page for the corresponding CRNO, as shown in Figure 174 "Code Restriction Tree Configuration Web page" (page 255).

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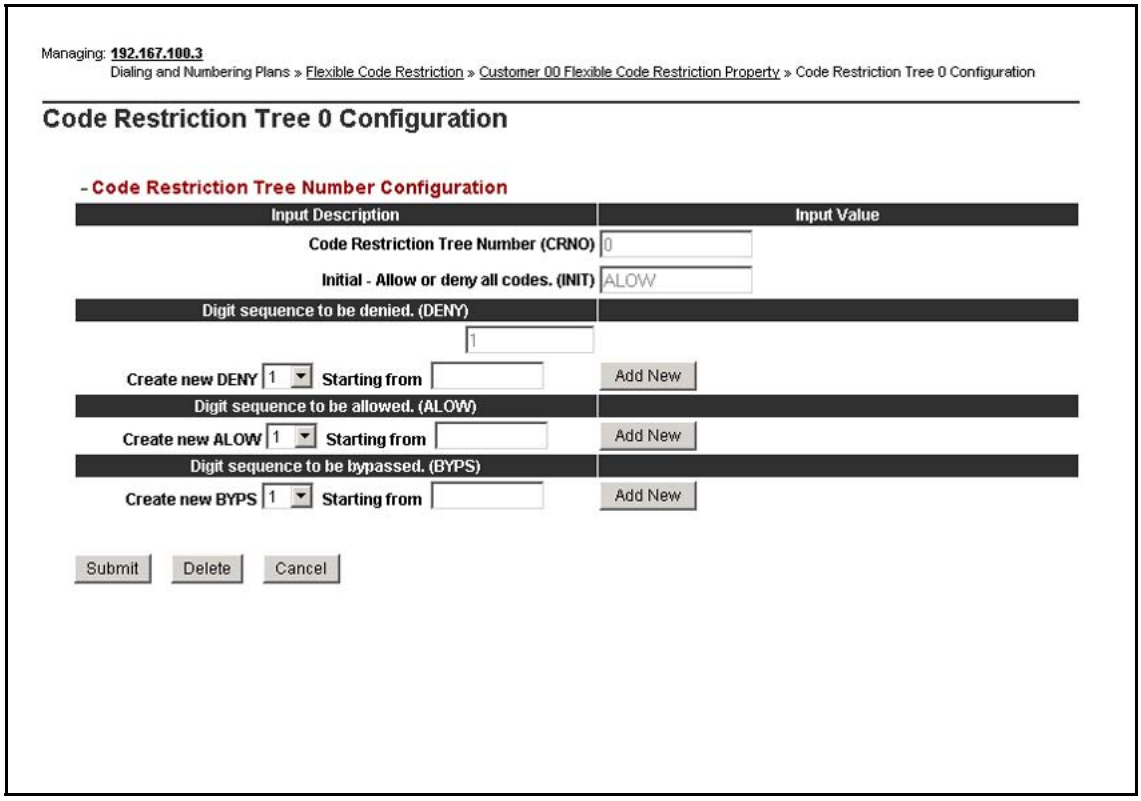
Figure 174
Code Restriction Tree Configuration Web page



By entering values in the appropriate text boxes, users can:

- add or edit digit sequences to be enabled
- add or edit digit sequences to be denied

The information entered in this section corresponds to data traditionally configured using LD 49 - Flexible Code Restriction and Incoming Digit Conversion.

To save changes made in the configuration for this Code Restriction Tree, click **Submit** at the bottom of the Web page.

Incoming Digit Translation

To configure or edit Incoming Digit Translation information, click the **Incoming Digit Translation** link in the **Dialing and Numbering Plans** branch of the Element Manager navigator. The **Incoming Digit Translation** Web page appears, as shown in Figure 175 "Incoming Digit Translation Web page" (page 256).

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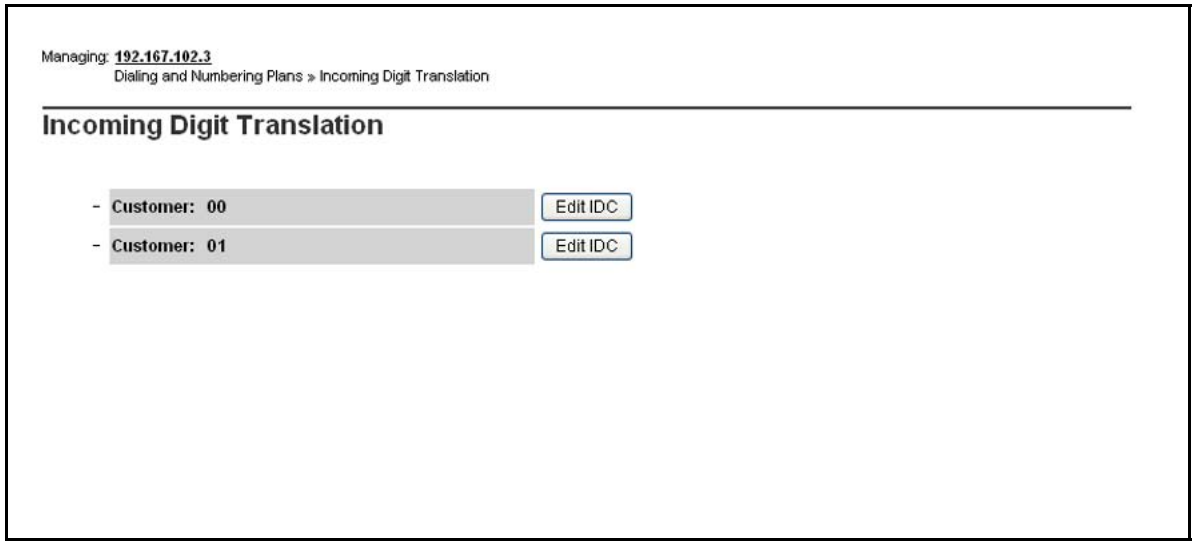
Figure 175
Incoming Digit Translation Web page



This Web page contains **Edit IDC** buttons that link to **Incoming Digit Conversion Property** Web pages for each of the customers configured on the Call Server.

To view the list of Incoming Digit Conversion Trees for a customer, click the **Edit IDC** button located beside the customer number. The **Incoming Digit Conversion Property** Web page for the selected customer appears. See Figure 176 "Incoming Digit Conversion Property Web page" (page 257).

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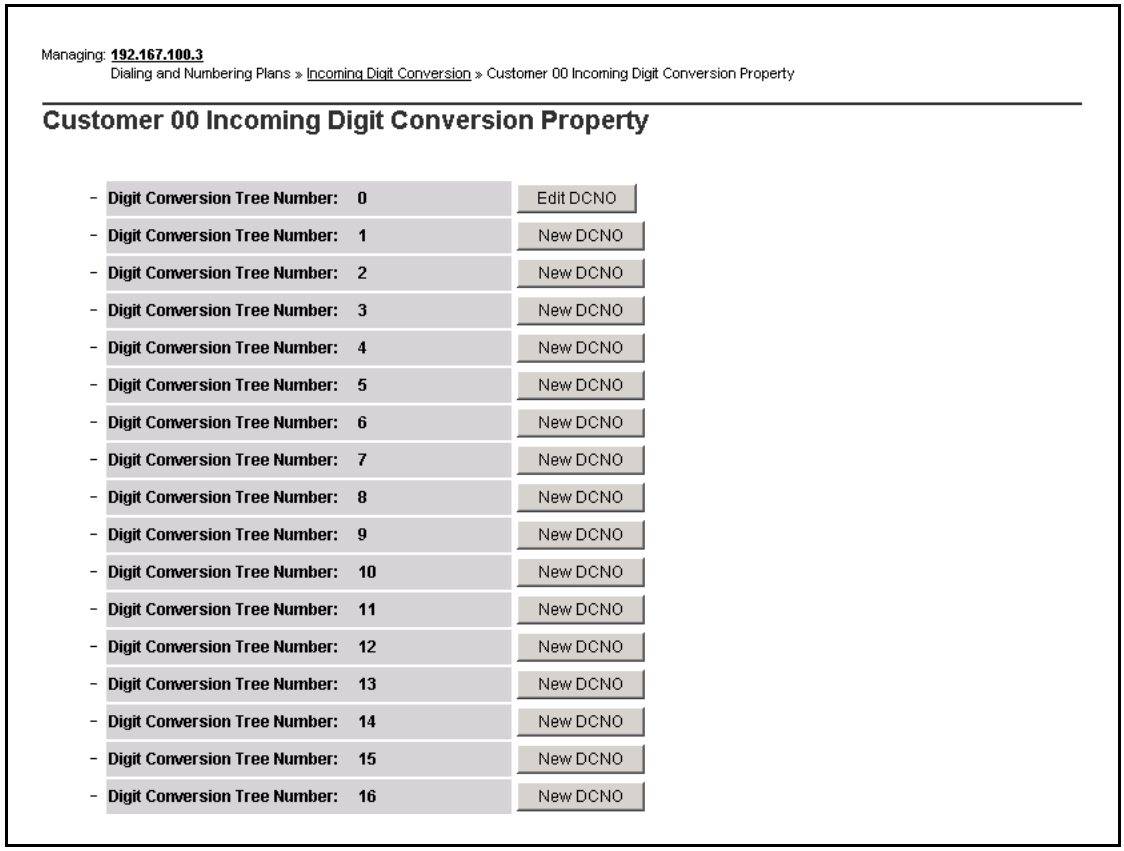
Figure 176
Incoming Digit Conversion Property Web page



The **Incoming Digit Conversion Property** Web page contains buttons that link to **Digit Conversion Tree Configuration** Web pages for each Digit Conversion Tree Number (DCNO). If there is an existing configuration for the DCNO, the button is labeled **Edit DCNO**. If a configuration has not been defined for the DCNO, the button is labeled **New DCNO**. Click the **Edit DCNO/New DCNO** button to open the **Digit Conversion Tree Configuration** Web page for the corresponding DCNO. From this Web page, users can configure Incoming Digit Conversion data.

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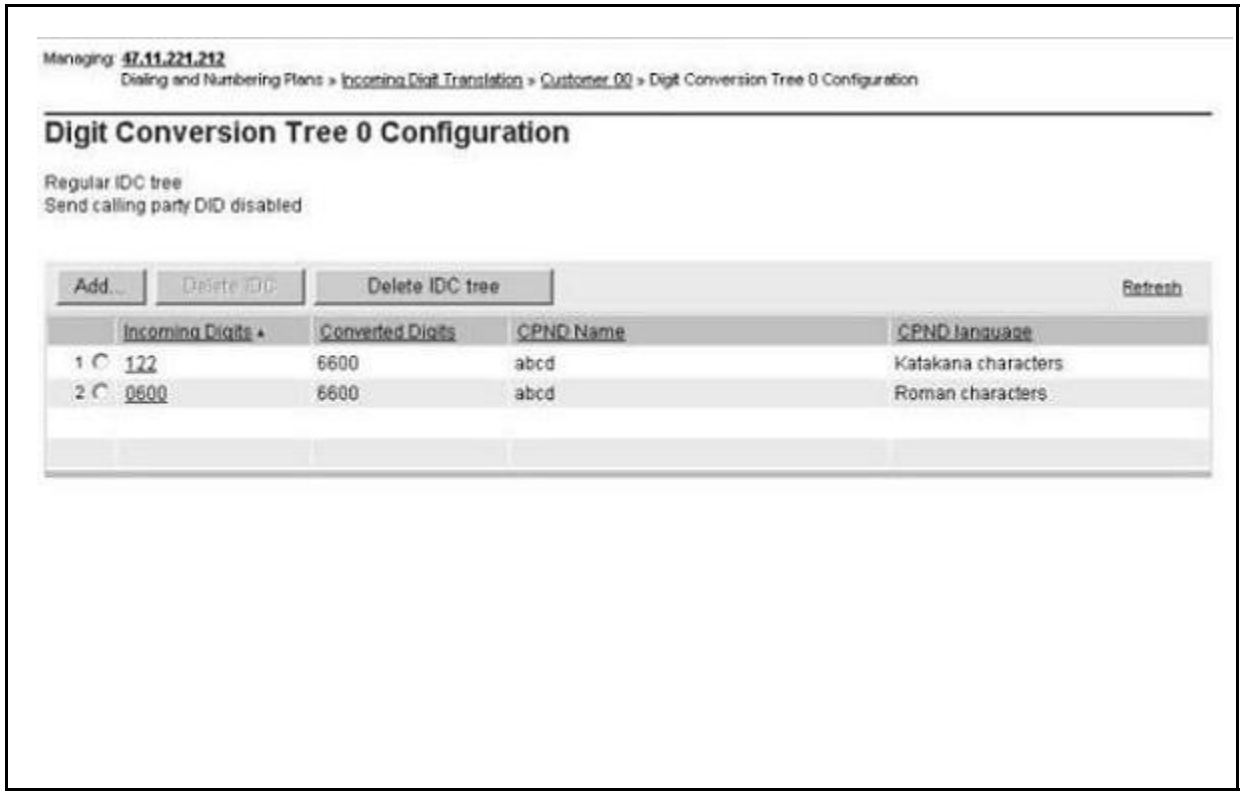
Figure 177
Digit Conversion Tree Configuration Web page



The information entered in this section corresponds to data traditionally configured using LD 49 - Flexible Code Restriction and Incoming Digit Conversion.

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Phones

Contents

This section contains the following topics:

"Introduction" (page 259)

"Database Update" (page 262)

"Station Fast Sync feature" (page 262)

"Templates" (page 263)

"Search Phones" (page 272)

"Add Phones" (page 275)

"Program Phone Keys" (page 281)

"Edit Phones" (page 284)

"Employee reference field support when exporting and import phone database" (page 287)

"Export and Import of employee reference field" (page 288)

"Import Telephones" (page 292)

"Move Phones" (page 298)

"Retrieve Phones" (page 299)

"Delete Phones" (page 300)

"Swap Phones" (page 301)

"Courtesy Change" (page 302)

"Reports" (page 303)

"Migration" (page 304)

Introduction

EM Phone Provisioning functionality provides an interface to provision phones on CS 1000 systems.

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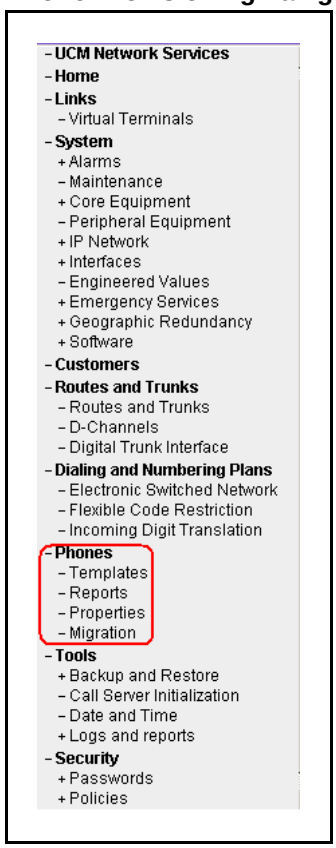
You access Phone Provisioning through the Phones branch of the Element Manager navigator as shown in the following figure.

Figure 178
Phone Provisioning navigation



Use Element Manager to configure phones for the Call Server. The configuration information described in this chapter corresponds to the Command Line Interface (CLI) prompts and responses for Telephone Administration traditionally configured in LD 10 and LD 11.

Additional information is retrieved from the Call Server for validation purposes corresponds to Print Routines traditionally performed in LD 20, LD 21, and LD 22.

For more information about the overlays described in this chapter, see *Software Input Output Administration* (NN43001-611) and *Software Input Output Reference - Maintenance* (NN43001-711).

Feature Operation during Upgrade

When Element Manager is upgraded to CS 1000 Release 6.0 the phone data is not automatically upgraded. Complete the steps below to perform the upgrade.

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Perform the following operations to upgrade from CS 1000 Release 5.5 to CS 1000 Release 6.0 network for a system without Subscriber Manager.

Procedure 90
Upgrading to CS 1000 Release 6.0 without Subscriber Manager

Step	Action
1	Upgrade to CS 1000 Release 6.0.
2	Launch Element Manager.
3	Follow the step in procedure Procedure 109 “Retrieve Phones” (page 299) to populate the phone database.

--End--

Perform the following operations to upgrade from CS 1000 Release 5.5 to CS 1000 Release 6.0 network for a system with Subscriber Manager.

Procedure 91
Upgrading to CS 1000 Release 6.0 with Subscriber Manager

Step	Action
1	Upgrade to CS 1000 Release 6.0.
2	Launch Element Manager.
3	Follow the step in procedure Procedure 109 “Retrieve Phones” (page 299) to populate the phone database.
4	Run Account synchronization from Subscriber Manager. Accounts created in Release 5.5 are automatically removed from Subscriber Manager.
5	Run the Migration utility to re-create accounts based on CPND names (See, “Migration” (page 304)).

--End--

Note: The phone templates and the link from phone to templates created in Release 5.5 are lost during this upgrade. This limitation is corrected from Release 6.0 onwards.

You can follow the manual work around steps to bring back template information and link them to the corresponding phones.

Create templates from existing phones. (See, “Create a Template from an existing phone” (page 266).) This allows you to create templates quickly rather than creating them from scratch.

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Use the Bulk Phone Edit procedure to link the selected phones with the template. (See, “Update phones using the phone Templates” (page 285).)

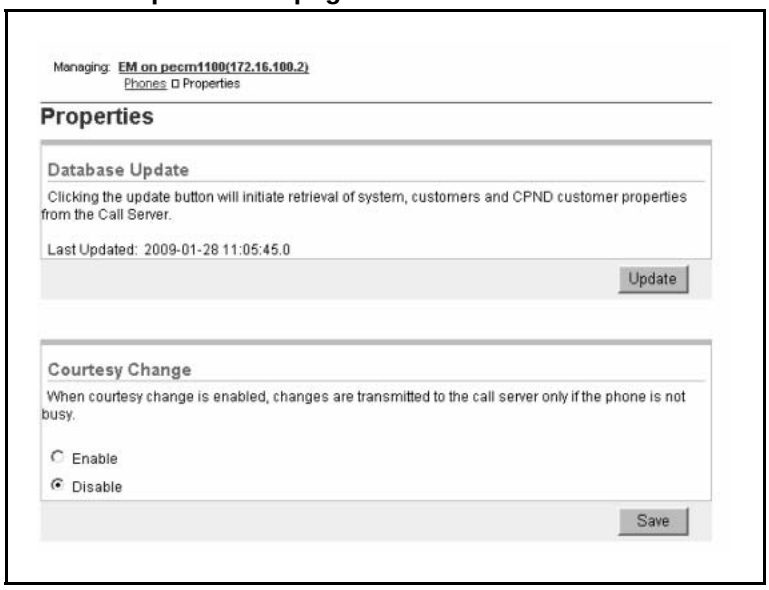
Database Update

When you start Phones for the first time, the application automatically updates the database in the background. You must perform the update before you manage telephones to retrieve configuration changes in packages, customer data blocks, and CPND customer blocks. The following message appears: “Please wait for requested page to load while system properties are being updated.”. You can configure telephones when the update finishes.

To manually update the database, click on the Properties link of the Phones branch of the Element Manager navigator and click Update in the Database Update section of the **Properties** Web page.

The **Database Update** Web page appears, as shown in Figure 179 "Database Update Web page" (page 262)

Figure 179
Database Update Web page



The Last Updated field displays the timestamp of the last update performed.

Station Fast Sync feature

The Station Fast Sync feature keeps the Phones Database synchronized with the PBX.

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When a phone is modified on call server using CLI, then SNMP trap is sent from the Call Server to Element Manager with error code MGMT0001. When Element Manager receives the notification, it retrieves changes or deletes the TN/DN as required. This functionality is enabled by configuring the Element Manager IP address as an SNMP trap destination in LD 117. The EM IP address is configured automatically when EM Phones is launched for the first time. However, if changes from the CLI are not being reflected in EM Phones, it is recommended to verify that the management trap destination is correct using LD 117 See *Communication Server 1000 Fault Management - SNMP* (NN43001-719).

A log entry is created for each Fast Sync notification received.

Note: A manual “Retrieve and Reconcile All” must be performed periodically to ensure data consistency with the Call Server. The automatic fast synchronization update relies on SNMP traps and overlay access to maintain the data. Blocked or dropped SNMP traps and overlay conflicts can result in a data mismatch between the Call Server and EM.

Templates

Use Element Manager to access Templates that contain attributes common to a CS1000 phone type. After you create a template, use it to apply common attributes to a group of telephones, without having to repetitively define the same value for each telephone. In general, using a template is a more efficient method of adding large number of telephones than individually maintaining each telephone.

The administration pages for Templates are organized as a link named Templates inside the Phones section of EM navigator.

Click the Templates link to open the **Templates** Web page as shown in Figure 180 "Templates Web page" (page 264). The **Templates** Web page lists all available templates by name, the telephone type to which they apply, and the time and date of the last update. The action bar has buttons to add, export, import, and delete templates.

Note: Due to performance considerations, the recommended maximum number of templates supported by the system is 100.

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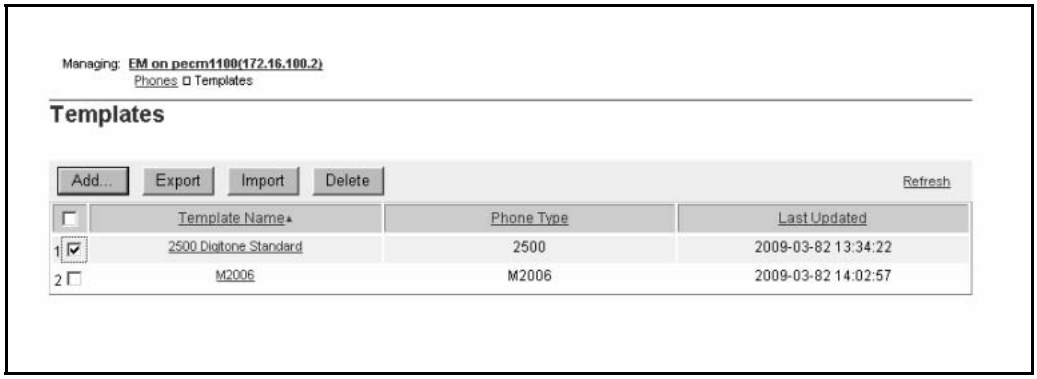
Figure 180
Templates Web page



Create a Template

To add a template click Add on the **Templates** Web page. The **Template Details** Web page appears as shown in Figure 181 "Template Details Web page" (page 265). Select the telephone type to use for the Template.

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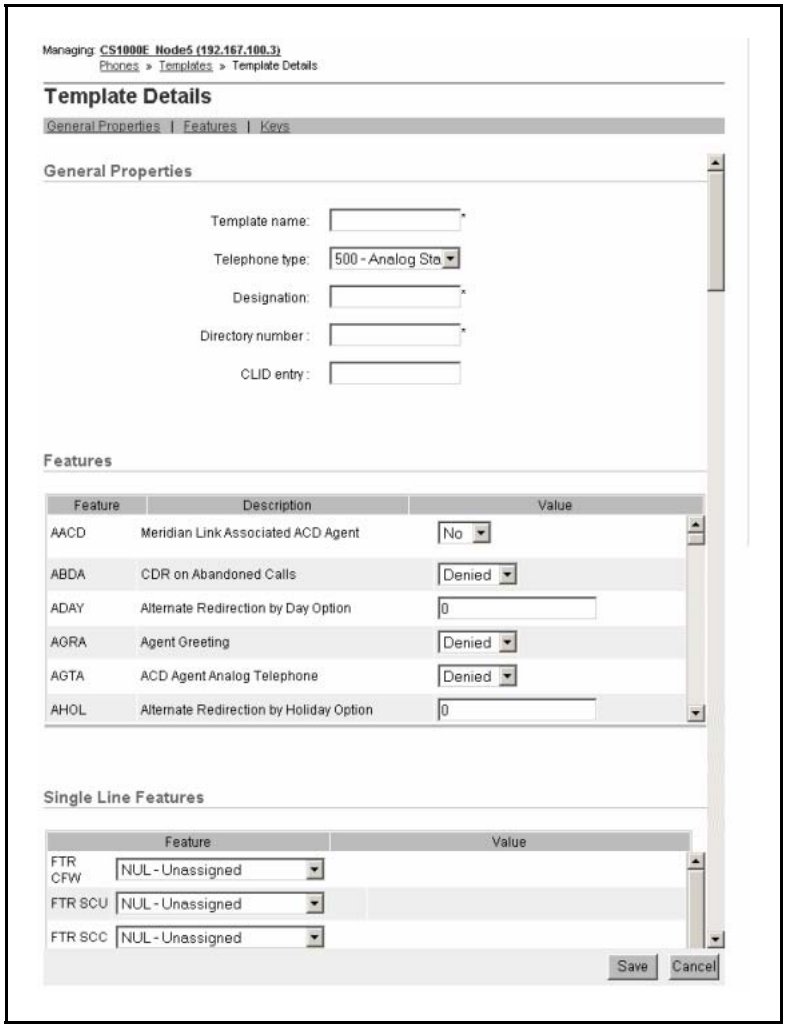
Figure 181
Template Details Web page



The fields marked with an asterisk (*) are mandatory.

The Template name identifies the template. If a template exists with the same name as specified, then an error message, "Template name already in use. Please specify another Template name." appears when you try to save the new template.

The templates are not system-specific, and hence all the phone features and keys applicable to the selected phone type are available for configuration in the **Template Details** Web page. The available features and key features change based on the selected phone type.

Note: Enter a partial DN as part of the key configuration parameter to enable a phone configured with this template to pick up a DN according to the partial DN.

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Configure all required parameters, and click Save to save the template and return to the **Templates** Web page. The view refreshes to display the newly added template.

After you create a template, you can use it to add telephones to the system. When you use a template to add a telephone, only those keys and features that are valid for the system in context appear in the **Phone Details** Web page.

Create a Template from an existing phone

You can define a new template from an existing telephone configuration.

Select a telephone to convert to a phone template and view the new template in the **Template Details** Web page.

Procedure 92
Save a phone as template

Step	Action
1	Click the **Phones** branch of the Element Manager navigator to open the **Search for Phones** Web page.
2	Select the telephone to save as a template from the Search Result section of the**Search for Phones** Web page. ***Note:*** You can create a template only from one telephone. An error message appears if you select multiple phones for creating a template.
3	Select **Save As Template** from the **More Actions** list as shown in Figure 182 "Search For Phones Web page with option to save a phone as template" (page 267).

