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Nortel Communication Server 1000

Element Manager System Reference — Administration

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New in This Release

Login Banner

For Communication Server 1000 Release 5.5, Element Manager displays a security warning banner, in the login page of Element Manager on VxWorks, that can be modified if necessary.

Media Gateway and 32 Channel Secure Media commands

Element Manager now provides support for executing Media Gateway Controller (MGC) and 32 Channel Secure Media Card (MC32S) command line interface (CLI) maintenance commands from Element Manager.

Traffic Reports

The display format of all the traffic reports displayed in Element Manager has been changed. Data measured under System Traffic and Customer Traffic is displayed with proper headers and descriptions.

Subscriber Manager

Communication Server 1000 Release 5.5 also introduces a new Nortel product called ECM Subscriber Manager, which provides a common application to handle subscriber data and launches subscriber based provisioning workflows for various Nortel enterprise services.

Subscriber Manager is a Web-based interface that is deployed as a plug-in application on the Enterprise Common Manager (ECM) framework. Subscriber Manager provides a centralized location for the management of subscriber information for enterprise services.

Element Manager in ECM provides a nodal management interface for provisioning CS 1000 phones. EM is able to inter-work with Subscriber Manager to provision phone services for subscribers. For more information about Subscriber Manager refer to, *Subscriber Manager Fundamentals* () (NN43001-120).

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Mobile Extension

With CS 1000 Release 5.5, Element Manager supports configuration and maintenance aspects of the Mobile Extension feature for CPPIV and CPPM machines.

The CS 1000 Mobile Extension feature enables mobile phones connected to a CS 1000 system to appear as an office extension. Incoming calls to an office phone number automatically call out to the mobile phone associated with the office phone number. A user making a call from a mobile phone can use the enterprise dial plan as if the call were made from an office extension. Call treatments provided for an office extension are extended to the mobile phone.

The Element Manager interface supports overlay prompts for Mobile Extension.

Mobile Extension provides various telephony features to the Mobile user. A Mobile user is configured with a Universal Extension (UEXT), which provides the logical connection to the mobile phone. A Mobile user can have an office desktop phone (digital, IP etc) in addition to the Universal Extension. A single Directory Number (DN) can be shared between the Universal Extension and the desktop phone.

With CS 1000 Release 5.5 Element Manager supports configuration of phones with the UEXT designation. Functionalities provided for the new set are:

- Single/bulk phone addition
- Single/bulk phone modification
- Basic and advanced search
- Retrieval of phones from PBX
- Single/bulk phone deletion
- Reports generation in HTML and CSV format

Two features are part of UEXT – Universal Extension Type (UXTY) and Universal Extension ID (UXID).

For more information about Mobile Extension refer to, *Features and Services Fundamentals - Book 4 of 6* () (NN43001-106-B4).

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Other

Revision History

November 2008	Standard 02.14. This document is up-issued to add information in the Software section.
April 2008	Standard 02.13. 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.
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 on 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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Introduction

WARNING
Do ***not*** contact Red Hat for technical support on your Nortel version of the Linux base operating system. If technical support is required for the Nortel version of the Linux base operating system, contact Nortel technical support through your regular channels

Contents

This section contains information on the following topics:

"Element Manager overview" (page 13)

"Element Manager Launched from Enterprise Common Manager" (page 16)

"Key features" (page 16)

"Signaling Server" (page 16)

"Call Server and Media Gateway" (page 17)

"IP Line 5.5/Voice Gateway" (page 17)

Element Manager overview

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

There are six scenarios by which Element Manager can be deployed:

- Element Manager on CPPM server, can be coresident with Network Routing Service (NRS).
- Element Manager on ISP1100 server, can be coresident with Network Routing Service (NRS)
- Element Manager on COTS IBM server that resides on Signaling Server

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- Element Manager on COTS HP server that resides on Signaling Server
- Element Manager on COTS IBM server on Enterprise Common Manager Framework
- Element Manager on COTS HP server on Enterprise Common Manager Framework

Table 1 "Element Manager deployment scenarios" (page 14) further illustrates the deployment scenarios for Element Manager.

Table 1
Element Manager deployment scenarios

Hardware Platform	Operating Environment	Scope
ISP1100 CPPM HP DL320 IBM 360	VxWorks OS	Configuration of one IP system, generally the system that is associated with the signaling server software that runs on the same platform. ***Note:*** NRS supports co-residency in some situations depending on the engineering of the network.
HP IBM	ECM framework Linux OS	Management of: • Features: — Single Sign On through ECM security domain — Configuration of telephones ***Note:*** In this deployment, Element Manager does not co-reside with the NRS application

Element Manager can also be launched from Telephony Manager.

When Element Manager is deployed on Linux operating systems, it is launched from the Enterprise Common Manager framework. For more information, see *Enterprise Common Manager Fundamentals (NN43001-116)* () .

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

Element Manager can also be accessed through Telephony Manager (TM). The TM navigator includes integrated links to each network system and their respective instances of Element Manager.

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With Subscriber Manager, an administrator can 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 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, drop-down lists, checkboxes, and range values.
- To simplify the importing of phones to the database a Comma Separated Value (CSV) file can be used.

Note: All screen captures in this chapter are applicable to CS 1000Eand CS 1000Msystems, unless otherwise indicated. In some cases, Web pages are different, depending on whether they are presented on a Large or a Small System. Where there is no indicator, the screen and commands are available on both. When the screen or command is specific to a Large or a Small System, this is indicated.

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Element Manager Launched from Enterprise Common Manager

This document focuses on the Element Manager application launched from Enterprise Common Manager.

Except where indicated, the text and Figures in this document refer to Element Manager when launched from Enterprise Common Manager.

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 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 means to configure all Electronic Switched Network (ESN) data blocks for the Call Server, as well as to access configuration for the Network Routing Service (NRS). When deployed on VxWorks, this menu provides links to NRS Manager, which performs configuration of NRS services, SIP/Redirect services, and H.323 gatekeeper.
- **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

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- 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

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 5.5/Voice Gateway

Element Manager enables administrators to perform the following activities on the IP Line 5.5/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.

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- 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 5.5 and Voice Gateway Media Card parameters that can be configured and managed in Element Manager, see *IP Line Fundamentals (NN43100-500)* () .

The following maintenance activities are supported when using Element Manager for IP Line 5.5 and Voice Gateway Media Card:

- 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 5.5 and Voice Gateway maintenance activities that are supported by Element Manager, see “IP Network” (page 131).

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How to get help

Contents

This section contains information on the following topics:

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).
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

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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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How to use Element Manager

Contents

This section contains information on the following topics:

"Launching Element Manager" (page 21)

"Timeout after a period of inactivity" (page 24)

"Navigation" (page 24)

"Configuring data" (page 28)

"Logging out" (page 29)

Launching Element Manager

CS 1000 Element Manager can be installed with the Enterprise Common Manager (ECM) security framework on a dedicated IBM 306 or an HP DL320 Commercial Off The Shelf (COTS) server. Element Manager is launched from the ECM framework. This framework supports Single Sign-on so that the user can access multiple systems. Users access the framework through Microsoft Internet Explorer 6.02600 or later. For information on how to log in to ECM, configure the ECM framework, and log in to Element Manager, see *Enterprise Common Manager Fundamentals* () (NN43001-116).

The VxWorks version of Element Manager can be deployed on an ISP1100 Signaling Server, an IBM 306 or an HP DL320 Commercial Off The Shelf (COTS) server, or a CPPM server. To log in to Element Manager on VxWorks, follow the steps in Procedure 1 "Launching Element Manager on VxWorks" (page 22). Element Manager supports Microsoft ™ Internet Explorer 6.0.2600 and later versions.

Before following this procedure, ensure that the Web browser is still configured properly for optimal Web browser performance. This configuration was performed when the Signaling Server software was

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installed. Refer to *Signaling Server Installation and Commissioning* () (NN43001-312) for information on configuring the browser for optimal performance of Element Manager.

Note: This procedure requires Service Pack 1 and Java Runtime environment.

Procedure 1
Launching Element Manager on VxWorks

Step	Action
1	Open the Web browser.
2	Enter the **Signaling Server Node IP address** in the Address Bar of the browser window and press **Enter** on the keyboard. ***Note:*** The ELAN network interface IP address can be required, instead of the Node IP address, to access the Element Manager login Web page in secure environments.
3	The Element Manager **Login** Web page opens (see Figure 1 "Element Manager Login Web page" (page 23)). ***Note:*** If a security certificate is correctly installed, and the usage rule set to *UserChoice*, the user has the option to log in using Secure mode. If the usage rule is set to *Always*, the user is redirected to the https site, and a warning message appears. For more information, see "Certificate Management" (page 333). **a** Enter a valid **User ID** and **Password** combination. ***Note:*** A valid User Id and Password combination is one that is defined on the Call Server. The IP Address of the Call Server appears in the **Call Server IP Address** field. **b** Click **Login**.

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Figure 1
Element Manager Login Web page

4 The **System Overview** Web page appears (see Figure 2 "Element Manager System Overview Web page" (page 23)).

--End--

Figure 2
Element Manager System Overview Web page

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Timeout after a period of inactivity

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

Navigation

The Element Manager navigator is located on the left side of the browser window as shown in Figure 3 "Element Manager navigator on Linux" (page 25).

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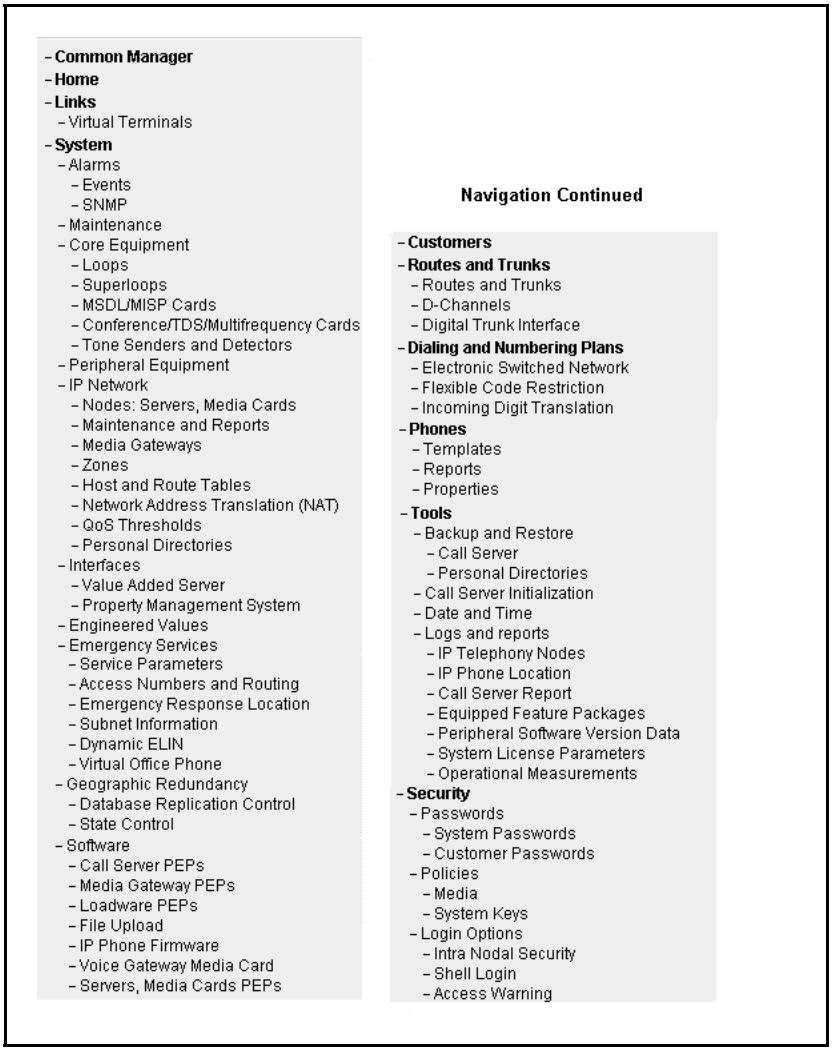
Figure 3
Element Manager navigator on Linux



Links in the Element Manager on Linux navigator are structured as follows:

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

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- Interfaces
- 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
- **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 more slowly.

When deployed on VxWorks, the Element navigator appears as shown in Figure 4 "Element Manager navigator on VxWorks" (page 27).

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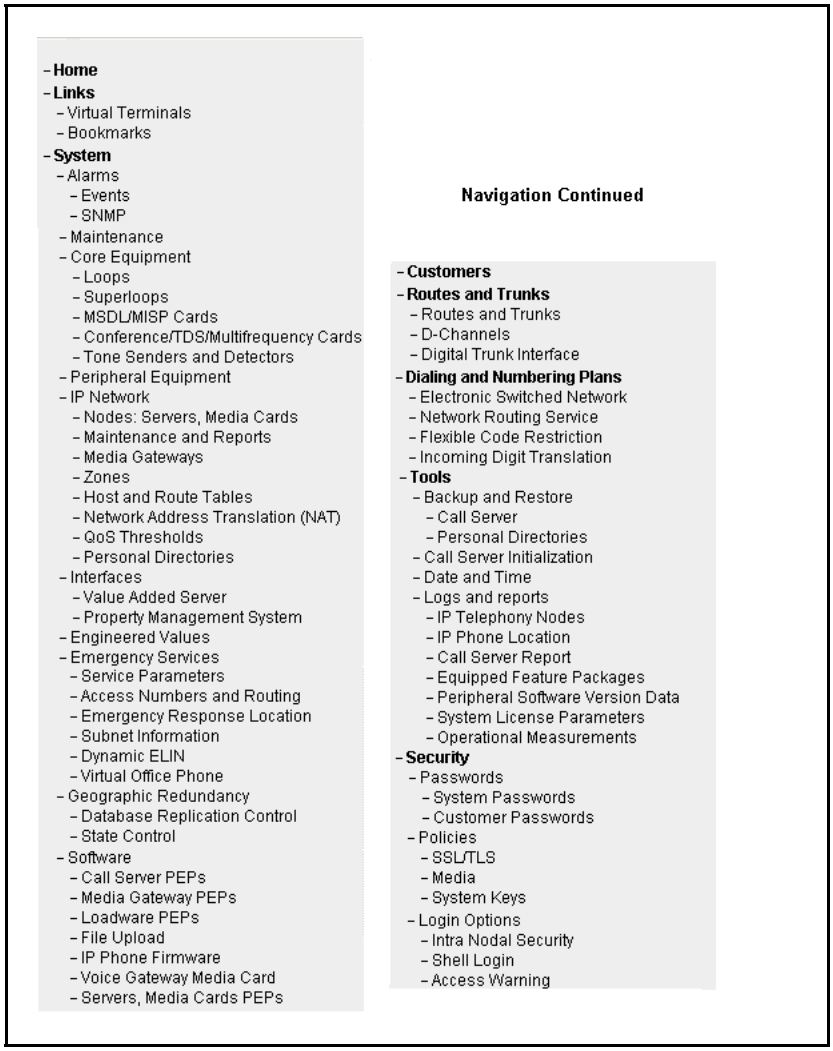
Figure 4
Element Manager navigator on VxWorks



Links in the Element Manager on VxWorks navigator are structured as follows:

- **Home**
- **Links**
  - Virtual Terminals
  - Bookmarks
- **System**
  - Alarms
  - Maintenance
  - Core Equipment
  - Peripheral Equipment

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- IP Network
- Interfaces
- 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
  - Network Routing Service
  - Flexible Code Restriction
  - Incoming Digit Conversion
- **Tools**
  - Backup and Restore
  - Call Server Initialization
  - Date and Time
  - Logs and Reports
- **Security**
  - Passwords
  - Policies
  - Login Options

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.

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- **Delete** — Deletes the item being edited or configured.
- **Cancel** — Discards the changes and returns to the appropriate configuration page.

Logging out

To log out of Element Manager, click the **Logout** link in the top right-hand corner.

WARNING

Do not close the browser window before logging out. The session remains active and the user will be unable to log in again within 30 minutes.

In the VxWorks environment, the command *userLogOut <username>* can be used in vxshell of the Signaling Server to logout the Element Manager user. This will release the active session for the user.

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Links

Contents

This section contains information on the following topics:

“Introduction” (page 31)

“Virtual Terminals” (page 31)

“Bookmarks” (page 34)

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 define and access the IP addresses of any character-based interfaces. On the Call Server, users can access context-sensitive online help, which provides detailed information on system prompts and error messages.

The Bookmarks feature allows access to any Web servers embedded within the components of the system. Users can also add links to any other useful Web sites.

> ***Note:*** The **Bookmarks** link is available only on Element Manager on VxWorks. When using the Enterprise Common Manager framework, the user accesses the link directly from the framework.

Virtual Terminals

Click the **Virtual Terminals** link to open the **Virtual Terminal Sessions** Web page as shown in Figure 5 "Virtual Terminal Sessions Web page" (page 32).

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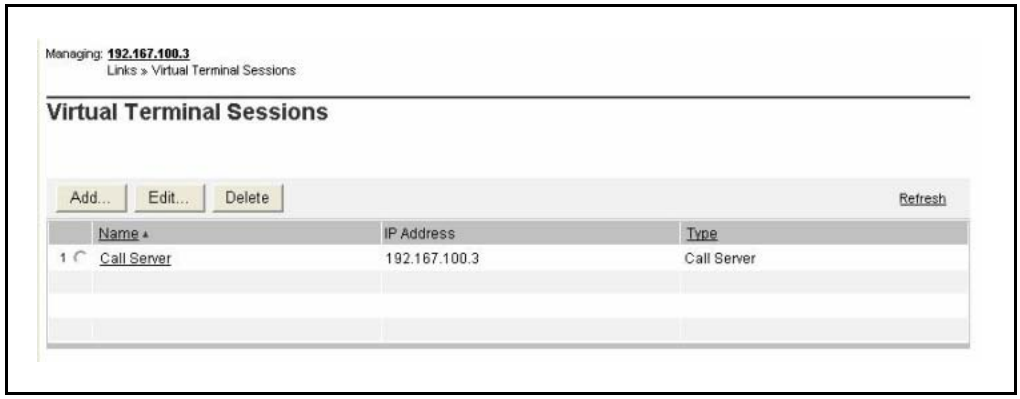
Figure 5
Virtual Terminal Sessions Web page



The **Virtual Terminal Sessions** Web page enables users to Telnet to any IP-based element in the system. By entering and saving the IP address to Telnet to a particular IP-based element, users can access those elements more quickly in the future.

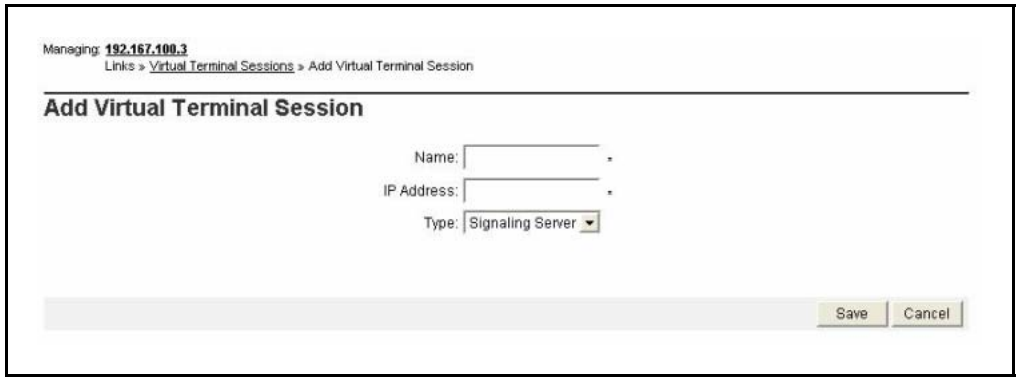
ATTENTION
Java Runtime Environment (JRE) version 1.5 must be installed for the Virtual Terminal Emulator to run properly

Follow the steps in Procedure 2 “Adding a Virtual Terminal session” (page 32) to add a Virtual Terminal Session .

Procedure 2
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 6 "Add Virtual Terminal Session Web page" (page 32).

Figure 6
Add Virtual Terminal Session Web page



2	Enter a **Name** and **IP Address** for the session.

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3 Select the **Type** from the drop-down list.

4 Click **Save** to save.

5 To cancel the session, click **Cancel**.

--End--

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 opens in a separate browser window.

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

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 3 “Editing an existing Virtual Terminal session” (page 33) to edit an existing Virtual Terminal session.

Procedure 3
Editing an existing Virtual Terminal session

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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.
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 4
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--

Bookmarks

The Bookmarks link is available only on Element Manager on VxWorks. When using the Enterprise Common Manager framework, the user accesses the link directly from the framework. Element Manager on VxWorks enables users to bookmark Web sites for easy access. Click the **Bookmarks** link to open the **Bookmarks** Web page, as shown in Figure 7 "Bookmarks Web page" (page 35).

Note: If there are no bookmarks created, a dialog box appears when selecting the Bookmarks link that states the following: *There are no bookmarks configured. Click on [OK] to add one.* Click **OK** to create a bookmark or click **Cancel** to return to the **System Overview** Web page.

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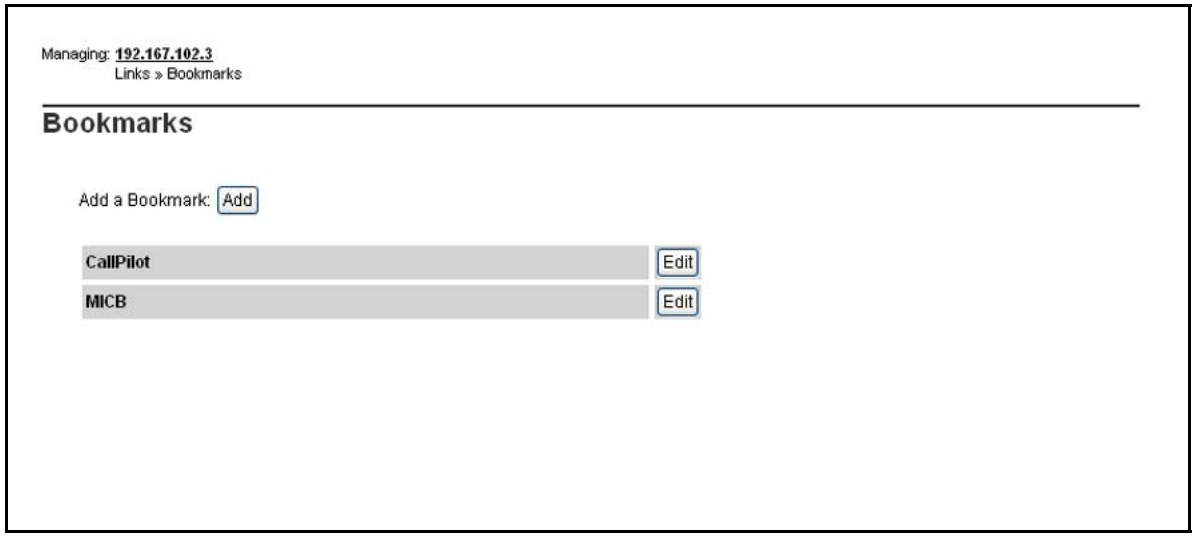
Figure 7
Bookmarks Web page



To create a new bookmark, follow the steps in Procedure 5 “Creating a new Bookmark” (page 35).

Procedure 5
Creating a new Bookmark

Step	Action
1	Click **Add**. The **Bookmark Property Configuration** Web page appears as shown in Figure 8 "Bookmark Property Configuration Web page" (page 36).

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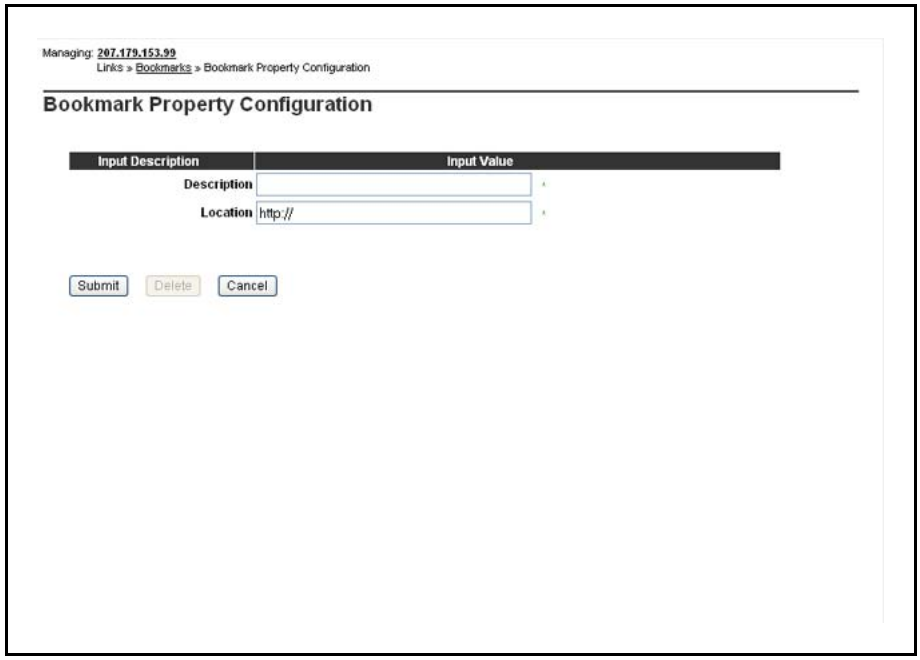
Figure 8
Bookmark Property Configuration Web page



2 Enter a **Description** and **Location** (the URL) of the Web site to be bookmarked.

3 Click **Submit** to enter the bookmark.

4 To cancel the session, click **Cancel**.

--End--

To access a bookmark that is already created, click the name of the bookmark on the **Bookmark** Web page. The Web site opens.