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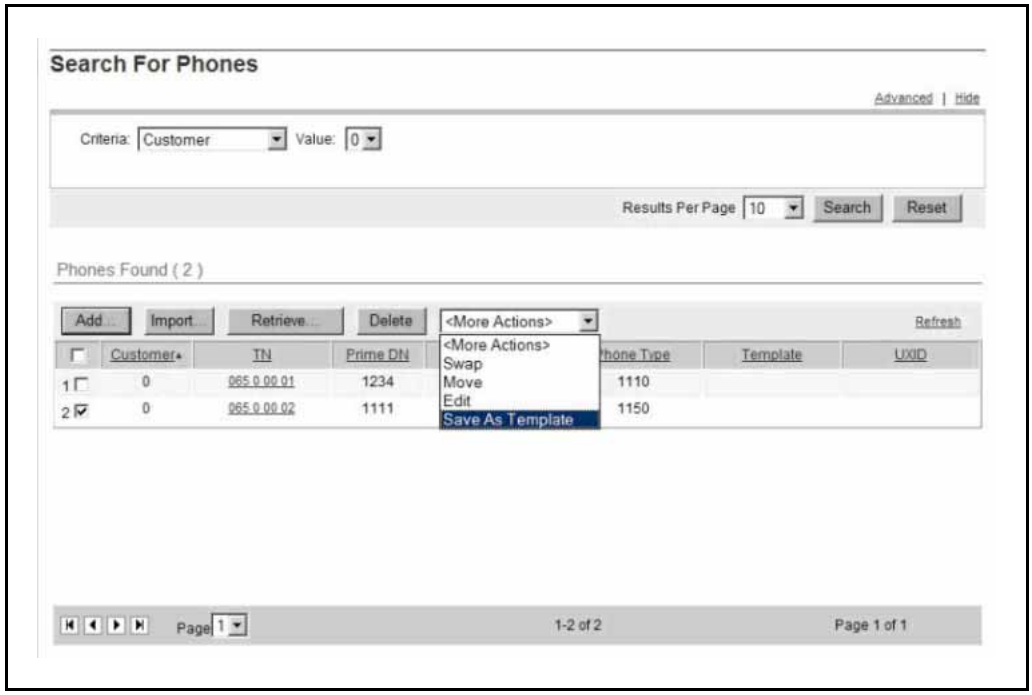
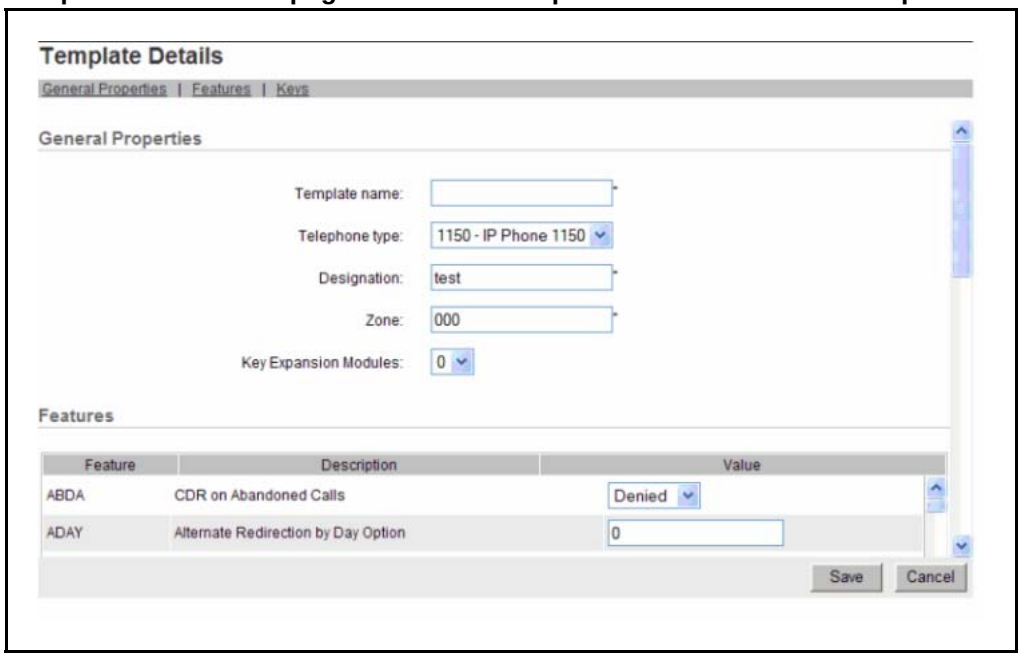
Figure 182
Search For Phones Web page with option to save a phone as template



The **Template Details** Web page appears as shown in Figure 183 "Template Details Web page with the select phone converted into a template" (page 267) .

Figure 183
Template Details Web page with the select phone converted into a template



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4 Enter a template name in the **Template name field**.

Note: The Template name must be unique. If you enter an existing template name that an error message appears.

5 Click **Save** to save the template.

Search for Phones Web page appears. The information of selected phone is converted into a telephone template.

--End--

View a Template

To view template details, click the template name link in the **Templates** Web page. The **Template Details** Web page appears displaying the selected template.

Update a Template

To update a template, click the template name link in the **Templates** Web page. The **Template Details** Web page appears displaying the selected template.

Make the required modifications to the template and save the changes.

Note: When you update a Template, the telephones associated with this Template are not automatically updated. See, "Update phones using the phone Templates" (page 285).

Delete a Template

Select any template from the **Templates** Web page and click Delete to remove the template.

You must confirm the deletion. When you click OK, the selected template is deleted immediately. If you click Cancel, the deletion is cancelled and the **Templates** Web page appears.

Note: When you delete a template, its association with telephones is removed, but the telephones are not deleted.

Export and Import Templates

You can export and import templates in CSV format.

Template data configured at one EM is not available for every EM in the UCM Common Services framework. You must perform a manual export and import procedure to share this data between various Element Managers.

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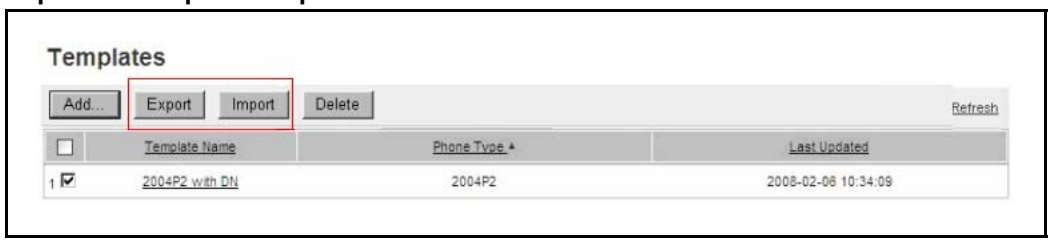
You import and export Templates from the **Templates** Web page as shown in Figure 184 "Import and Export Templates" (page 269).

Note: No data validation occurs when you import a template. You must ensure that proper values are present under all fields in the CSV file that you import.

Figure 184
Import and Export Templates



You can use a comma-delimited ASCII text file, with a file extension of CSV as the data file. The first line or record of the file must contain the names of the fields that you import. You must enclose each field in the record in quotation marks. The first field in the data record is template name and is used as the key during the import. Existing templates are updated if a template with the same name exists and a new template is created, if the template name does not exist.

The following are the mandatory fields required for a template import:

- TEMPLATE_NAME
- PHONE
- DES

Depending on the imported telephone type, other mandatory fields are required. For example in case of an IP Phone, **Zone** is a mandatory field. If any of the mandatory fields are missing in a data record, the import process ignores that data record. The other data requirements for import of templates as well as the list of field names to be used for import of templates are similar to Import Telephones. See, “Import Telephones” (page 292).

Note: You cannot import CPND because templates do not support them.

The following is a sample of data in CSV format.

"TEMPLATE_NAME","PHONE","DES","ZONE","KEY0",
"1110 for HR dept","1110","Test","000","SCR 2 D"

Note 1: In the above sample data, Key0 is configured with partial DN.

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Note 2: The UI reports errors encountered during the import operation. You can modify the CSV file and try the import again.

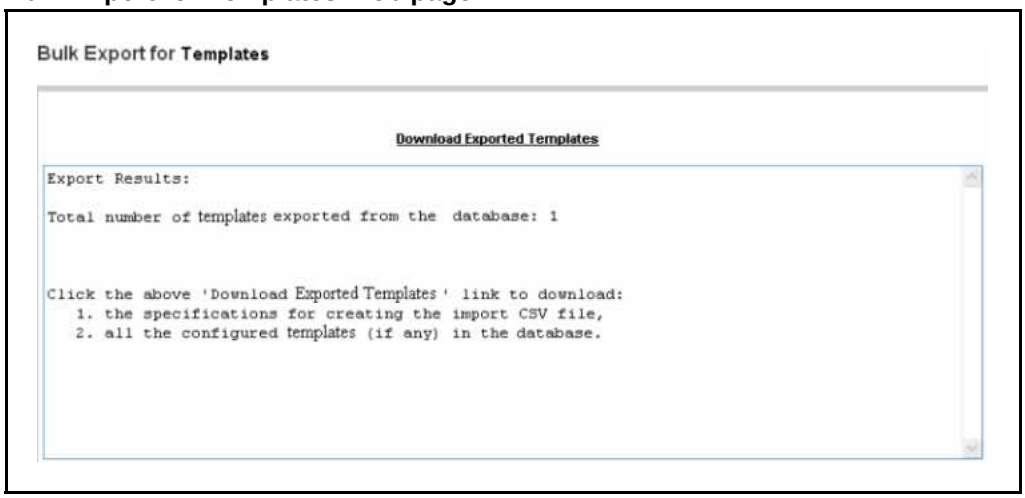
Note 3: The template import is shorter than the telephone import operation so no log file is written.

Procedure 93 “Export Templates” (page 270) describes the step you complete to export one or more templates.

Procedure 93
Export Templates

Step	Action
1	Click the **Templates** link on the EM navigator. The **Templates** Web page appears.
2	Select the list of templates to export.
3	Click **Export**.
4	The **Bulk Export for Templates** Web page appears as shown in Figure 185 "Bulk Export for Templates Web page" (page 270).

Figure 185
Bulk Export for Templates Web page



5	Click the **Download Exported Templates** link to download and save the exported data to your computer as shown in Figure 186 "Download Exported Template" (page 271).

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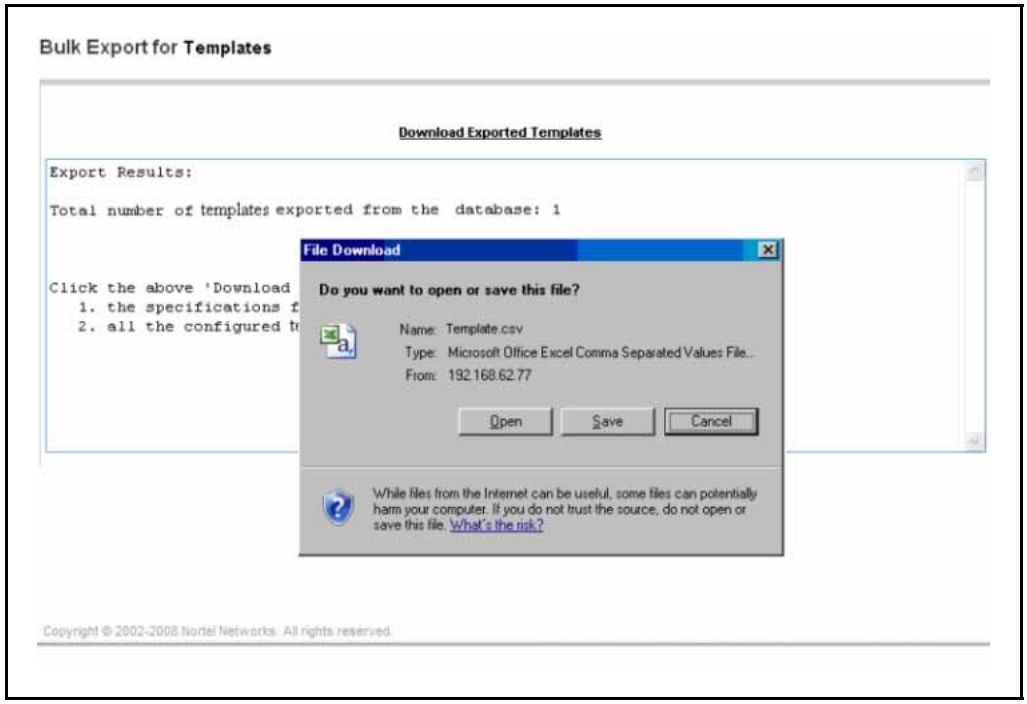
Figure 186
Download Exported Template



--End--

Procedure 94 “Import Templates” (page 271)describes the steps to import one or more templates.

Procedure 94
Import Templates

Step	Action
1	Click the**Templates** link on the EM navigator. The **Templates** Web page appears.
2	Click **Import**. The **Import Templates** Web page appears as shown in Figure 187 "Import Templates Web page" (page 272).

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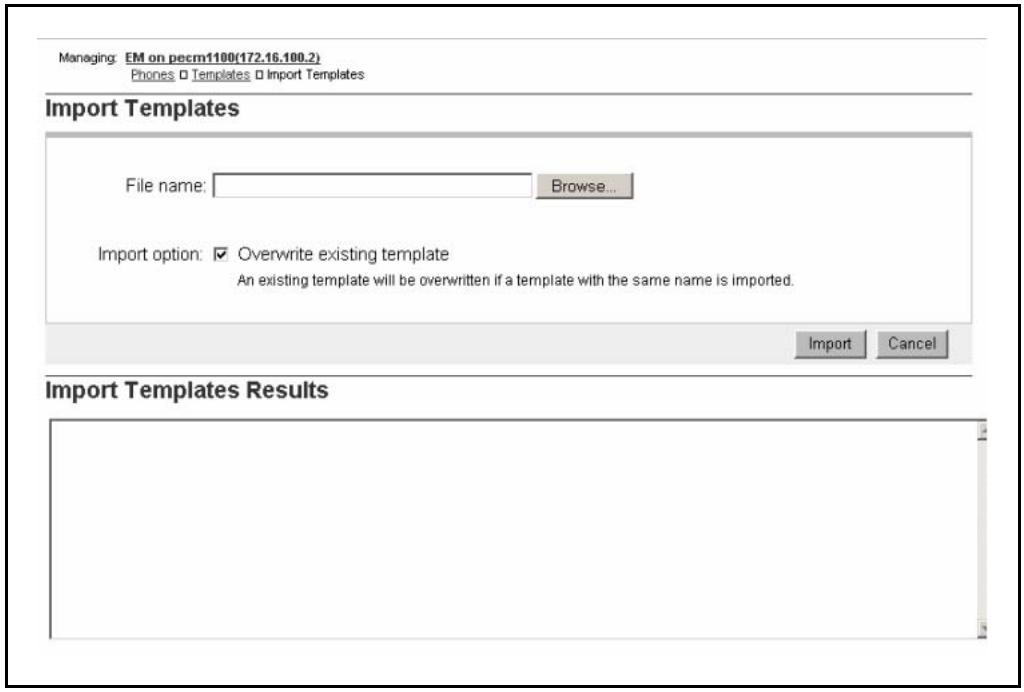
Figure 187
Import Templates Web page



3 Specify the source file name by performing one of the following steps:

- Type the path and file name of the source file in the CSV file name box.
- Click **Browse** to locate and select the file.

4 Click **Import** to perform the Import operation.

--End--

Search Phones

Access the Phones functions in Element Manager from the **Search for Phones** Web page. Search for phones based on the following criteria:

- Prime DN
- Phone Type
- Terminal Number
- Designation
- Customer

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- Template
- UXID

For example, to search for a telephone type, select Phone Type as the criteria and a telephone type from the Value list. Procedure 95 “Search for phones” (page 273) describes searching for telephones using template as the criteria.

Procedure 95
Search for phones

Step	Action
1	Click the **Phones** branch of the Element Manager navigator to open **Search for Phones Web** page, as shown in Figure 188 "Search for Phones Web page" (page 273).

Figure 188
Search for Phones Web page

2	Select **Template** as the criteria from the **Criteria** list. ***Note:*** If you select no template as the criteria then the search returns all phones not associated to a template.
3	Enter a **Value** for the template to search for.
4	Click **Search**. The **Search for Phones** Web page displays the telephones that match the specified Template as shown in Figure 189 "Search for Phones Web page" (page 274).

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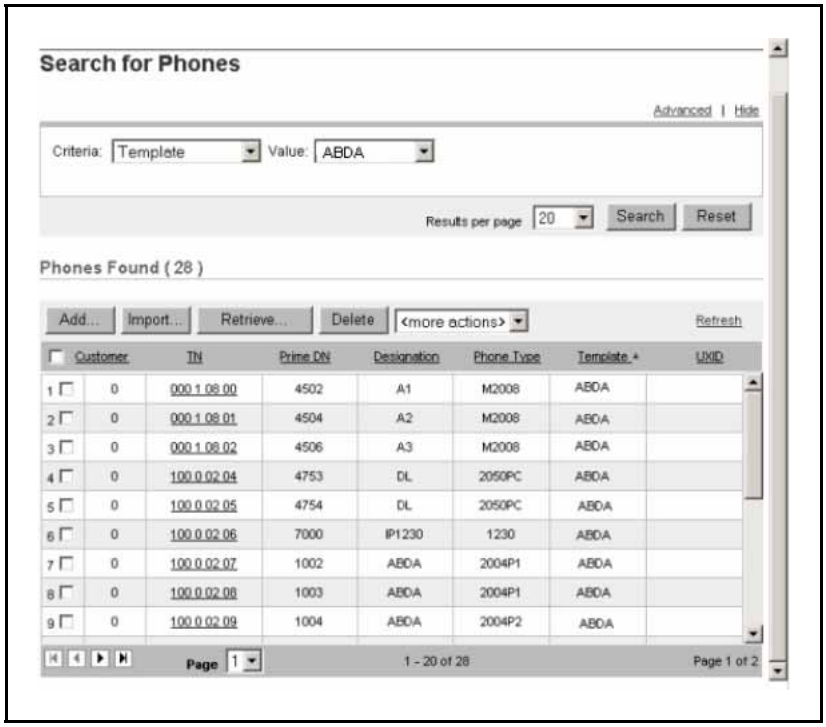
Figure 189
Search for Phones Web page



--End--

To search using additional criteria, click the Advanced link in the top right corner. The **Advanced Search for Phones** Web page appears, as shown in Figure 190 "Advanced Search for Phones Web page" (page 275).

Enter the criteria for the advanced search and click Search.

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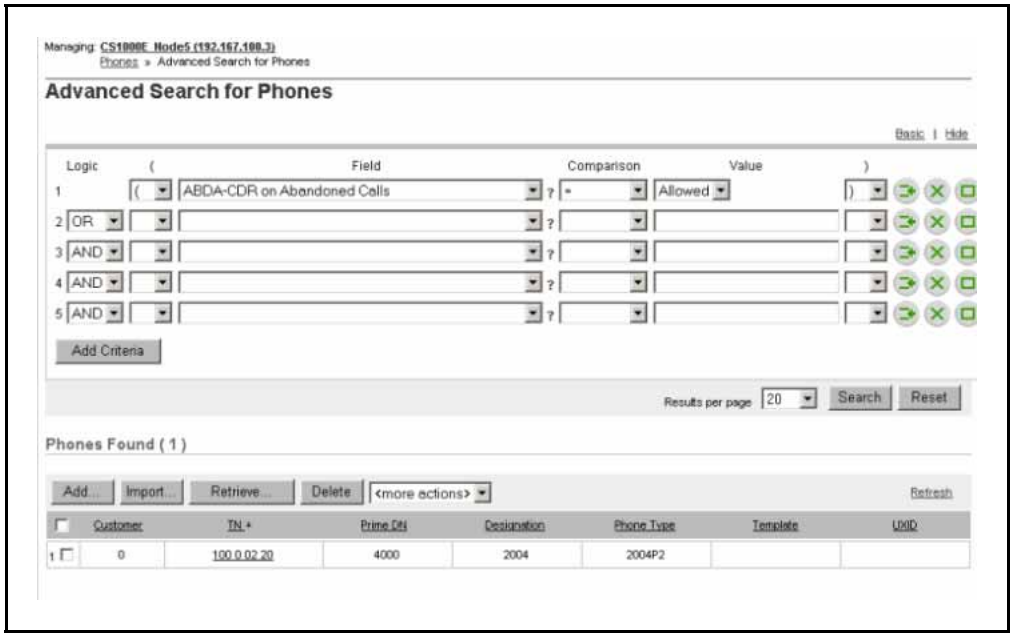
Figure 190
Advanced Search for Phones Web page



Add Phones

The following methods are used to add telephones:

- Add single or multiple telephones
- Add phones using a template
- Add phones using copy from TN option

To add a single telephone, perform the steps in Procedure 96 “Add Single Phone” (page 275).

Procedure 96
Add Single Phone

Step	Action
1	From the **Search for Phones** Web page, click **Add**. The **New Phones** Web page appears, as shown in Figure 191 "New Phones Web page" (page 276).

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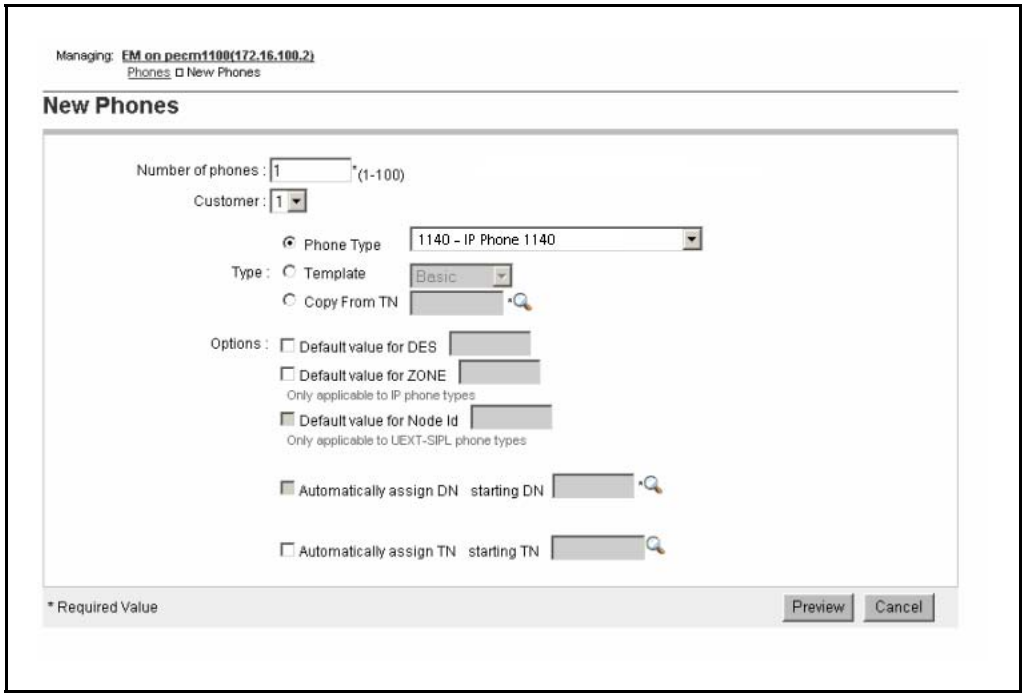
Figure 191
New Phones Web page



2 Enter **1** in the **Number of phones** box.

3 to which this telephone is associated from the **Customer** list.

4 Select the **Phone Type** from the list.

5 Select **Default value for DES**, and type the value in the box.

6 If the telephone type is analog, select **Automatically assign DN** to automatically assign the next DN from the starting DN value.

Note 1: Click the Magnifying Glass to look up a DN.

Note 2: You can select **Automatically assign DN** for analog telephone types and while creating telephones and templates having a partial DN.

7 Select **Automatically assign TN** to automatically assign the next available TN from the starting TN value.

Note: Click the Magnifying Glass to look up a TN.

8 Click **Preview**.

The **Phone Details** Web page appears, as shown in Figure 192 "Phone Details Web page" (page 277).

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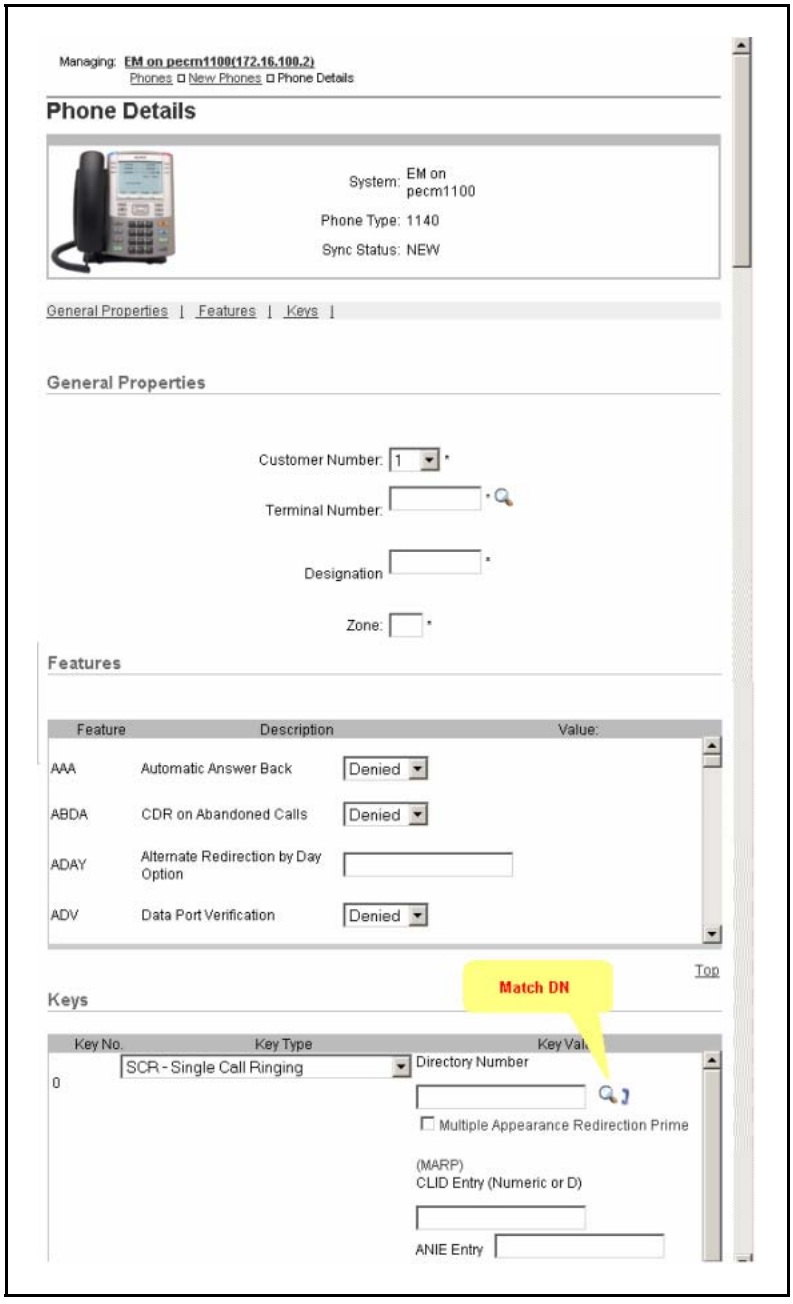
Figure 192
Phone Details Web page



9 If necessary, you can change the **Customer Number** from the default number you selected in the **New Phones** Web page.

10 If **Terminal Number** is empty, click the magnifying glass icon and select an available TN.

11 Enter or update the DES value in the **Designation** field.

12 Choose the desired features in the **Features** section.

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13 Choose the desired keys in the **Keys** section. To program keys using Phone graphical interface see "Program Phone Keys" (page 281).

Note 1: If the telephone type is analog, the **Keys** section is not available.

Note 2: Match DN page is only applicable for Single Call Ringing (SCR) you start Match DN by clicking on the Phone icon. If you start Match DN in the context of Digital and IP Phones, all UEXT sets with same DN appear. If the context is UEXT all the Digital and IP Phones are appear in the Match DN page. When you select Single Call Ringing (SCR) for Key 0, the telephone icon (Match DN) appears. If you select any telephone and click **Assign** then FDN, HUNT, NCOS, TGAR, and CLS features are copied to the telephone that you are configuring or for which you are editing information

14 Click **Validate** to validate the new telephone.

The status of the Validation appears, listing validation errors that occur. If validation errors occur, repeat the relevant sections of this procedure to correct the errors.

15 Click **Save** to add the new telephone to the database.

Note: Click Cancel to cancel the current operation and redirect to the **Phone Search** Web page.

--End--

If you select Copy from TN in Step 4 of the **New Phones** Web page, the new Phone uses the properties of the specified TN, with the following exceptions:

- The Default value for DES, if specified, takes precedence
- The Automatically assign DN, if enabled, takes precedence.
- The Automatically assign TN, if enabled, takes precedence.

If you select Template in Step 4 of the New Phones page, the new Phone uses the properties of the specified template, with the following exceptions:

- The Default value for DES, if specified, takes precedence.
- The Automatically assign DN, if enabled, takes precedence.

The Template field displays all templates. To add a telephone, select a template from the list.

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When Auto Assign DN is on and you specify when a starting DN, the starting DN overwrites the existing partial DN specified in the template. The message “The current DN is the specified starting DN. It is not the partial DN specified in the template” is displayed indicating that the starting DN overwrites the partial DN specified in the template.

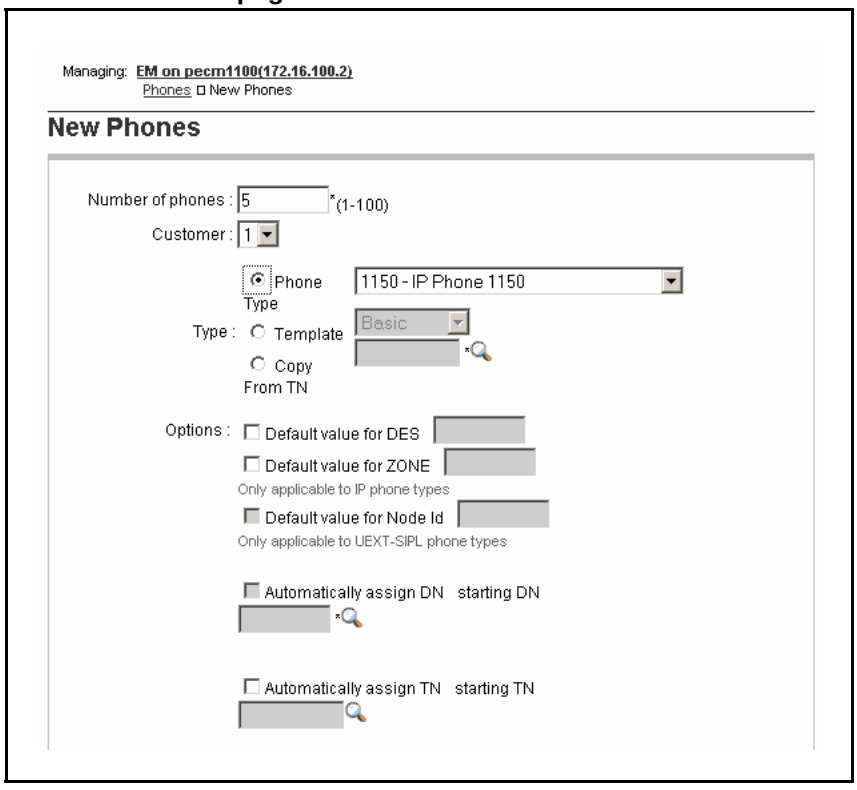
When Auto Assign DN is switched off, a Partial DN specified in the template becomes the DN. The Add Phones fails unless the user corrects the DN. The message, “The current DN is the partial DN specified in the template. The DN must be modified in order to successfully add the phone.” appears.

To add multiple telephones, perform the steps in Procedure 97 “Add Multiple Phones” (page 279).

Procedure 97
Add Multiple Phones

Step	Action
1	From the **Search for Phones** Web page, click **Add**. The **New Phones** Web page appears, as shown in Figure 193 "New Phones Web page" (page 279).

Figure 193
New Phones Web page



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2 Enter the number of telephones to add in the **Number of phones** field.

You can add up to 100 phones at a time.

3 Select the customer to which these telephones are associated from the **Customer** list.

4 Select **Default value for DES**, and type the value in the text box.

5 Select **Default value for Zone**, and type the value in the text box.

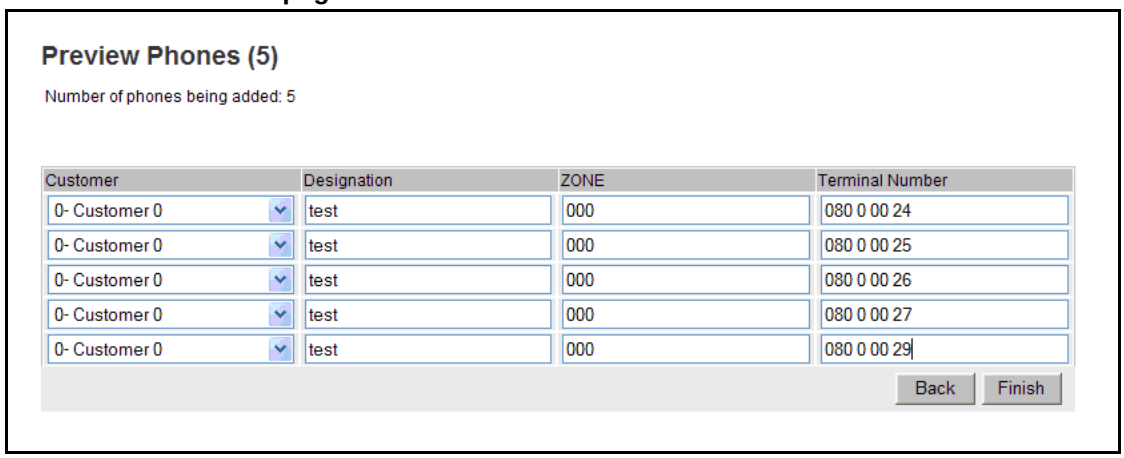
6 Select **Automatically assign DN** to automatically assign the next available DN.

7 Select **Automatically assign TN** and type the value in the starting TN box; or, you can leave the value blank and the system assigns the next available TN (Loop, Shelf, Card, Port or Unit) to the specified telephones as defined in the Hardware database for the system.

8 Click **Preview**.

The **Preview Phones** Web page appears, as shown in Figure 194 "Preview Phones Web page" (page 280).

Figure 194
Preview Phones Web page



This Web page lists the attributes of each new telephone based on the selections entered in the **New Phones** Web page in previous steps.

The **Preview Phones** page lists the desired number of telephones with automatically assigned TN to each telephone either from the starting value entered or from the automatically assigned values.

9 If the **Customer** number is incorrect, select the correct value from the list.

10 If the **DES** field is empty or incorrect, type the correct value.

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11 For an analog telephone, If the **DN** field is missing or incorrect, type the correct value.

12 If the **TN** field is missing or incorrect, type the correct value.

13 Click **Finish** to add the telephones to the database.

--End--

You can select a template to add multiple telephones.

To add multiple analog phones when Auto Assign DN is on and when the starting DN is specified, the DNs are used from the unused DN list of the call server. For example, if the starting DN is 100 and the user adds three phones then 105, 115, 116 could be the DNs if they are the next available free DNs for the given starting DN.The DNs appear in the **Preview Phones** Web page and you can edit it.

To add multiple analog telephones when Auto Assign DN is switched off, the Partial DN specified in the template becomes the DN. Add multiple telephones fails unless you correct the DN. The message “The current DN is the partial DN specified in the template. The DN must be modified in order to successfully add the phone.” appears.

To add multiple digital or virtual telephones when Auto Assign DN is switched on and when starting DN is specified, the starting DN is incremented and used. For example if the starting DN is 100 and we try to add three telephones then 100, 101, and 102 are the DNs. The DNs do not appear in the **Preview Phones** Web page so you cannot modify the DNs.

To add multiple digital or virtual telephones when Auto Assign DN is switched off, you cannot use the template with partial DN for adding multiple digital or virtual telephones. The error message “Multiple phone addition is not allowed since the template selected has a partial DN” appears indicating that this scenario is not allowed. However, no restriction is placed on adding telephones if the template does not contain a partial DN.

Program Phone Keys

You can program telephone keys by using a graphical image of the telephone.

You can program telephone keys from the **Phone Details** Web page by using the graphical image of the telephone, which appears when you click on the telephone image at the top left of the page as shown in the figure below.

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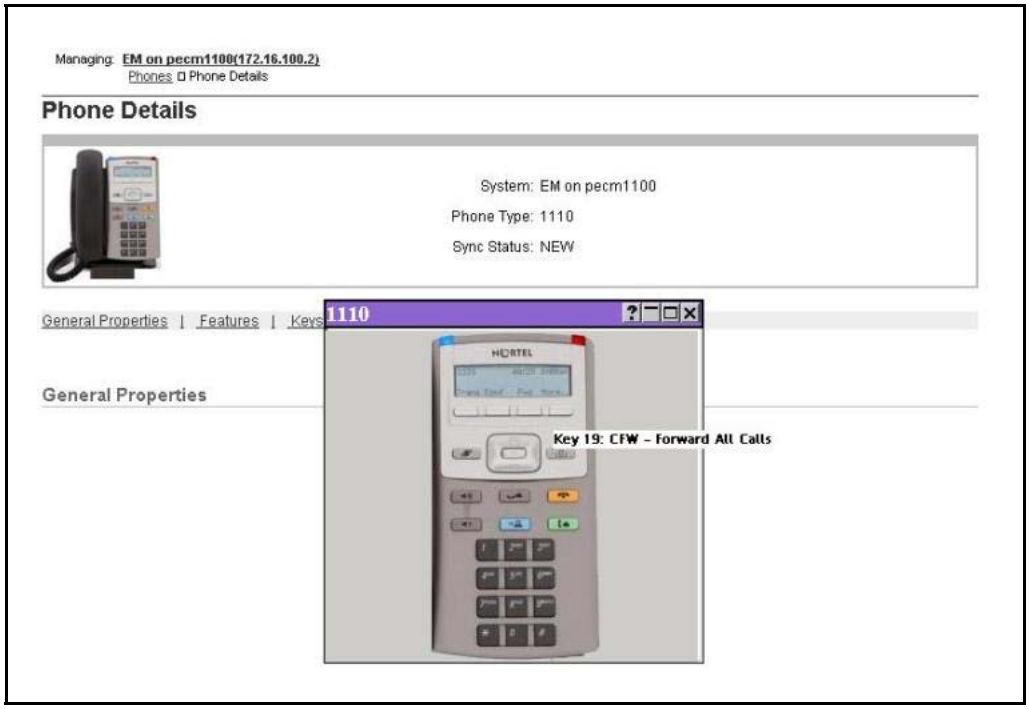
Figure 195
Phone graphical interface



Procedure 98
Programing phone keys using phone graphical interface

Step	Action
1	From the Search Result section of the **Search for Phones** Web page, click the telephone to be updated. The **Phone Details** Web page appears.
2	Click on the telephone image at the top left of the page. The graphical interface for the select telephone appears.
3	Click the key button of the telephone you want to program. The select box for the selected key of the Keys section of the **Phone Details** Web page appears highlighted.
4	Change the key configuration as required.
5	Click **Finish** to add the telephone. The window closes and the **Search for Phones** Web page appears.

--End--

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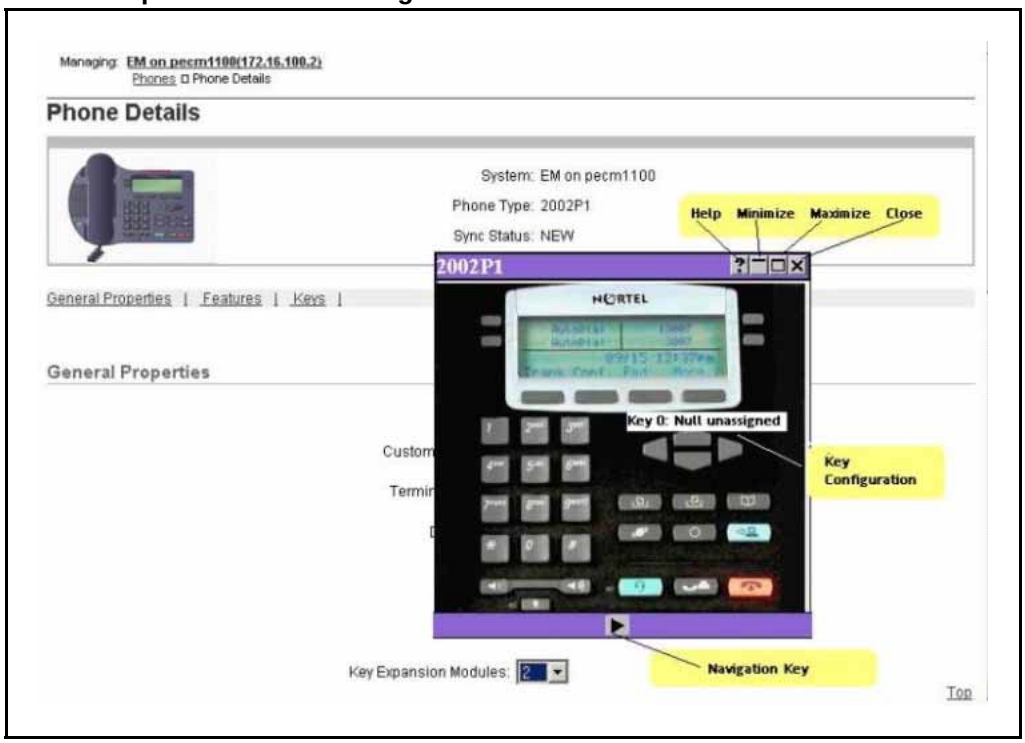
The Phone Graphical Interface window has help, minimize, maximize, and the close buttons on the title bar. To open the corresponding help page for the telephone displayed, click the question mark.

Use the minimize and maximize buttons to hide and display the graphical image window. Hover the mouse over the key buttons on the image to display a tool tip with the key number and the current configured value. See Figure 196 "Phone Graphical Interface navigation" (page 283).

Figure 196
Phone Graphical Interface navigation



When minimized, the Phone Graphical interface title bar remains visible. You can move the title bar so it does not obscure your view of the **Phone Details** Web page. However, you cannot drag and place the title bar on top of the navigation pane of the browser.

You can configure telephones with a key-based add-on module. Use the navigation button at the bottom to navigate to the extended keys for the telephone.

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Edit Phones

Use the Edit feature to edit a single telephone or multiple telephones.

Note: You can update only one field at a time. Old Value and New Value fields are either boxes or lists. When you select a field to update, additional old and new values appears that correspond to the Key field parameters.

Edit single or multiple phones

Click the Phones branch of the Element Manager navigator to open the **Search for Phones** Web page.

To edit a single telephone or multiple telephones, perform the following procedure.

Procedure 99
Editing single or multiple phones

Step	Action
1	To search for telephones to edit, select a search criteria from the **Criteria** list
2	Sort the telephone list by telephone type.
3	Click the box beside the telephones to update.
4	Select **Edit** from the **<more actions>** list. The **Bulk Phone Edit** Web page appears.
5	In the edit **Field**, select the field to update. Some selected fields require you to enter other values.
6	Enter the old value in the **Old Value** text box or select it from the **Old Value** list. If you update a Key field, enter the old value of any parameter to change in the corresponding box on the left side.
7	Enter the new value in the **New Value** text box or select it from the **New Value** list. If you update a Key field, enter the new value of any parameter to change in the corresponding box on the right side.
8	Click **Save** to complete the edit, or click **Cancel** to undo changes and return to the **Search for Phones** Web page.

--End--

Note: UXTY cannot be changed using Bulk Phone Edit for UEXT types. Bulk Phone Edit of UEXT types from one UXTY to another UXTY is not supported.

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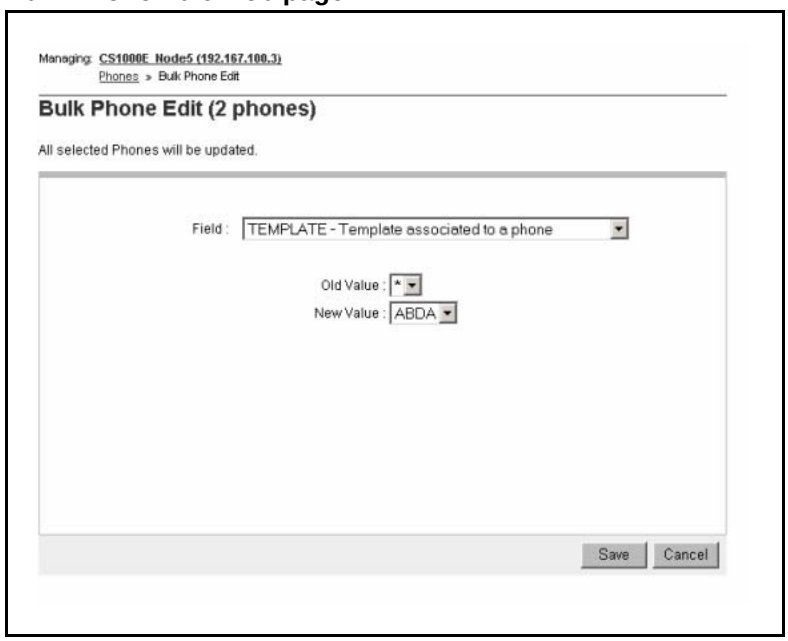
Update phones using the phone Templates

The association of telephones to a template simplifies the bulk change procedure. Use this association to enable a change to the template content to be applied to all telephones that use the template.

The **Bulk Phone Edit** Web page allows the user to update the telephone from templates. The value **Template** of the edit **Field** list, enables the user to update the telephone based on the value in the template.

In the edit **Field**, if you select Template, then the **Old Value** field displays an asterisk (*). The **New Value** field displays all Templates configured for the selected telephone type as seen in Figure 197 "Bulk Phone Edit Web page" (page 285).

Figure 197
Bulk Phone Edit Web page



The template is considered the master during this update. All configured telephone attributes are overwritten with the attributes in the selected template. The CPND name configured in the telephone is retained during the update.

If the selected telephones to be updated are of different telephone types, then the **Template** field is not available in the edit **Field** list. You cannot change the following telephone properties when you update using Templates. These properties are different for every telephone and updating it from template is not supported.

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- Designator (DES): This property is part of the General Properties section of the telephone details page.
- Station Control Password (SCPW): This property is part of the Features section of the telephone details page.
- Directory number parameter of any key feature.

In addition, certain properties are not part of the template and can be changed in the telephone.

- Terminal Number (TN): This property is part of the General Properties section of the telephone details page.
- Call Party Name Display (CPND): This property is part of the Keys section of the telephone details page.
- Voice Mail Box (VMB): This property is part of the Keys section of the telephone details page.

If a template has a partial DN configured, you cannot update a telephone with the Template by using the Edit function. The error message “Editing phones is not allowed since the template selected has a partial DN” appears. However, no restriction is placed on editing if the template does not contain partial DN.

Perform this procedure to associate a template with telephones that are not associated with a template.

Procedure 100
Associating a Template to Phones

Step	Action
1	Search for telephones that are not associated with a template.
2	Sort the telephone list by telephone type.
3	Select telephones to update.
4	Select **Edit** from the **<more actions>** list. The **Bulk Phone Edit** Web page appears.
5	In the edit **Field**, specify the value to update as **Template**.
6	In the Old Value field, select **Asterisk** (*).
7	In the **New Value** field, select the Template associate with the telephone.

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8 Click **Save** to complete the edit, or click **Cancel** to undo changes and return to the **Search for Phones** Web page.

--End--

Note: When you update the telephone Element Manager may send an update to the account in Subscriber Manager depending on the attributes you updated.

Phone properties that can change without breaking the Template association

Certain properties differ for various telephones; therefore, changing these properties does not break the telephone-to-template association. The following is a list of properties:

- Designator (DES): This property is part of the General Properties section of the phone details page.
- Station Control Password (SCPW): This property is part of the Features section of the phone details page.
- Directory number parameter of any key feature.

In addition, certain properties are not part of the template, and can be changed in the phone.

- Terminal Number (TN): This property is part of the General Properties section of the phone details page
- Call Party Name Display (CPND): This property is part of the Keys section of the phone details page.
- Voice Mail Box (VMB): This property is part of the Keys section of the phone details page.

Employee reference field support when exporting and import phone database

Including this attribute in the export and import tools enables you to retain important data that is not persisted on the call server such as the employee reference and template ID. You can export and the import employee reference fields along with other supported telephone fields. The employee reference field stores the ID of the subscriber who owns the telephone. This field is the link between a telephone in EM Phone Provisioning and a subscriber in Subscriber Manager.

When you need to retain this offline data, perform Procedure 101 “Retaining offline data” (page 288).

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Procedure 101
Retaining offline data

Step	Action
1	Export the Phones database as a CSV file with the mandatory fields (TN, CUSTOMER, PHONE, DES), Template ID, and Employee Reference field.
2	Perform the Retrieve and Reconcile procedure to populate the phone database.
3	Import phones from the CSV file generated in step 1 to re-establish the link from telephone to template and telephone to subscriber.

--End--

Export and Import of employee reference field

Certain limitations apply while importing the EMPLOYEEREFERENCE field. In the import CSV file, if you update the EMPLOYEEREFERENCE field of an existing telephone, the following work flow occurs:

- EM Phone Provisioning updates the employee reference field in the telephone database.
- An update account notification is sent to Subscriber Manager. Because the notification is not an update to an existing account, Subscriber Manager ignores this notification.
- Run the Account Synchronization operation to synchronize the account differences between EM phone provisioning and Subscriber Manager. Account synchronization resynchronize the accounts as follows:
  - Account Synchronization finds that the older account exists in Subscriber Manager but not in EM phone provisioning. This account is automatically removed from Subscriber Manager.
  - Account Synchronization identifies a newer account in EM phone provisioning but not in Subscriber Manager, but the account has a subscriber ID in the directory. The newer account is automatically created in Subscriber Manager.

Procedure 102
Generating a report and exporting phones with employee reference in the selected report field

Step	Action
1	Select**Report** from the **Phones** branch of the EM navigator. The **Edit a Report** Web page appears.

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2 In the Field Selection section, select the fields to include in the report. Include EMPLOYEEREFERENCE field as well.

3 In the Custom Criteria section, select the criteria to determine which telephones are included in the report.

4 Select **CSV** as the report format from the Report Format list.

5 Click **Generate Report**.

The **Download Generated Report** Web page appears.

6 Download the report.

- EMPLOYEEREFERENCE field is included in the generated report.
- All telephones linked to a subscriber have a value for the EMPLOYEEREFERENCE field.
- All telephones not linked to a subscriber do not have a value for the EMPLOYEEREFERENCE field.

--End--

Procedure 103
Generating a report and exporting phones with employee reference field as the criteria.

Step	Action
1	Select**Report** from the **Phones** branch of the EM navigator. The **Edit a Report** Web page appears.
2	Select the fields to include in the report.
3	In the Custom Criteria section, select the EMPLOYEEREFERENCE field. • The corresponding Value field changes to a text box. • The corresponding Comparison list contains only the equal to (=) operator.
4	Enter a value in the **Value** field.
5	Select **CSV** as the report format from the Report Format list.
6	Click **Generate Report** . The **Download Generated Report** Web page appears.

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7 Download the report.

- EMPLOYEEREFERENCE field is in the generated report.
- All telephones linked to a subscriber have a value for the EMPLOYEEREFERENCE field.

--End--

Procedure 104
Importing a new phone with employee reference field

Step	Action
1	Modify the generated CSV, and add a new telephone with a valid employee reference field.
2	Click **Import** on the **Search for Phones** Web page. The **Import Phones** Web page appears.
3	Specify the name of the source file by performing one of the following steps: • Type the path and name of the file in the import source file text box • Click **Browse** to locate and select the file.
4	Click **OK** to import the file. The **Import Status** Web page appears indicating the success or failure of the import.
5	Click **Common Manager** to go to UCM home page.
6	Click the **Subscribers** link in UCM. The **Search for Subscribers** Web page appears.
7	Enter the subscriber's last name in the **Name** field of the search criteria, and click **Search**. Use the name of the subscriber whose ID you used in step 1. The **Search for Subscriber** Web page appears with search results that match the search criteria.
8	Click the name of the subscriber. The **Subscriber Details** Web page appears with a new account added to the account list.

--End--

Procedure 105
Importing an existing phone with no update to employee reference field

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Step	Action
1	Modify the generated CSV to update an existing telephone. Update the DN of Key 0 so that the change is visible in Subscriber Manager.
2	Click **Import** on the **Search for Phones** Web page. The **Import Phones** Web page appears.
3	Specify the name of the source file by perfoming one of the following steps: • Type the path and name of the file in the import source file text box • Click **Browse** to locate and select the file.
4	Click **OK** to import the file. The **Import Status** Web page appears indicating the success or failure of the import operation.
5	Click **Common Manager** to go to UCM home page.
6	Click the **Subscribers** link in UCM. The **Search for Subscribers** Web page appears.
7	Enter the subscriber's last name in the **Name** field of the search criteria and click **Search**. Use the subscriber name that you used in step 1. The **Search for Subscriber** Web page appears with search results that match the search criteria.
8	Click the name of the subscriber. The **Subscriber Details** Web page appears with the DN changes made to the account in the account list.
	--End--

Procedure 106
Importing an existing phone with updated employee reference field

Step	Action
1	Modify the generated CSV to update an existing telephone. Update the employee reference field to another valid subscriber.
2	Click **Import** on the **Search for Phones** Web page. The **Import Phones** Web page appears.