To edit the properties of an existing bookmark, follow the steps in Procedure 6 “Editing the properties of an existing Bookmark” (page 36).

Procedure 6
Editing the properties of an existing Bookmark

Step	Action
1	Click **Edit** The **Bookmark Property Configuration** window appears as shown in Figure 9 "Bookmark Property Configuration Web page - Edit" (page 37).

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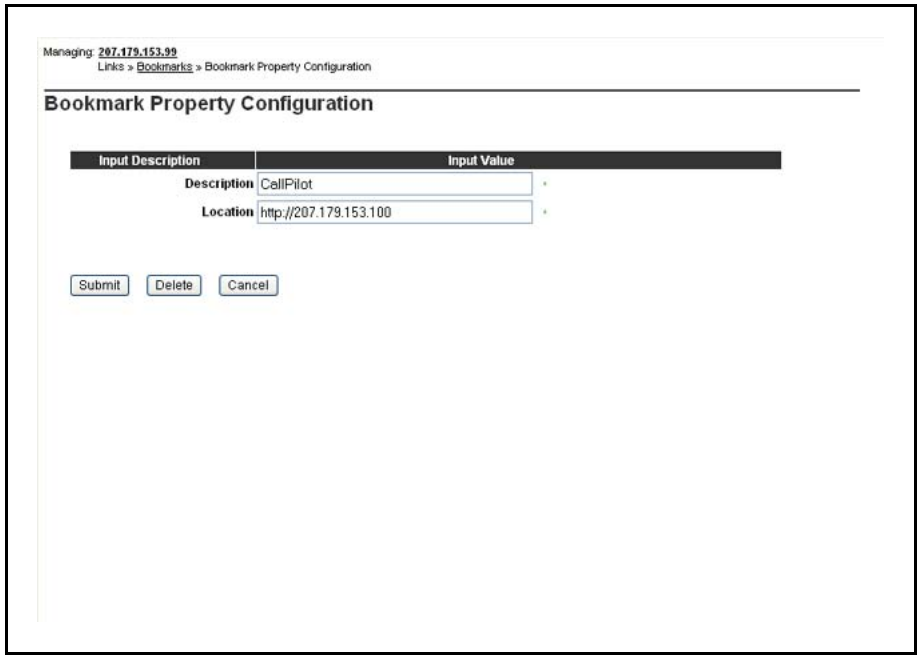
Figure 9
Bookmark Property Configuration Web page - Edit



2 Edit the **Description** and **Location** (URL) values.

3 Click **Submit** to record the changes.

4 Click **Delete** to remove the bookmark completely.

5 Click **Cancel** to disregard any changes made.

--End--

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System

Contents

This section contains information on the following topics:

"Introduction" (page 40)

"Maintenance" (page 46)

- "Application Module Link Diagnostics" (page 49)
- "Background Signaling and Switching Diagnostics" (page 52)
- "Call Trace Diagnostics" (page 53)
- "Clock Controller Diagnostics" (page 59)
- "Core Common Equipment Diagnostics" (page 60)
- "Core Input/Output Diagnostics" (page 64)
- "D-channel Diagnostics" (page 66)
- "D-Channel Expansion Diagnostics" (page 69)
- "Digital Trunk Diagnostics" (page 72)
- "Digital Trunk Maintenance Diagnostics" (page 75)
- "Emergency Services Diagnostics" (page 78)
- "Ethernet Diagnostics" (page 81)
- "Ethernet Quality of Service Diagnostics" (page 85)
- "Input/Output Diagnostics" (page 87)
- "Intergroup Switch and System Clock Generator Diagnostics" (page 90)
- "MSDL Diagnostics" (page 94)
- "Multifrequency Sender Diagnostics" (page 96)
- "Multifrequency Signaling Diagnostics" (page 99)
- "Network and Peripheral Equipment Diagnostics" (page 101)
- "Network and Signaling Diagnostics" (page 106)
- "TMDI Diagnostics" (page 108)
- "Tone and Digit Switch Diagnostics" (page 110)

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"Trunk Diagnostics" (page 112)
"Zone Diagnostics" (page 114)
"Loops (Common Equipment)" (page 116)
"Superloops" (page 118)
"MSDL/MSIP Cards" (page 120)
"Conference/TDS/Multifrequency Cards" (page 121)
"Tone Senders and Detectors" (page 121)

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.

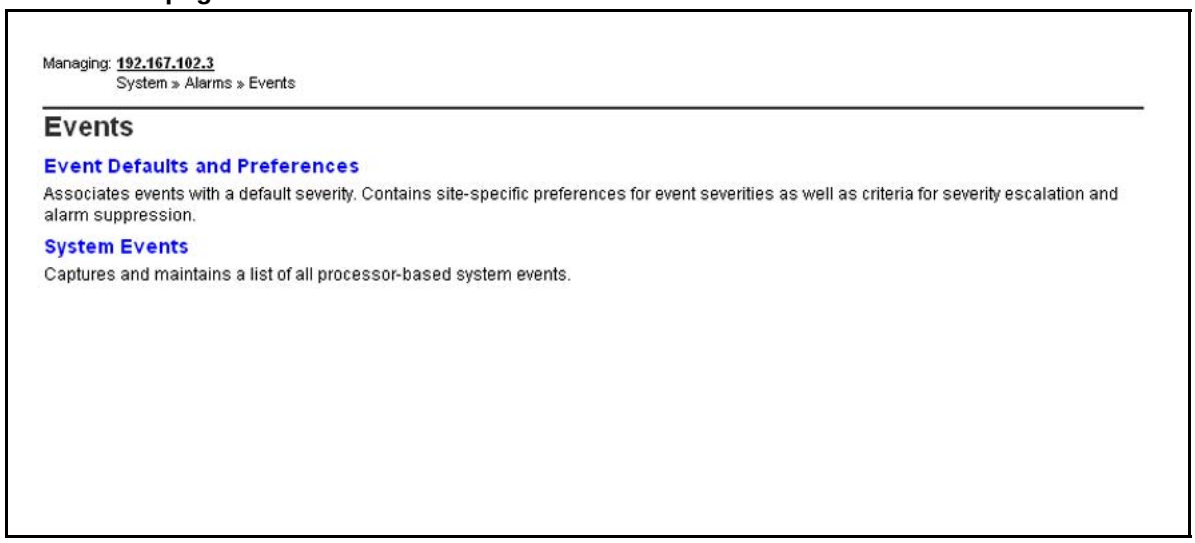
The following buttons appear on some or all of the System Web pages:

- **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 10 "Events Web page" (page 40).

Figure 10
Events Web page



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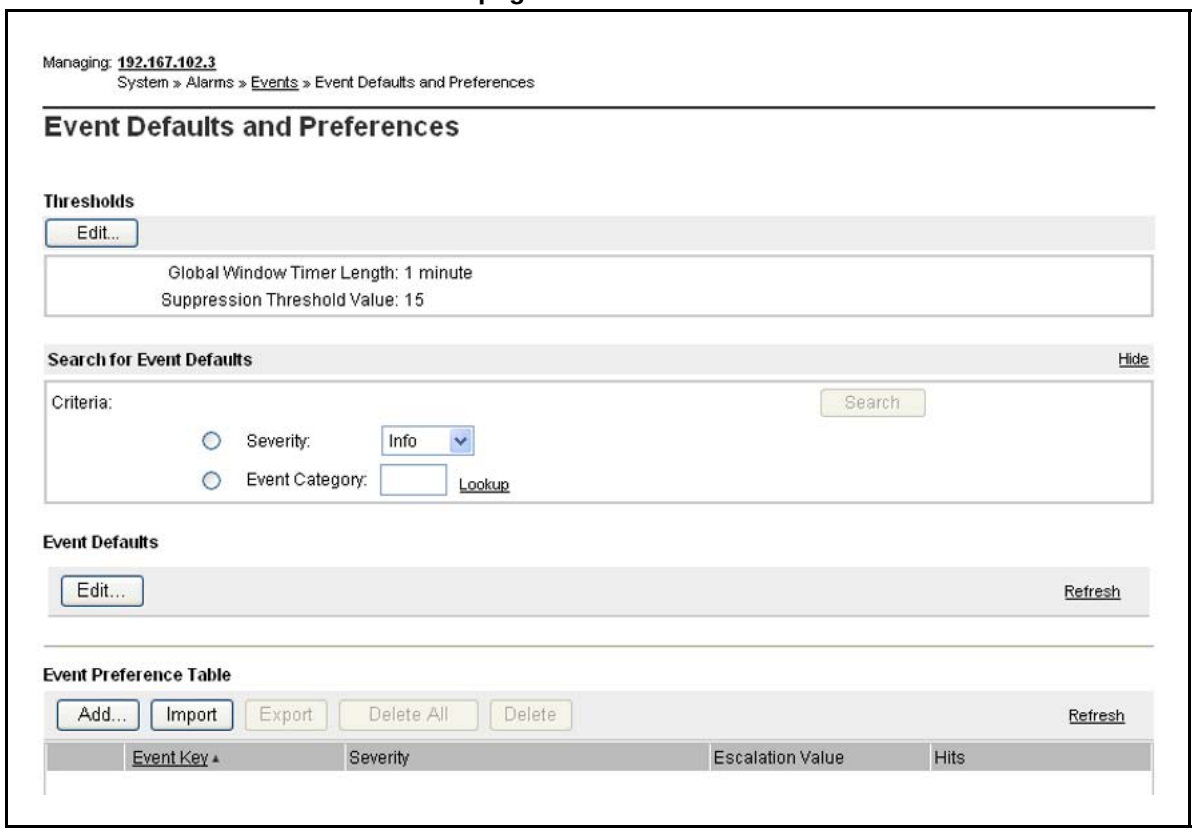
To display event default severity, event thresholds and site-specific event preferences, click the **Event Defaults and Preferences** link to open the **Event Defaults and Preferences** Web page as shown in Figure 11 "Event Defaults and Preferences Web page" (page 41).

Figure 11
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 12 "Edit Thresholds Web page" (page 42).

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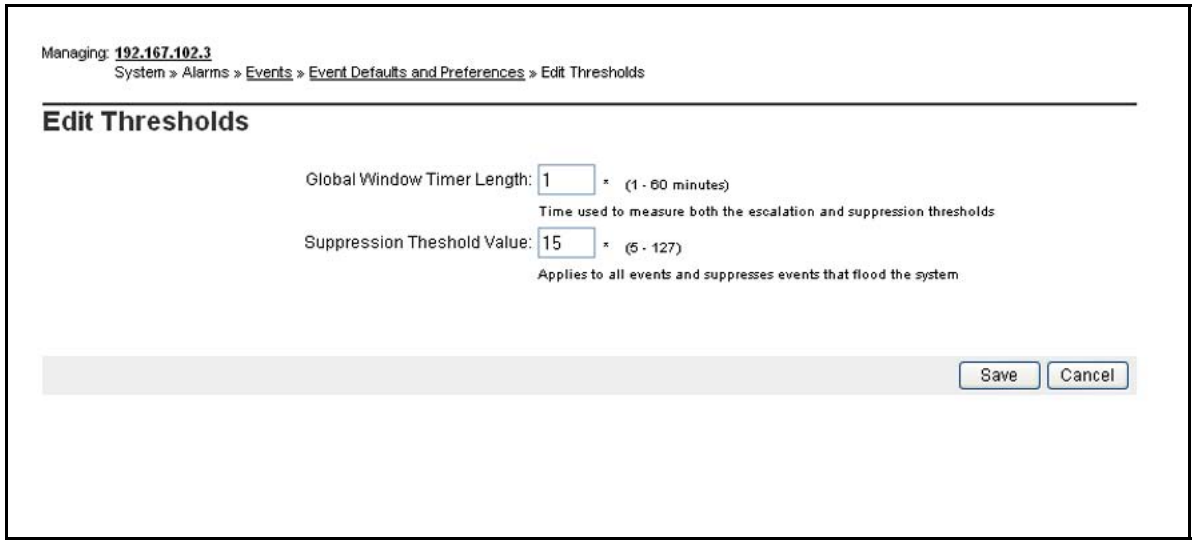
Figure 12
Edit Thresholds Web page



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 13 "System Events Web page" (page 43).

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Figure 13
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 opens.

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 7
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

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 opens as shown in Figure 14 "SNMP Configuration Web page" (page 45).

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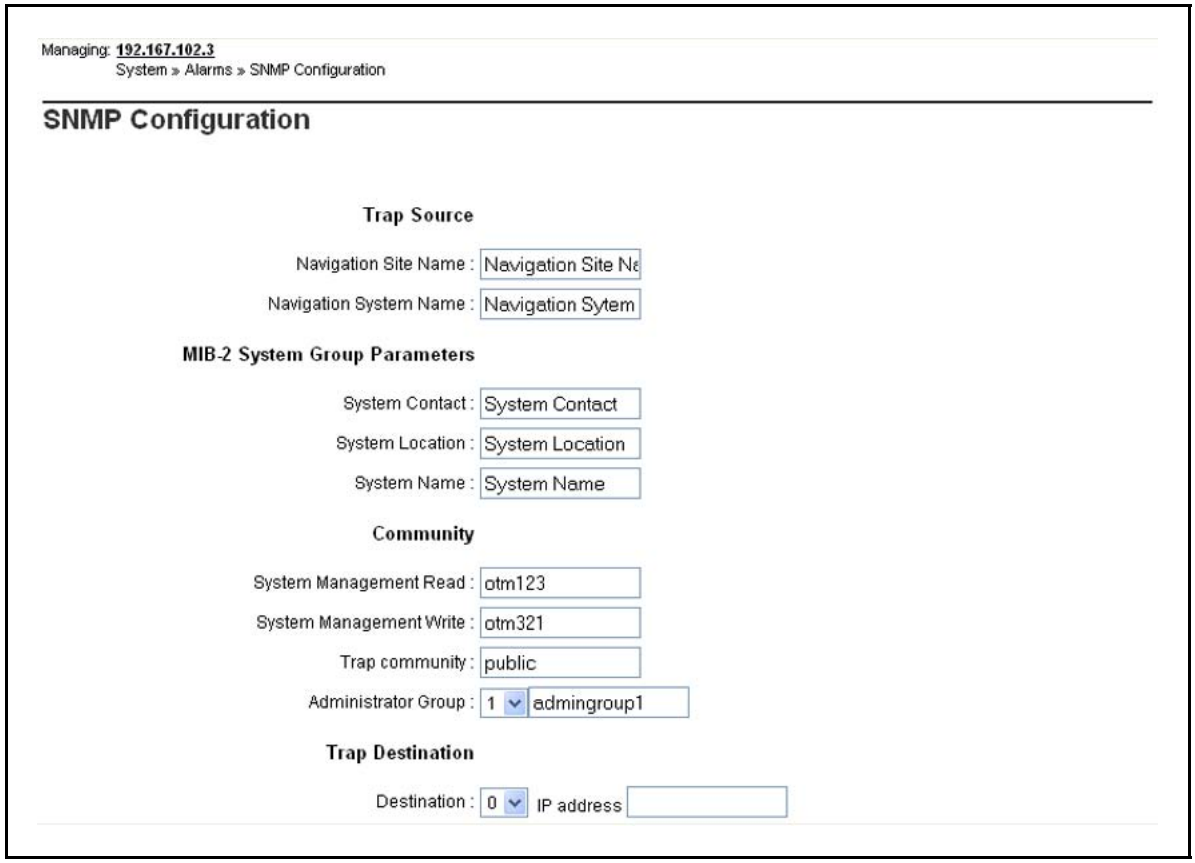
Figure 14
SNMP Configuration Web page



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

By entering information into the appropriate text boxes, the following tasks for SNMP can be performed:

- turn SNMP on and off by enabling or disabling traps
- trap destination IP addresses
- configure community name strings
- enable Call Server filtering
- enable Event Default Table (EDT), Event Preference Table (EPT), and alarm suppression thresholds

Note: Element Manager does not provide an SNMP alarm browser, so the TM alarm browser must be used when SNMP alarm collection is required.

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

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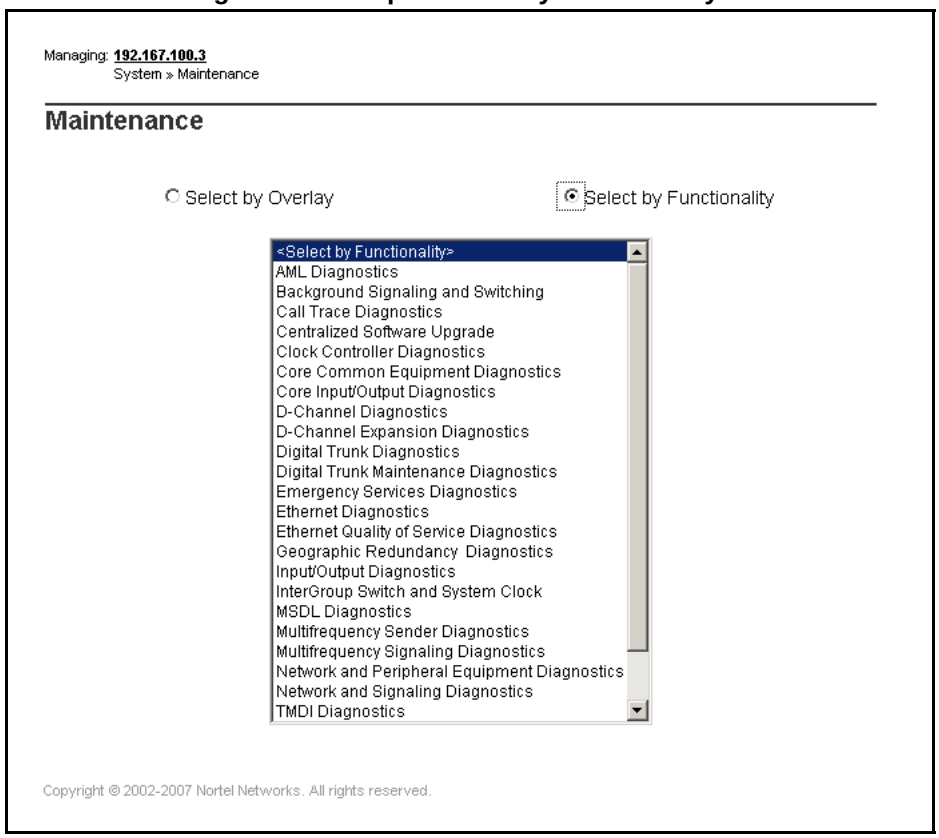
Maintenance

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 15 "Maintenance diagnostic tools presented by functionality" (page 46).

Figure 15
Maintenance diagnostic tools presented by functionality



The following tool options are available from this Web page:

- AML Diagnostics
- Background Signalling and Switching
- Call Trace Diagnostics
- Centralized Software Upgrade
- Clock Controller Diagnostics
- Core Common Equipment Diagnostics
- Core Input/Output Diagnostics
- D-Channel Diagnostics

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- 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 16 "Call Server diagnostic tools presented by overlay" (page 48):

- 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

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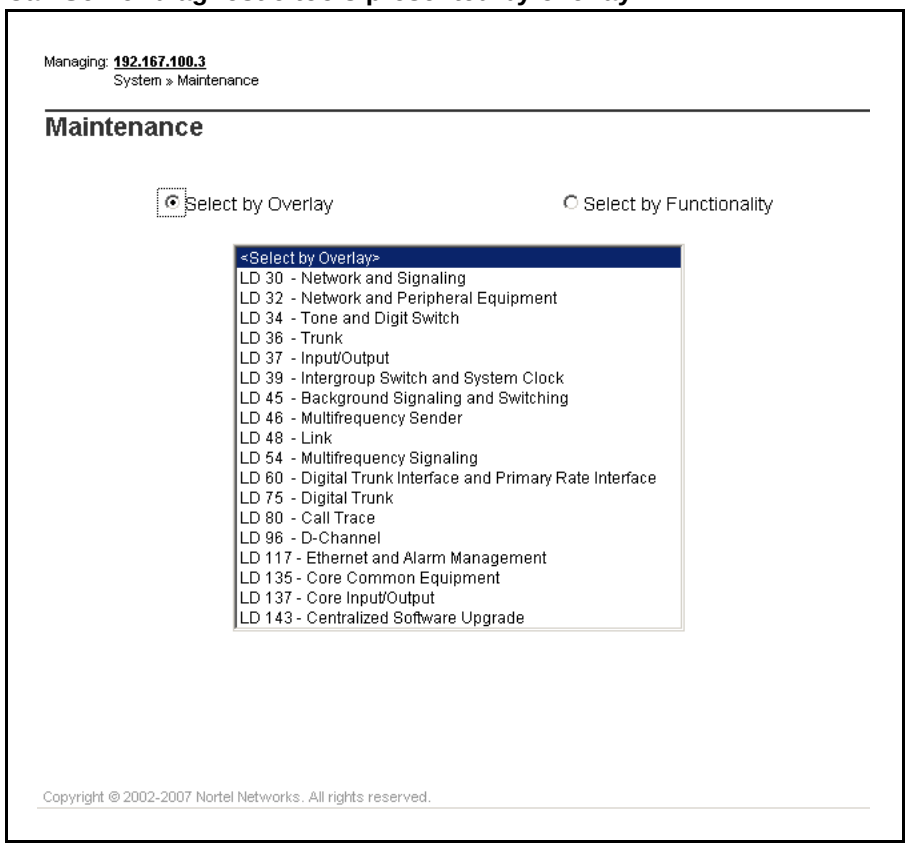
- LD 54 - Multifrequency Signaling
- LD 60 - Digital Trunk Interface and Primary Rate Interface
- LD 75 - Digital Trunk
- LD 80 - Call Trace
- LD 96 - D-Channel
- LD 117 - Ethernet and Alarm Management
- LD 135 - Core Common Equipment
- LD 137 - Core Input/Output
- LD 143 - Centralized Software Upgrade

Figure 16
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 17 "Select Group drop-down list" (page 49).

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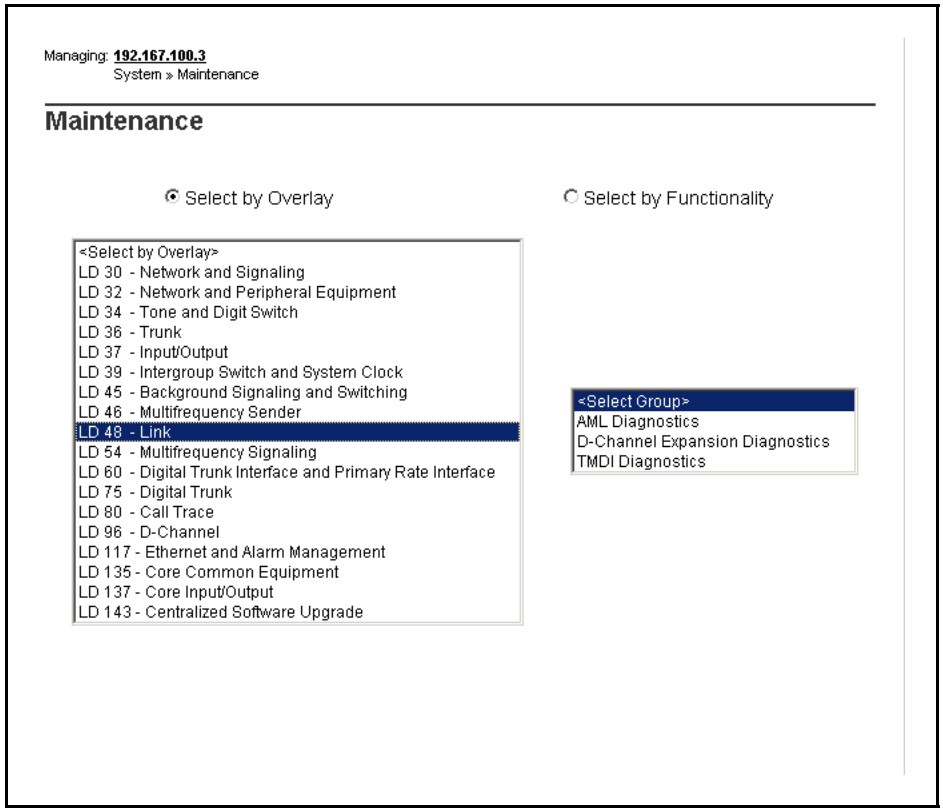
Figure 17
Select Group drop-down list



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

The following sections provide information on 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 18 "AML Diagnostics Web page" (page 50).