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3 Specify the name of the source file by performing one of the following steps:

- Type the path and name of the file in the import source file text box
- Click **Browse** to locate and select the file.

4 Click **OK** to import the file.

The **Import Status** Web page appears indicating the success or failure of the import.

5 Click **Common Manager** to go to UCM home page.

6 Click the **Subscribers** link in UCM.

The **Search for Subscribers** Web page appears.

7 Enter the subscriber's last name in the **Name** field of the search criteria, and click **Search**. Use the subscriber name that you used in step 1.

The **Search for Subscriber** Web page appears with search results that match the search criteria.

8 Click the name of the subscriber.

The **Subscriber Details** Web page appears with no changes made to the account in the account list. No changes are made to the account list of the subscriber whose employee reference field you used in step 1.

--End--

Import Telephones

You can import telephones into the telephone database by using the import function. Use the Import Telephones feature to import telephone data into the database from a comma-separated value (CSV) file. The **Import Telephones** Web page as shown in Figure 198 "Search for Phones Web page" (page 293)appears when you click the **Phones** link in EM navigator and then click **Import** from the **Search for Phones** Web page.

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Figure 198
Search for Phones Web page

The Import Telephones Web page appears, as shown in Figure 199 "Import Telephones Web page" (page 293).

Figure 199
Import Telephones Web page

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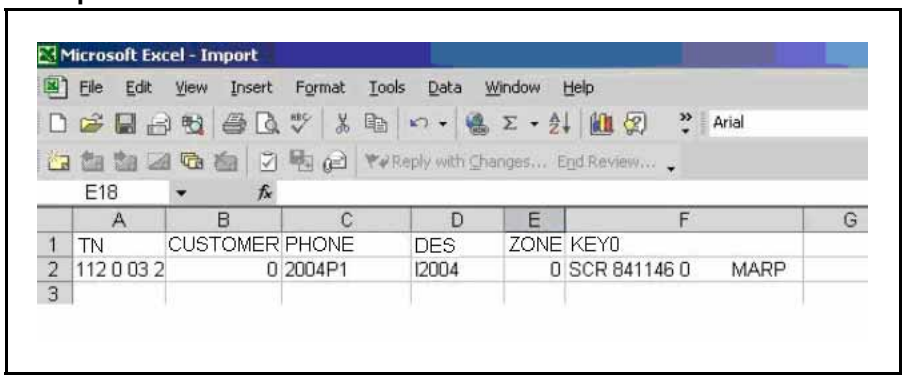
Specifications for CSV file

- The data file must be in CSV format.
- The first line in the CSV file should contain a list of fields to import.
- Subsequent lines in the CSV file should contain data values for each field being imported and should be in the same order as the corresponding field names appear in the first line.

Figure 200
Example Contents of CSV file



The valid field names to be used while importing data into the database are in the **Available fields** list in **Fields selection** section of Reports UI. Click the **Reports** link of the **Phones** branch of the Element Manager navigator to access the Report UI. See, "Reports" (page 303). For more information see, *Software Input/Output - Administration* (NN43001-611).

Mandatory Fields

The first column of the import file must be either TN or PRIMEDN. The first column is used as a key to identify the telephones update.

Table 1
Mandatory Fields

Operation	Mandatory Fields
Update an existing telephone record	TN (Terminal Number) or PRIMEDN (Prime Directory Number)
Add a new telephone record	TN (Terminal Number), PHONE (Phone type), CUST (Customer Number), and DES (Designation)
Add a IP Phone record	TN (Terminal Number), PHONE (Phone type), CUST (Customer Number), DES (Designation), and ZONE (Zone)
Add DCS	TN (Terminal Number), PHONE (Phone type), DES (Designation), CUST (Customer Number), PRIMEDN (Prime Directory Number), FTR_CFW (Forward All Calls), DMC (DECT Mobility Controller), and IDNX (Index on DMC)

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If PRIMEDN is the first column, you can import only for updating telephones.

If TN is the first column, you can import to add or update a telephone.

For a TN, if a matching telephone is found, then the configuration is updated using data from the import file. If no matching telephones are found for a TN, then a new telephone is added to database if all the mandatory parameters for telephone configuration are specified in the import file.

Note: When you add DCS sets you cannot assign a TN to the telephone. The call server automatically assigns the TN after the telephone is added. Therefore, for DCS telephones, the business logic allows the telephone to be imported if the TN field remains blank. If a TN is assigned for DCS telephone, import will ignore the user specified TN.

Data requirements for importing Keys, CPND names and VMB

To import keys, the field name used in CSV file uses the format *Key <number>* where,*<number>* is the key number. For example, to import Key 10, the field name is **Key10** The value for key is specified in the following format:

<mnemonic> [<parameters>] [MARP] [ANIE(<value>)] [CPND_FIRST_NAME (<value>) CPND_LAST_NAME(value) CPND_LANG(value) CPND_DISPLAY_FORMAT(value) [VMB_CLASS_OF_SERVICE(value) VMB_SECOND_DN(value) VMB_THIRD_DN(value) VMB_KEEP_MESSAGES(value)]

The entries in square brackets ([ ]) are optional and are based on key mnemonic and import requirements:

- <mnemonic>: Represents key feature mnemonic to be assigned to the key.
- <parameters>: Represents the key parameters. The values described in this section depend on key feature mnemonic.
- MARP: Indicates that the DN specified in the <parameters> section should use MARP on the key.
- ANIE(<value>) – Specifies the value for ANIE entry. The <value> represents the ANIE entry value.

You can use the sections with names starting with *CPND_* to import the CPND name for the DN specified in <parameters> section. To import new CPND names, specify a nonblank value for at least one of the two name fields:

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- CPND_FIRST_NAME and CPND_LAST_NAME. To update existing CPND names using import, specify values for only those fields that need to be updated. It is not mandatory to specify a value for all fields.
- Use CPND_FIRST_NAME: Use this section to specify the CPND first name for the DN specified in <parameters> section.
- Use CPND_LAST_NAME: Use this section to specify the CPND last name for the DN specified in <parameters> section.
- CPND_LANG: Use this section to specify the CPND language for the CPND name.
- CPND_DISPLAY_FORMAT: Use this section to specify the CPND display format for the CPND name.

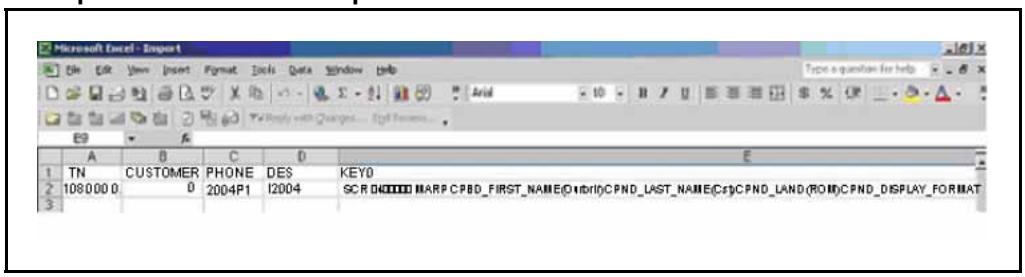
You can use the sections with names starting with *VMB__* to import VMB configuration data for the DN specified in the <parameters> section. It is not mandatory to specify values for all fields; specify a value only for those fields that need to be updated:

- VMB_CLASS_OF_SERVICE: Use this section to specify the class of service value for the VMB.
- VMB_SECOND_DN: Use this section to specify a second DN for the VMB.
- VMB_THIRD_DN: Use this section to specify the third DN for the VMB.
- VMB_KEEP_MESSAGES: Use this section to specify the preference for keep messages field of the VMB.

The valid values are the same as those accepted by PBX overlays.

The following figure is an example of a CSV file to import.

Figure 201
Example of a CSV file to import



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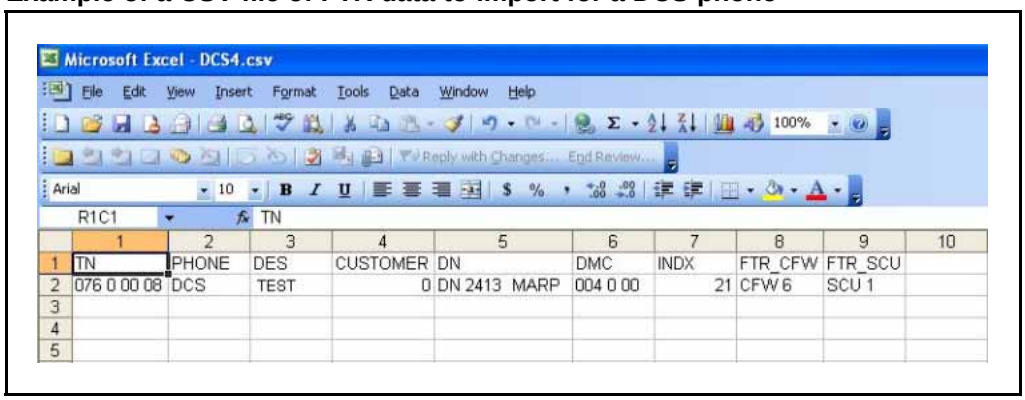
Data requirements for importing Single Line Features

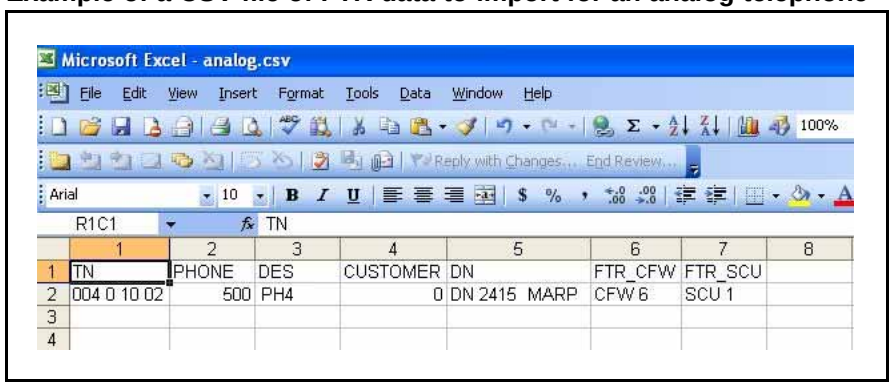
You can import Single line features (FTR) by specifying the field name in format FTR_<mnemonic>, where <mnemonic> is the mnemonic for a single line feature and by specifying the value in the format <mnemonic> <parameters>.

Figure 202
Example of a CSV file of FTR data to import for a DCS phone



	1	2	3	4	5	6	7	8	9	10
1	TN	PHONE	DES	CUSTOMER	DN	DMC	INDX	FTR_CFW	FTR_SCU	
2	076 0 00 08	DCS	TEST	0	DN 2413 MARP	004 0 00	21	CFW 6	SCU 1	
3										
4										
5										

Figure 203
Example of a CSV file of FTR data to import for an analog telephone



	1	2	3	4	5	6	7	8
1	TN	PHONE	DES	CUSTOMER	DN	FTR_CFW	FTR_SCU	
2	004 0 10 02	500	PH4	0	DN 2415 MARP	CFW 6	SCU 1	
3								
4								

Data requirements for importing DN for analog telephones

DN field for analog telephones can have MARP and ANIE settings and, CPND and VMB configuration. You can import the DN field for analog telephones by specifying the field name as DN and by specifying the value in the following format:

DN<DNvalue> [MARP] [ANIE(<value>)] [CPND_FIRST_NAME (<value>) CPND_LAST_NAME(value) CPND_LANG(value) CPND_DISPLAY_FORMAT(value)] [VMB_CLASS_OF_SERVICE(value) VMB_SECOND_DN(value) VMB_THIRD_DN(value) VMB_KEEP_MES SAGES(value)]

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To Import telephones, perform the steps in Procedure 107 “Import Telephones” (page 298).

Procedure 107
Import Telephones

Step	Action
1	Click the **Phones** link in EM navigator. The **Search for Phones** Web page appears.
2	Click **Import** to open the **Import Telephones** Web page.
3	Specify the name of the file from which the telephone details are to be imported by using the browse button or by entering the file name. The file must be a CSV file.
4	Click **Save**.

--End--

The status of the import appears to the user. Obtain an initial format of the CSV file by generating a Report in CSV format by using the Reports link of the Phones branch of the Element Manager navigation page.

Note: The maximum session time in UCM is 2 hours by default. You need to change the maximum session time for import operation that exceeds 2 hours in the UCM Session Properties section. To change the maximum session time refer to *Unified Communication Management* (NN43001-116).

Move Phones

You can move a telephone to another TN with the same property values. To do this, perform the steps in Procedure 108 “Move Phones” (page 298).

Procedure 108
Move Phones

Step	Action
1	From the **Search Results** section of the **Search for Phones** Web page, select **Move** from the **<more actions>** list. The **Move TN** Web page appears, as shown in Figure 204 "Move TN Web page" (page 299).

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Figure 204
Move TN Web page

2	Enter the TN to move the telephone, and click **Submit**.

--End--

Retrieve Phones

The Retrieve Phones function synchronizes data from the Call Server to the Phones database. Perform the steps in Procedure 109 “Retrieve Phones” (page 299).

Procedure 109
Retrieve Phones

Step	Action
1	From the **Search for Phones** Web page, click **Retrieve**.
2	The **Retrieve Options** Web page appears, as shown in Figure 205 "Retrieve Options Web page" (page 300).

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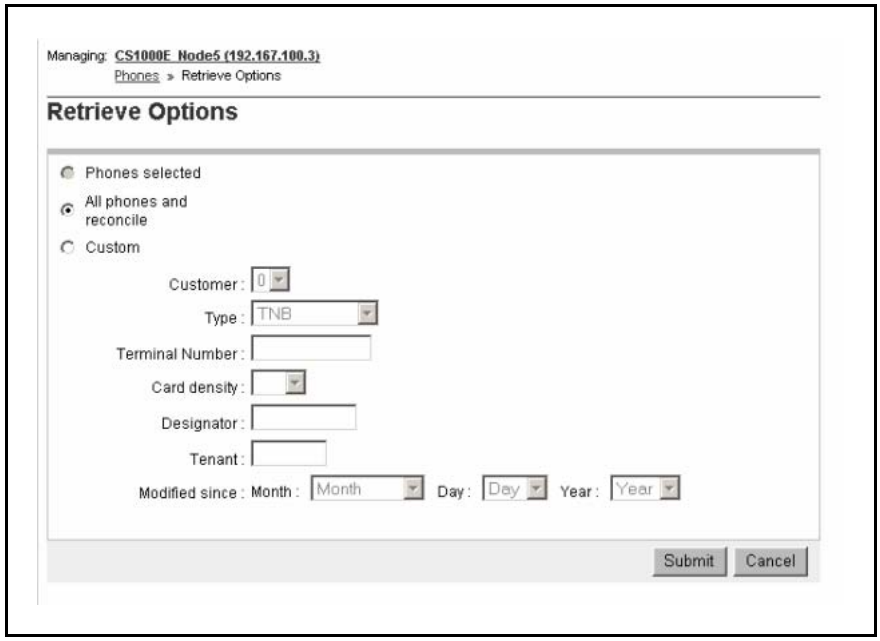
Figure 205
Retrieve Options Web page



3 Select one of the Retrieve Options, as follows:

Select **Phones selected** to retrieve the telephones in the phone **Search Results** section.

Select **All phones and reconcile** to retrieve the telephones.

Select **Custom** and enter any combination of search criteria to retrieve telephones that meet those criteria.

4 Click **Submit.**

--End--

Note 1: The maximum session time in UCM is 2 hours by default. You need to change the maximum session time for import operation that exceeds 2 hours in the UCM Session Properties section. To change the maximum session time refer to *Unified Communication Management* (NN43001-116).

Note 2: It is recommended to perform 'retrieve and reconcile' operation only by one user at a time. EM Phone Provisioning does not support concurrent users for the 'retrieve and reconcile' operation.

Delete Phones

To delete telephones, perform the steps in Procedure 110 "Delete Phones" (page 301).

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Procedure 110
Delete Phones

Step	Action
1	From the **Search for Phones**, search for telephones based on a search criteria.
2	Click the boxes beside all the telephones to delete.
3	Click **Delete**.
4	Click **OK** to confirm the deletion of the telephones selected, or click **Cancel** to stop the operation.

--End--

Swap Phones

When you swap telephones, two telephones exchange TNs. The following limitations apply to a swap:

- You can swap only two telephones at a time.
- The telephones to be swapped must belong to the same customer.
- The telephones to be swapped must have compatible TN types. For example, you cannot swap an analog (500/2500-type) telephone with a digital telephone.
- Swapping is not supported for DCS telephones. Element Manager does not control the allocation of virtual TNs for DCS telephones.
- If the synchronization status of one of the telephones to be swapped is New, it must be swapped with another telephone with a synchronization status of New.
- The telephones to be swapped must have the same VCE or DTA Class of Service.
- Swapping is not supported for IP Phones.
- Swapping is not supported with the BFS feature.
- Swapping is not supported if one of the telephones is an ACD telephone in the acquired state.
- Swapping is not supported for telephones with a branch office link.

Procedure 111
Swap Phones

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Step	Action
1	From the **Search for Phones**, search for telephones based on a search criteria.
2	From the list of telephones, select the two telephones to swap.
3	Select **Swap** from the **<more actions>** list. The changes are submitted to the database.

--End--

Courtesy Change

The Courtesy Change feature checks the telephone busy/idle status before transmitting changes to the switch. If the telephone is busy, the change is not transmitted, the active call is disconnected, and the following error message appears: "Telephone is busy. Changes are not transmitted.".

Before a telephone call is transmitted to the call server, the overlay 32 STAT command is used to check the idle/busy status of the telephone. If the telephone is busy, then the changes are not committed to the switch and you must perform the operation again.

Nortel recommends that you turn off this feature before doing an bulk import operation.

Enabling and disabling the Courtesy Change feature

You can turn on or off the Courtesy Change feature from the existing Properties page.

To enable or disable the Courtesy Change feature, select the **Properties** link of the Phones branch of the Element Manager navigator, and select either **Enable** or **Disable**.

The following figure shows Courtesy Change on the **Properties** Web page.

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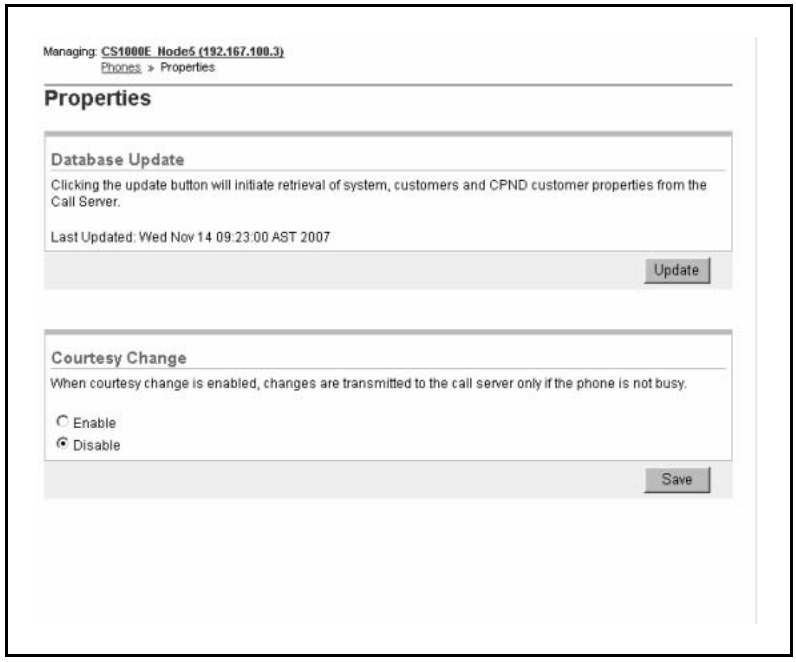
Figure 206
Properties Web page



Note: Turning on the Courtesy Change feature significantly affects the performance of bulk add, delete, or import operations. Nortel recommends that you turn off the courtesy feature before such operations.

Reports

Element Manager provides the ability to construct complex SQL queries against the Phones database. The results can be in either HTML or CSV format. If you choose HTML format, only a maximum of 1000 records appear.

Click the **Reports** link of the **Phones** branch of the Element Manager navigator. The **Edit a Report** Web page appears, as shown in Figure 207 "Edit a Report Web page" (page 304).

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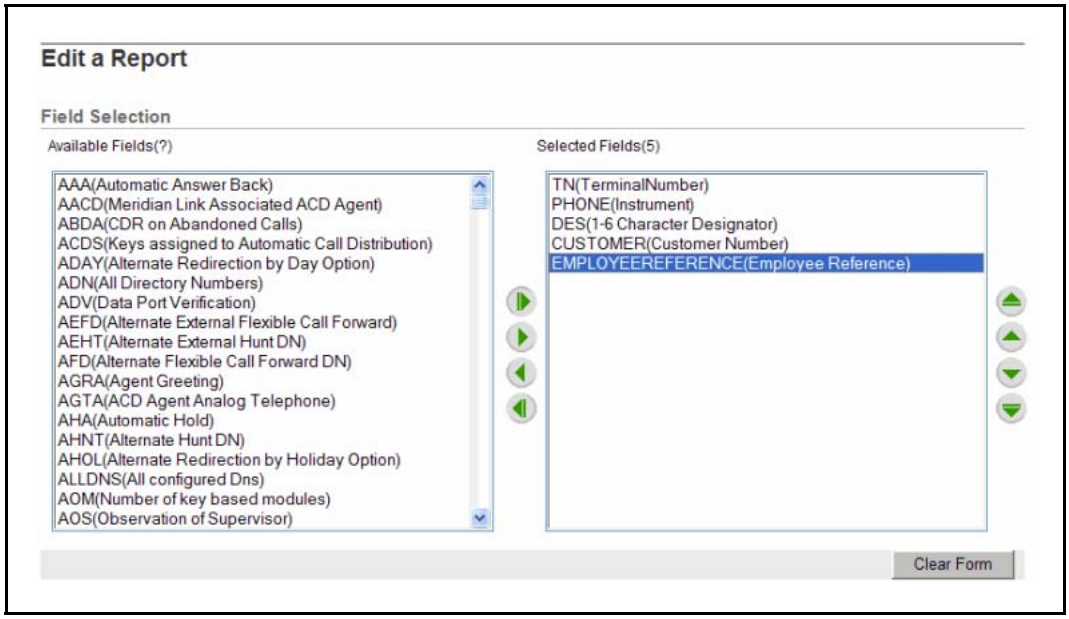
Figure 207
Edit a Report Web page



Enter the desired criteria and report format. Click **Generate Report** to generate the report.

Migration

Use the Migration tool to migrates telephone data from Element Manager to Subscriber Manager. This tool associates the telephone with existing subscribers, or adds a subscriber and then add accounts to them.

You can migrate only telephones that have a CPND name configured. During migration, the tool checks with the Subscriber Manager for a subscriber with the same name as the CPND name in the telephone. Based on the search result, it either adds an account under the existing subscriber, or creates a new subscriber and then adds an account under it.

To start the Migration tool, select on the **Migration** link on the **Phones** branch of the Element Manager navigator. The **Migration** Web page appears as shown in Figure 208 "Migration Web page" (page 305).

tele

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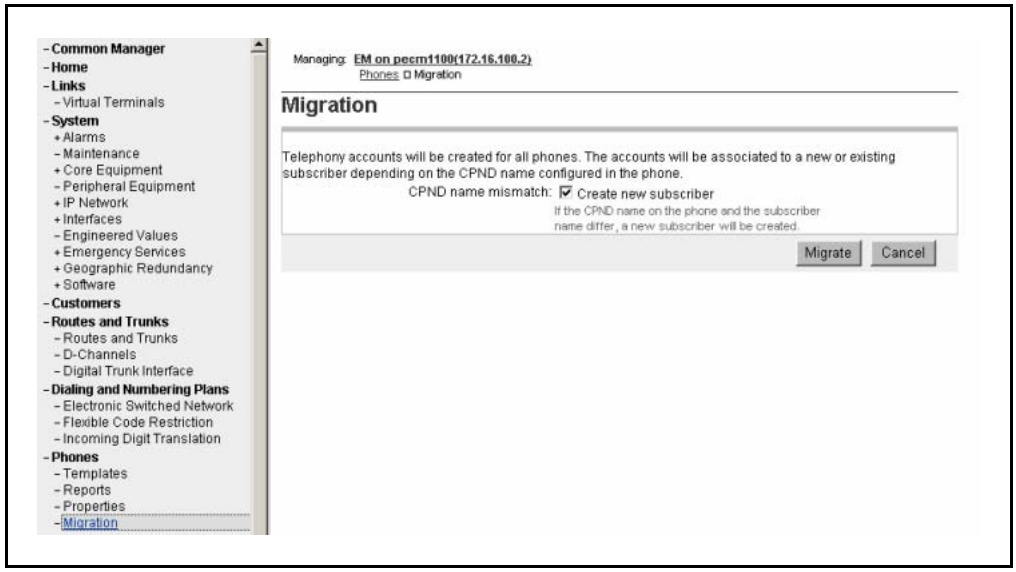
Figure 208
Migration Web page



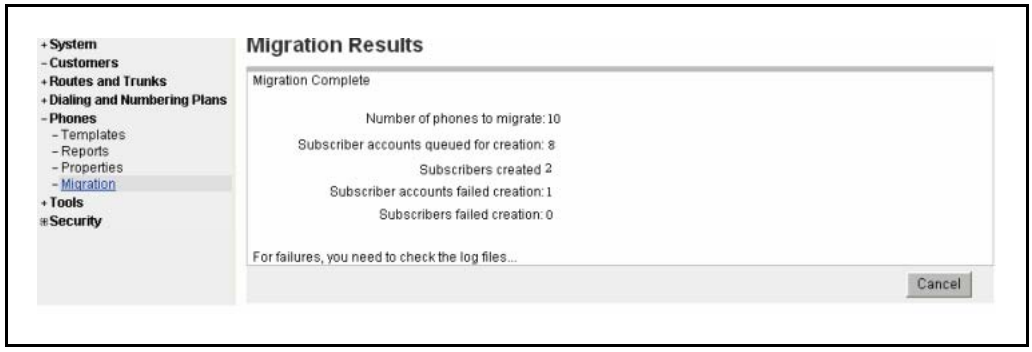
To create a new subscriber when a CPND name mismatch occurs, ensure the **Create new subscriber** box is selected.

When you click **Migrate**, a confirmation message box appears before the migration starts.

While the migration is in progress, the system displays a status page that provides the current status of the migration. The page is refreshed every 5 seconds with the latest status.

After the migration is complete, the page shows the summary as shown in Figure 209 "Migration Results Web page" (page 305).

Figure 209
Migration Results Web page



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Tools

Contents

This section contains the following topics:

“Introduction” (page 307)

“Backup and Restore” (page 307)

“Call Server Initialization” (page 317)

“Date and Time” (page 320)

“Logs and Reports” (page 334)

Introduction

The following Call Server Tools can be accessed through Element Manager:

- Backup and Restore
- Call Server Initialization
- Date and Time
- Logs and Reports

Backup and Restore

The **Backup and Restore** link of the **Tools** branch of the Element Manager navigator provides access to Call Server Backup and Restore functions, as well as Personal Directories Backup and Restore functions.

Call Server

In the Services branch of the Element Manager navigator, click **Backup and Restore > Call Server**. The **Call Server Backup and Restore** Web page opens (see Figure 210 "Call Server Backup and Restore Web page" (page 308)).

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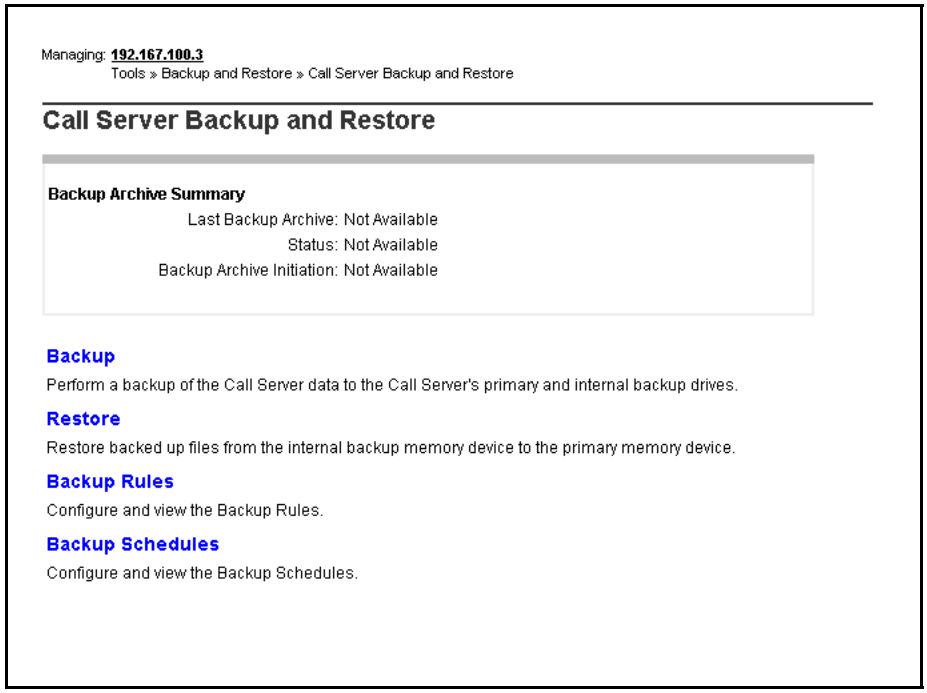
Figure 210
Call Server Backup and Restore Web page



Note: Backup Rules and Backup Schedules are available only on CPP IV and CP PM systems.

Backup

To back up the Call Server, click the **Backup** link on the **Call Server Backup and Restore** Web page. The **Call Server Backup** Web page opens, as shown in Figure 211 "Call Server Backup Web page" (page 309).

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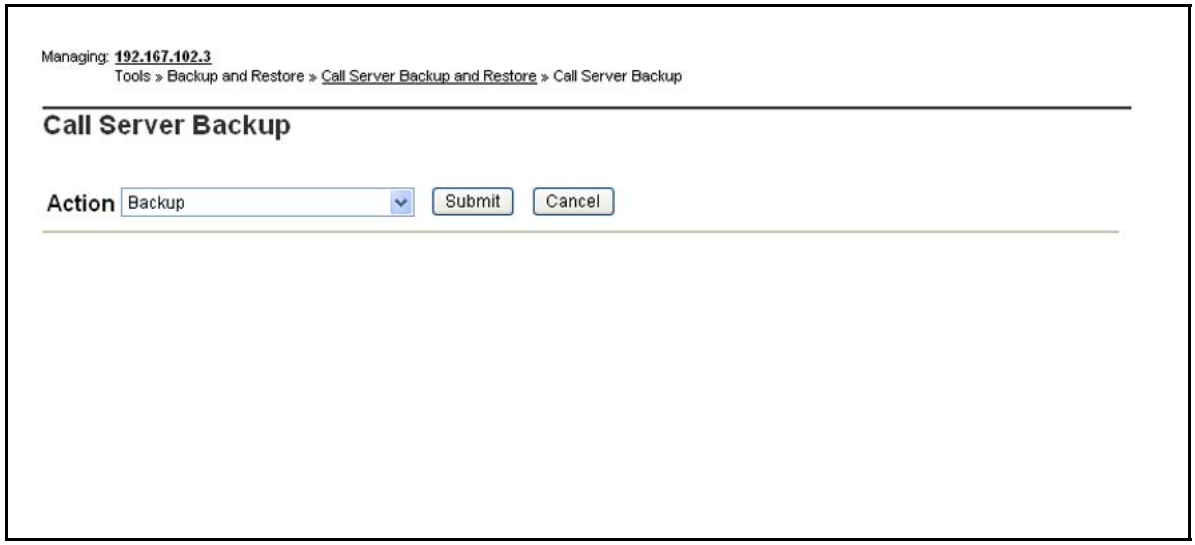
Figure 211
Call Server Backup Web page



Select **Backup** from the **Action** drop-down list and click **Submit**. The **Call Server Backup Waiting** Web page opens to indicate that the backup is in progress.

The Backup function invokes a data dump and writes the Call Server data to the primary and internal backup drives.

The Backup function performs the same task as the EDD CLI command traditionally configured in LD 43.

A summary of the results of the EDD appears at the bottom of the **Call Server Backup** Web page.

Performing manual database replication

To manually invoke the database replication process, select **Backup According to Rule** from the **Action** drop-down list, and click **Submit**. The **Backup Rule Number** drop-down list appears. In the **Backup Rule Number** drop-down list, enter the Backup Rule number to use for the restore operation. Click **Submit**.

For more information on backing up and restoring databases for Geographic Redundancy, see *System Redundancy Fundamentals (NN43001-507)*.

Restore

The Call Server Restore function restores the backed-up files from the internal backup device to the primary device. The Restore function performs the same task as the CLI RIB command traditionally configured in LD 43.

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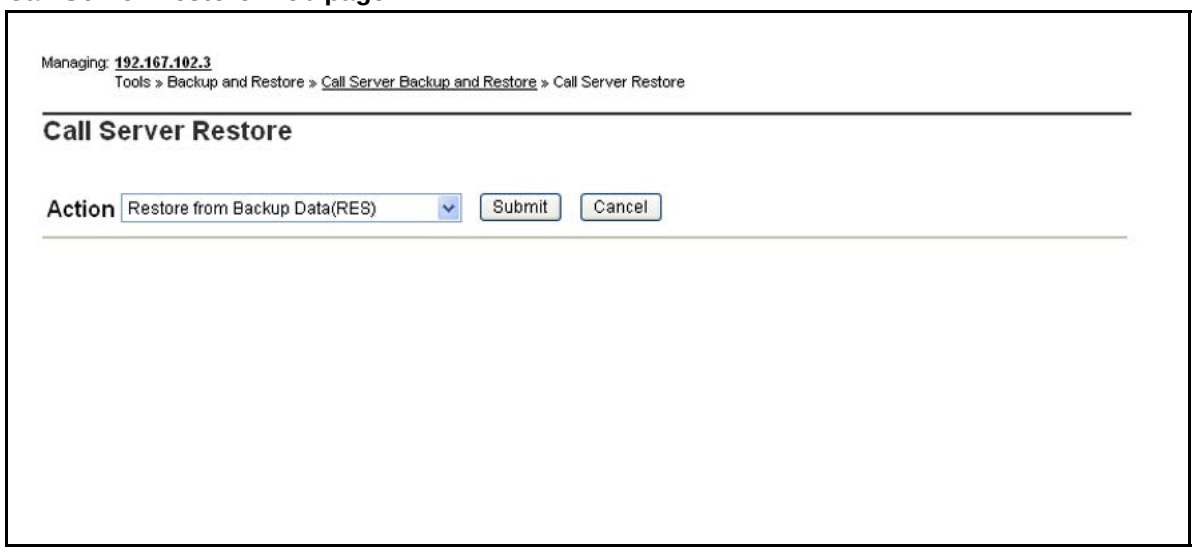
WARNING
The process to restore data using the Element Manager interface is immediate. There is no warning or detailed information provided on the specifics of the data to be restored.

Also, note that a "cold start" of the system is required before the restored data is in effect.

Click the **Restore** link on the **Call Server Backup and Restore** Web page. The **Call Server Restore** Web page opens (see Figure 212 "Call Server Restore Web page" (page 310)).

Figure 212
Call Server Restore Web page



Select **Restore from Backup Data (RES)** in the **Action** drop-down list, and click **Submit**.

Note: The database for Element Manager IP Telephony is updated immediately after the restore. Other call server databases require a cold start after the restore.

For information about the server databases and when they were created, select **Database issue and creation date** in the **Action** drop-down list, and click **Submit**. The information is displayed in the text area below the command.

To manually invoke a database restore process, select **Restore According to Rule (RSR X Y)** from the **Action** drop-down list. The **Backup Rule Number** and **Restore Version** drop-down lists appear, as well as the **Apply Filtering** checkbox.

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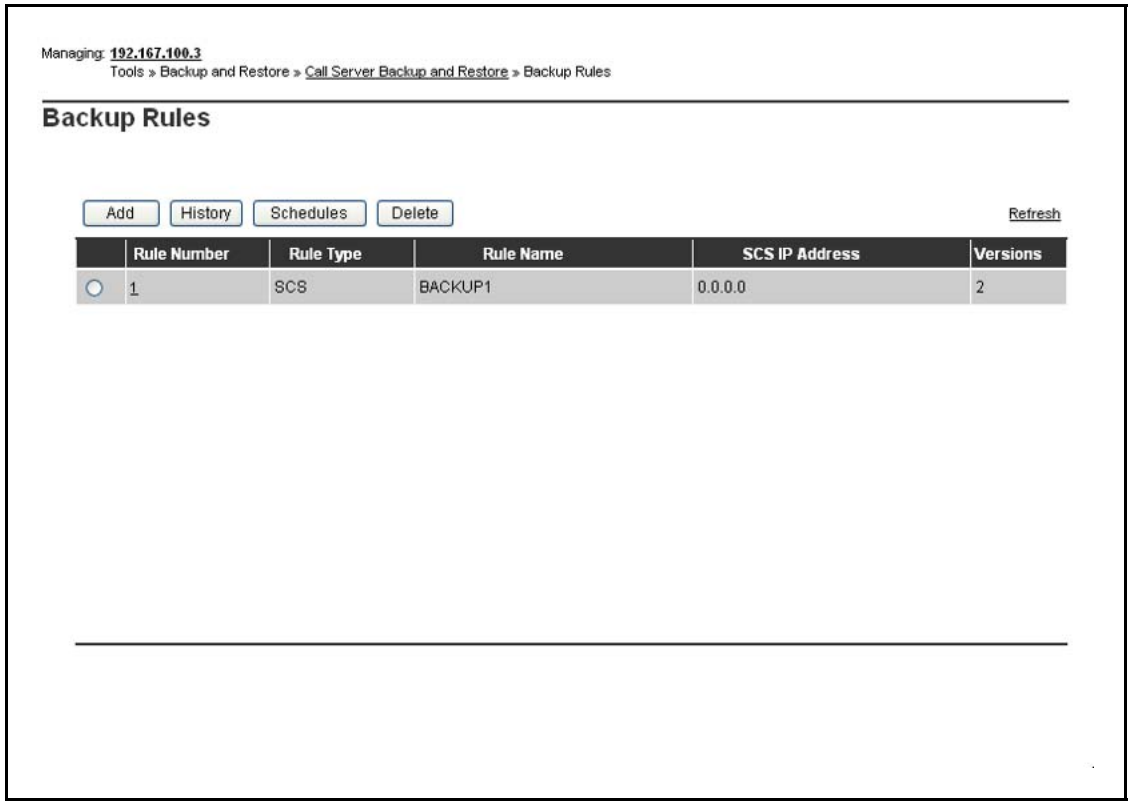
In the **Backup Rule Number** drop-down list, enter the Backup Rule number to use for the restore operation.

For more information on backing up and restoring databases for Geographic Redundancy, see *System Redundancy Fundamentals (NN43001-507)*.

Backup Rules

To add or edit a Backup Rule, click the **Backup Rules** link on the **Call Server Backup and Restore** Web page. The **Backup Rules** Web page opens as shown in Figure 213 "Backup Rules Web page" (page 311).

Figure 213
Backup Rules Web page



To view a log of backup attempts, select a **Backup Rule** and click **History**. The **Backup History** Web page opens. This Web page displays information for each backup attempt based on the given Backup Rule.

To add a Backup Rule, click **Add** on the **Backup Rules** Web page. The **Add Backup Rule** Web page opens. To edit a Backup Rule, click the Backup **Rule Number**. The **Edit Backup Rule** Web page opens, as shown in Figure 214 "Edit Backup Rule Web page" (page 312).

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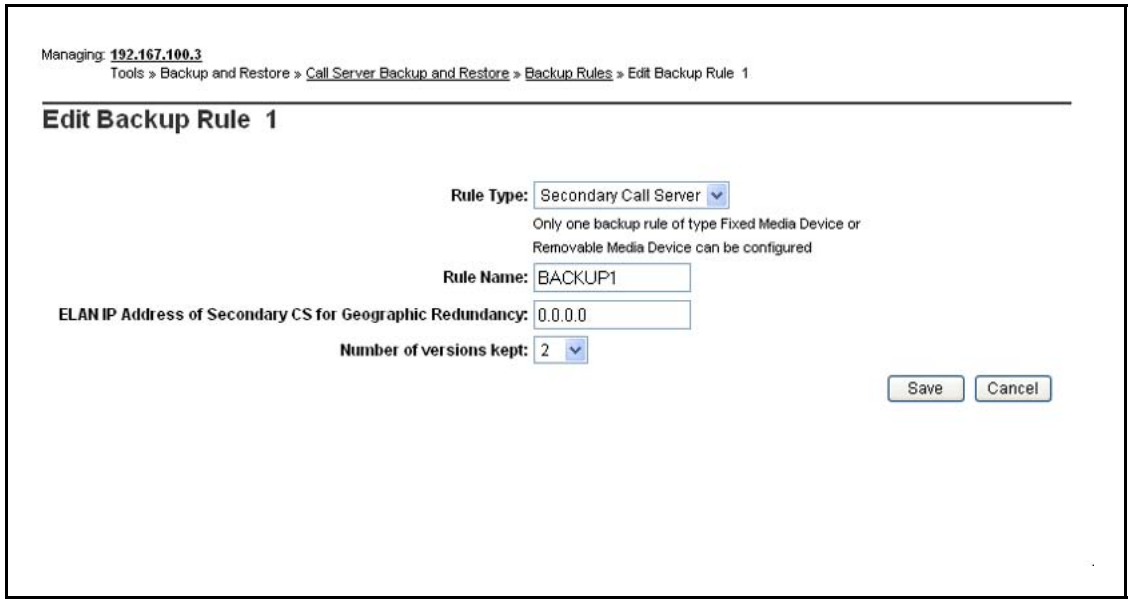
Figure 214
Edit Backup Rule Web page



The following Backup Rule Types are available:

- Fixed Media Device
- Removable Media Device
- FTP
- Secondary Call Server

For more information on configuring backup rules for Geographic Redundancy, see *System Redundancy Fundamentals (NN43001-507)* () .

Backup Schedules

Backup schedules provide the user with the ability to schedule backup operations associated with a specified backup rule. To add or edit a Backup Schedule, click the **Backup Schedules** link on the **Call Server Backup and Restore** Web page. The **Backup Schedules** Web page opens as shown in Figure 215 "Backup Schedules Web page" (page 313)

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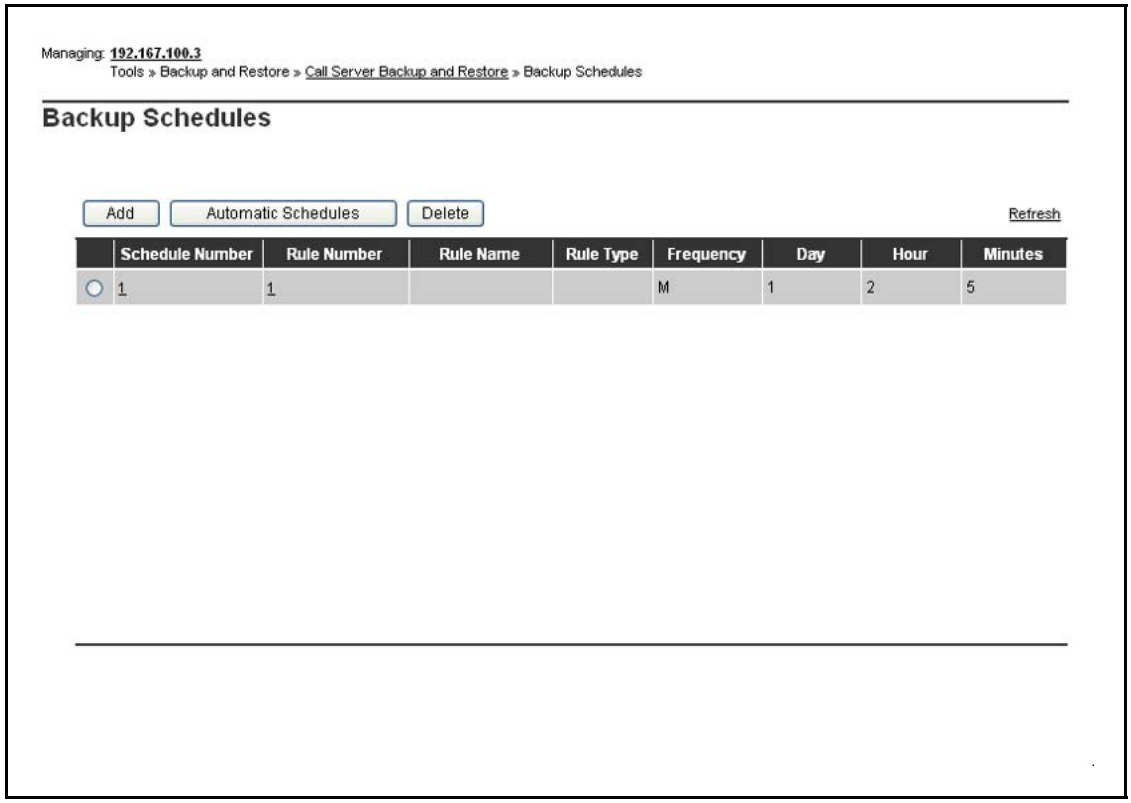
Figure 215
Backup Schedules Web page



To add a Backup Schedule, click **Add**. The **Add Backup Schedule** Web page opens. To edit a Backup Schedule, click the **Schedule Number**. The **Edit Backup Schedule** Web page opens, as shown in Figure 216 "Edit Backup Schedule Web page" (page 314).

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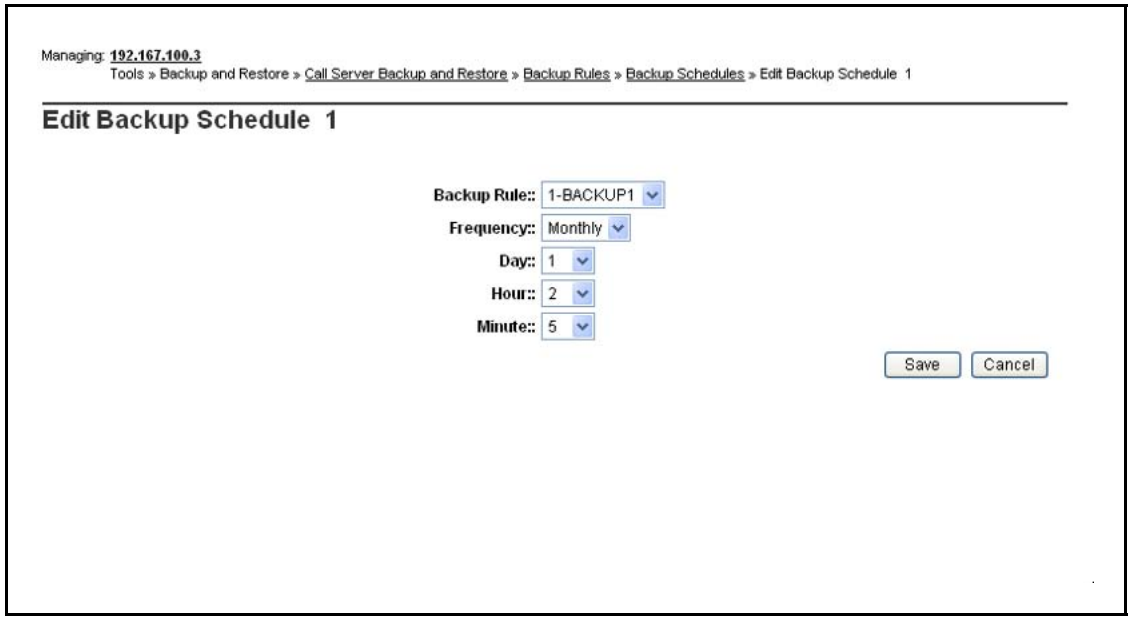
Figure 216
Edit Backup Schedule Web page



Each backup schedule defines a total of six associated parameters, as follows:

- **Backup Schedule Number** — up to ten backup schedules can be defined, numbered from one to ten.
- **Backup Rule** — specifies the backup rule number associated with this backup schedule. The backup rule number must be previously configured.
- **Frequency** — defines how often the scheduled backup operation occurs. The default is D. Not more than one backup schedule can be defined with Frequency set to the value A. Options are:
  - M (monthly)
  - W (weekly)
  - D (daily)
  - A (automatic — immediately after every EDD)
- **Day** — specifies the day on which the backup occurs with a default value of SU. When Frequency is M, the range is 1 to 31 with a default value of 1. This parameter does not apply when Frequency is set to either of the values D or A. When Frequency is W, the range is the days of the week as follows:
  - SU
  - MO
  - TU

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— WE

— TH

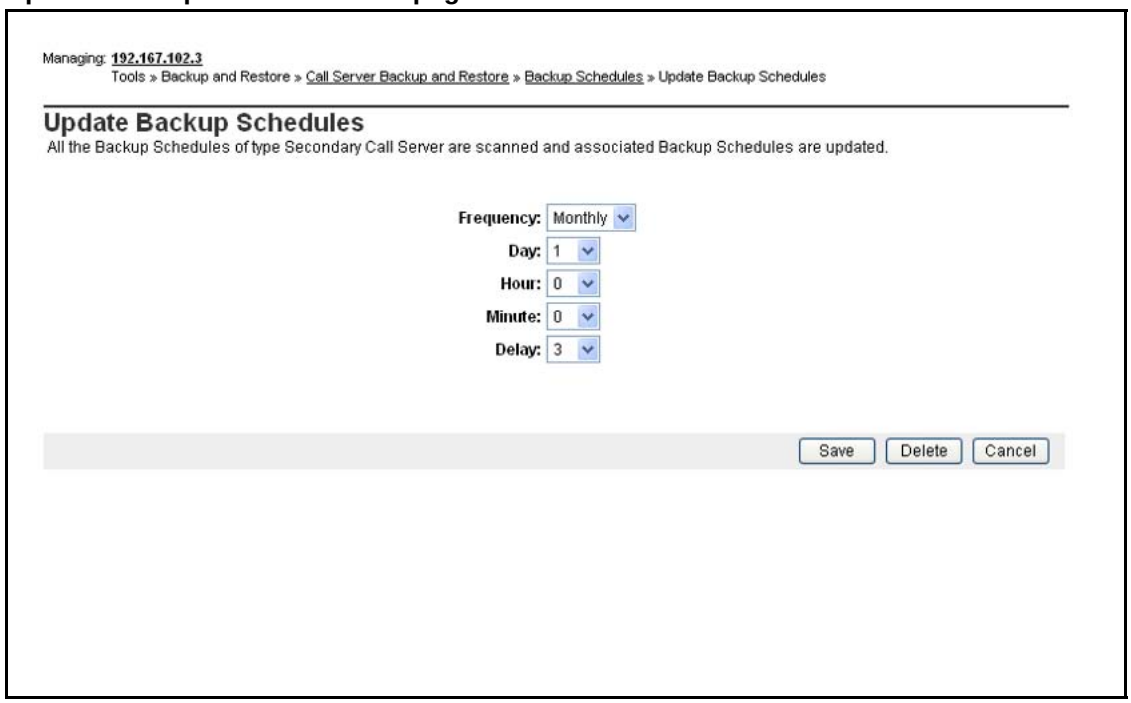
— FR

— SA

- **Hour** — specifies the hour in the day on which the backup occurs. The range is 0 to 23, with a default of 3. This parameter does not apply when FREQ is set to the value A.
- **Minute** — specifies the minute in the hour in the day on which the backup occurs. The range is 0 to 59.

To update Backup Schedules, click **Automatic Schedules**. The **Update Backup Schedules** Web page opens, as shown in Figure 217 "Update Backup Schedules Web page" (page 315).

Figure 217
Update Backup Schedules Web page



Backup schedules are supported only on CP PII, CP PIV and CP PM systems. A backup schedule can be created, modified, deleted, and printed by the respective command options **`NEW`**, **`CHG`**, **`OUT`**, and **`PRT`**.

Personal Directories Backup and Restore

To backup or restore Personal Directories click the **Backup and Restore > Personal Directories** link of the Tools branch or the Element Manager Navigator.