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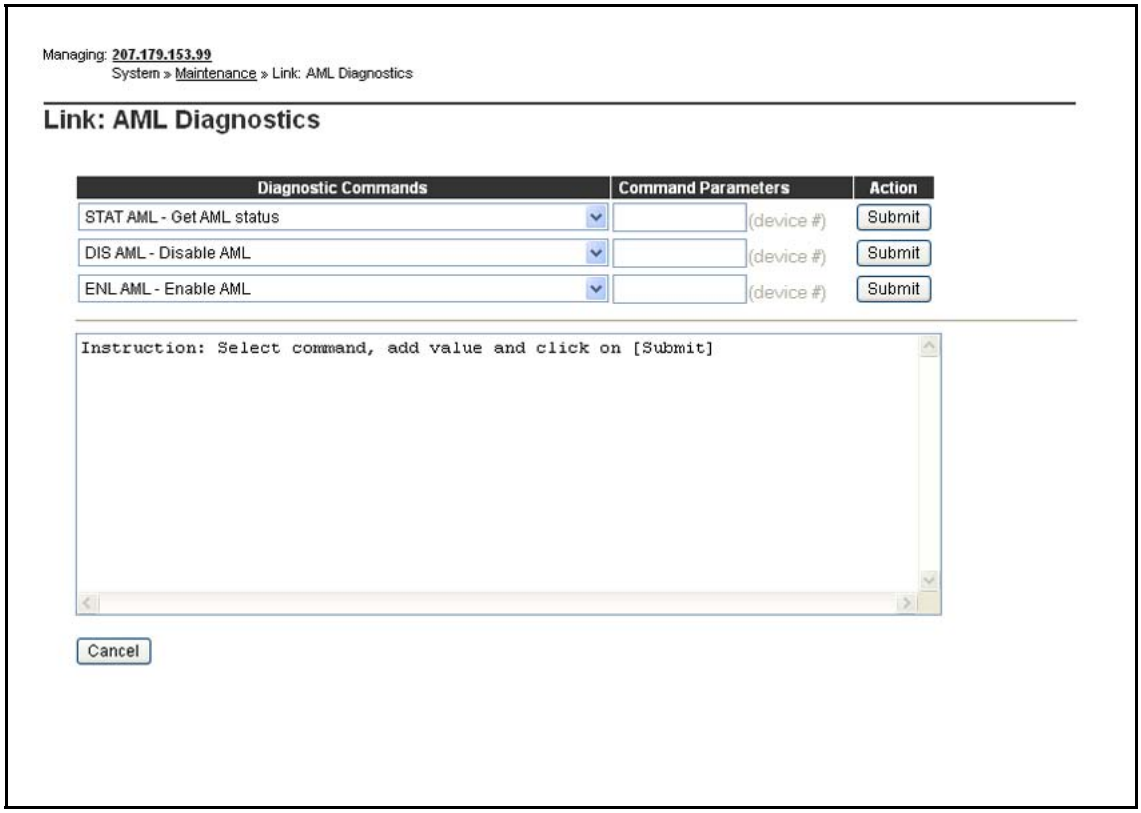
Figure 18
AML Diagnostics Web page



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 8 “Performing AML commands” (page 50).

Procedure 8
Performing AML commands

Step	Action
1	Select one of the following commands from the first **Commands** drop-down 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 9 “Disabling AML ” (page 51).

Procedure 9
Disabling AML

Step	Action
1	Select one of the following commands from the second **Commands** drop-down 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 10 “Enabling AML” (page 51).

Procedure 10
Enabling AML

Step	Action
1	Select one of the following commands from the third **Commands** drop-down 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**.

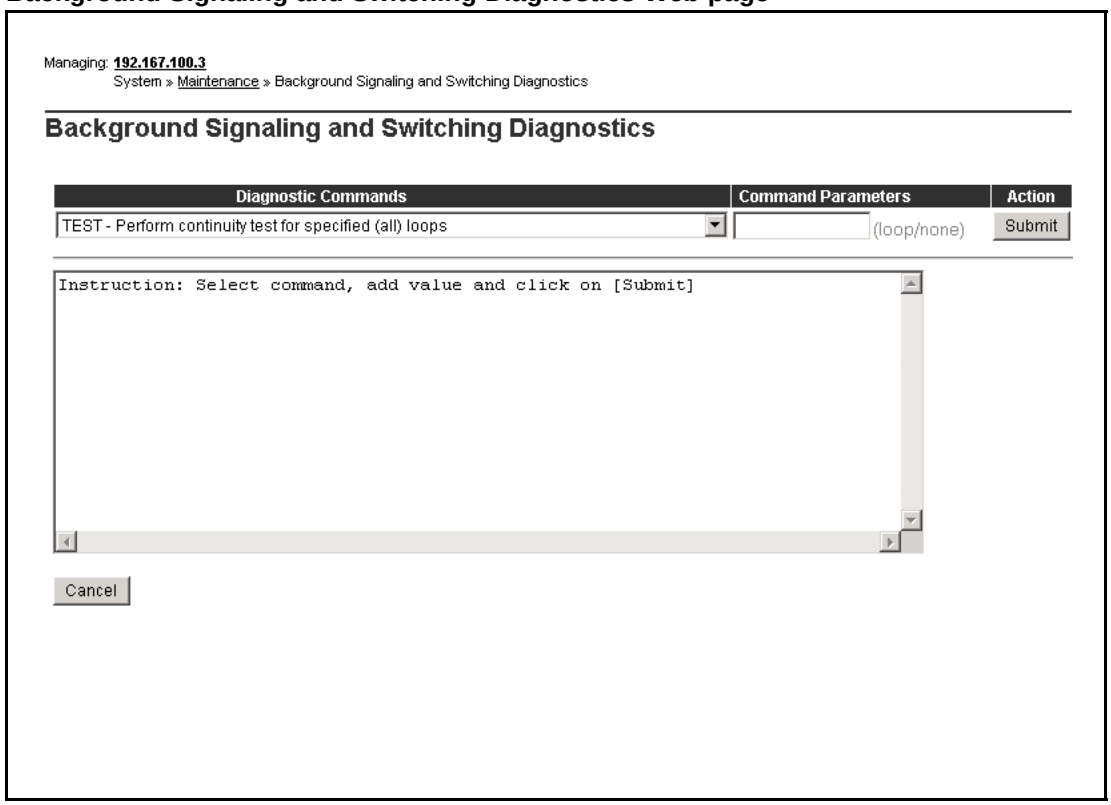
--End--

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 19 "Background Signaling and Switching Diagnostics Web page" (page 52).

Figure 19
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 11
Performing the TEST command

Step	Action
1	Select the **Diagnostic Command** from the drop-down 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 20 "Call Trace Diagnostics Web page" (page 54).

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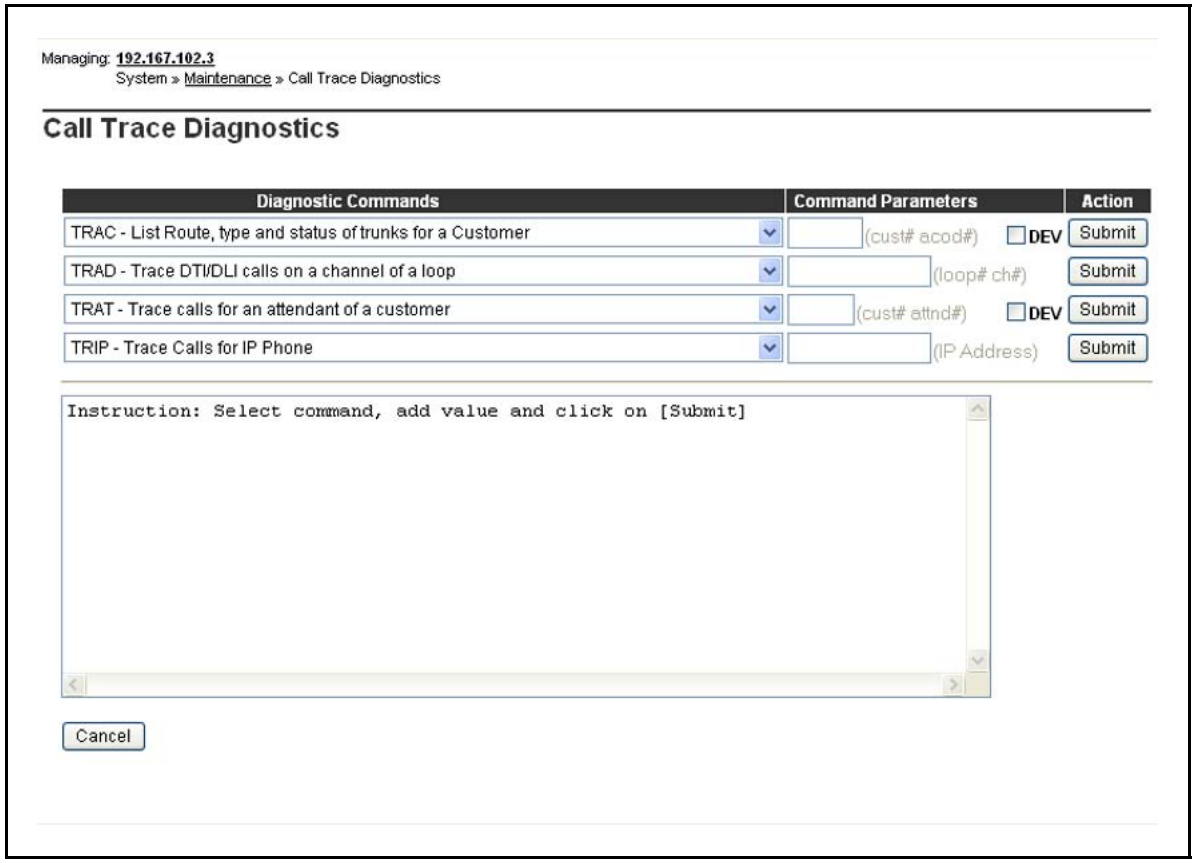
Figure 20
Call Trace Diagnostics Web page



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
- TRAC commands
- TRIP commands

To perform TRAC commands, follow the steps in Procedure 12 “Performing TRAC commands” (page 55).

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

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Procedure 12
Performing TRAC commands

Step	Action
1	Select one of the following commands from the first **Commands** drop-down 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 13 "Performing TRAD commands" (page 55).

Procedure 13
Performing TRAD commands

Step	Action
1	Select the following command from the second **Commands** drop-down 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 14 "Performing TRAT commands" (page 56).

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

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Procedure 14
Performing TRAT commands

Step	Action
1	Select one of the following commands from the third **Commands** drop-down 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 15 “Performing TRIP commands” (page 56).

Procedure 15
Performing TRIP commands

Step	Action
1	Select the following command from the fourth **Commands** drop-down 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 21 "Centralized Software Upgrade Web page" (page 57).

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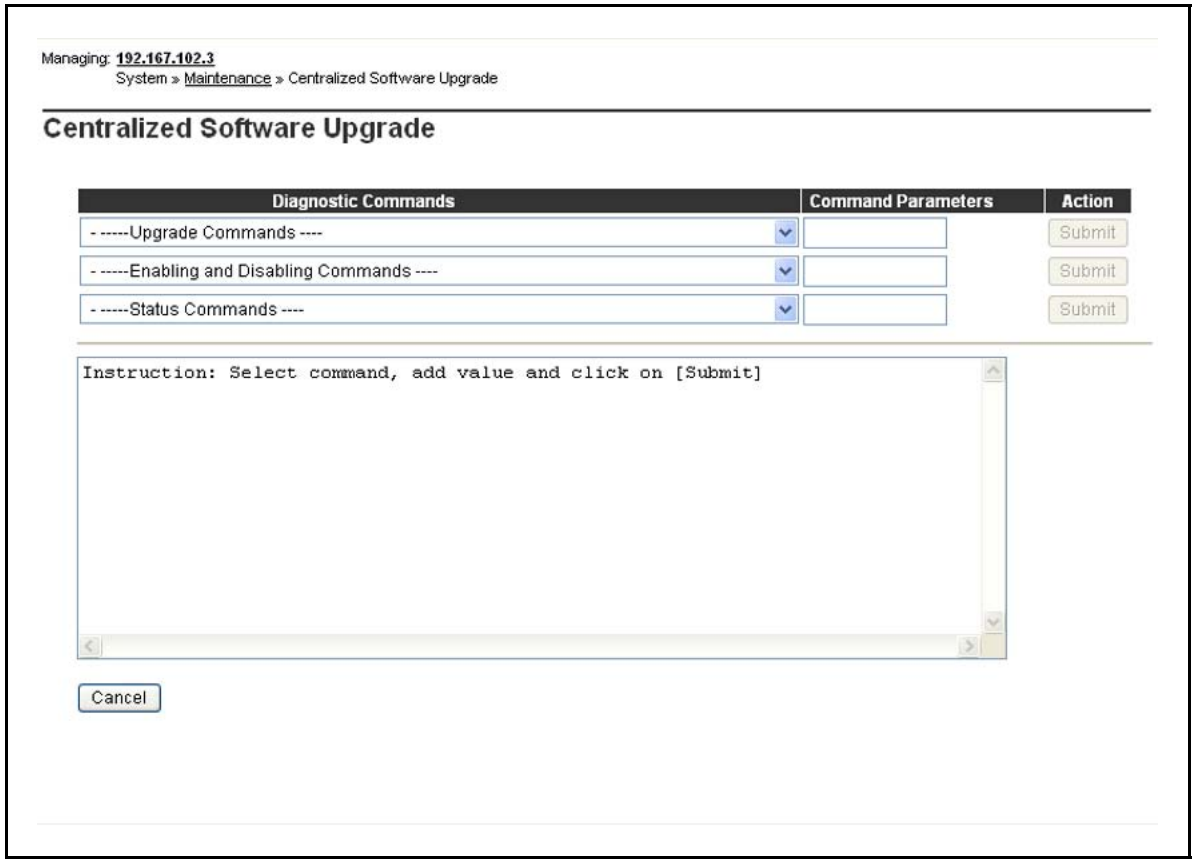
Figure 21
Centralized Software Upgrade Web page



To perform Upgrade commands, follow the steps in Procedure 16 "Performing Upgrade commands" (page 57).

Procedure 16
Performing Upgrade commands

Step	Action
1	Select the following commands from the first **Commands** drop-down list: **a** UPGMG - Upgrade IPMG **b** UPGMG ALL - Upgrade ALL IPMGs **c** UPGMGCOMMIT - Initial Reboot of the MGC based IPMG after upgrade **d** UPGMCOMMIT ALL - Initial Reboot of all the MGC based 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 17 “Performing Enabling and Disabling commands” (page 58).

Procedure 17
Performing Enabling and Disabling commands

Step	Action
1	Select the following commands from the second **Commands** drop-down 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 drop-down menu.
3	Click **Submit**.

--End--

To perform Status commands, follow the steps in Procedure 18 “Performing Status commands” (page 58).

Procedure 18
Performing Status commands

Step	Action
1	Select the following commands from the third **Commands** drop-down 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.

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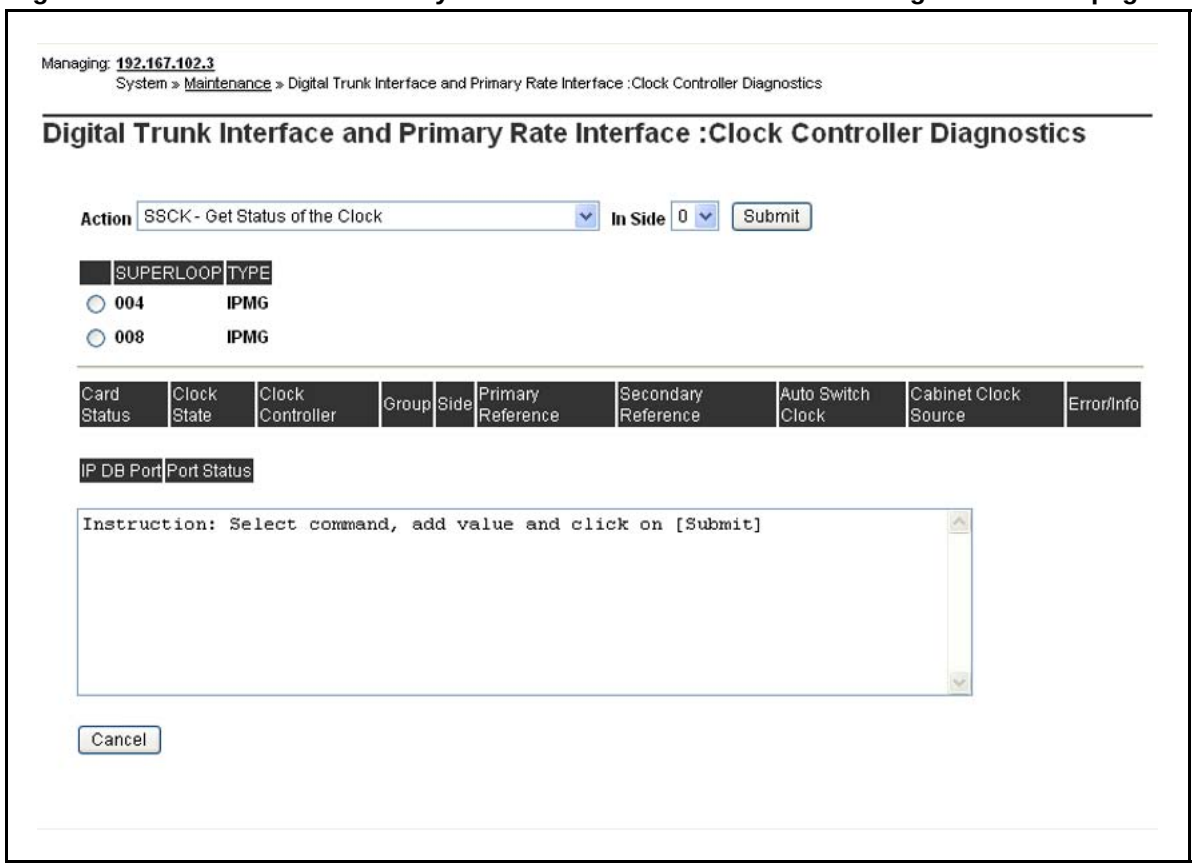
3 Click **Submit**.

--End--

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 22 "Digital Trunk Interface and Primary Rate Interface: Clock Controller Diagnostics Web page" (page 59).

Figure 22
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.

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To perform Clock Controller maintenance activities using this Web page follow the steps in Procedure 19 “Performing Clock Controller maintenance activities” (page 60).

Procedure 19
Performing Clock Controller maintenance activities

Step	Action
1	Select one of the following commands from the **Action** drop-down 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** drop-down 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 23 "Core Common Equipment Diagnostic Web page" (page 61).

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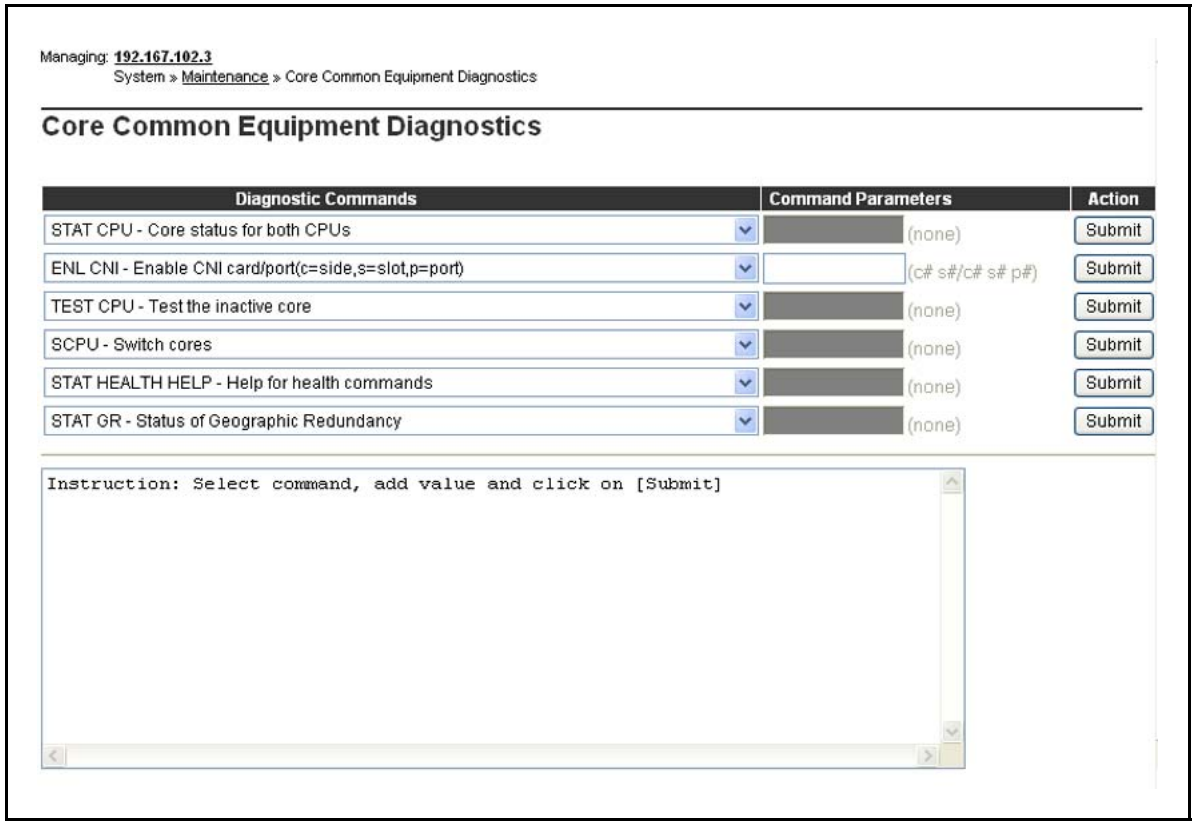
Figure 23
Core Common Equipment Diagnostic Web page



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 20 “Performing Core Common Equipment Status commands” (page 61).

Procedure 20
Performing Core Common Equipment Status commands

Step	Action
1	Select one of the following commands from the first **Commands** drop-down 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 21 “Performing Core Common Equipment CNI commands ” (page 62).

Procedure 21
Performing Core Common Equipment CNI commands

Step	Action
1	Select one of the following commands from the second **Commands** drop-down 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 22 “Performing Core Common Equipment test commands” (page 62).

Procedure 22
Performing Core Common Equipment test commands

Step	Action
1	Select one of the following commands from the third **Commands** drop-down 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 23 “Performing Core Common Equipment miscellaneous commands” (page 63).

Procedure 23
Performing Core Common Equipment miscellaneous commands

Step	Action
1	Select one of the following commands from the fourth **Commands** drop-down 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 24 “Performing Core Common Equipment status health commands” (page 63).

Procedure 24
Performing Core Common Equipment status health commands

Step	Action
1	Select one of the following commands from the fifth **Commands** drop-down 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 25
Performing Core Common Equipment Geographic Redundancy commands

Step	Action
1	Select one of the following commands from the sixth **Commands** drop-down 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 24 "Core Input/Output Diagnostics Web page" (page 65).

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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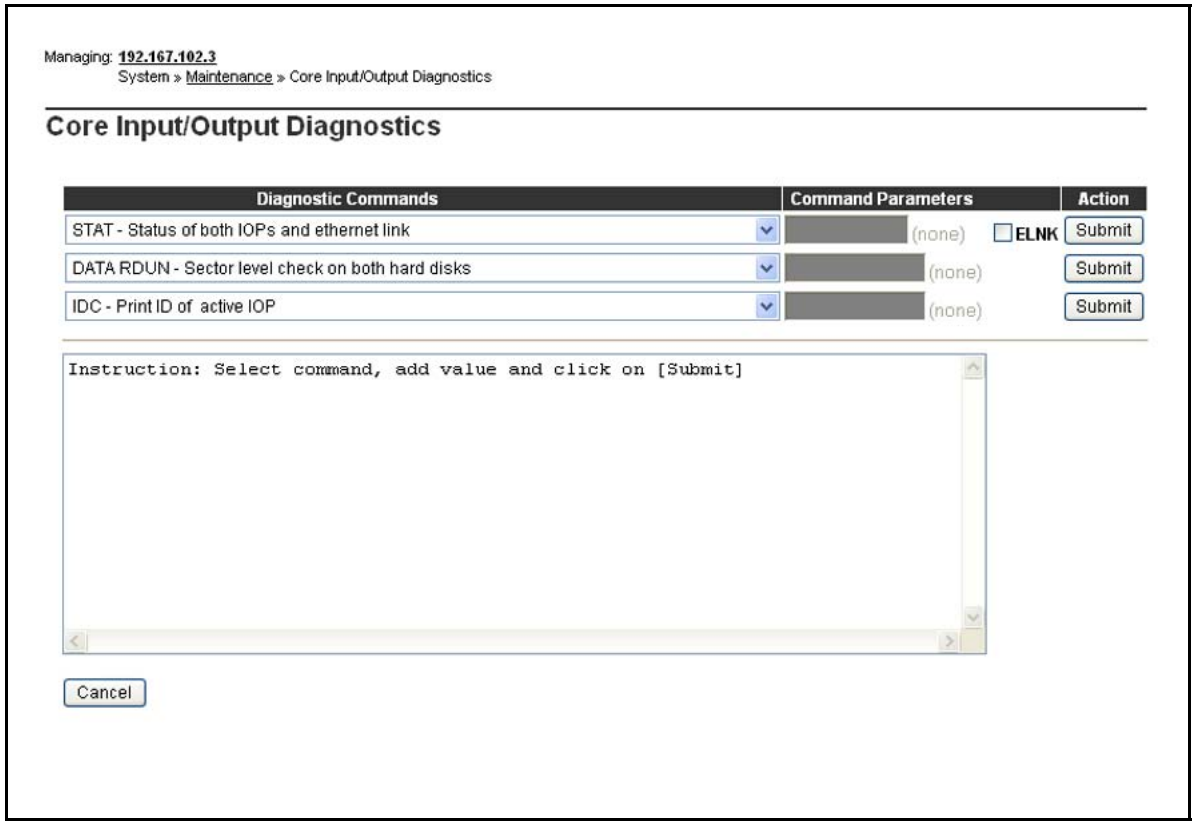
Figure 24
Core Input/Output Diagnostics Web page



To perform diagnostic commands using this Web page, follow the steps in Procedure 26 “Performing Core Input/Output diagnostic commands” (page 65).

Procedure 26
Performing Core Input/Output diagnostic commands

Step	Action
1	Use the first **Commands** drop-down 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** drop-down 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** drop-down list to perform the following diagnostic activities:

a IDC - Print IDs of both CMDUs and active IOP

b SDID - Display security device information

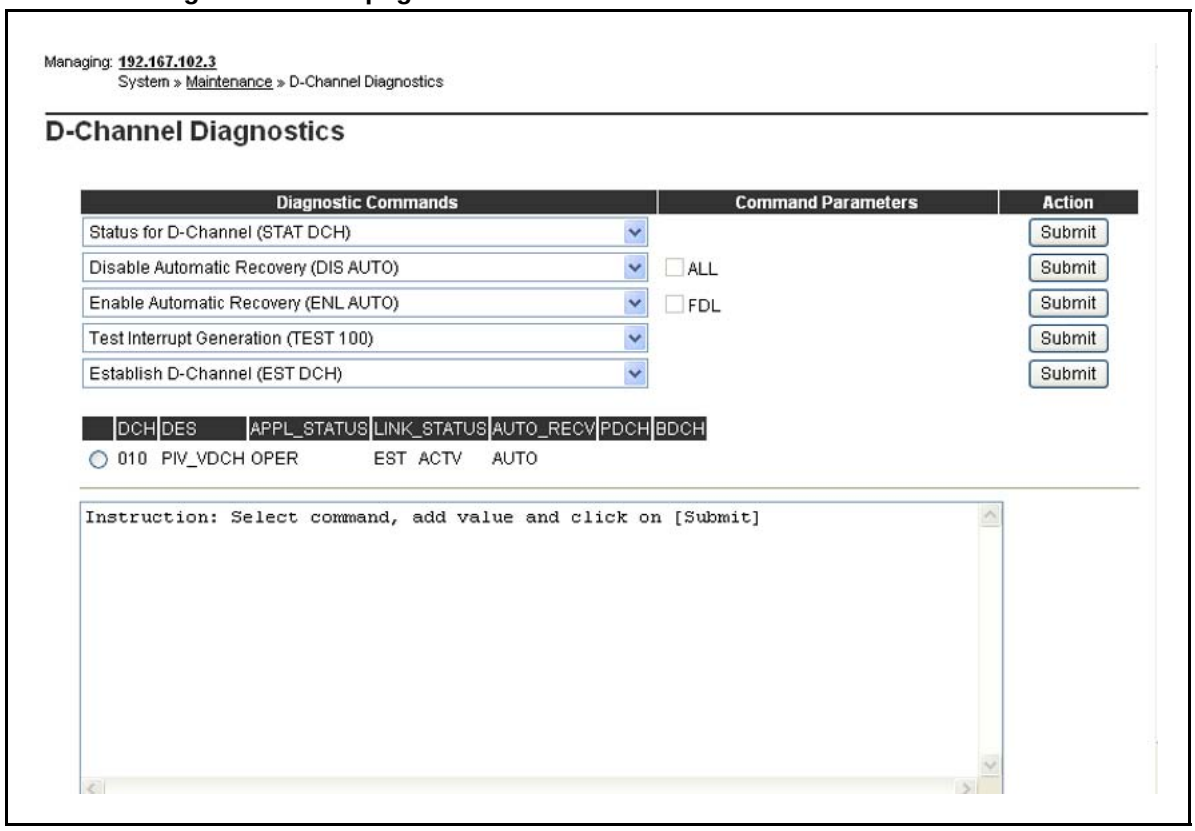
6 Click **Submit**.

--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 25 "D-channel Diagnostics Web page" (page 66).

Figure 25
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 27 “Performing D-channel status commands” (page 67).

Procedure 27
Performing D-channel status commands

Step	Action
1	Select one of the following commands from the first **Commands** drop-down 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 28 “Performing D-channel disable commands” (page 67).

Procedure 28
Performing D-channel disable commands

Step	Action
1	Select one of the following commands from the second **Commands** drop-down 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 29 “Performing D-channel enable commands” (page 68).

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Procedure 29
Performing D-channel enable commands

Step	Action
1	Select one of the following commands from the third **Commands** drop-down 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 30 “Performing D-channel test commands” (page 68).

Procedure 30
Performing D-channel test commands

Step	Action
1	Select one of the following commands from the fourth **Commands** drop-down 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 31 “Performing D-channel commands” (page 69).

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Procedure 31
Performing D-channel commands

Step	Action
1	Select one of the following commands from the fifth **Commands** drop-down 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 26 "Link: D-Channel Expansion Diagnostics Web page" (page 70).

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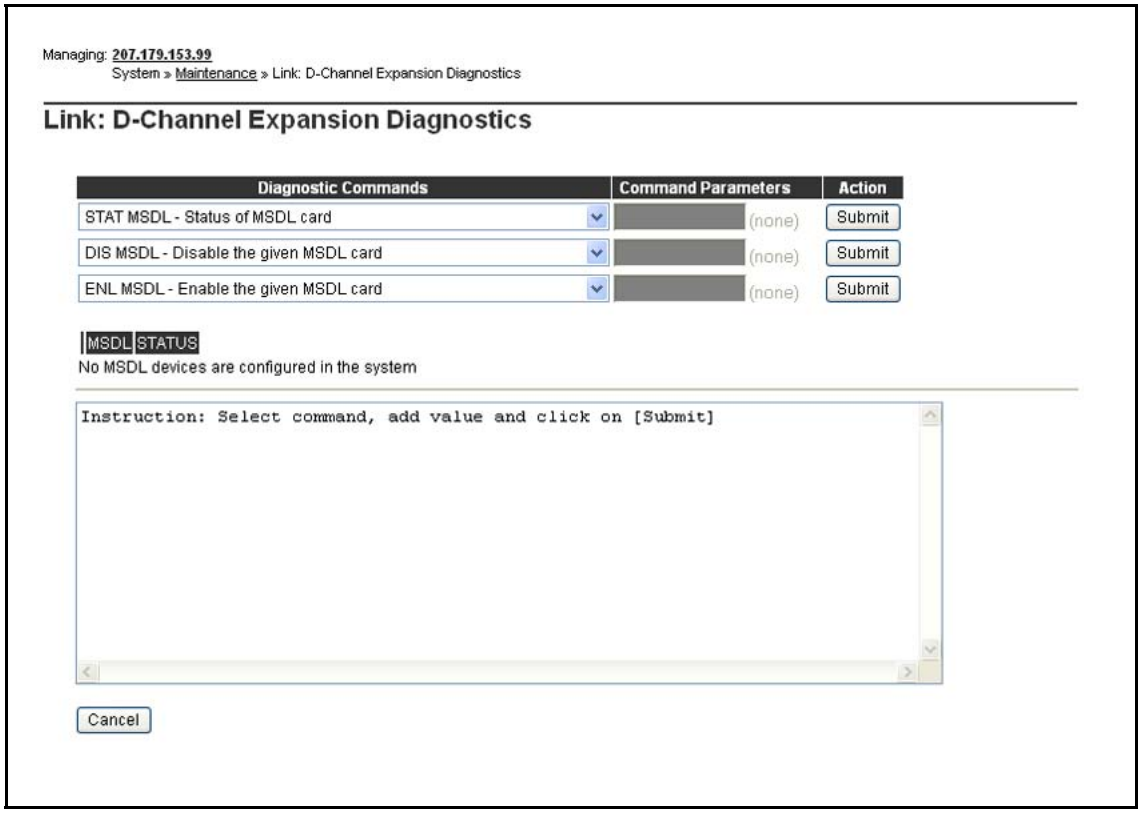
Figure 26
Link: D-Channel Expansion Diagnostics Web page



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 32 “Performing D-channel Expansion MSDL diagnostic commands” (page 70).

Procedure 32
Performing D-channel Expansion MSDL diagnostic commands

Step	Action
1	Select one of the following commands from the first **Commands** drop-down 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 33 “Performing D-channel Expansion disable commands” (page 71).

Procedure 33
Performing D-channel Expansion disable commands

Step	Action
1	Select one of the following commands from the second **Commands** drop-down 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 34 “Performing D-channel Expansion enable commands” (page 71).

Procedure 34
Performing D-channel Expansion enable commands

Step	Action
1	Select one of the following commands from the third **Commands** drop-down 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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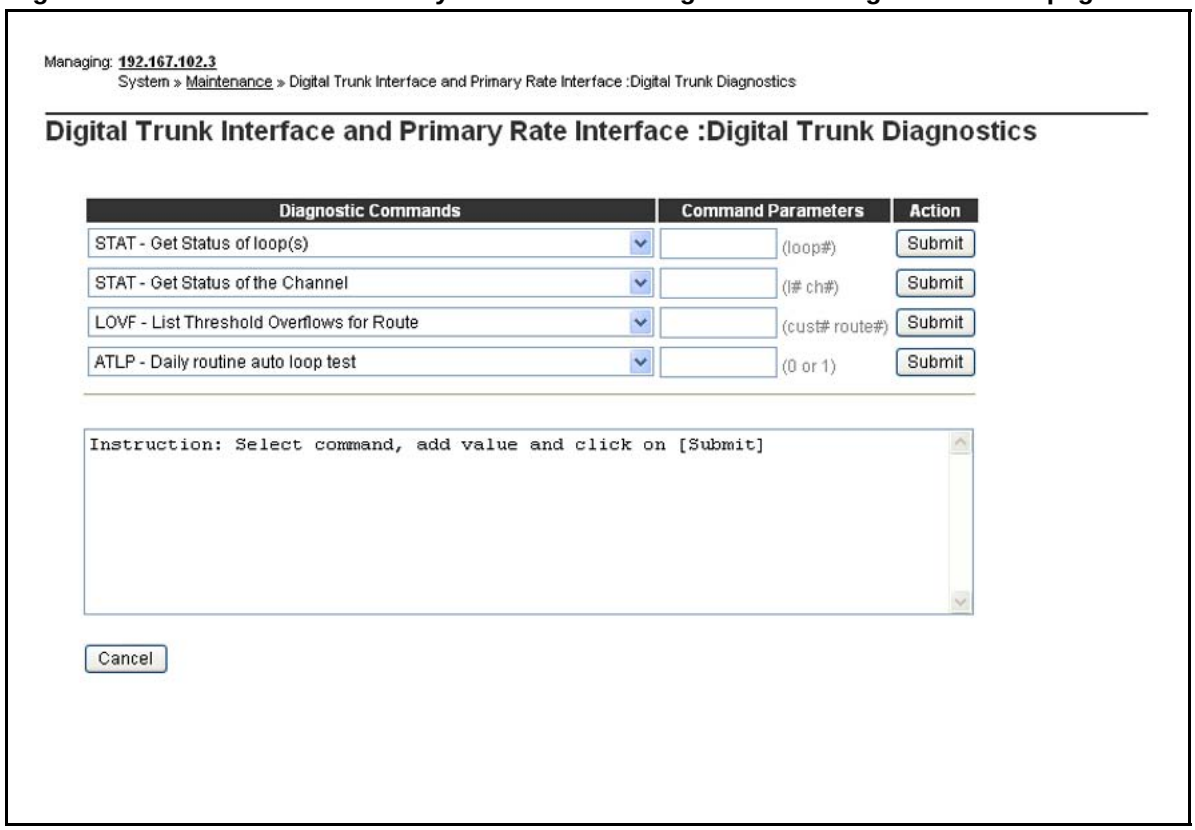
2 Click **Submit**.

--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 27 "Digital Trunk Interface and Primary Rate Interface: Digital Trunk Diagnostics Web page" (page 72).

Figure 27
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 drop-down 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 35 “Performing maintenance activities on a Digital Trunk Card” (page 73).

Procedure 35
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 36 “Performing maintenance activities on a Channel” (page 73).

Procedure 36
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 37 “Performing maintenance activities on a Digital Trunk Route” (page 74).

Procedure 37
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 38 “Performing maintenance activities on a card” (page 74).

Procedure 38
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.

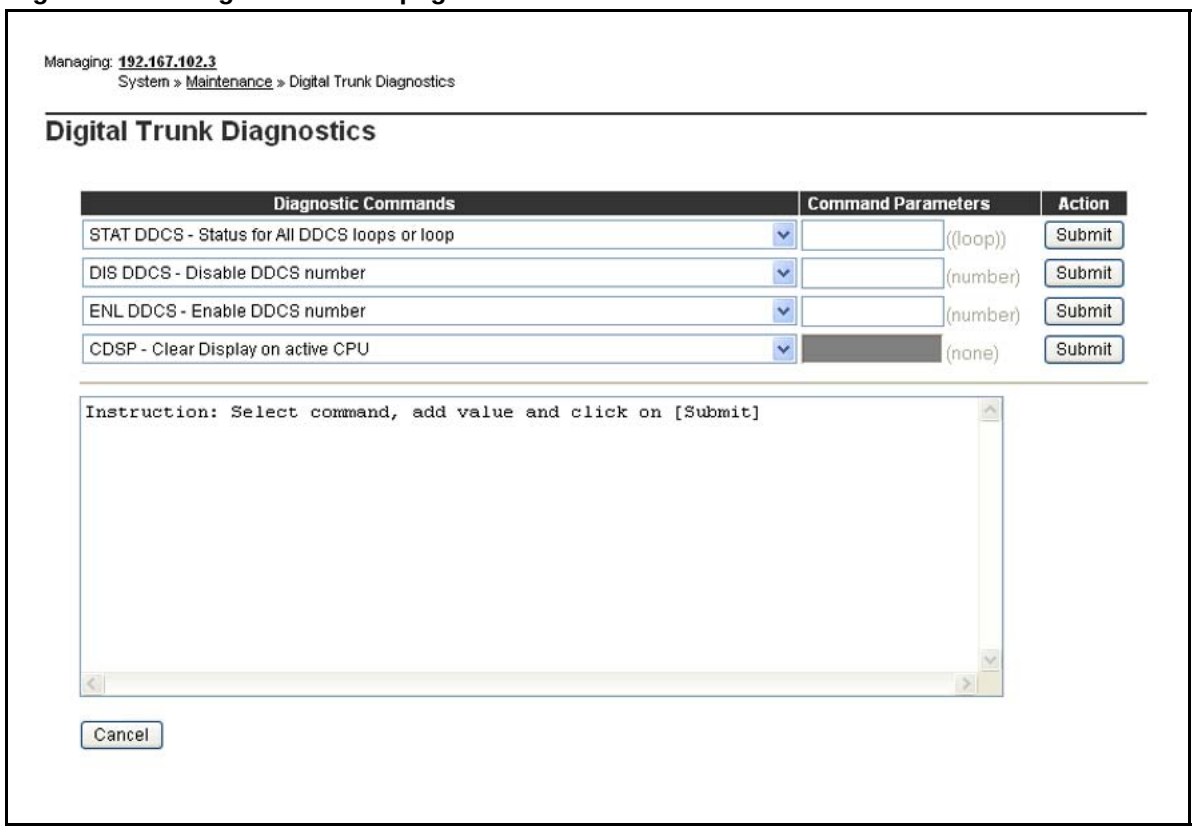
3 Click **Submit**.

--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 28 "Digital Trunk Diagnostics Web page" (page 75).

Figure 28
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 on a digital trunk using this Web page, follow the steps in Procedure 39 “Performing status commands on a digital trunk” (page 76).

Procedure 39
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 40 “Performing disable commands on a digital trunk” (page 76).

Procedure 40
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 41 “Performing enable commands on a digital trunk” (page 77).

Procedure 41
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 42 “Performing miscellaneous commands on a digital trunk” (page 78).

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Procedure 42
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 29 "Emergency Services Diagnostics Web page" (page 79).

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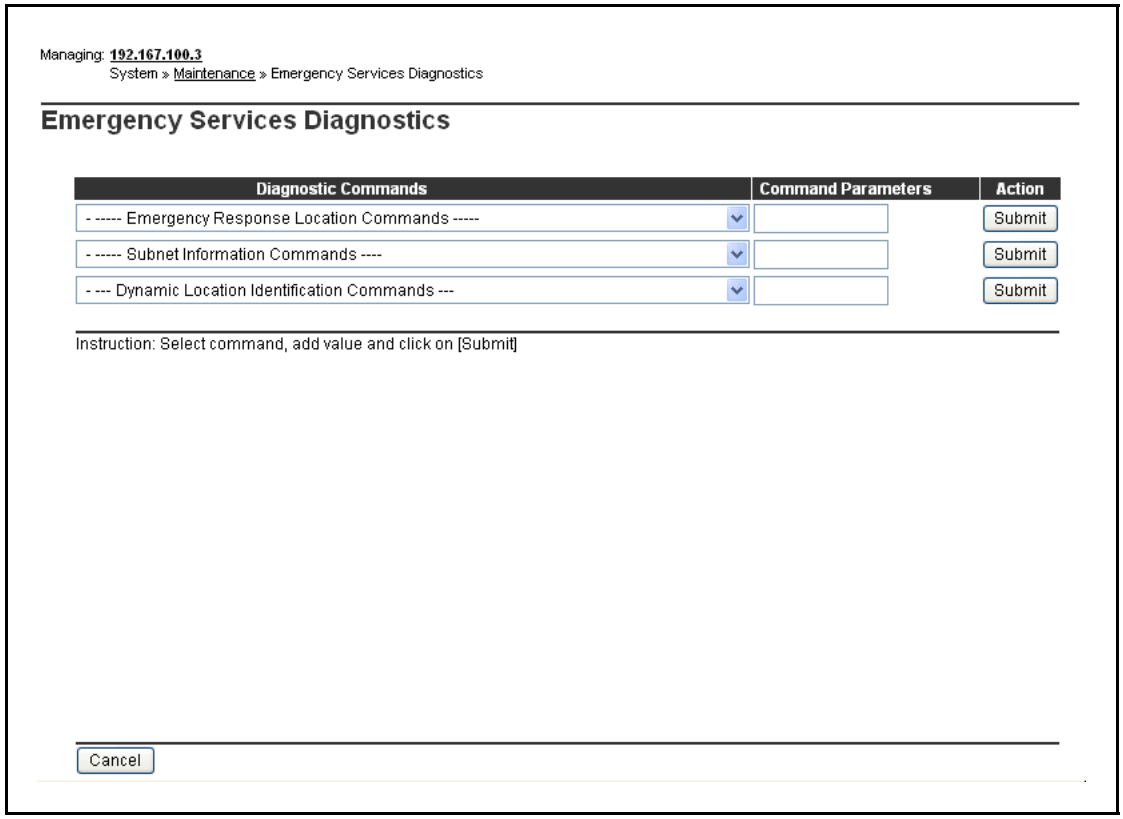
Figure 29
Emergency Services Diagnostics Web page



To perform Emergency Response Location commands using this Web page, follow the steps in Procedure 43 “Performing Emergency Response Location commands” (page 79).

Procedure 43
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--

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To perform Subnet Information commands using this Web page, follow the steps in Procedure 44 “Performing Subnet Information commands” (page 80).

Procedure 44
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--

To perform Dynamic Location Identification commands using this Web page, follow the steps in Procedure 45 “Performing Dynamic Location Identification commands” (page 80).

Procedure 45
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--

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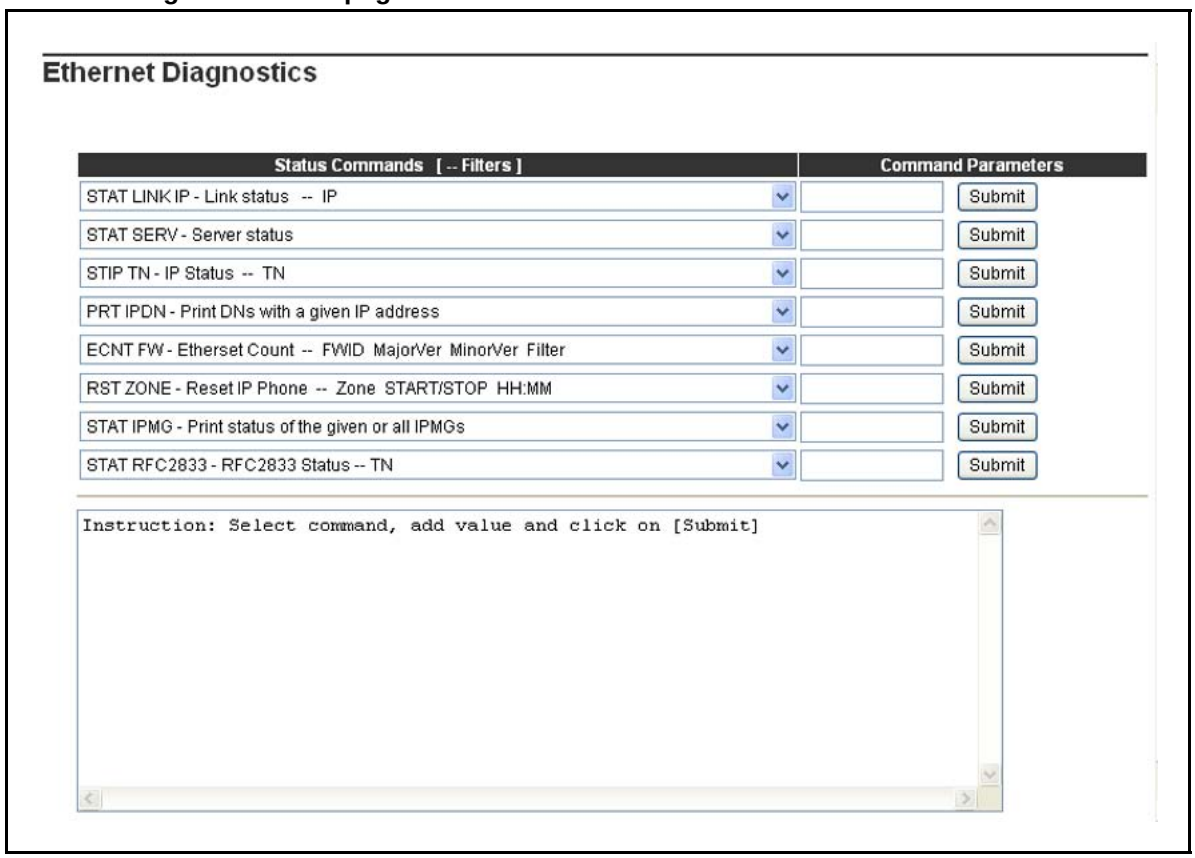
Ethernet Diagnostics

Click the **Ethernet Diagnostics** link in the list of Maintenance diagnostic tools to open the **Ethernet Diagnostics** Web page as shown in Figure 30 "Ethernet Diagnostics Web page" (page 81).

Figure 30
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 46 “Performing Link status commands” (page 81).

Procedure 46
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

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b STAT LINK SRV - Link Status -- Server

c STAT LINK NAME - Link Status -- Host Name

d STAT LINK NODE - Link Status -- Node ID

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 47 “Performing server status commands” (page 82).

Procedure 47
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 48 “Performing IP status commands” (page 82).

Procedure 48
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

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b STIP TYPE - IP Status -- Type

c STIP ZONE - IP Status -- Zone

d STIP NODE - IP Status -- Node ID

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 49 “Performing print commands” (page 83).

Procedure 49
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 50 “Performing Etherset Count commands” (page 84).

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Procedure 50
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 **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 51 “Performing Reset IP Phone commands” (page 84).

Procedure 51
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 52 “Performing IPMG commands” (page 85).

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Procedure 52
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
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 53 “Performing RFC2833 commands” (page 85).

Procedure 53
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 31 "Ethernet Quality of Service Diagnostics Web page" (page 86).

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Figure 31
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 54 “Performing maintenance activities for Zone Attributes” (page 86).