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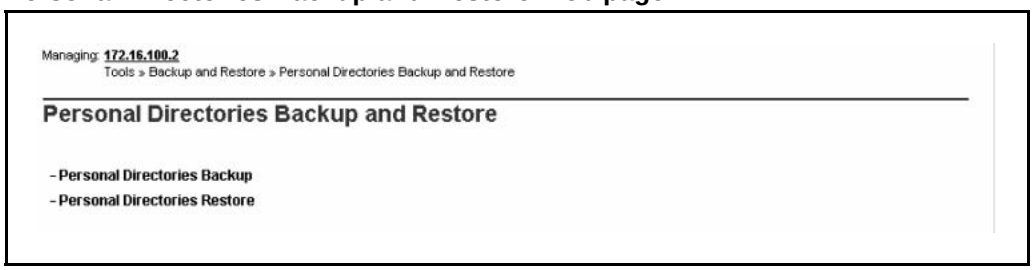
The **Personal Directories Backup and Restore** Web page opens and shown in the following figure.

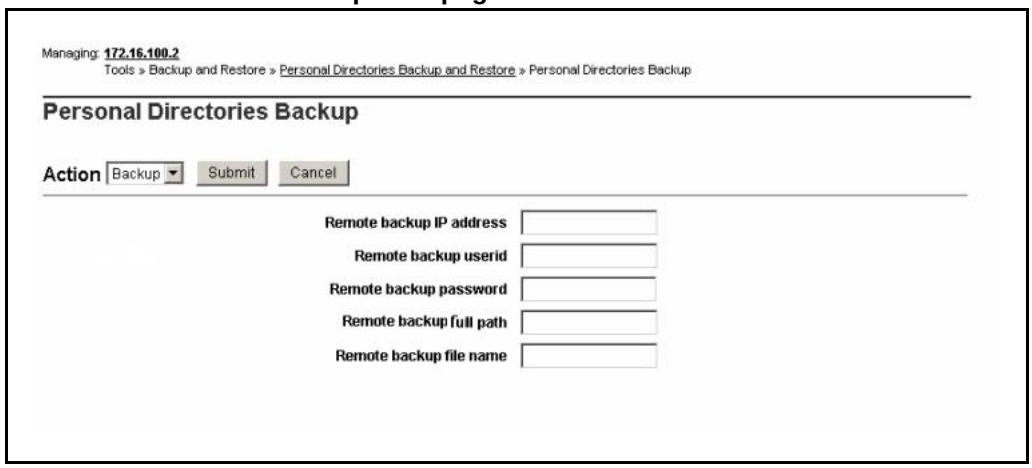
Figure 218
Personal Directories Backup and Restore Web page



To backup Personal Directories click the Personal Directories Backup link of the **Personal Directories Backup and Restore** Web page.

The **Personal Directories Backup** Web page opens as shown in the following figure.

Figure 219
Personal Directories Backup Web page



To backup Personal Directories, enter the backup information and click **Submit**.

To restore Personal Directories click the Personal Directories Restore link of the **Personal Directories Backup and Restore** Web page.

The **Personal Directories Restore** Web page opens as shown in the following figure.

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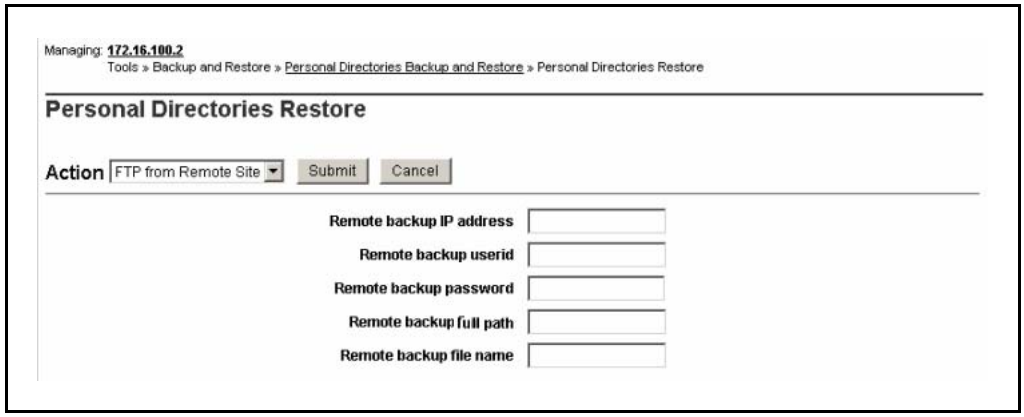
Figure 220
Personal Directories Restore Web page



To restore Personal Directories, enter the backup information to restore and click **Submit**.

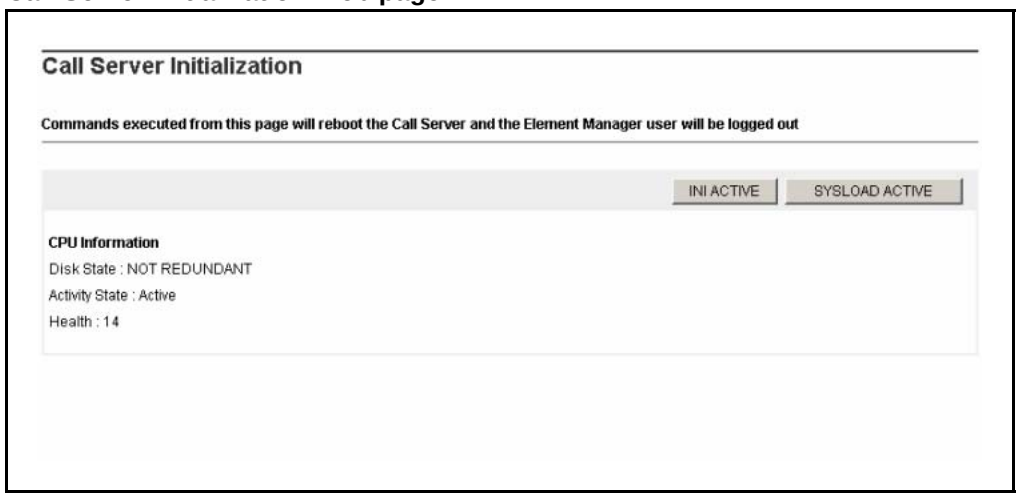
For information on Backup and Restore functions of Personal Directories, "Personal Directories" (page 166).

Call Server Initialization

The Call Server Initialization page is used to invoke Call Server INI & Call Server SYSLOAD commands.

Click the **Call Server Initialization** link in the **Tools** branch of the Element Manager navigator. The **Call Server Initialization** Web page opens, as shown in Figure 221 "Call Server Initialization Web page" (page 317).

Figure 221
Call Server Initialization Web page



To check for the message displayed, roll the mouse over buttons displayed on the page.

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If there is an INI command on the button, then the following message is displayed, “Restarts the Application Server”.

If it is a SYSLOAD command, then another message is displayed, “Restarts the Application Server as well as the Operating System”.

Call Server INI ACTIVE Command

The Call server is a Redundant System or a Split System on the Active side.

Procedure 112
Initializing the INI ACTIVE command

Step	Action
1	Click **INI ACTIVE**. A confirmation message is displayed.
2	Click **OK**. The Call Server is rebooted and the Element Manager user is logged out.

--End--

Call Server INI INACTIVE Command

The Call server is Redundant System on the Inactive side.

Procedure 113
Initializing the INI INACTIVE command

Step	Action
1	Click **INI INACTIVE**. A confirmation message is displayed.
2	Click **OK**. The inactive core is rebooted.

--End--

Call Server INI BOTH Command

The Call Server is a CPP Redundant System.

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Procedure 114
Initializing the INI BOTH command

Step	Action
1	Click **INI BOTH**. A confirmation message is displayed.
2	Click **OK**. The Call Server is rebooted and the Element Manager user is logged out.

--End--

Call Server SYSLOAD ACTIVE

The Call server is a Redundant System or a Split System on the Active side.

Procedure 115
Initializing the SYSLOAD ACTIVE command

Step	Action
1	Click **SYSLOAD ACTIVE**. A confirmation message is displayed.
2	Click **OK**. The Call Server is rebooted and the Element Manager user is logged out.

--End--

Call Server SYSLOAD INACTIVE Command

The Call server is Redundant System on the Inactive side.

Procedure 116
Initializing the SYSLOAD INACTIVE command

Step	Action
1	Click **SYSLOAD INACTIVE**. A confirmation message is displayed.
2	Click **OK**.

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The inactive core goes for sysload.

--End--

Call Server SYSLOAD BOTH Command

The Call Server has a Redundant System.

Procedure 117
Initializing the SYSLOAD BOTH command

Step	Action
1	Click **SYSLOAD BOTH**. A confirmation message is displayed.
2	Click **OK**. The Call Server is rebooted and the Element Manager user is logged out.

--End--

Note: If the selected command is not executed successfully for any reason, such as an overlay conflict for example, the following error message is displayed, “The command was not executed successfully. Try again.”

Date and Time

The date and time management covers the configuration of time synchronization options, as well as the setting of the actual date and time, and time zone related settings. An important concept is that there is a recommended configuration for any elements that are part of a CS 1000 system (these are running CS 1000 applications, such as CS, SS, SIPL, PD).

Timezone offsets for distributed phone subscribers is separately configurable through the Element Manger Branch Office zone configuration. In order to ensure that the configuration for a CS 1000 system is consistent, the configuration must be done using Element Manager.

The purpose of system-level coordination of the operating system date and time configuration for all elements of a single CS 1000 system is to facilitate the interpretation of system event and error messages generated by different elements.

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The CS 1000 system level date and time management in Element Manager allows the configuration of Network Time Protocol (NTP) and Network Time Synchronization (NTS). The NTS client and NTP usage are mutually exclusive options for the CS 1000 system. A Call Server may be designated as the NTS master and utilize NTP to synchronize its own time.

In Element Manager, the configuration setting of NTP requires the systemadmin permissions, whereas setting of the actual date/time clock requires either systemadmin or timeadmin permissions.

For any other Linux servers that are not part of a CS 1000 system, configuration is done using Base Manager of UCM. See, *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Configuration of time synchronization options performed from Element Manager overrides those previously performed by CLI, Base Manager, or the install tool on all system elements. Conversely, if changes are attempted later on at the individual element level that may interfere with the system time synchronization options chosen at the system level using Element Manager.

Nortel recommends that you use the ELAN interface for all NTP communication within a system. This would be to communicate to CS 1000 NTP primary and secondary servers. The CS 1000 NTP primary and secondary servers would normally communicate with external NTP clock sources using their TLAN connections. If TLAN is not available, then ELAN would be used. In all cases, it is necessary to ensure that appropriate routing is in place for communication between devices. This applies for communication to external sources and also for communication with CS 1000 NTP primary and secondary servers if the ELAN network interfaces of devices are on different subnets.

System time synchronization options

The following are the time synchronization options offered. Only one such option may be chosen. All configuration for these options is done solely by Element Manager and conveyed to all system elements.

- NTS client (Call Server as NTS client) can be configured to allow the Call Server to be synchronized from a ISDN digital trunk D-channel. The Call Server then pushes time directly to all system elements. An exception is standalone Element Manager, where Element Manager is not running on an element with any of the Call Server, SS, SIPL, or PD applications. In such as case, Base Manager must be used to set appropriate time synchronization, if required, on that element
- NTS Master (Call Server as NTS master) can be configured to allow the Call Server to act as the NTS Master. This Call Server provides time synchronization to other Call Servers set up as NTS slaves across

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MCDN. The system with Call Server as NTS master may use NTP configuration to maintain time from external time sources or internal hardware clock of the CS 1000 Primary NTP server.

- CS 1000 system level primary and, optionally, secondary NTP servers are configured on Linux system elements that are part of this CS1000 system. The secondary NTP server would act as a backup for the primary NTP server, and normally synchronize time with the primary NTP server and then try with other external sources. The default is that the element on which Element Manager is running is set as the CS 1000 primary NTP server, but that can be altered. All other Linux system elements (including EM if applicable) will synchronize to these CS 1000 NTP servers. Configuration is done by EM and pushed to all Linux elements.

  The CS 1000 primary and secondary NTP servers can source their time in two ways:

  — The CS 1000 primary and secondary NTP servers use their internal hardware clocks. The date/time has to be set using Base Manager on the primary (assuming that the secondary NTP server will sync time from the primary NTP server in normal operation).

  — External NTP clock sources are used. The internal system primary and secondary NTP servers are synchronized from external clock sources, up to 10, with optional single key security. The secondary NTP server would normally synchronize with the primary NTP server, and only synchronized with the external sources if the primary is not available.

If you use NTP security, all the clock source servers need to have the same private key. This means that an internal primary NTP server can not use a different key to access an external server than that which is used for servicing requests from internal clients. The implication is that if the external connection is to be secured, the internal connections would also have to be secured using the same single key as the external connections. Also, all the external servers need to have the same private key to service the requests from the internal servers or other Linux NTP clients.

Note: In previous releases, the Call Server supported configuration of two external clock sources with different private keys for each, but only a single private key is supported in Communication Server 1000 Release 6.0.

When NTP configuration is done using EM, the ELAN IP addresses of system elements are obtained from UCM element information and used for the configuration of such elements as primary or secondary NTP servers.

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When NTP is utilized, you must configure each element with time zone and daylight saving adjustments. Element Manager supports Windows-style selection of time zones. The time zone you select determines the time zone regions and subregions to be used on Linux system elements. The configuration associated with the time zone you select is applied to all system elements

System Date and Time

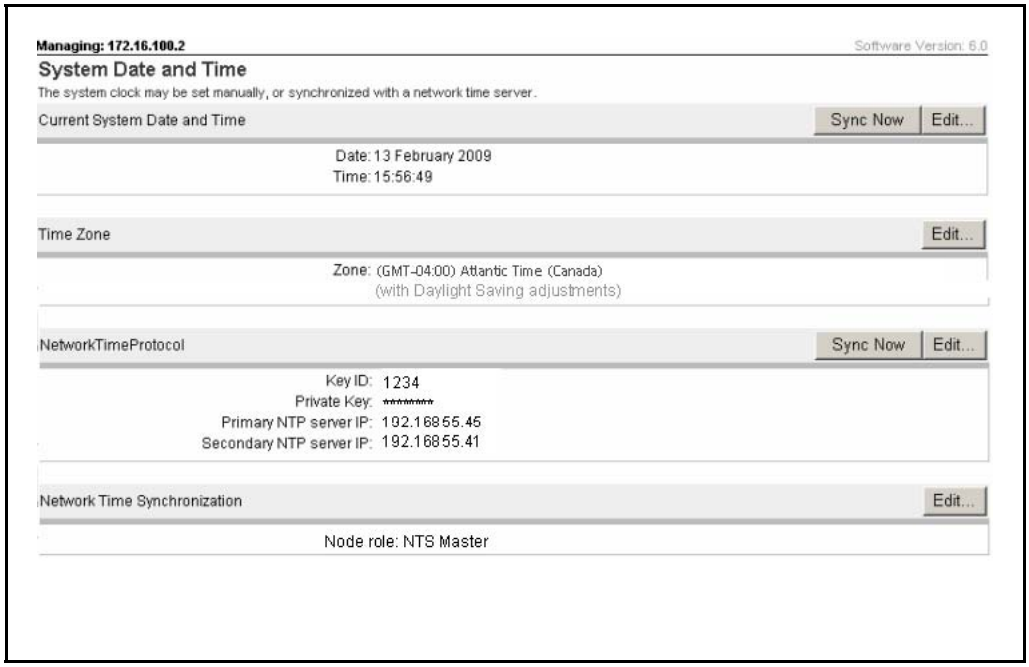
The **System Date and Time** Web page offers configuration of the following:

- The ability to configure the Date and Time for the system
- The ability to configure the Time Zone
- The option to configure Network Time Protocol for the system
- The option to configure Network Time Synchronization for the system

Note: If there are no time synchronization options currently chosen (i.e., neither NTP nor NTS are configured) then a warning appears.

Click the **Date and Time** link in the **Tools** branch of the Element Manager navigator. The **System Date and Time** Web page opens, as shown in Figure 222 "System Date and Time Web page" (page 323).

Figure 222
System Date and Time Web page



The **System Date and Time** Web page summarizes the following sections:

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- Current System Date and Time: The time displayed is always the Call Server time.
- Time zone: The time zone configured for the CS 1000 system is displayed
- Network Time Protocol: The NTP server (Primary/Secondary) details are displayed. If security is configured then the key id and private key are shown (masked), otherwise a message is displayed with “Not configured".
- NTS configuration is displayed (NTS Master/NTS Slave/NTS Stand-alone).

Current System Date and Time

The Current System Date and Time section displayed on the **System Date and Time** Web page displays the current date and time on the CS 1000 Call Server. When you select Edit, you can manually set the date and time on the Call Server or NTP server. Manually setting the date and time is not an operation that you would normally perform in the cases where either NTP or NTS were configured because manual adjustments would be overwritten.

The Sync Now button initiates re-application of the date and time configuration to all elements. If NTP is in use on the system this results in an immediate synchronization with external NTP sources and/or the CS 1000 primary NTP server.

If the NTP is in use, then you are redirected to Base Manager to set the date and time on the internal Primary NTP server and if NTS is in use then you configure the date and time on the Call Server and in the case of a Linux based Call Server it is done through redirection to the Base Manager.

Use the Edit button in the following scenarios:

- If the system is running as NTS slave then time is set on the Call Server. For a VxWorks Call Server clicking Edit brings up a new page to set the time. For the CP PM Co-Resident CS & SS on Linux, the Base Manager of the CS server is opened in a new window.
- If the system is using NTP, then clicking Edit opens the Base Manager time page of the Primary NTP server in a new window.
- In the case of NTS master or NTS stand-alone (i.e., NTS disabled), then if NTP is in use clicking Edit opens the Base Manager time page.
- If time synchronization is not configured, a warning is normally given when accessing the page. Clicking Edit allows the time on the Call

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Server to be set. For a VxWorks Call Server clicking Edit brings up a new page to set the time. For the CP PM Co-Resident CS & SS on Linux, the Base Manager of the CS server is opened in a new window.

If NTP is being used on the system, then after setting the time, click Sync Now, to immediately start time synchronization to all elements.

For more information about configuring Date and Time using Base Manager, refer to*Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Procedure 118
Editing date and time on a VxWorks Call Server

Step	Action
1	Click **Edit** in the Current System Date and Time section of the **System Date and Time** Web page. The **Edit Date and Time** Web page opens, as shown in Figure 223 "Edit Date and Time Web page" (page 326)
2	Enter the Date and Time in the appropriate fields.
3	If necessary enter the value for the Daily Time Adjustment to compensate for a fast or slow system clock.
4	Click **Save**. The **System Date and Time** Web page opens with the new time settings.
5	If NTP is being used on the system, click **Sync Now** to immediately start time synchronization to all elements.

--End--

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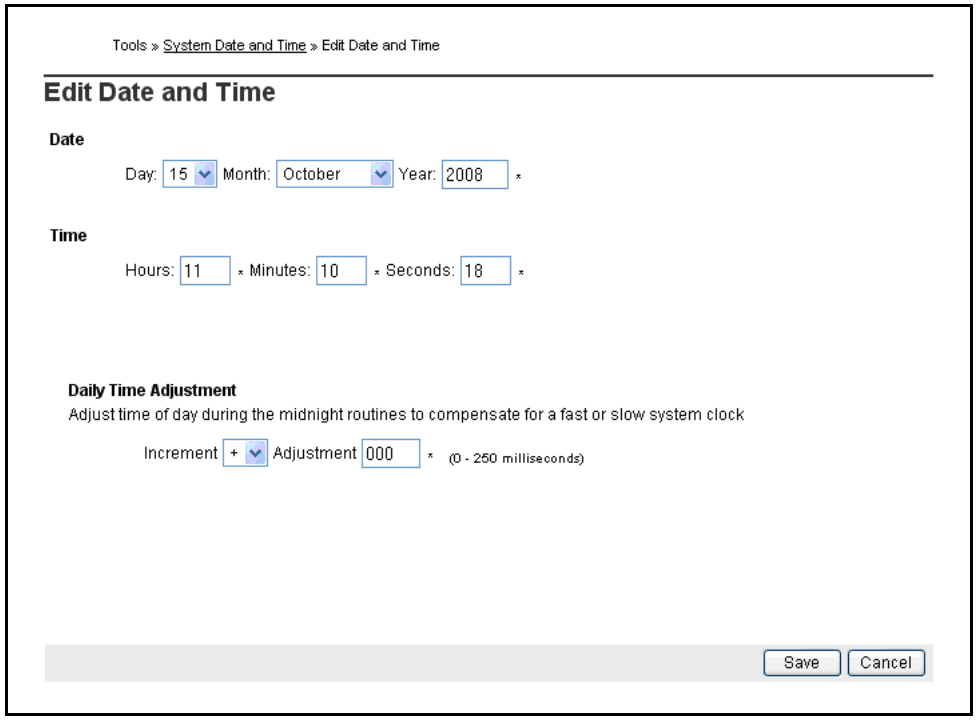
Figure 223
Edit Date and Time Web page



Time Zone

The **Time Zone** Web page displays the time zones and lists all the supported zones and UTC values. The time zone selected is used to set the time on the Call Server and Linux elements. For the case of a VxWorks Call Server internal mapping is also done of the offset from UTC and Daylight Saving time start and end dates. For a VxWorks Call Server, the Daylight Saving time start and end dates will be configured on the Call Server using the internally mapped values. For Linux devices, the Linux time region Daylight Saving time information is used.

If the time zone selected has automatic Daylight Saving adjustments built in, the text on the screen indicates that as “(with Daylight Saving adjustments)”, otherwise the text indicates “(no Daylight Saving adjustments)". Some time zones (e.g., currently those associated with Jerusalem and Tehran) have Daylight Saving dates that vary each year. These are not handled and you must manually change the time zones for these regions upon entering or leaving the Daylight Saving calendar period. When such time zones are selected, the text on the screen indicates “(manual time zone change required when entering or leaving Daylight Saving period)”.

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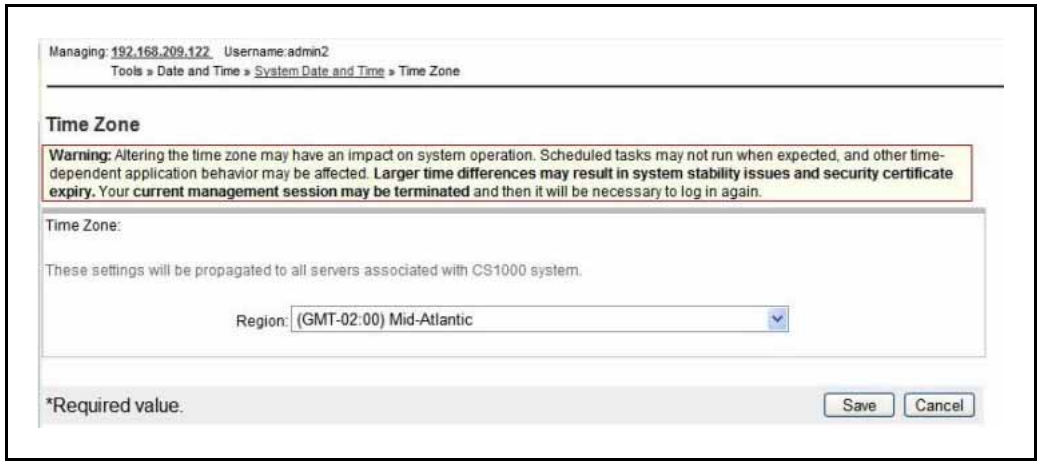
Procedure 119
Editing the Time Zone

Step	Action
1	Click **Edit** in the Time Zone section of the **System Date and Time** Web page. The **Time Zone** Web page opens as shown in the following figure.
2	Select the Time Zone from the list.
3	Click **Save**. The **System Date and Time** Web page opens with the new time zone setting.

--End--

Figure 224
Time Zone Web page



Network Time Protocol configuration

Prior to CS 1000 Release 6.0, Element Manager used overlay configuration of the Call Server (CS) on VxWorks to support system level NTP configuration. The NTP configuration only applied to the CS and all of the VxWorks based Communication Server 1000 system elements derived their time from the CS through a pbxLink.

You must use Element Manager to configure time synchronization settings that are used on the Call Server as well as all other system elements. The configuration of NTP differs from the support that was present prior to R6.0. Some settings for polling interval, query offset, and alarms which were applicable for VxWorks based CS are not offered now, since the Call Server now synchronizes only with internal system primary or secondary

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NTP servers, and not with external clock sources. These settings will be hardcoded now and ten minutes for polling will be the mid-range of Linux NTP clients.

If this is the first time that NTP is being configured, once the **Synchronize System Clock with NTP** check-box is checked, the UI is loaded with a default configuration. The default configuration has the server running Element Manager selected as the internal Primary NTP server, and internal clock sources (hardware clock on this server) is used. If NTP had been previously configured on the system, but subsequently disabled then the previous configuration is displayed.

The default selection for transfer mode is “Secure”. This selection requires the operator to enter the Key ID and Private key. Only a single key is supported to be applied for NTP protocol security between external clock sources as well as between internal system NTP servers and other system Linux elements. Only MD5 authentication is supported for NTP security. Selecting insecure transfer mode disables the fields for Key ID and Private key and the key data is not removed.

The selection of a primary internal NTP server is mandatory, whereas a secondary internal NTP server is optional, but recommended when there are two or more Linux based elements configured in the CS 1000 system.

The secondary internal NTP server normally gets its time source from the primary internal NTP Server. If the Primary internal NTP server does not respond to the Secondary, then the Secondary gets its time source from the first external NTP server which responds to polling by the Secondary.

NTP clients running on Linux base elements which are "Not a clock server", as well as on the VxWorks-based Call Server, get their time source from the Primary internal NTP server, or from the Secondary internal NTP server, if the Primary does not respond to polling by the other NTP clients in the CS 1000 system.

When you click the Sync Now button in the Network Time Protocol section, a ntpconfig command is sent to the Linux element with the pre-configured NTP details.

Procedure 120
Configuring Network Time Protocol

Step	Action
1	Click **Edit** in the Network Time Protocol section of the **System Date and Time** Web page.

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The **Network Time Protocol** Web page opens as shown in Figure 225 "Network Time Protocol Web page" (page 330).

2 Click the **Synchronize System Clock with NTP** box.

Note: Clicking this box enables Network Time Protocol configuration otherwise only synchronization is available.

3 Select **Secure**.

Secure is the default setting.

Note: If transfer mode is to apply only to internal synchronization then it should be bundled under Local server sub-section.

4 Enter the Key ID and Private Key.

Note: Only a single key is supported to be applied for NTP protocol security between external clock sources as well as between internal system NTP servers and other system Linux elements. Only MD5 authentication is supported for NTP security. Selecting insecure transfer mode disables the fields for Key ID and Private key and the key data is not removed.

5 Select Primary and Secondary IP addresses from the list.

The drop down boxes for primary and secondary server IP addresses provide the choice of any Linux server associated with the given CS 1000 system.