Procedure 54
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 55 “Performing maintenance activities for Zone Levels” (page 87).

Procedure 55
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 32 "Input/Output Diagnostics Web page" (page 88).

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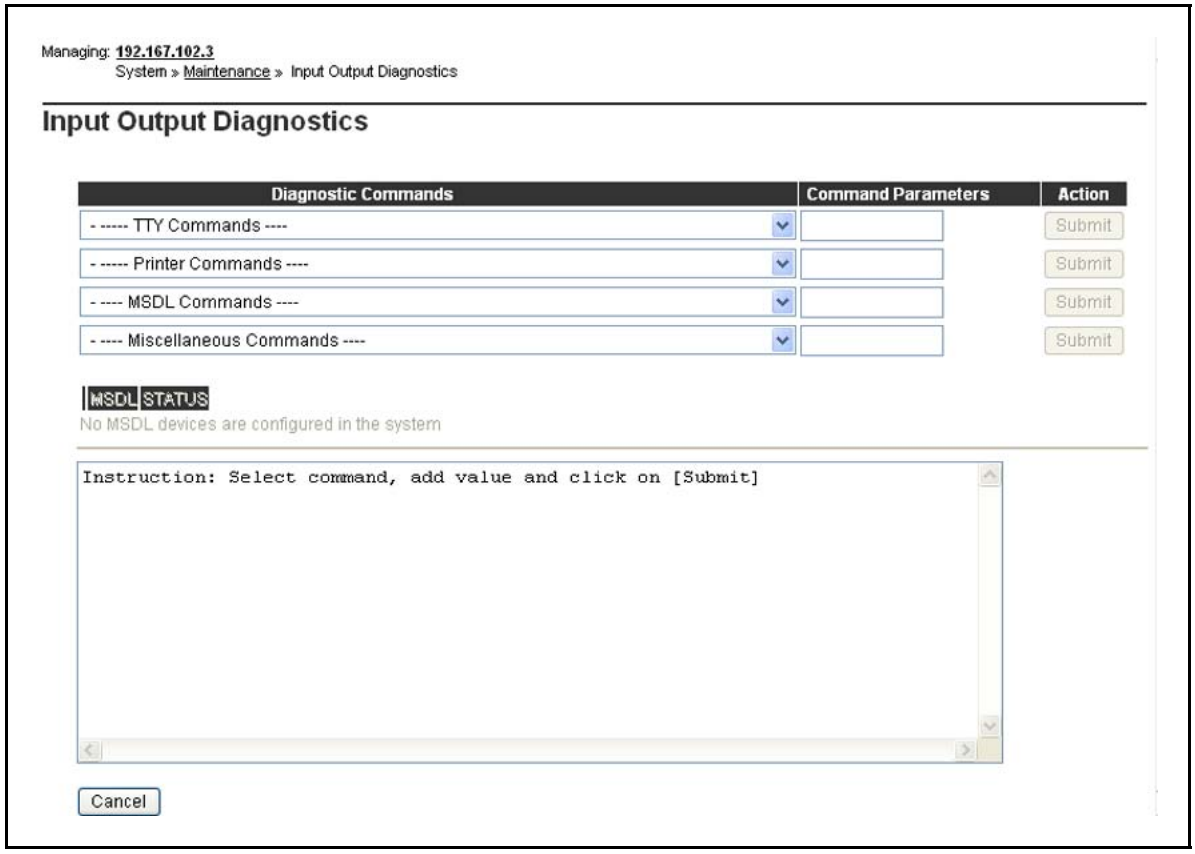
Figure 32
Input/Output Diagnostics Web page



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 56 “Performing Input/Output TTY commands” (page 88).

Procedure 56
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 57 "Performing Input/Output Printer commands" (page 89).

Procedure 57
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 58 "Performing Input/Output MDSL commands" (page 89).

Procedure 58
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 33 "Intergroup Switch and System Clock Generator Diagnostics Web page" (page 91).

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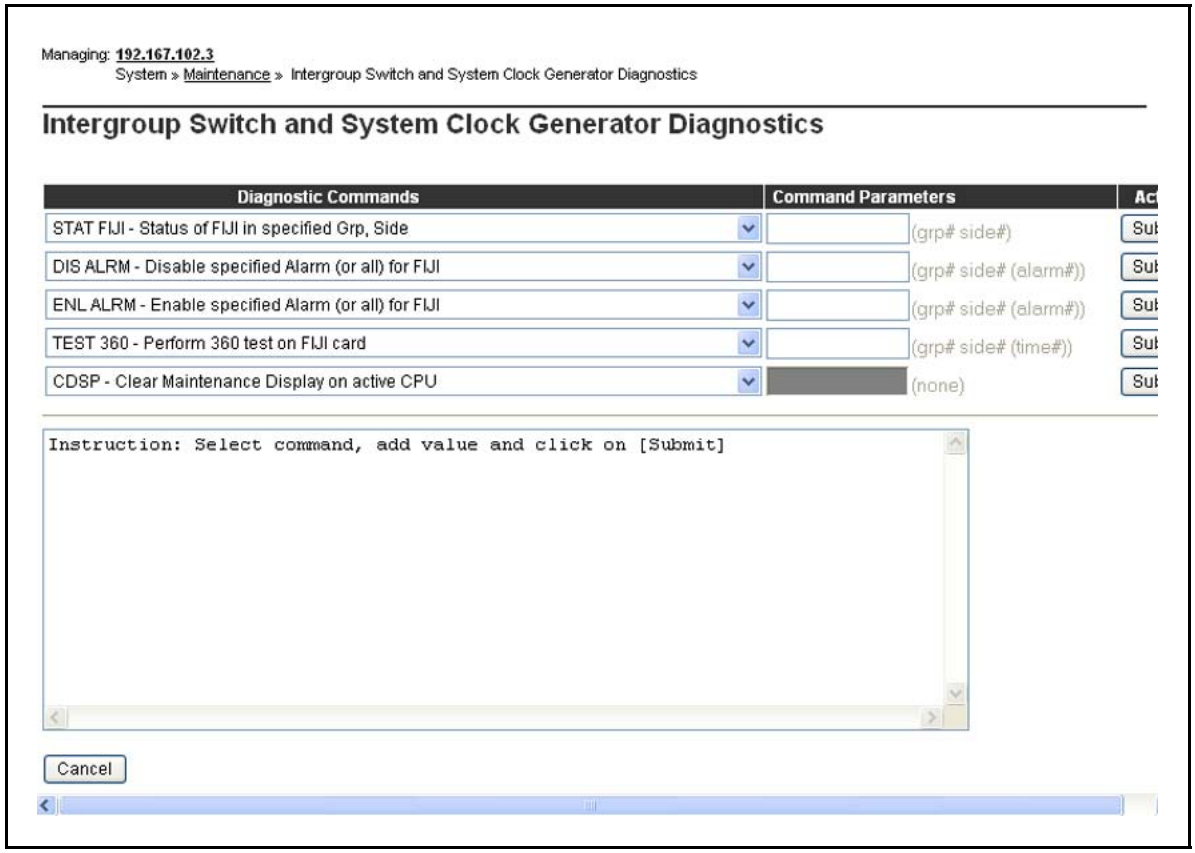
Figure 33
Intergroup Switch and System Clock Generator Diagnostics Web page



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 59 “Performing Intergroup status commands” (page 91).

Procedure 59
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 60 "Performing Intergroup disable commands" (page 92).

Procedure 60
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 61 "Performing Intergroup enable commands" (page 92).

Procedure 61
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 62 “Performing Intergroup test commands” (page 93).

Procedure 62
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 63 “Performing Intergroup miscellaneous commands” (page 93).

Procedure 63
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 34 "MSDL Diagnostics Web page" (page 95).

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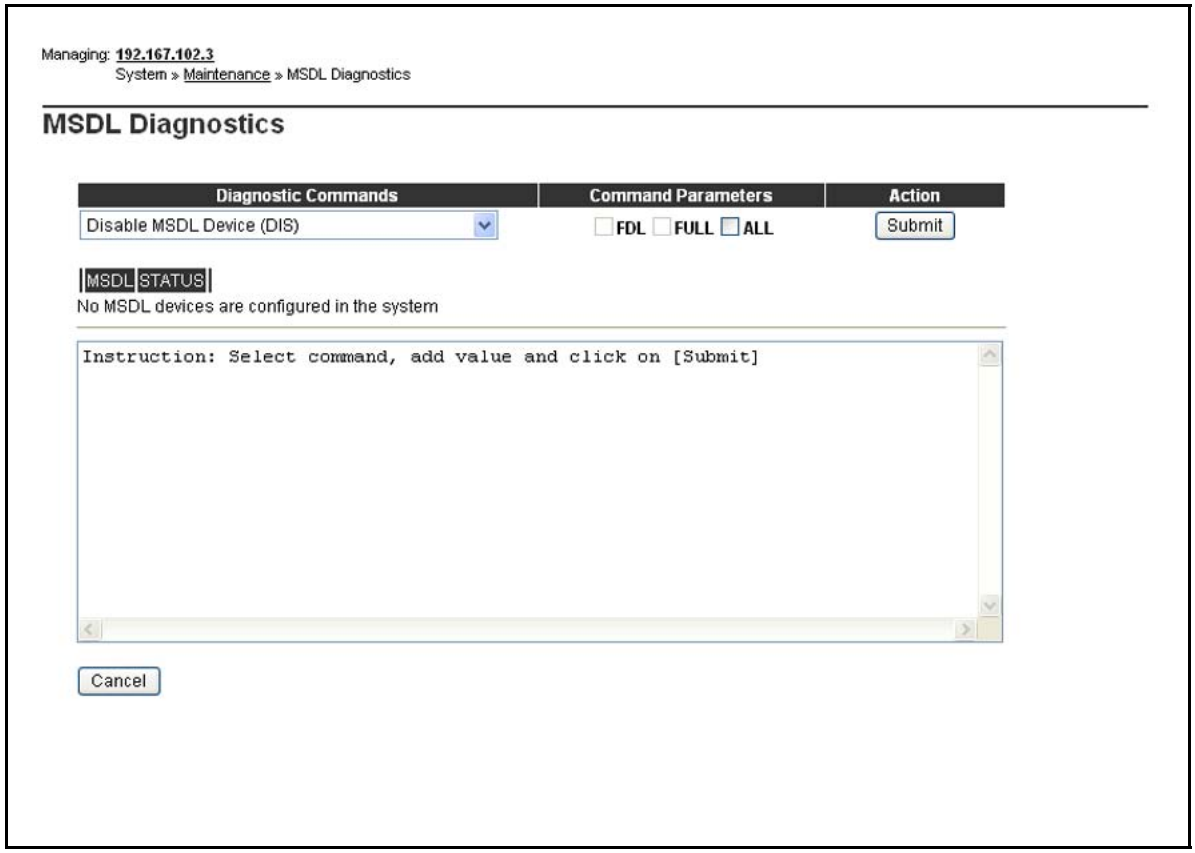
Figure 34
MSDL Diagnostics Web page



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 64 “Performing MSDL diagnostic activities” (page 96).

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Procedure 64
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 35 "Multifrequency Sender Diagnostics Web page" (page 97).

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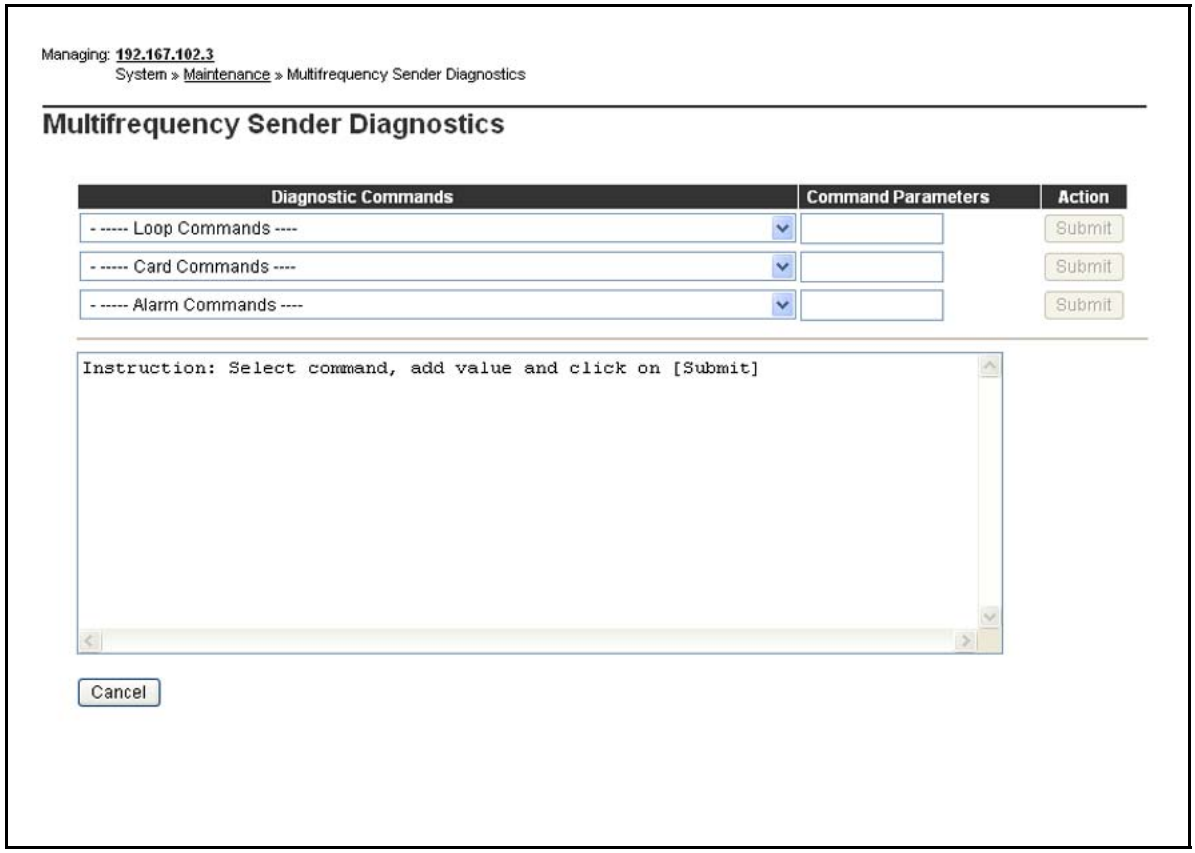
Figure 35
Multifrequency Sender Diagnostics Web page



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 65 “Performing Multifrequency Sender loop commands” (page 97).

Procedure 65
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 66 “Performing Multifrequency Sender card commands” (page 98).

Procedure 66
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 67 “Performing Multifrequency Sender alarm commands” (page 98).

Procedure 67
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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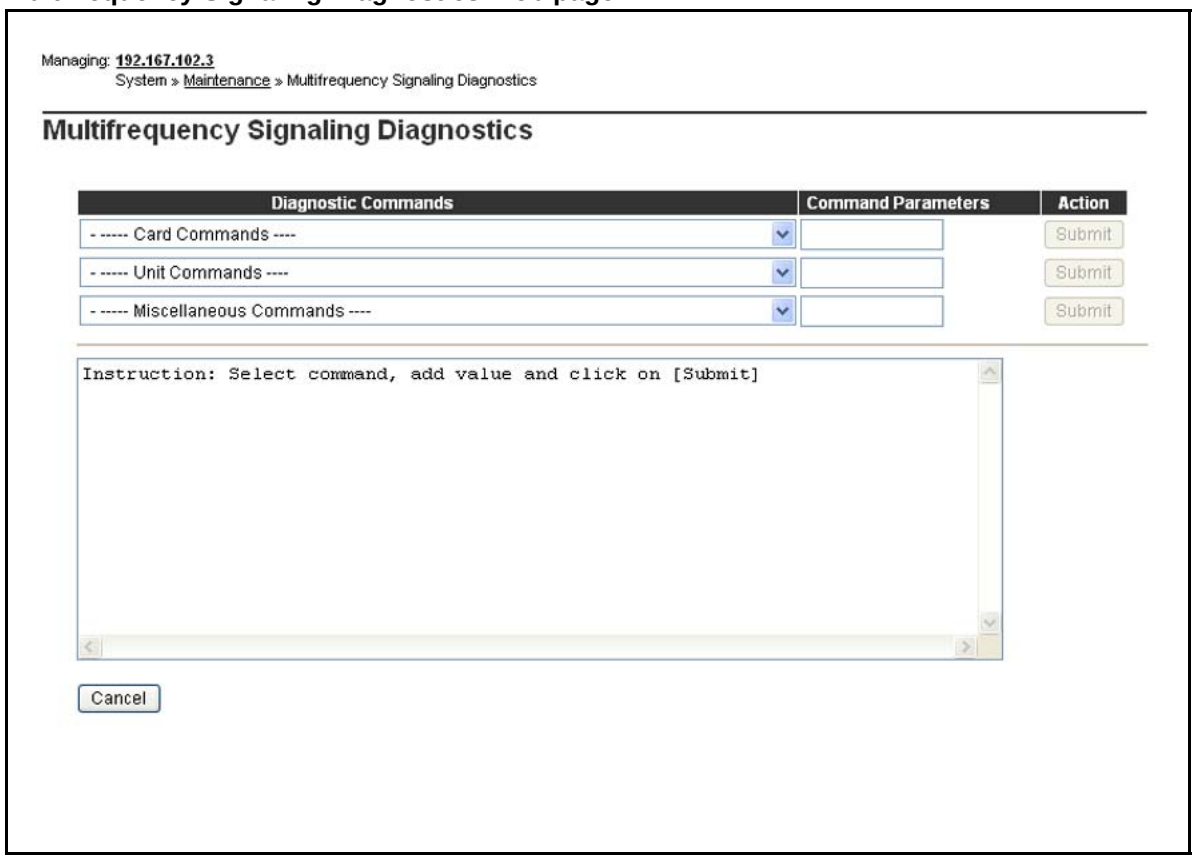
Multifrequency Signaling Diagnostics

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 36 "Multifrequency Signaling Diagnostics Web page" (page 99).

Figure 36
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 68 “Performing Multifrequency Signaling card commands” (page 99).

Procedure 68
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 69 “Performing Multifrequency Signaling unit commands” (page 100).

Procedure 69
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 70 “Performing Multifrequency Signaling miscellaneous commands” (page 100).

Procedure 70
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.

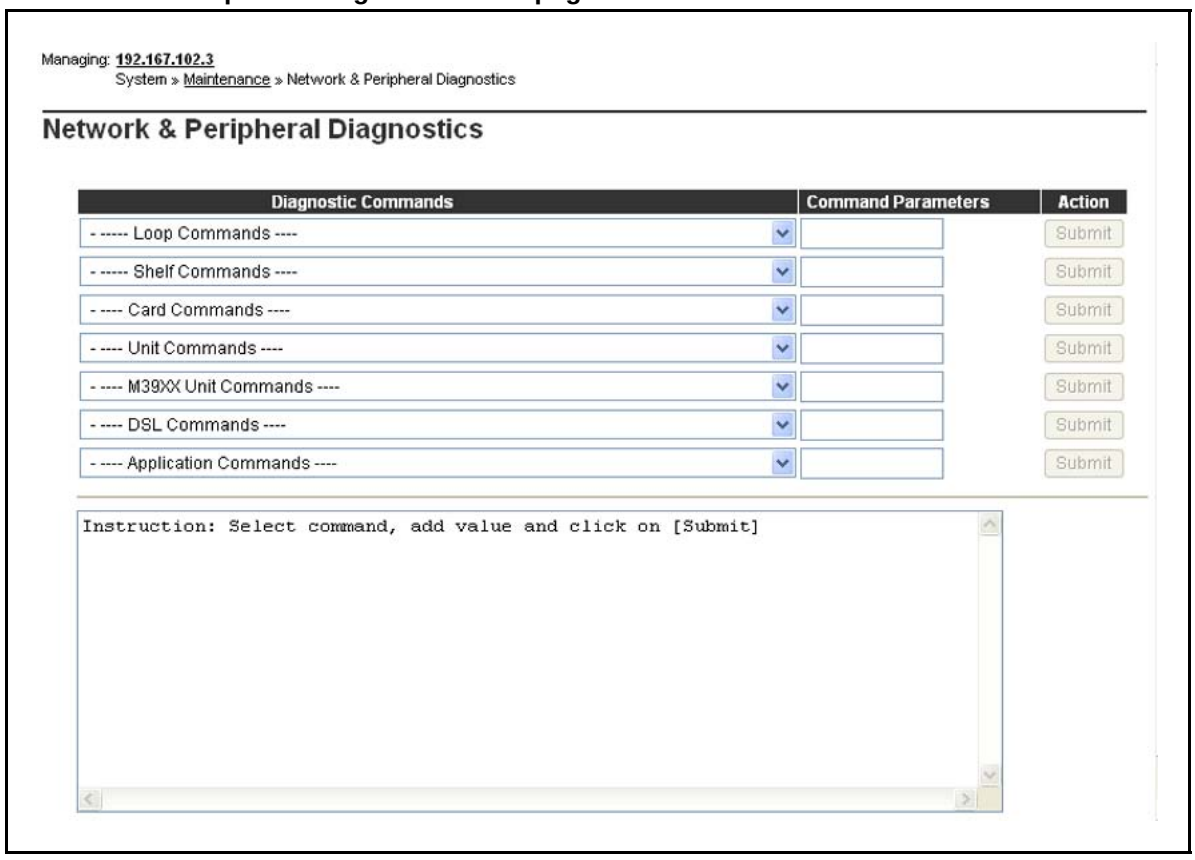
3 Click **Submit**.

--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 37 "Network and Peripheral Diagnostics Web page" (page 101).

Figure 37
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 module (Small System) Disable the shelf (Large System)
  - ENLS - Enable module (Small System) Enable specified shelf (Large System)
  - 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 card (Small System). Disable peripheral card (Large System)
    - IDC - Print card ID (Small System). Print card ID for PE card (Large System)
  - MISP Card Commands
    - STAT - Print status of MISP appl/card
    - ENLL - Enable MISL loop

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- ENLL BRIL - Enable BRIL application on MISP loop
- ENLL BRIT - Enable BRIT application on MISP loop
- IDC - Print MISP card ID
- 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

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

- 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

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- RLBT - Perform Remote Loop Back test
- RLSU - Release D Channel Link

- Application Commands
  - 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 71 “Performing Network and Peripheral maintenance activities” (page 106).

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Procedure 71
Performing Network and Peripheral maintenance activities

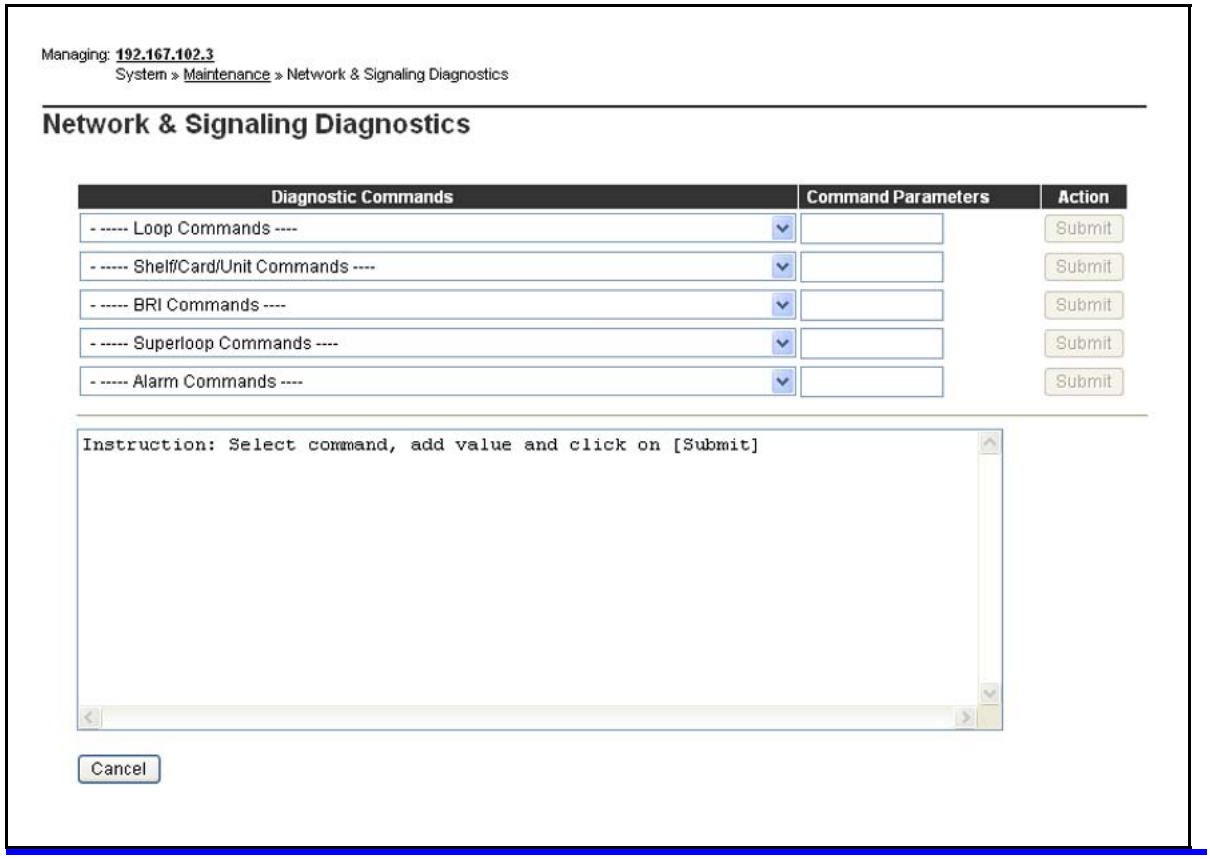
Step	Action
1	Select a command from one of the **Diagnostic Commands** drop-down lists.
2	Enter the appropriate value in the corresponding **Command Parameters** text box. The required parameters for the selected command are indicated to the right of the **Command Parameters** box once the command is 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 38 "Network and Signaling Diagnostics Web page" (page 106).

Figure 38
Network and Signaling Diagnostics Web page



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

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

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To perform diagnostic activities using this Web page, follow the steps in Procedure 72 “Performing Network and Signaling diagnostic activities” (page 108).

Procedure 72
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 39 "TMDI Diagnostics Web page" (page 109).

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Figure 39
TMDI Diagnostics Web page

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 73 “Performing TMDI diagnostic activities” (page 109).

Procedure 73
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

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b FULL

c ALL

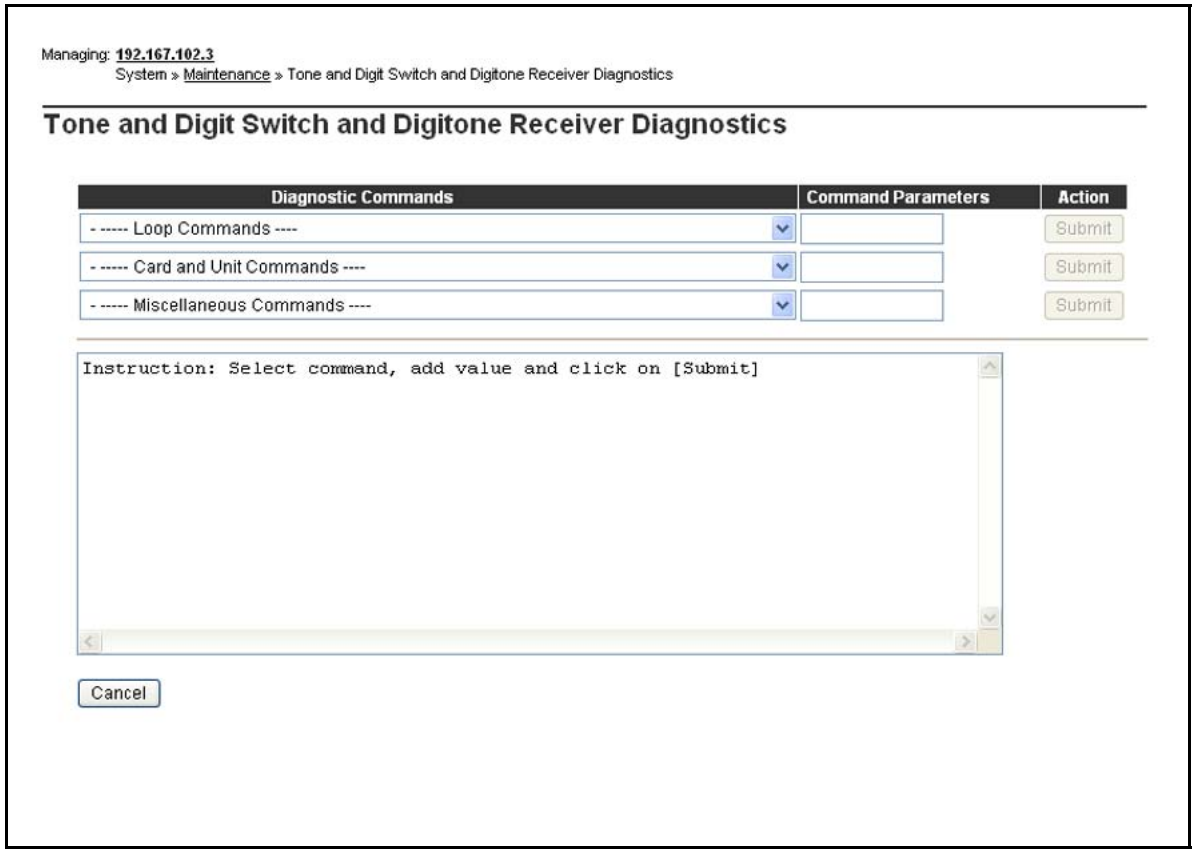
3 Click **Submit**.

--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 40 "Tone and Digit Switch and Digitone Receiver Diagnostics Web page" (page 110).

Figure 40
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.

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To perform diagnostic activities using this Web page, follow the steps in Procedure 74 “Performing Tone and Digit diagnostic activities” (page 111).

Procedure 74
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 — 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--

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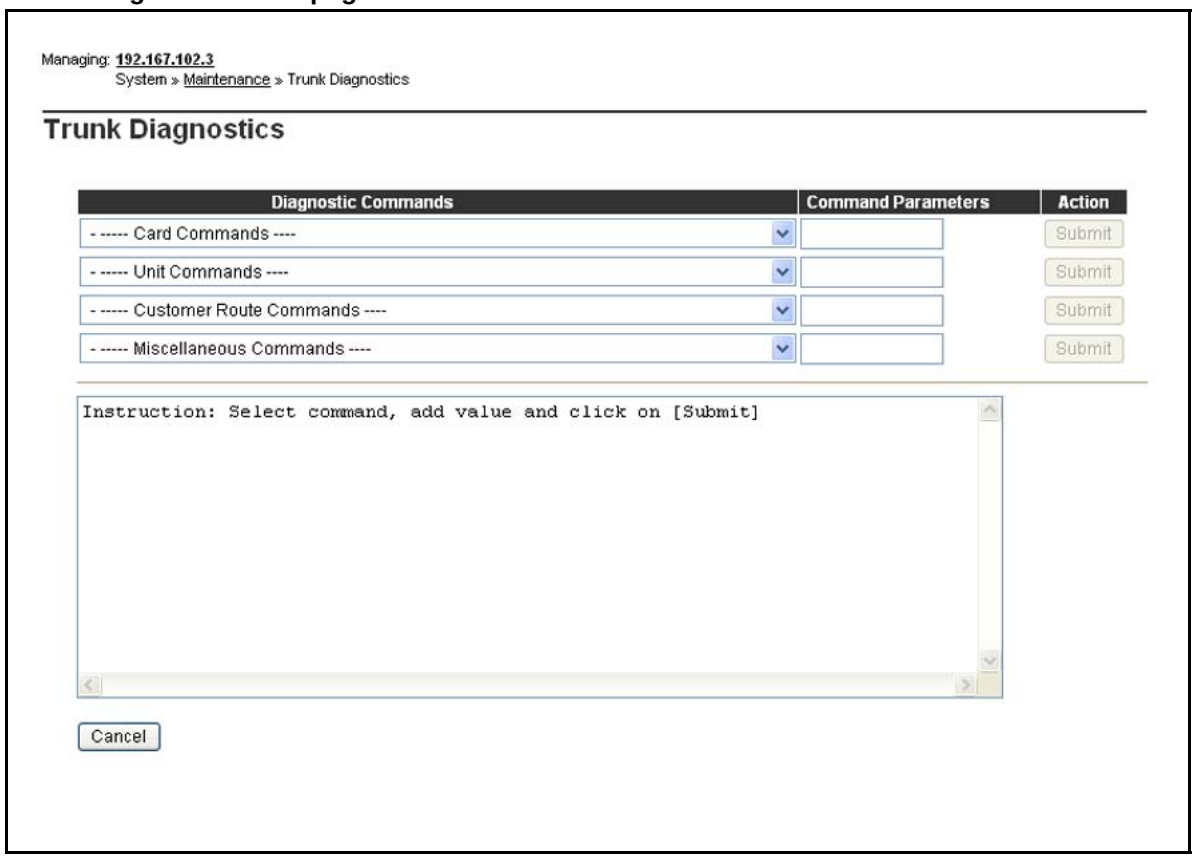
Trunk Diagnostics

Click the **Trunk Diagnostics** link in the list of **Maintenance** diagnostic tools to open the **Trunk Diagnostics** Web page as shown in Figure 41 "Trunk Diagnostics Web page" (page 112).

Figure 41
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 75 “Performing Trunk card commands” (page 112).

Procedure 75
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

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b ENLC - Enable and reset card

c DISC - Disable card

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 76 “Performing Trunk unit commands” (page 113).

Procedure 76
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 77 “Performing Trunk customer route commands” (page 113).

Procedure 77
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

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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.

3 Click **Submit**.

--End--

To use the miscellaneous commands, follow the steps in Procedure 78 “Performing Trunk miscellaneous commands” (page 114).

Procedure 78
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 42 "Maintenance Commands for Zones Web page" (page 115).

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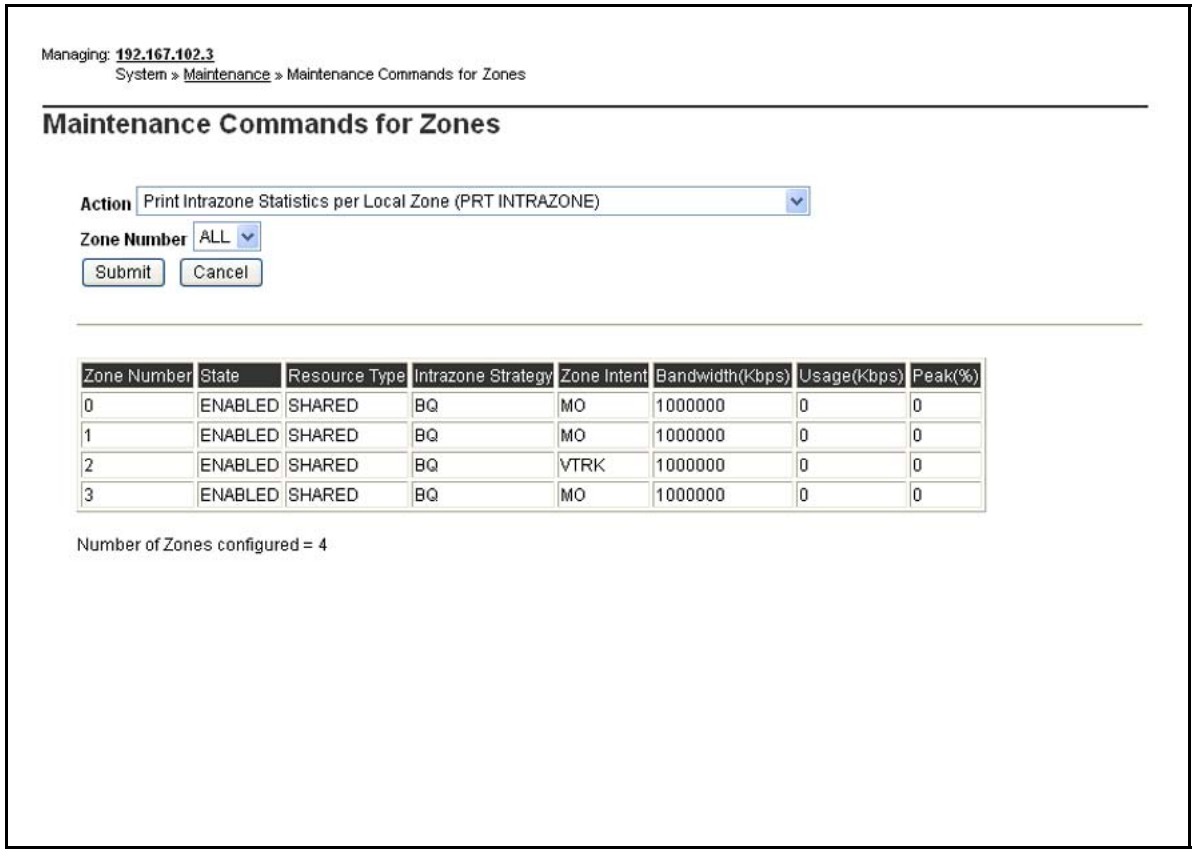
Figure 42
Maintenance Commands for Zones Web page



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 79 “Performing Zone maintenance activities” (page 115).

Procedure 79
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 opens (see Figure 43 "Common Equipment Web page" (page 117)).

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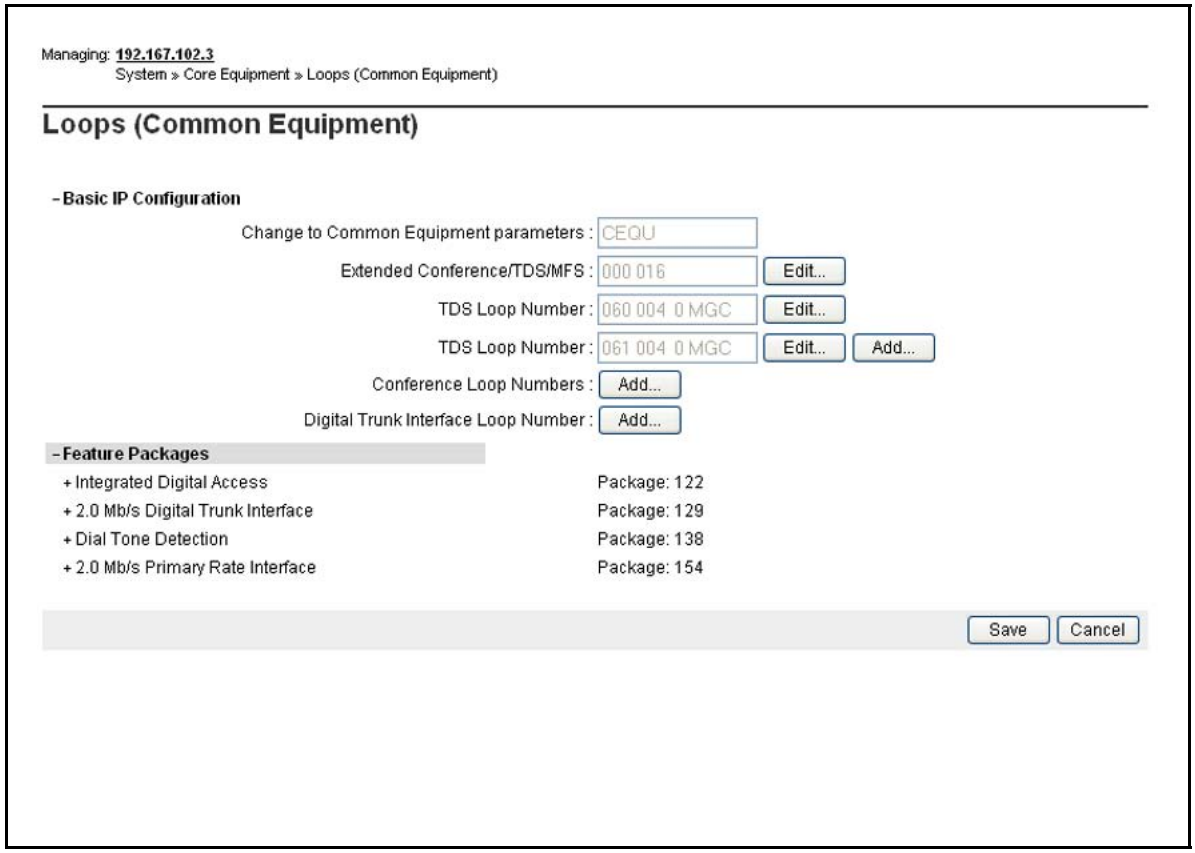
Figure 43
Common Equipment Web page



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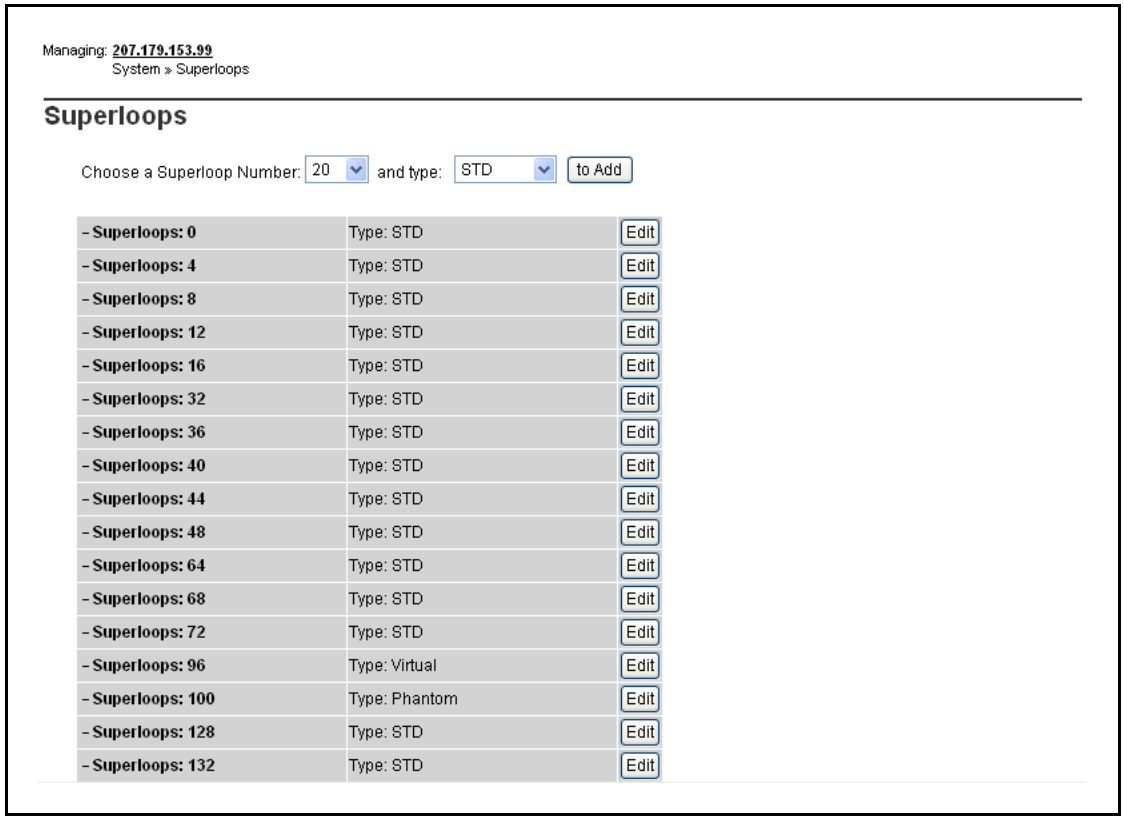
To save changes made in this section, click **Submit** at the bottom of the **Common Equipment** Web page.

Superloops

To configure or edit Superloop information, click the **Core Equipment > Superloop** link of the**System** branch of the Element Manager navigator. The **Superloops** Web page opens as shown in Figure 44 "Superloops Web page" (page 118).

Figure 44
Superloops Web page



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

To add a Superloop, choose a **Superloop Number** and **type** (CARR, FIBR, IPMG, STD, Phantom, or Virtual) from the pull-down menu, then click **to Add**. The **Superloop Property Configuration** Web page displays, as shown in Figure 45 "Superloop Property Configuration Web page" (page 119).

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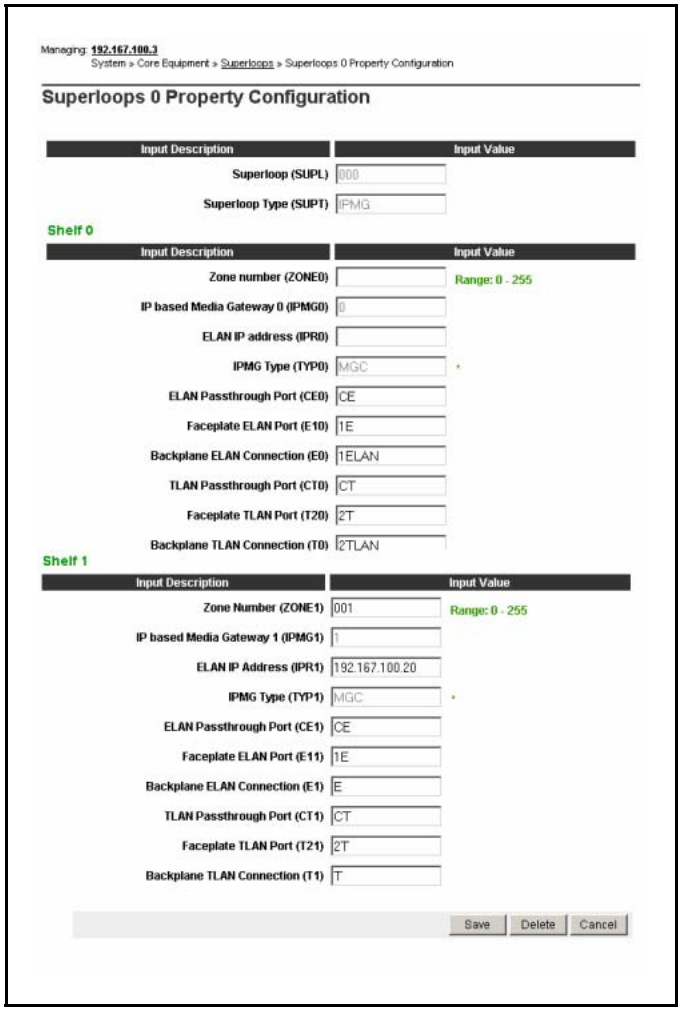
Figure 45
Superloop Property Configuration Web page



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

To return to the **Superloops** Web page as shown in Figure 44 "Superloops Web page" (page 118), click the **Superloop** link in the navigation path at the top of the page.

To edit the properties of an existing Superloop, click the **Edit** button next to the **Superloop** entry on the Superloops Web page. The **Superloops Property Configuration** Web page for that Superloop opens.

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

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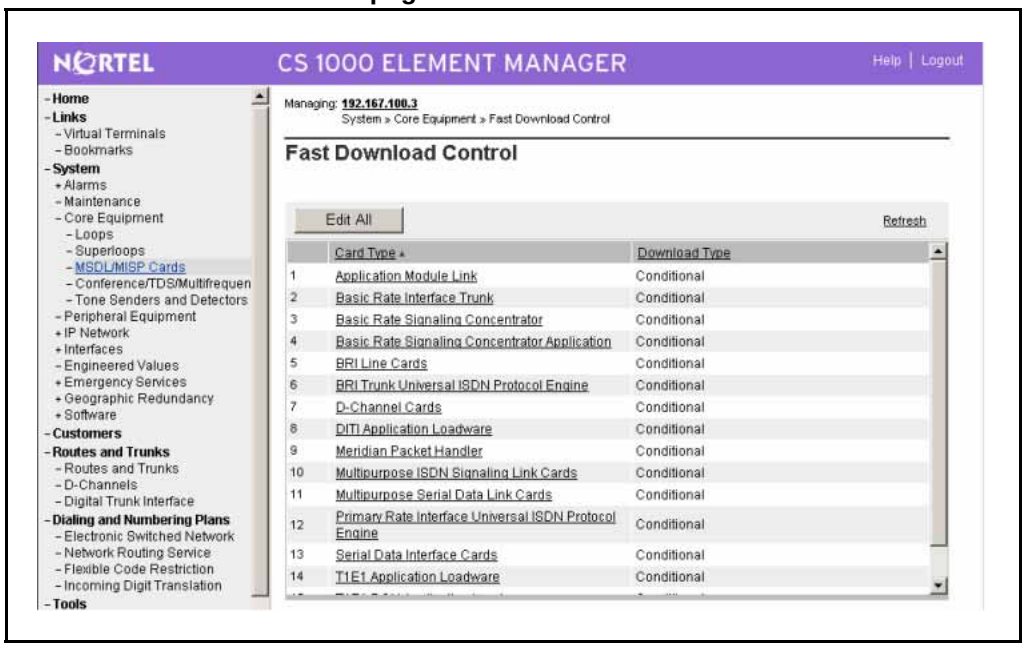
MSDL/MSIP Cards

The Multipurpose Serial Data Link / Multi-Purpose ISDN Signaling Processor (MSDL/MSIP) Cards navigation link opens the **Fast Download Control Web** page, as shown in Figure 46 "Fast Download Control Web page" (page 120).

Figure 46
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 80 “Editing Fast Download Control (single card)” (page 120).

Procedure 80
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 opens.
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--

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To configure download type for all cards, follow the steps in Procedure 81 “Editing Fast Download Control (all cards)” (page 121).