Note: If NTP has not been configured for the CS 1000 system, the default value for the primary server IP address is the ELAN address of the server hosting Element Manager for the system.

6 To select an external server as a clock source click the **External server(s)** box.

Selecting **External server(s)** enables the additional fields labeled “NTP server IP” which allows you to enter the IP addresses of one to ten external clock sources.

Note: Specifying an external NTP clock sources are optional, and if configured, are used by the local Primary and Secondary NTP servers. If external servers are not configured then the internal hardware clocks are used on the primary and secondary NTP servers.

7 Enter an external clock source and click **Add**. You can add up to ten external clock sources. The list is an ordered list, such that

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the first external source listed is contacted first, and if that fails then the next on the list is used.

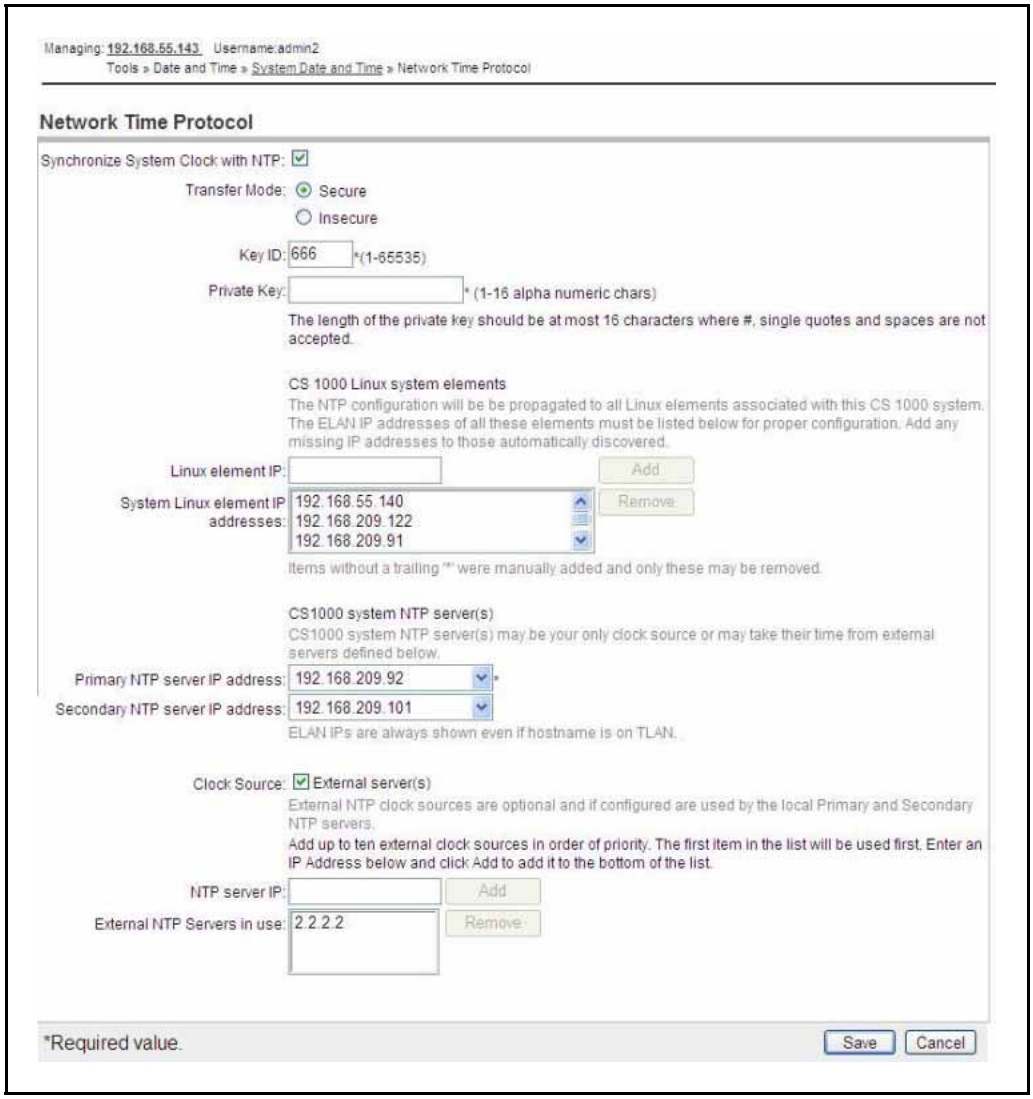
Note: You may have to perform IP routing configuration to reach external servers. This would not normally be required for devices that reach external sources by the TLAN, since the default route for most devices uses the TLAN. Base Manager can be used for IP route configuration.

8 Click **Save**.

The parameters are transferred to all system Linux elements.

--End--

Figure 225
Network Time Protocol Web page



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CS1000 Linux System Elements

The NTP Configurations propagate into all Linux elements associated with the CS1000 system. Default configuration shows the list of Linux elements registered with the CS1000 system. Linux elements that are not associated with the CS1000 system can be added and removed manually and updates the same for CS1000 system-level NTP servers.

CS1000 system-level NTP server(s)

The selection of a primary internal NTP server is mandatory, whereas a secondary internal NTP server is optional, but recommended when there are two or more Linux based elements configured in the CS 1000 system.

The secondary internal NTP server's NTP client normally gets its time source from the primary internal NTP Server. If the Primary internal NTP server does not respond to the Secondary, then the Secondary gets its time source from the first external NTP server which responds to polling by the Secondary.

NTP clients running on Linux base elements which are "Not a clock server", as well as on the VxWorks-based Call Server, get their time source from the Primary internal NTP server, or from the Secondary internal NTP server, if the Primary does not respond to polling by the other NTP clients in the CS 1000 system.

If NTP has not already been configured for the CS1000 system, the default value for is the ELAN address Element Manager for the system. The drop down boxes for primary and secondary server IP addresses provide the choice of any Linux server associated with the given CS1000 system. ELAN IP's are always shown even if the hostname is on TLAN.

Note: The Primary and Secondary IP addresses must be different and the system validates the IP addresses before they are accepted.

External Servers

The selection of External server(s) enables the additional fields labeled "NTP server IP" thereby allowing the operator to enter the IP addresses of one to ten external clock sources. The internal system primary and secondary NTP servers are Synchronized with these servers. The list is an ordered list, such that the first external source listed is contacted first, and if that fails then move on down the list. If the list is not in correct order then it may be necessary to delete sources and re-add in desired order. A newly added external server IPs is added to the end of the list.

If necessary to reach external servers then IP routing configuration may have to be performed on devices. This would not normally be required for devices that reach external sources by the TLAN, since the default

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route for most devices uses the TLAN. An IP route is required if the ELAN has to be used to reach an external source. The IP routes would have to be performed on the primary and secondary servers if required, and Base Manager can be used for this configuration. If external servers are not provided, the primary NTP server will derive its system clock from its internal hardware clock.

Note: The maximum number of Network Time Protocol server IP addresses is ten entries and are validated for uniqueness.

Network Time Synchronization

The clock synchronization feature is designed to work on ISDN networks, using D channel messages. NTS helps to synchronize time across different zones with different time zones for each. The Call Server is configured in master/stand-alone/slave modes for these zones. The stand-alone Call Server doesn't sync up with the master but the slave does sync up with the master. NTS enables the CS 1000 Call Server to derive its system clock from a Digital Trunk Signaling Link (DTRL). All of the other Signaling Servers, Media Gateway Controllers, and Voice Gateway Media Cards associated with the CS 1000 system derive their system clock from the Call Server by signaling over the PBXLink. protocol.

In CS 1000 Release 6.0 support for NTS has been included in the deployment of Linux based servers. If the CS 1000 Call Server NTS Node Role is set as NTS slave then NTP and NTS configurations are mutually exclusive. For roles like stand-alone and master user can configure NTP for the elements to get time synced from the NTP servers. The Time Delta time adjustment factor keeps the Call Server at a difference with the master Call Server. This allows the slave Call Server to keep CS 1000 system time for its local timezone. If there are DST differences between the master NTS and slave NTS then manual adjustments may be required of the offset as the DST starts/ends.

You set the customer of the node and Local Virtual DN in charge of synchronizing the switch (that customer makes and receives the calls to and from the Master/Backup switch). That customer must already exist, prior to referencing it

If NTS is disabled and NTP is not in effect, then an warning message is shown to the user.

The Network Time Synchronization feature ensures that all time stamps in a network are synchronized from one source.

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Procedure 121
Configuring Network Time Synchronization

Step	Action
1	Click **Edit** in the Network Time Synchronization section of the **System Date and Time** Web page. The **Network Time Synchronization** Web page opens, as shown in Figure 226 "Network Time Synchronization Web page" (page 334).
2	Select the **Node Role** form the list.
3	Select the **Customer** from the list.
4	Enter the **Local Virtual DN**.
5	Enter the **Master/Backup Time Synchronization Number**.
6	Choose the mode: **Background (BKGD)** or **Daily Services Routine (DVCS)**.
7	If there are Daylight Saving Time (DST) differences between the master NTS and slave NTS then manual adjustments may be required of the offset as the DST starts or ends. Enter the **Time Adjustment factor with clock on Master** values
8	Click **Save**.

--End--

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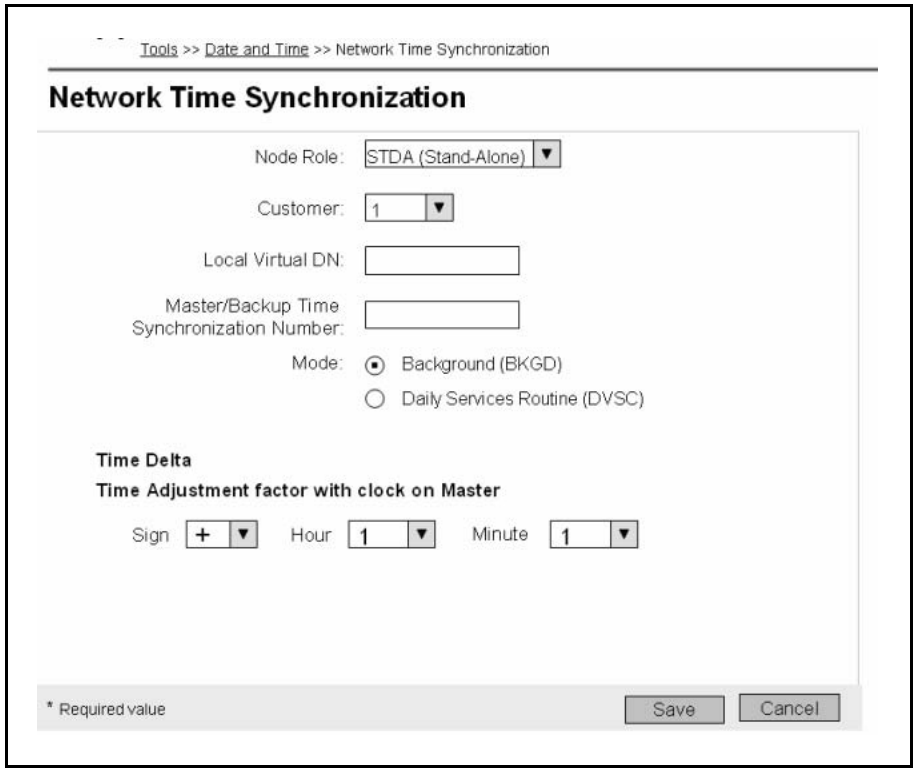
Figure 226
Network Time Synchronization Web page



Logs and Reports

To access IP Telephony Node Maintenance Reports click the **Logs and Reports > IP Telephony Nodes** link in the **Tools** branch of the Element Manager navigator. The **Node Maintenance and Reports** Web page appears.

For information on IP Telephony Node Maintenance and Reports, see "Nodes: Servers, Media Cards" (page 137).

In addition, information about the database status and synchronization are available under the Reports tab in NRS Manager. For more information on these reports, refer to *IP Peer Networking Installation and Commissioning (NN43001-313)*.

To display information on all IP Phones configured in the system, click the **Logs and Reports > IP Phone Location** link in the **Tools** branch of the Element Manager navigator. The **IP Phone Location** Web page opens, as shown in Figure 227 "IP Phone Location Web page" (page 335).

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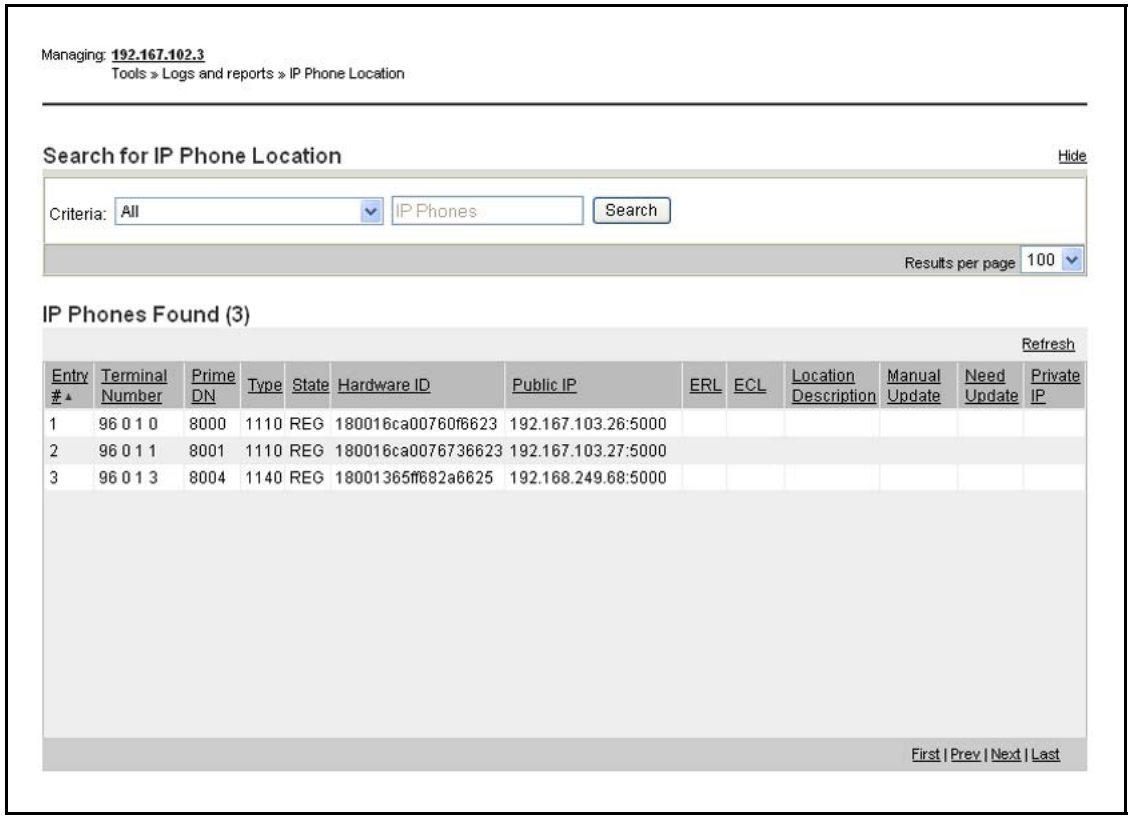
Figure 227
IP Phone Location Web page



Enter the search criteria in the **Search for IP Phone Location** section and click **Search**. The results matching the criteria entered are displayed in the **IP Phones Found** section.

Call Server Report

To access the **Call Server Report** Web page, click the **Logs and Reports > Call Server Report** link in the **Tools** branch of the Element Manager navigator. The **Call Server Report** Web page opens as shown in the following figure.

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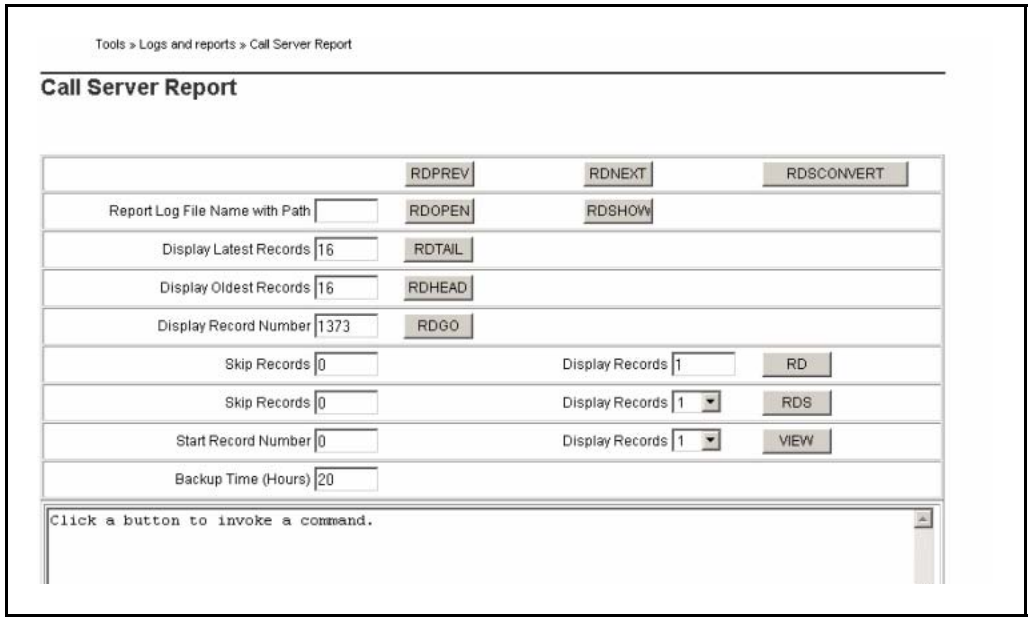
Figure 228
Call Server Report Web page



The following buttons provide one-click access to the following functions:

- RDSCONVERT — Convert a report log file to text
- RDPREV — Open the previous log file
- RDNEXT — Open the next log file
- RDOPEN — Open the latest report file
- RDSHOW — Show a summary of the report file
- RDTAIL — Show x records up to the newest record in the report file (where x is the configured display size).
- RDHEAD — Show x records starting from the oldest record in the report file (where x is the configured display size).

To view selected detail data on records in the report file, use the text boxes, the drop-down lists, and the following buttons:

- RDGO — Displays the record specified in the adjacent text box (where -1 is the oldest record and 1000 is the most recent).
- RD — Browses the report records. Enter the number of records to skip and the number of records to display in the adjacent text boxes.
- RDS — Browses the report records with (symbolic) memory dump. Enter the number of records to skip, and select the number of records to display using the adjacent text box and drop-down list.
- VIEW — Views selected records. Enter a starting record number and select the number of records to view using the adjacent text box and

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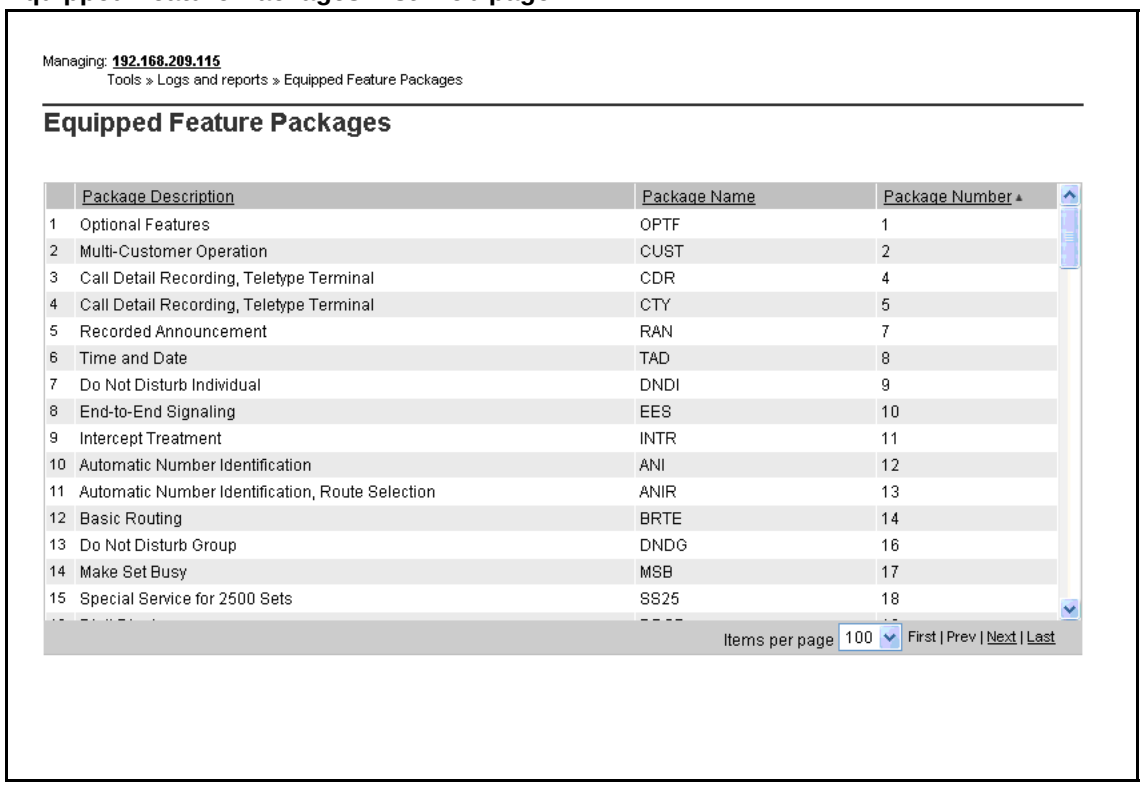
drop-down list. Negative numbers indicate records previous to the starting record.

Equipped Feature Packages

To view a list of software feature packages, click the **Logs and Reports > Equipped Feature Packages** link in the **Tools** branch of the Element Manager navigator. The **Equipped Feature Packages List** Web page opens as shown in Figure 229 "Equipped Feature Packages List Web page" (page 337).

Figure 229
Equipped Feature Packages List Web page



Peripheral Software Version Data

To view a list of Peripheral Software Version Data, including the loadware version of the Media gateway Controller (MGC) card, click the **Logs and Reports > Peripheral Software Version Data** link in the **Tools** branch of the Element Manager navigator. The **Peripheral Software Version Data** Web page opens as shown in Figure 230 "Peripheral Software Version Data Web page" (page 338).

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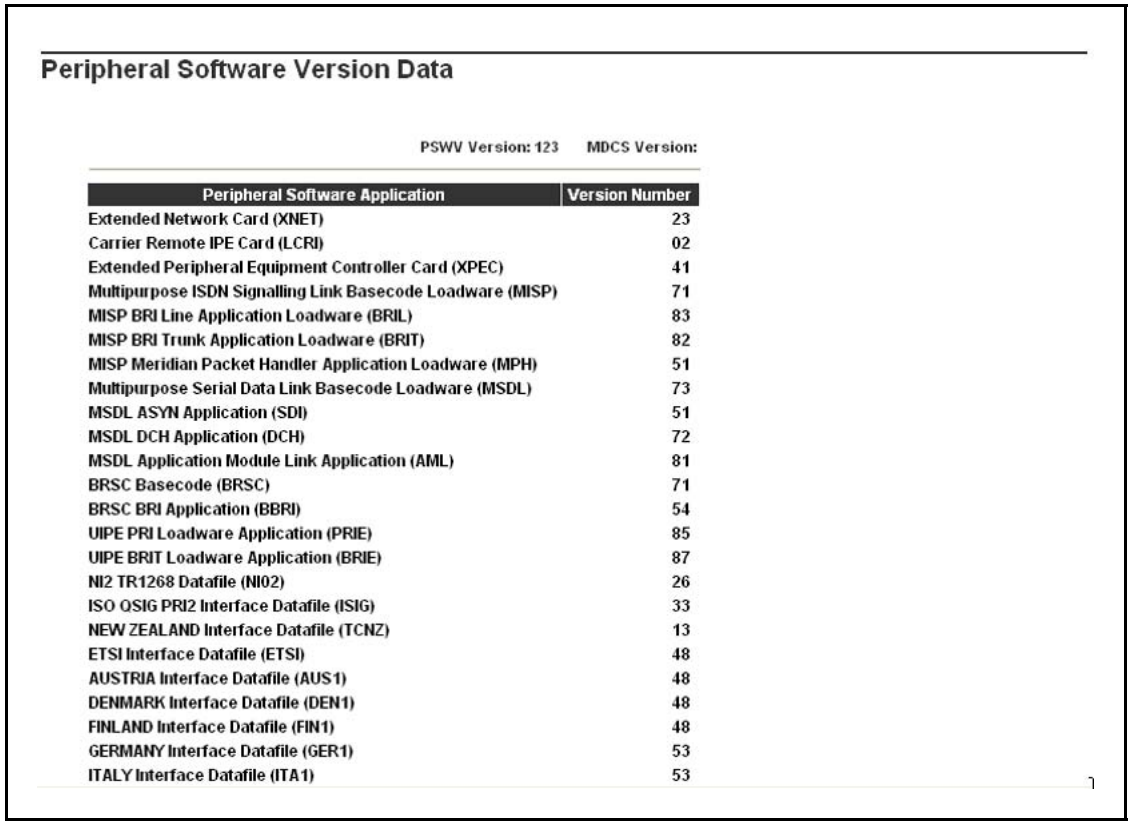
Figure 230
Peripheral Software Version Data Web page



Peripheral Software Version Data

PSWV Version: 123 MDCS Version:

Peripheral Software Application	Version Number
Extended Network Card (XNET)	23
Carrier Remote IPE Card (LCRI)	02
Extended Peripheral Equipment Controller Card (XPEC)	41
Multipurpose ISDN Signalling Link Basecode Loadware (MISP)	71
MISP BRI Line Application Loadware (BRIL)	83
MISP BRI Trunk Application Loadware (BRIT)	82
MISP Meridian Packet Handler Application Loadware (MPH)	51
Multipurpose Serial Data Link Basecode Loadware (MSDL)	73
MSDL ASYN Application (SDI)	51
MSDL DCH Application (DCH)	72
MSDL Application Module Link Application (AML)	81
BRSC Basecode (BRSC)	71
BRSC BRI Application (BBRI)	54
UIPE PRI Loadware Application (PRIE)	85
UIPE BRIT Loadware Application (BRIE)	87
NI2 TR1268 Datafile (NI02)	26
ISO QSIG PRI2 Interface Datafile (ISIG)	33
NEW ZEALAND Interface Datafile (TCNZ)	13
ETSI Interface Datafile (ETSI)	48
AUSTRIA Interface Datafile (AUS1)	48
DENMARK Interface Datafile (DEN1)	48
FINLAND Interface Datafile (FIN1)	48
GERMANY Interface Datafile (GER1)	53
ITALY Interface Datafile (ITA1)	53

System License Parameters

To view a list of System License Parameters, click the **Logs and Reports > System License Parameters** link in the **Tools** branch of the Element Manager navigator. The **System License Parameters** Web page opens as shown in the following figure.