Procedure 81
Editing Fast Download Control (all cards)

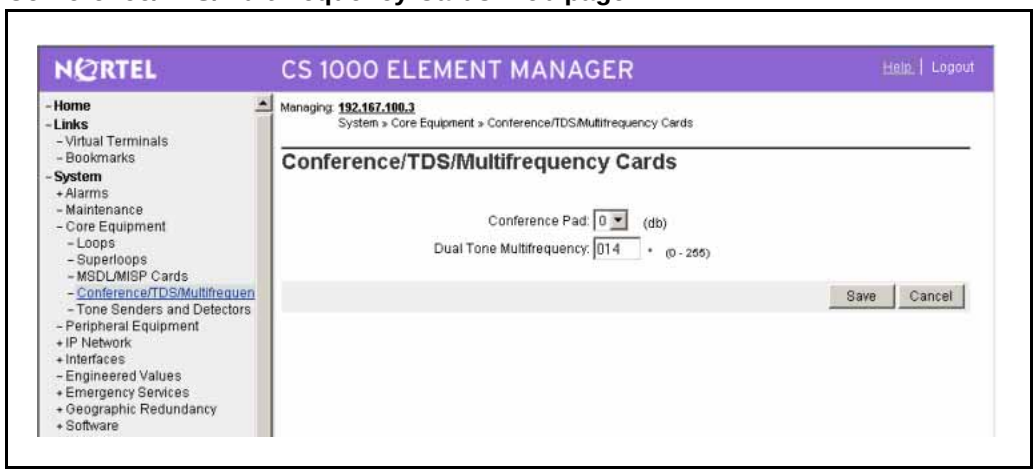
Step	Action
1	From the **Fast Download Control** Web page, click **Edit All** to edit all the cards in the list. The **Edit All** Web page opens.
2	Choose the **Download type** from the drop-down menu list.
3	Click **Save** or click **Cancel** to return to the **Fast Download Control** Web page.

--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 47 "Conference/TDS/Multifrequency Cards Web page" (page 121).

Figure 47
Conference/TDS/Multifrequency Cards Web page



Select a **Conference Pad** from the drop down 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

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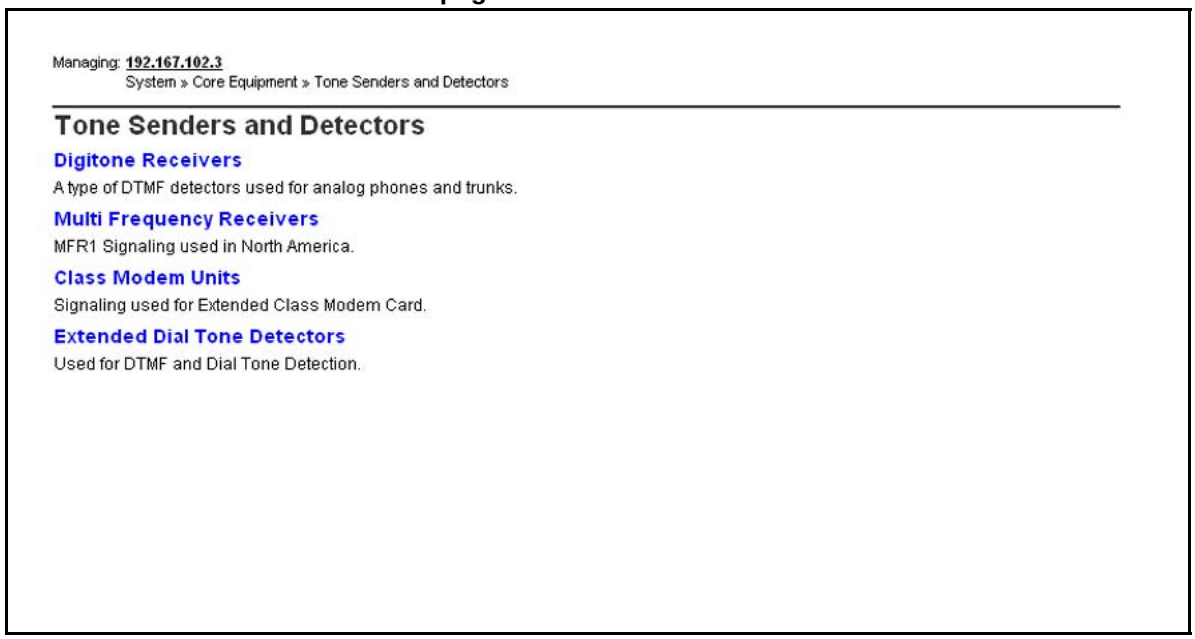
the Element Manager navigator. The **Tone Senders And Detectors** Web page opens, as shown in Figure 48 "Tone Senders and Detectors Web page" (page 122).

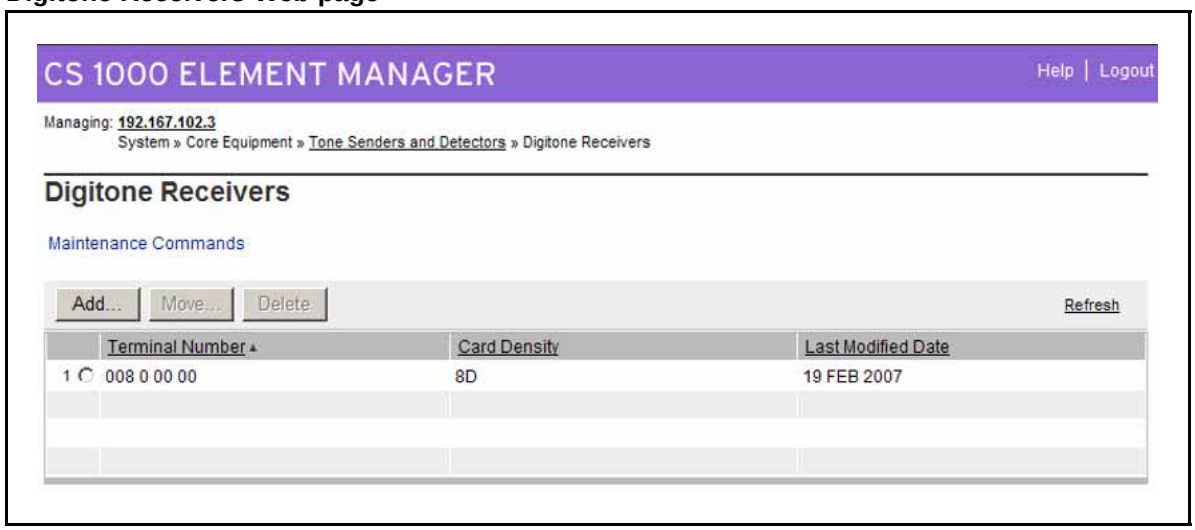
Figure 48
Tone Senders and Detectors Web page



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 opens, as shown in Figure 49 "Digitone Receivers Web page" (page 122).

Figure 49
Digitone Receivers Web page



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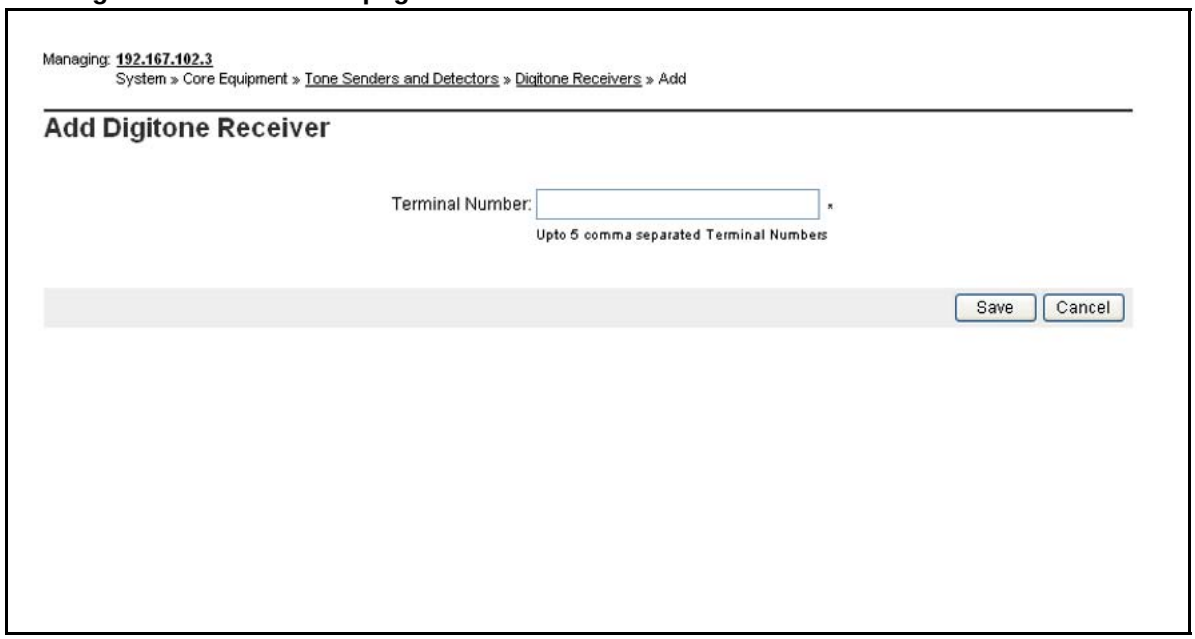
This Web page is used to display details of Digitone Receivers. Users can view, add, delete, and move Terminal Numbers.

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 opens, as shown in Figure 50 "Add Digitone Receiver Web page" (page 123).

Figure 50
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 opens, as shown in Figure 51 "Move Digitone Receiver Web page" (page 124).

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Figure 51
Move Digitone Receiver Web page

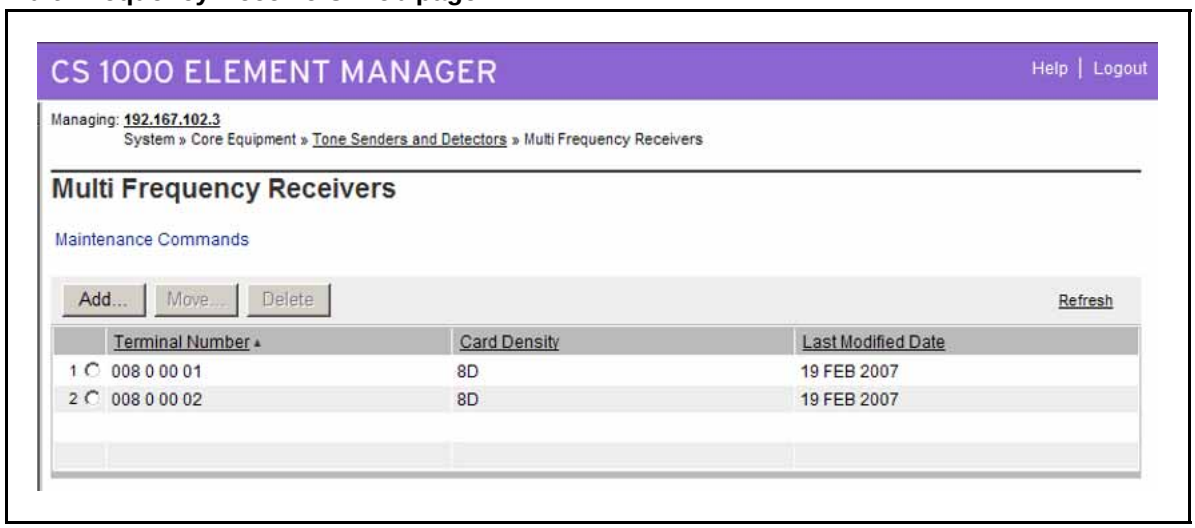
Enter the Destination Terminal Number and click **Save**.

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 opens, as shown in Figure 52 "Multi Frequency Receivers Web page" (page 124).

Figure 52
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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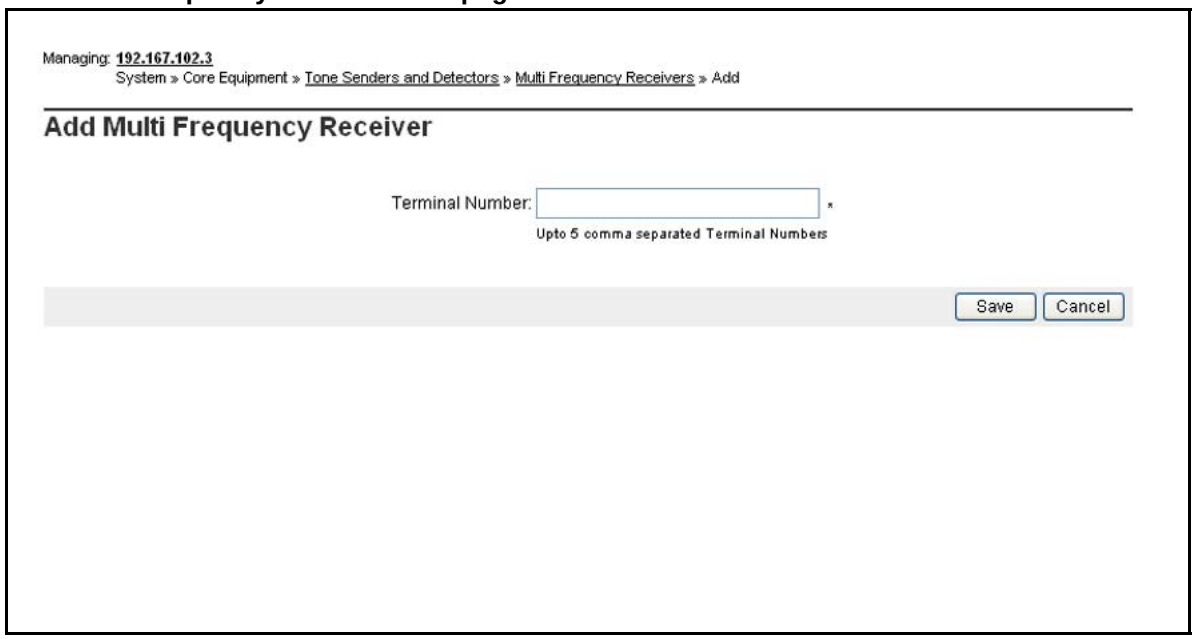
To add a Multi Frequency Receiver, click **Add**. The **Add Multi Frequency Receiver** Web page opens, as shown in Figure 53 "Add Multi Frequency Receiver Web page" (page 125).

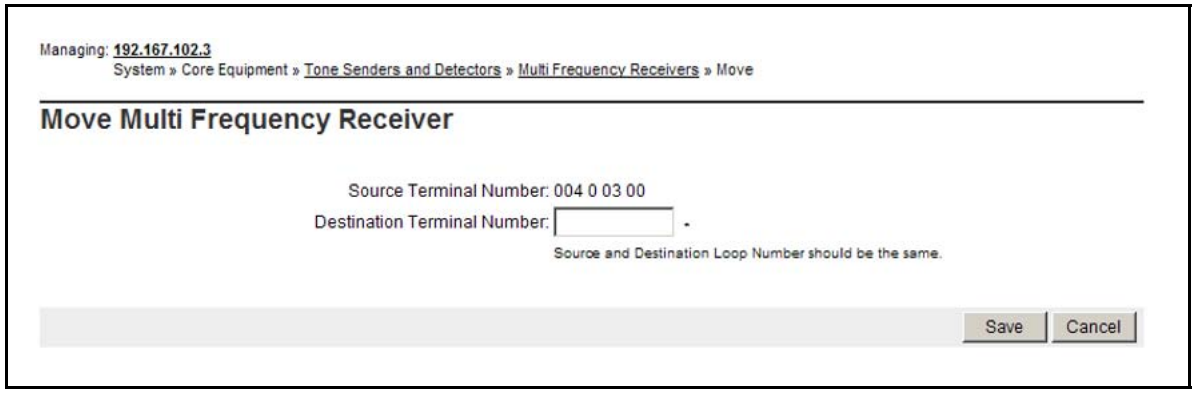
Figure 53
Add Multi Frequency Receiver Web page



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 opens, as shown in Figure 54 "Move Multi Frequency Web page" (page 125).

Figure 54
Move Multi Frequency Web page



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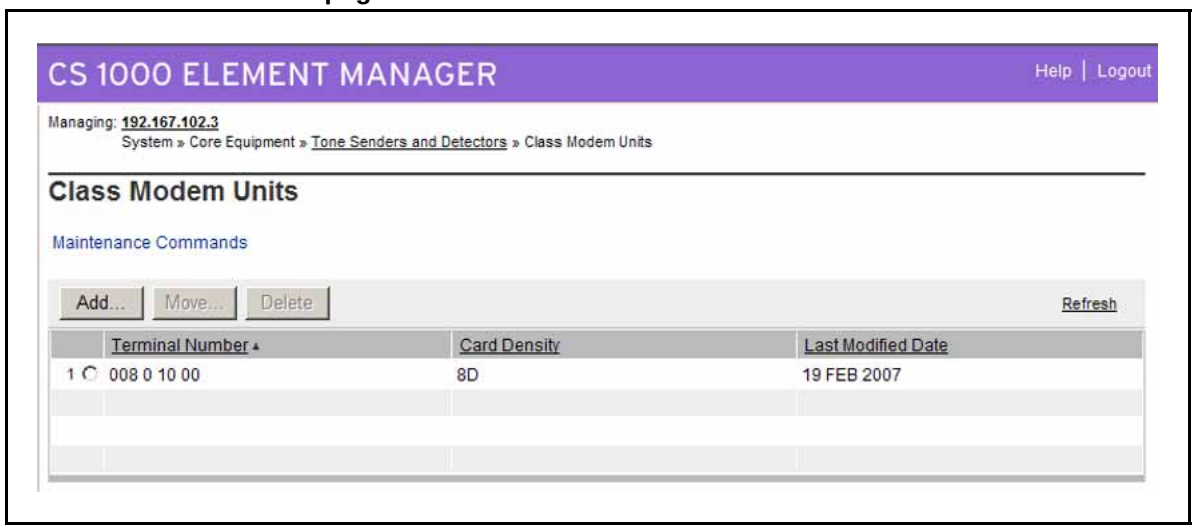
Enter the Destination Terminal Number and click **Save**.

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 opens, as shown in Figure 55 "Class Modem Units Web page" (page 126).

Figure 55
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 opens, as shown in Figure 56 "Add Class Modem Unit Web page" (page 127).

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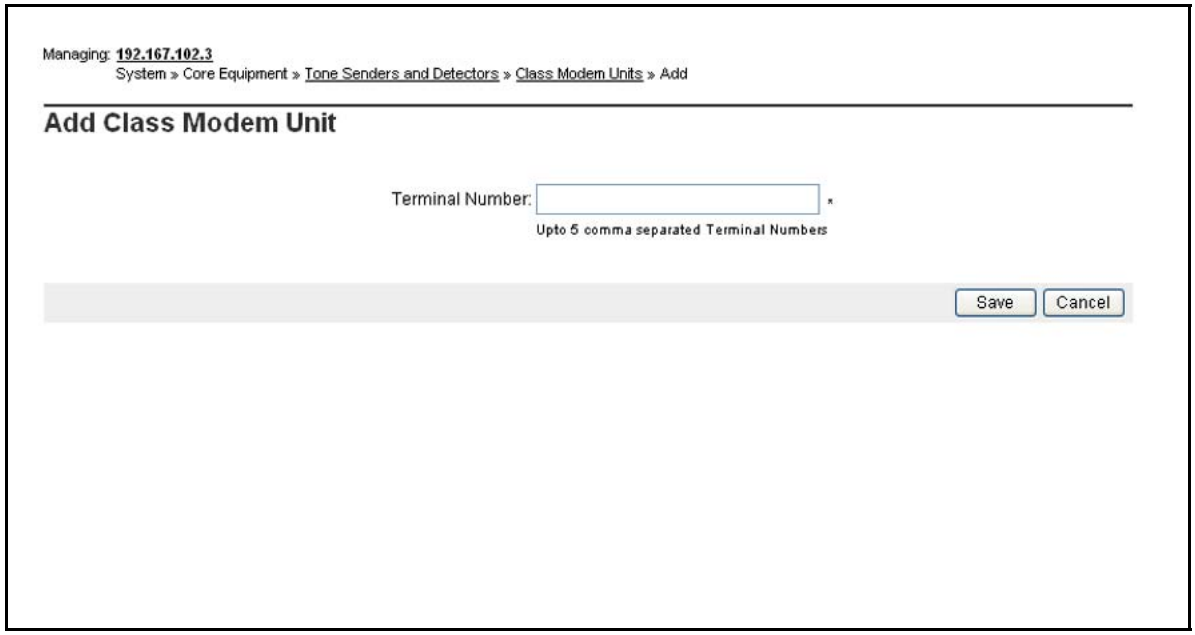
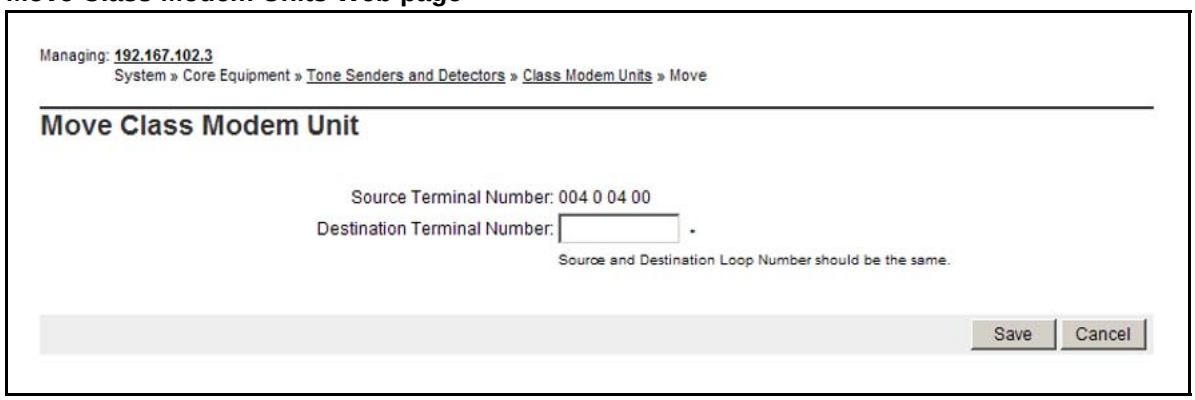
Figure 56
Add Class Modem Unit Web page



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 opens, as shown in Figure 57 "Move Class Modem Units Web page" (page 127).

Figure 57
Move Class Modem Units Web page



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

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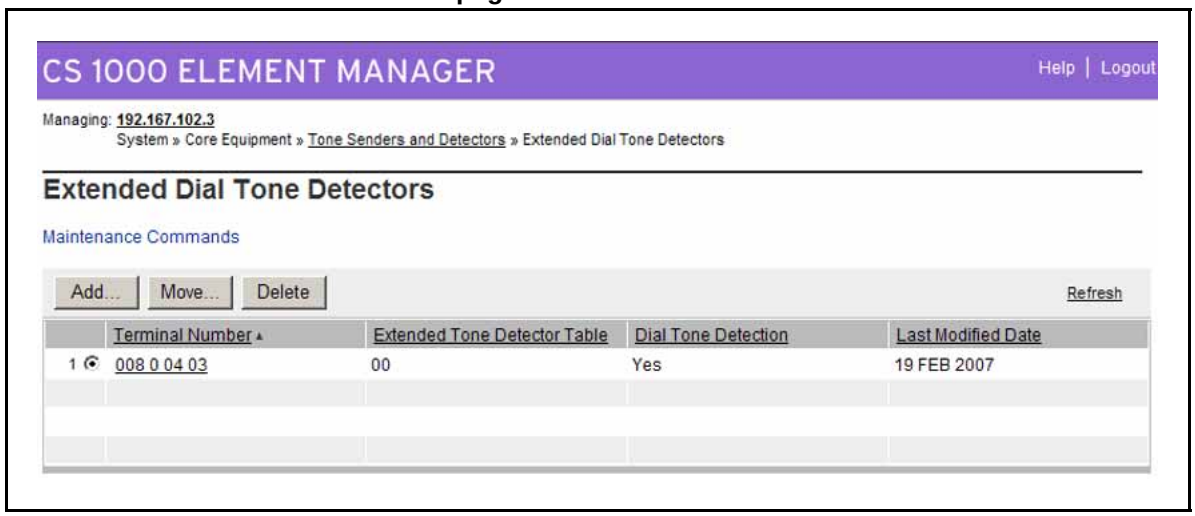
Extended Dial Tone Detectors

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 opens, as shown in Figure 58 "Extended Dial Tone Detectors Web page" (page 128).

Figure 58
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 opens, as shown in Figure 59 "Add Extended Dial Tone Detector Web page" (page 129).