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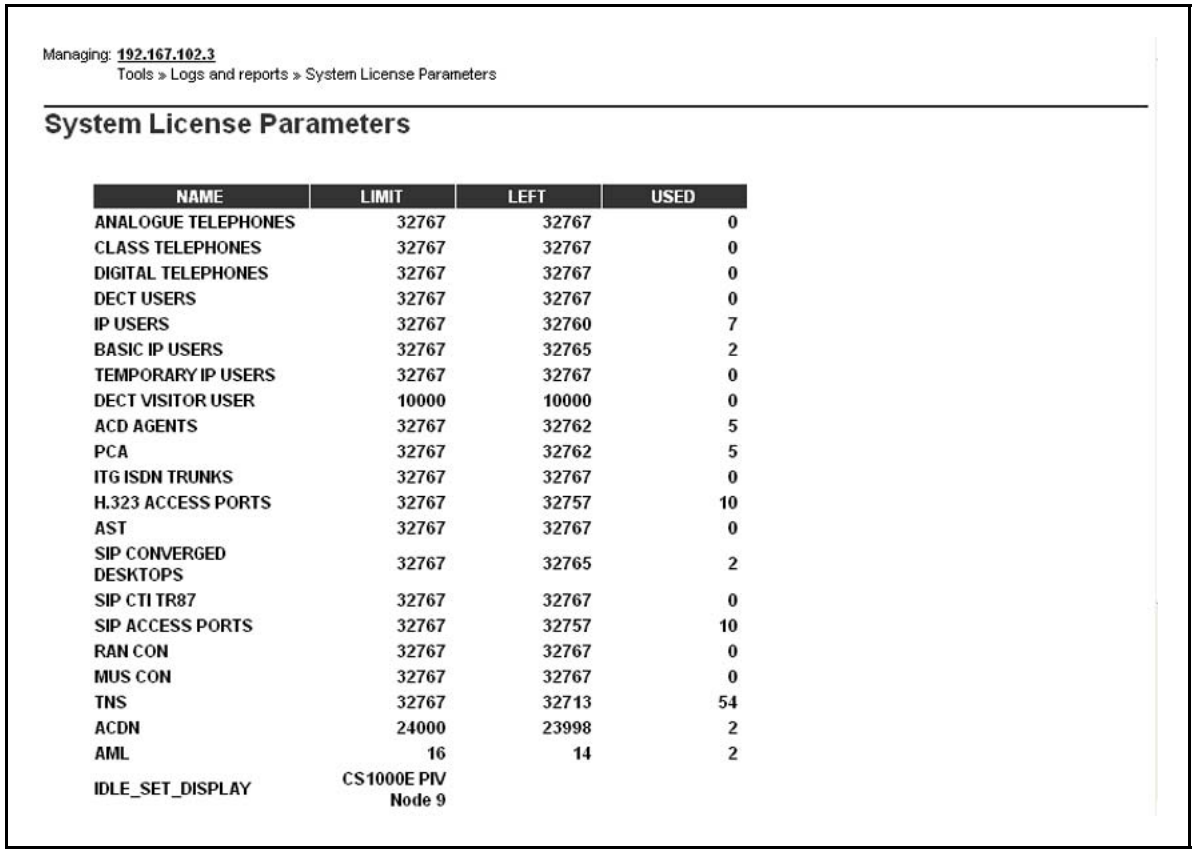
Figure 231
System License Parameters Web page



Managing: 192.167.102.3
Tools » Logs and reports » System License Parameters

System License Parameters

NAME	LIMIT	LEFT	USED
ANALOGUE TELEPHONES	32767	32767	0
CLASS TELEPHONES	32767	32767	0
DIGITAL TELEPHONES	32767	32767	0
DECT USERS	32767	32767	0
IP USERS	32767	32760	7
BASIC IP USERS	32767	32765	2
TEMPORARY IP USERS	32767	32767	0
DECT VISITOR USER	10000	10000	0
ACD AGENTS	32767	32762	5
PCA	32767	32762	5
ITG ISDN TRUNKS	32767	32767	0
H.323 ACCESS PORTS	32767	32757	10
AST	32767	32767	0
SIP CONVERGED DESKTOPS	32767	32765	2
SIP CTI TR87	32767	32767	0
SIP ACCESS PORTS	32767	32757	10
RAN CON	32767	32767	0
MUS CON	32767	32767	0
TNS	32767	32713	54
ACDN	24000	23998	2
AML	16	14	2
IDLE_SET_DISPLAY	CS1000E PIV Node 9		

Operational Measurements

Element Manager provides users with regularly scheduled reports on system traffic. To access these reports, click the **Logs and Reports > Operational Measurements** link in the **Tools** branch of the Element Manager navigator. The **Call Server Operational Measurements** Web page opens, as shown in Figure 232 "Operational Measurements Web page" (page 340).

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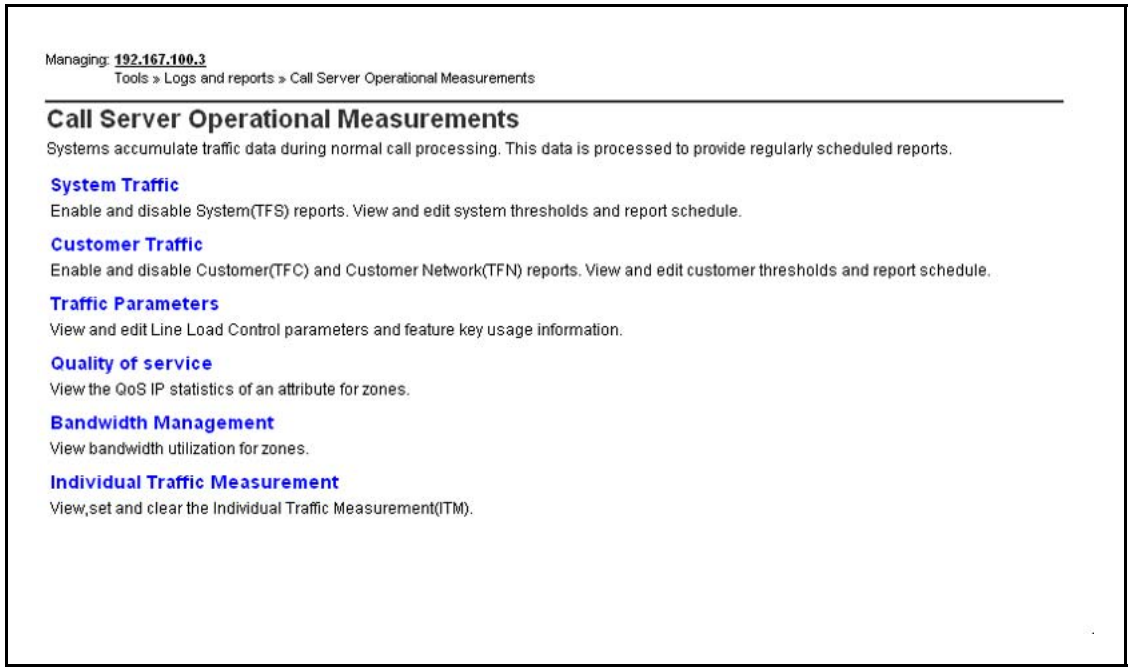
Figure 232
Operational Measurements Web page



System Traffic

To display details of the system's Traffic reports, click **System Traffic**. The **System Traffic** Web page opens, as shown in Figure 233 "System Traffic Web page" (page 341).

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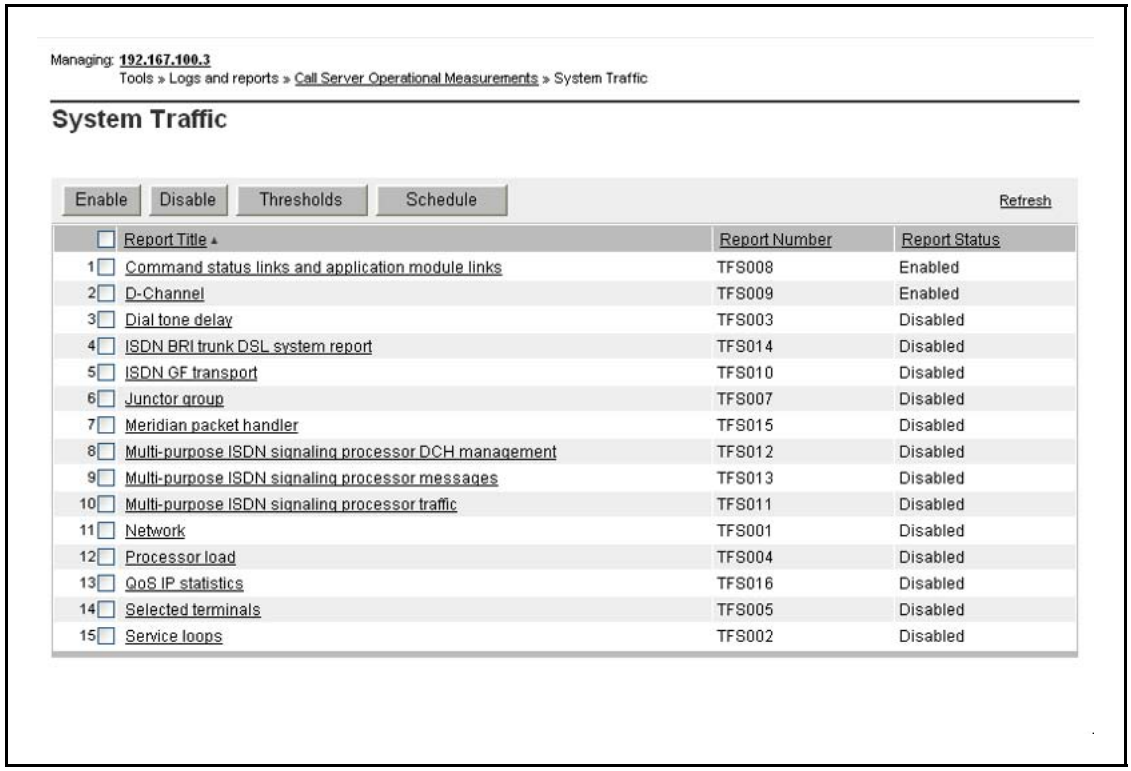
Figure 233
System Traffic Web page



To display a report, click the **Report Title**. The report displays in a new window.

To enable a report, select the report and click **Enable**.

To disable a report, select the report and click **Disable**.

To configure Threshold information, click **Thresholds**. The **Thresholds** Web page is displayed.

To configure report schedules, click **Schedules**. The **Report Schedule** Web page is displayed.

Customer Traffic

To display details of the Traffic reports for each Customer configured in the system, click **Customer Traffic**. The **Customer Traffic** Web page opens, as shown in Figure 234 "Customer Traffic Web page" (page 342).

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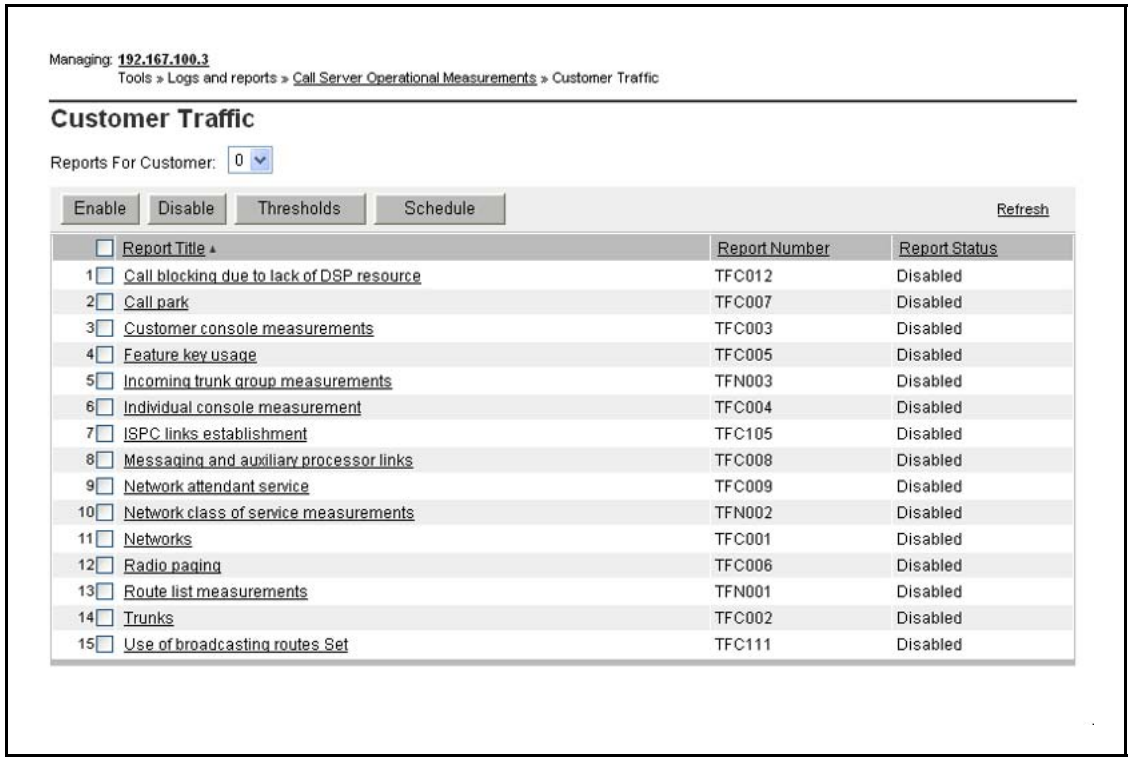
Figure 234
Customer Traffic Web page



To display Traffic reports for a Customer, select the Customer from the drop-down list.

To enable a report for the selected Customer, select the report and click **Enable**.

To disable a report for the selected Customer, select the report and click **Disable**.

To configure Threshold information for the selected Customer, click **Thresholds**. The **Thresholds** Web page is displayed.

To configure report schedules for the selected Customer, click **Schedules**. The **Report Schedule** Web page is displayed.

Traffic Parameters

To configure Traffic Parameters for the system, click **Traffic Parameters**. The **Edit Traffic Parameters** Web page opens, as shown in Figure 235 "Edit Traffic Parameters Web page" (page 343).

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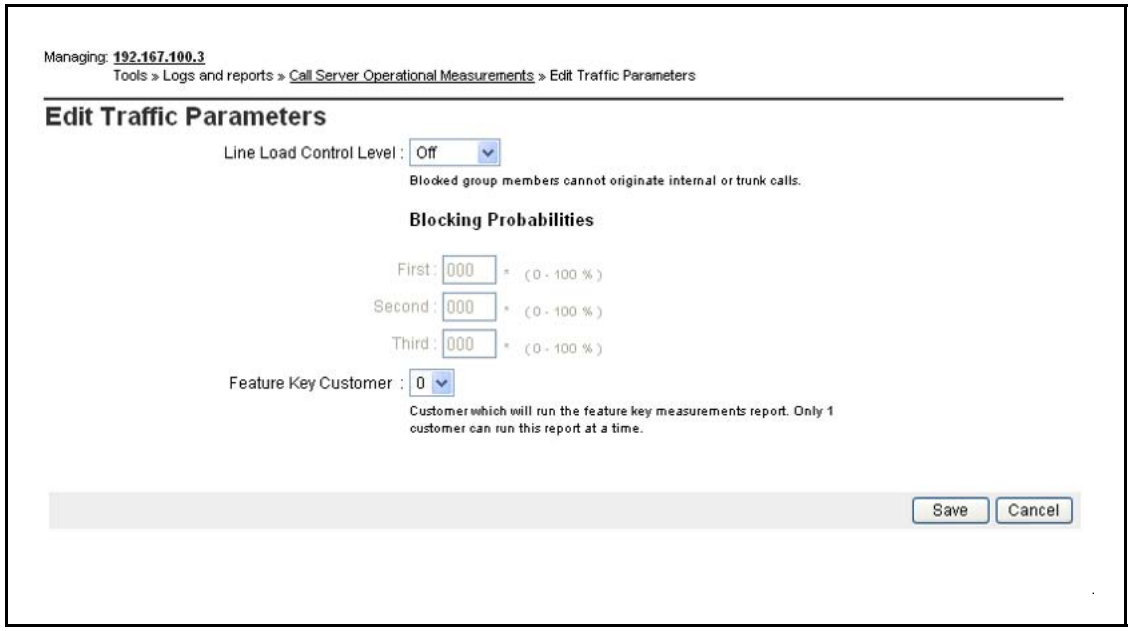
Figure 235
Edit Traffic Parameters Web page



Select a **Line Load Control Level** from the drop-down list.

Enter the **Blocking Probabilities**.

Choose a Customer from the **Feature Key Customer** drop-down list and click **Save**.

> ***Note:*** If the **Line Load Control Level** is set to Off, the **Blocking Probabilities** are disabled.

Quality of Service

Click **Quality of service** to open the **Ethernet Quality of Service Diagnostics** Web page. For more information, see "Ethernet Quality of Service Diagnostics" (page 82)

Bandwidth Management

Click **Bandwidth Management** to open the **Maintenance Commands for Zones** Web page. For more information, see "Zone Diagnostics" (page 111)

Individual Traffic Measurement

To configure lines and trunks for Individual Traffic Measurement, click **Individual Traffic Measurement**. The **Individual Traffic Measurement** Web page opens, as shown in Figure 236 "Individual Traffic Measurement Web page" (page 344).

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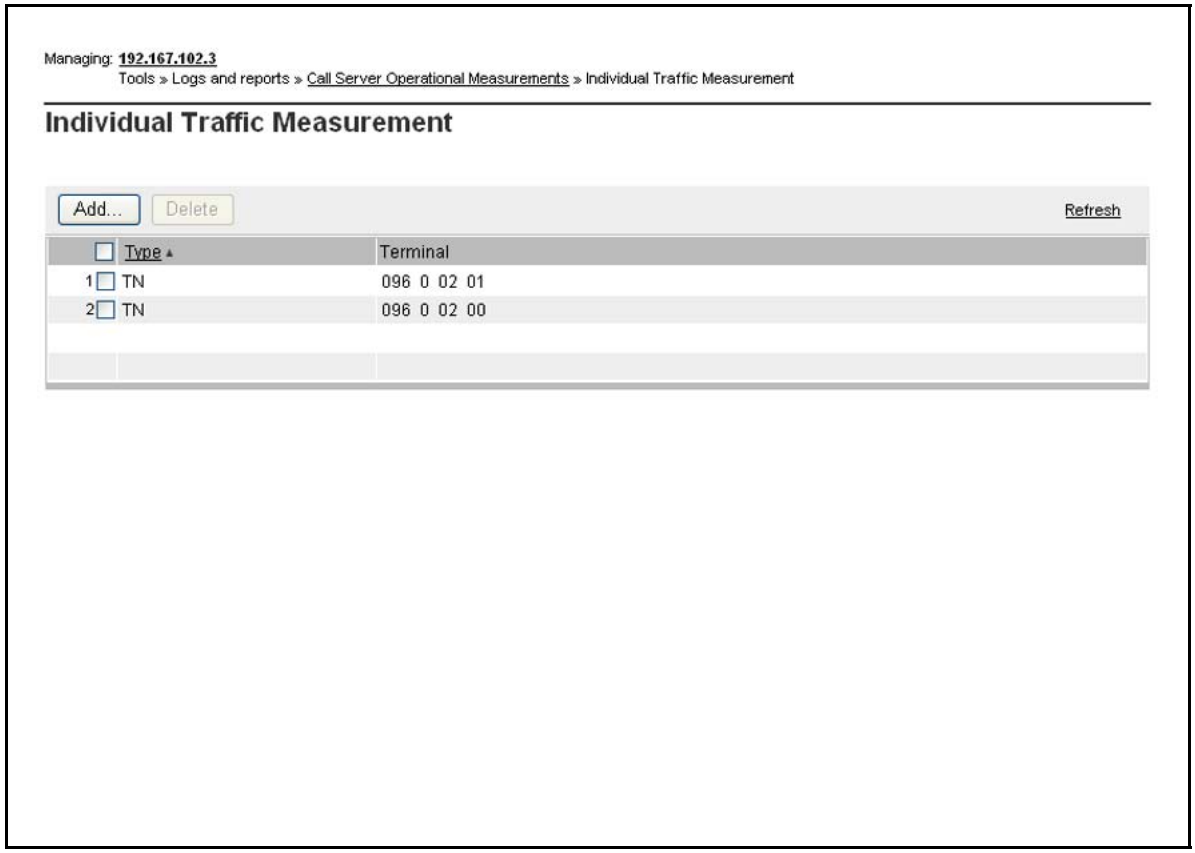
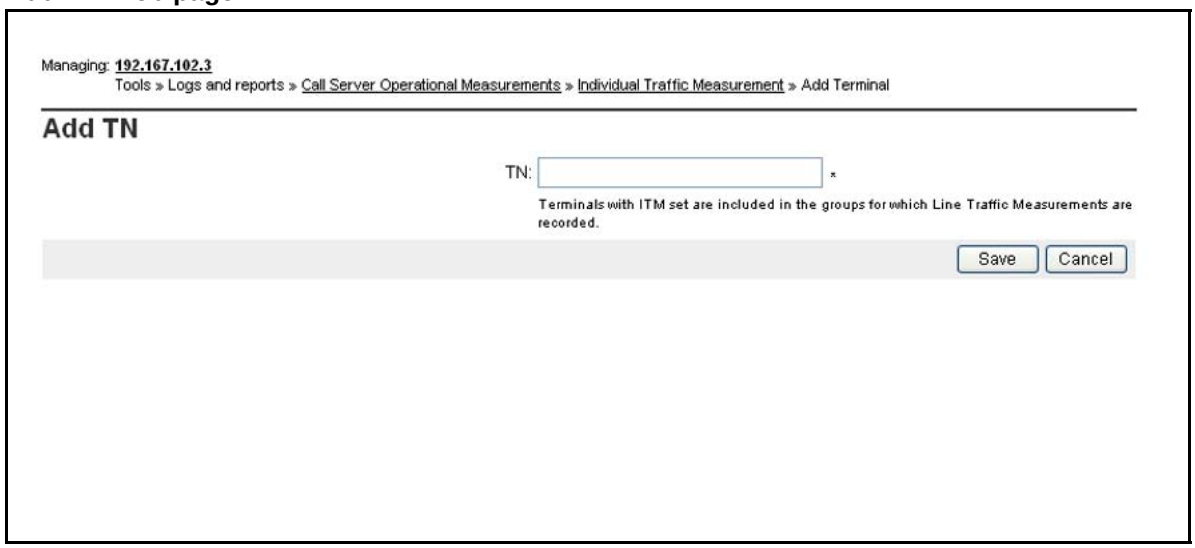
Figure 236
Individual Traffic Measurement Web page



To add a terminal for Individual Traffic Measurement, click **Add**. The **Add TN** Web page opens, as shown in Figure 237 "Add TN Web page" (page 344).

Figure 237
Add TN Web page



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Enter the TNs to be added in the **TN** text box. Enter up to five TNs and click **Save**.

Note: The TNs must be separated by a comma.

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Security

The following links are provided under the Security branch of Element Manager:

- Passwords
  - System Passwords
  - Customer Passwords
- Policies
  - Media
  - System Keys
  - File Transfer
  - Port Access Restrictions
- Login Options
  - Shell Login
  - Access Warning

All information about the Security features available in Element Manager is covered and maintained in *Security Management Fundamentals* (NN43001-604).

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Support

Contents

This section contains information about the following topics:

“Introduction” (page 349)

“Help” (page 349)

“Release Notes” (page 350)

Introduction

The following Support features can be accessed through Element Manager:

- Help
- Release Notes

Help

Element Manager provides context-sensitive online Help. To access Help, click the **Help** link located in the top right corner of the Element Manager Web pages. The **Help** Web page shown in Figure 238 "Help Web page" (page 350) appears.

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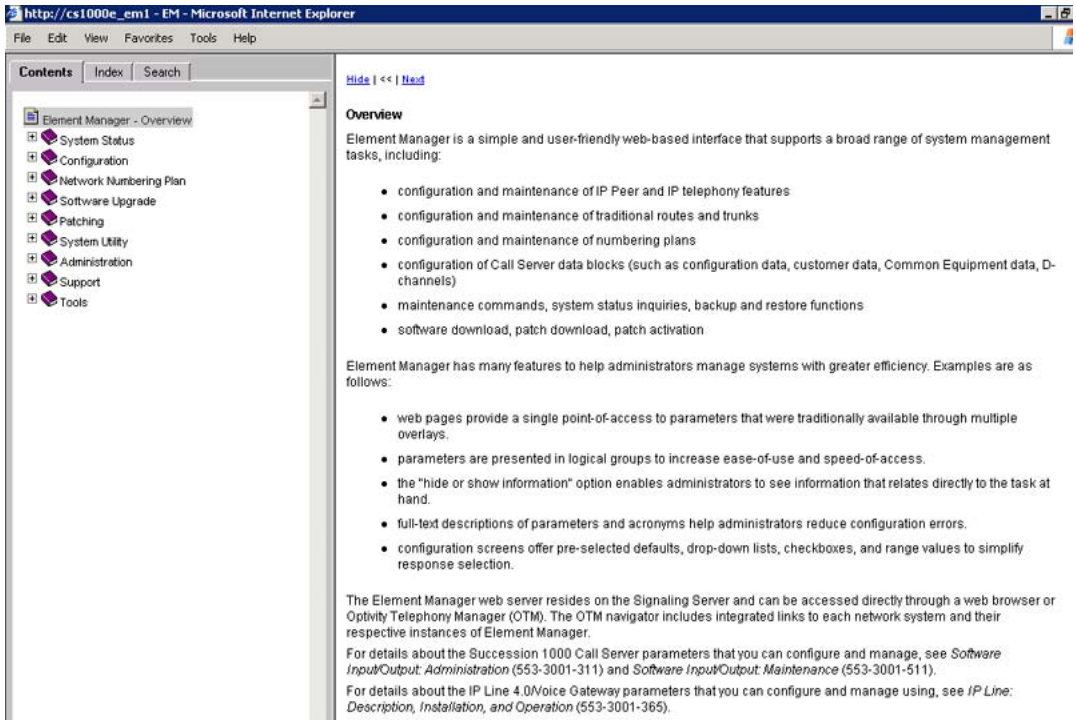
Figure 238
Help Web page



Release Notes

A Release Note can describe a design change or a product feature that was discovered after market release. Often, a Release Note describes how to work around a product limitation. Click the **Release Notes** link to access the Web-based Helmsman Express application.

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Appendix A

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