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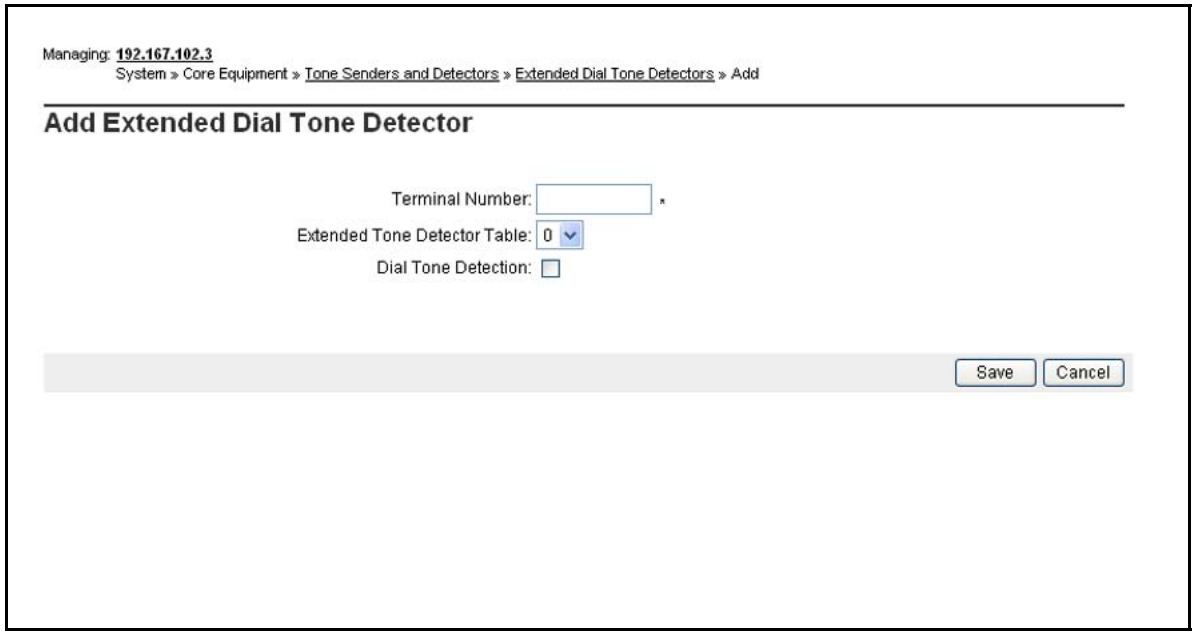
Figure 59
Add Extended Dial Tone Detector Web page



Procedure 82
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 opens, as shown in Figure 60 "Move Extended Dial Tone Detectors Web page" (page 130).

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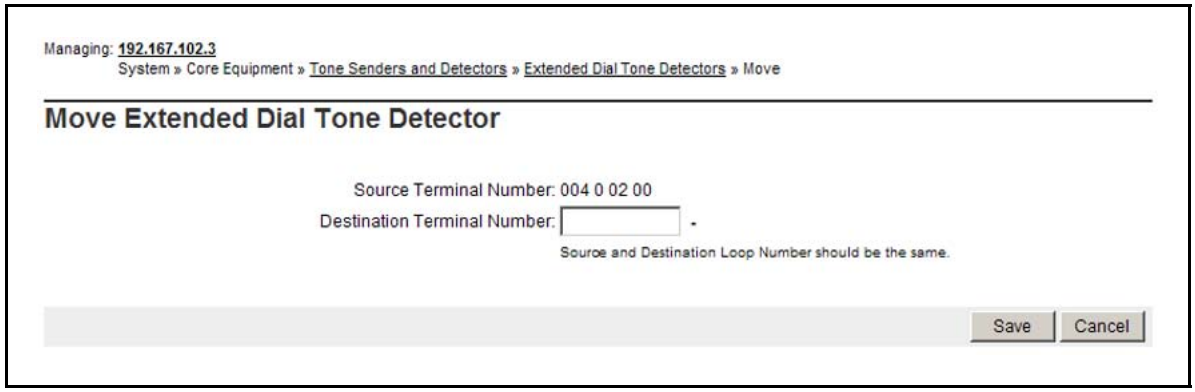
Figure 60
Move Extended Dial Tone Detectors Web page



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

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IP Network

Contents

This section contains information on the following topics:

“Introduction” (page 131)

“IP Network” (page 131)

- “Node Configuration” (page 131)
- “Nodes: Servers, Media Cards” (page 139)
- “Media Gateways” (page 149)
- “32 Channel Secure Media Card (MC32S) commands” (page 154)
- “Zones” (page 161)
- “Network Address Translation (NAT)” (page 169)
- “Quality of Service Thresholds (QoS)” (page 170)
- “Personal Directories” (page 172)

“Interfaces” (page 172)

“Engineered Values” (page 175)

“Emergency Services” (page 181)

“Geographic Redundancy” (page 196)

“Software” (page 198)

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

Node Configuration

To configure or edit Node Summary information, select the **Nodes: Servers, Media Cards** link in the **IP Network** branch of the Element Manager navigator. The **Node Configuration** Web page opens (see Figure 61 "Node Configuration Web page" (page 132)).

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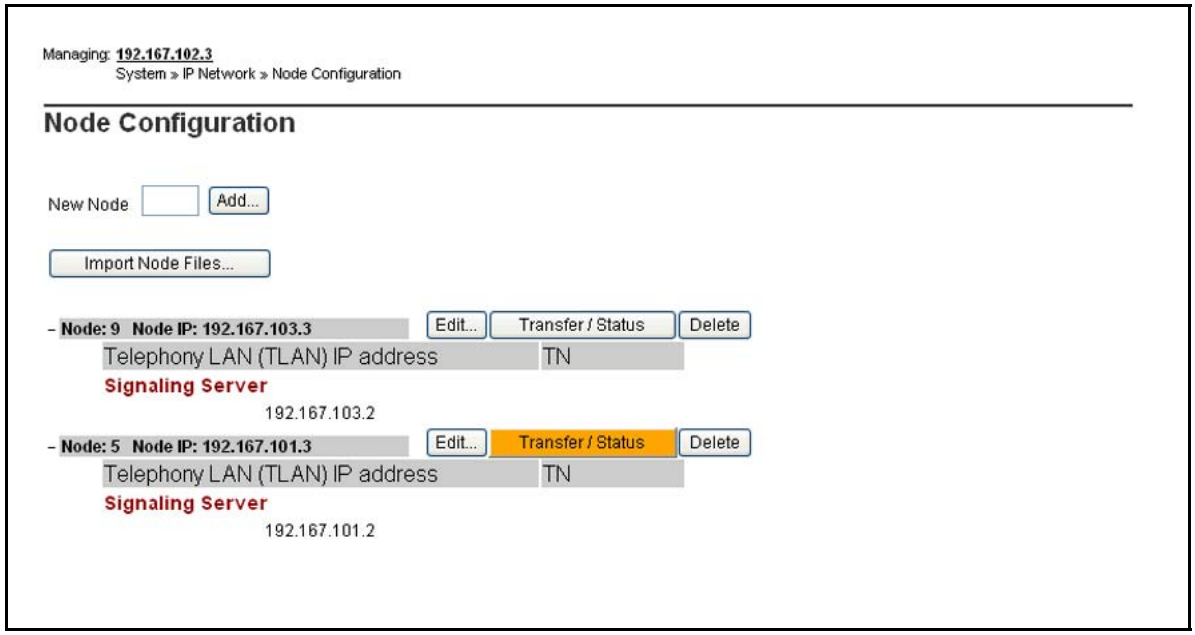
Figure 61
Node Configuration Web page



This Web page also contains buttons that link to additional Web pages. Follow these links to:

- add a new node
- import node files
- edit node configuration
- view the status of a previous transfer operation, or re-transfer to selected or failed elements
- delete a node
- add and edit Voice Gateway Channel (VGWC) configuration data on the media cards

ATTENTION
Make sure that the values for the Node ID in Element Manager/IP Telephony and in the Call Server/Route Data Block (for the Virtual Trunk) are the same. If these Node ID values do not match, the IP Peer H.323 virtual trunks do not establish.

To import a node file, follow the steps in Procedure 83 “Importing node files” (page 133):

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Procedure 83
Importing node files

Step	Action
1	Click **Import Node Files**.
2	Enter the ELAN (management LAN) network interface IP Address of the Leader in the text box. This address is used to retrieve the node files.
3	Click **Import**. If the import is successful, information appears in the text area of the Node Import Files screen and a message box appears.
4	In the message box, click **OK** to proceed to the **Node Summary** Web page, where edit node information can be viewed.

--End--

If any element within the Node fails to transfer either bootp or config files, the **TRANSFER/STATUS** button is highlighted in red. It is not necessary to manually retransfer the files; the next time the pbxlink is opened to that element, the files are updated. The **TRANSFER/STATUS** button is highlighted in yellow if the transfer status of the node elements is unavailable. Clicking this button opens the **Transfer/Status** Web page as shown in Figure 62 "Transfer/Status Web page" (page 134).

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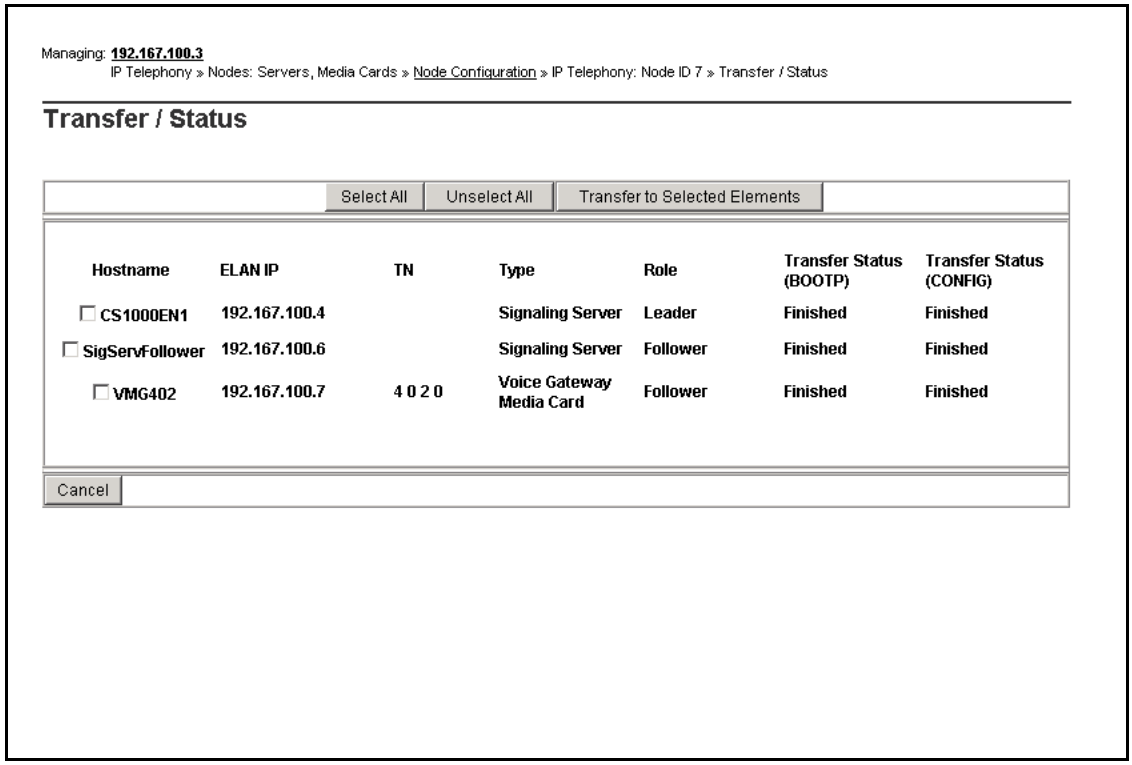
Figure 62
Transfer/Status Web page



This Web page displays the previous status of the node, and the failure reason for elements in nodes that failed to retrieve configuration files (*bootp.tab* and *config.ini*) from the Call Server side. Node elements that did not retrieve configuration files continue to display on the transfer progress status Web page when the IP Telephony node configuration file is submitted and transferred.

The **Transfer/Status** Web page displays two buttons:

- **Transfer to Selected Elements** — re-transfers node configuration files only to selected elements, regardless of a "Transfer Failed" state.
- **Transfer to Failed Elements** — transfers node configuration files to elements in a "Transfer Failed" state.

Note: The **Transfer to Failed Elements** button appears only when at least one element on the node failed to transfer either a *bootp.tab* or *config.ini* file in the previous operation. See Figure 63 "Transfer/Status Web page - Failed" (page 135).

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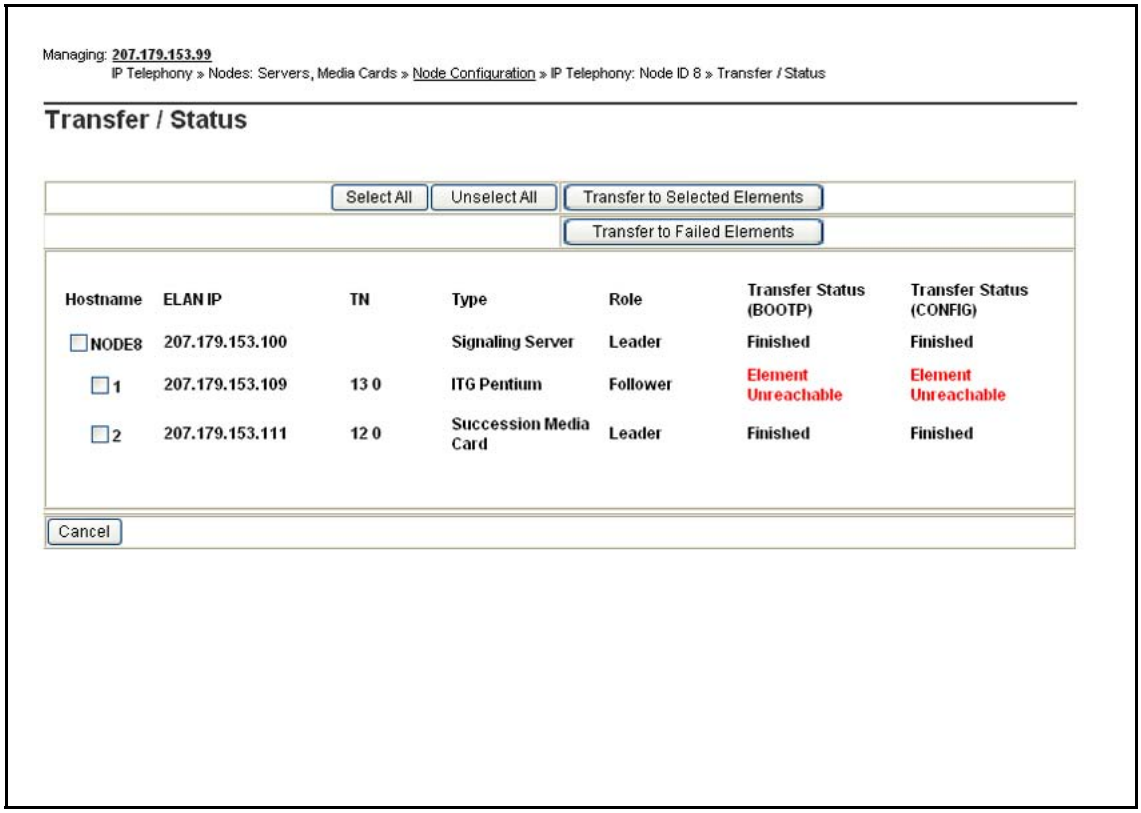
Figure 63
Transfer/Status Web page - Failed



Note: To ensure the element has correct configurations, when an element is deleted, it should be reconfigured in a mode with relevant necessary configurations, or physically removed from the network.

To edit the configuration information on an existing node, click **Edit** located to the right of the node's IP address.

To add a new node, enter a number in the **New Node** text box, and click **Add**.

When clicking either the **Add** button or any of the **Edit** buttons shown in the **Node Summary** Web page, the **Edit** Web page opens. See, Figure 64 "Edit Web page" (page 136).

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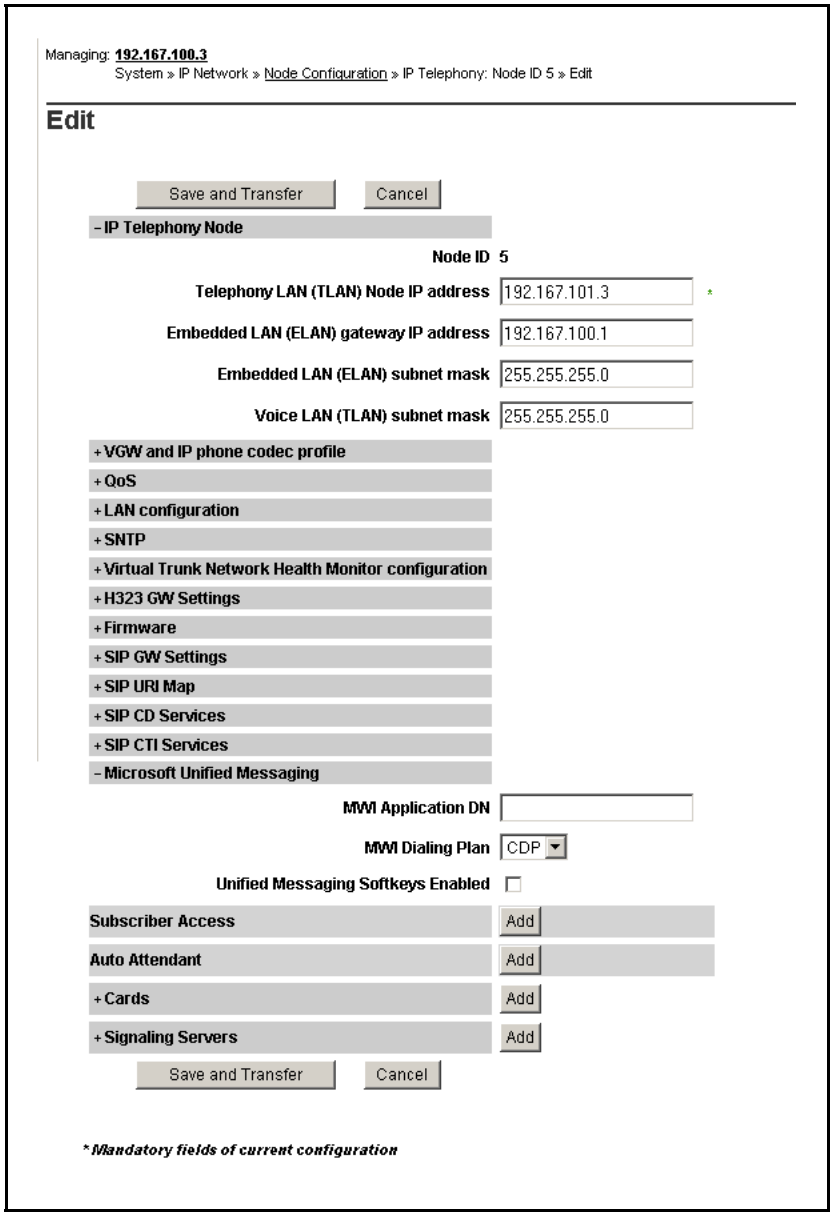
Figure 64
Edit Web page



From this Web page, the following functions can be performed:

- view and edit basic Node information
- view and configure VGW Profile data
- configure Quality of Service (QoS) data
- use LAN configuration to configure the ELAN Call Server IP Address, the Media Gateway IP Address, the ELAN and TLAN signaling ports and the ELAN and TLAN broadcast ports

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- view and edit Simple Network Time Protocol (SNTP) Server and Client information
- view and configure file server access for downloading firmware for the IP Phones
- monitor Virtual Trunk Network Health Configuration
- view and edit H.323 Settings
- view and edit SIP Gateway Settings, and configure the Re-direct Server
- perform SIP URI DN Mapping
- view and configure SIP CD Services
- view and configure SIP CTI Services
- edit Converged Desktop Service information
- Microsoft Unified Messaging. For more information, see *Communications Server 1000 and Microsoft Exchange Server 2007 Unified Messaging Fundamentals (NN43001-122)* ()
- view and edit Signaling Server information
- view and edit card properties of Voice Gateway Media Cards

For more information, see Transmission Parameters Reference (NN43001-282)

ATTENTION
Do not assign the same IP address for the Node ID and the TLAN network interface. The correct IP address must be verified manually. The Node IP address must be on the same subnet as the TLAN network interface IP addresses of the Voice Gateway Media Cards. Also, the Voice Gateway Media Card's TLAN and ELAN network interfaces must reside on separate logical subnets.

The IP Telephony Node Edit Web page does not support multiple customers per node. SIP Converged Desktop Service and SIP URI to DN Mapping are configurable on a per-node basis. Only one customer is supported per node.

Enabling SIP

Click the plus sign to the left of the **Signaling Servers** link on the **Edit** Web page (seeEdit Web page). Double-click the Signaling Server IP address. The **Signaling Server Properties** Web page opens (see Figure 65 "Signaling Server Properties Web page" (page 138)).

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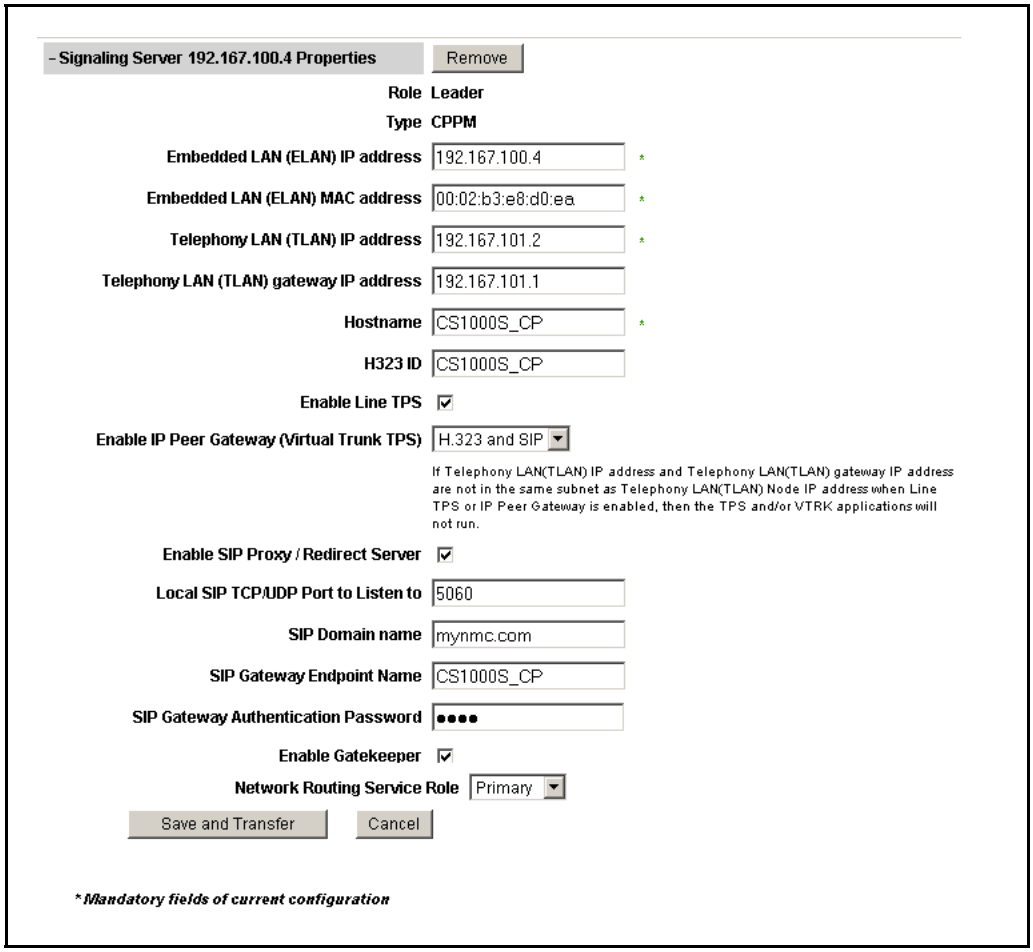
Figure 65
Signaling Server Properties Web page



Choose a **mode** from the following options in the **Enable IP Peer Gateway (Virtual trunk TPS)** drop-down list:

- None
- H.323 only
- SIP only
- H.323 and SIP

Enter the Local SIP Port, SIP Domain name, and SIP Gateway User user name and password.

When the administrator edits the Node and clicks **Save and Transfer**, transfer status information is updated and displayed.

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Detailed procedures for performing these tasks are included in *IP Peer Networking Installation and Commissioning (NN43001-313)* () .

Note: The configuration of static Loss Plan values is performed using LD 73 instead of Element Manager. A Dynamic Loss Plan has been implemented to define the loss value per endpoint connection type. The loss plan adjusts the Voice Gateway Media Card gateway channel's loss for each call by sending pad values to the card.

Default values

The default values in the system are for the North American loss plan.

Non-North American countries

Installation of IP Line 5.5 in countries other than North American countries requires setting the pad values to that country's loss plan. If the system is installed in other countries, the Global PRI package (International 1.5/2.0 Mb/s Gateway package 167) must be used, and the NTP-specified values must be entered in LD 73. At the PDCA prompt, enter Table 15.

For more information about configuring Loss Plans, see *Transmission Parameters Reference (NN43001-282)* () .

Note: When a system is installed in the UK, the CLI command UKLossPlanSet is entered at the CLI of one card in each node. This adjusts the loss plan of the IP Phones to the higher transmit levels required in the UK. For more information, see *IP Line Fundamentals (NN43100-500)* () .

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 66 "Node Maintenance and Reports Web page" (page 140).

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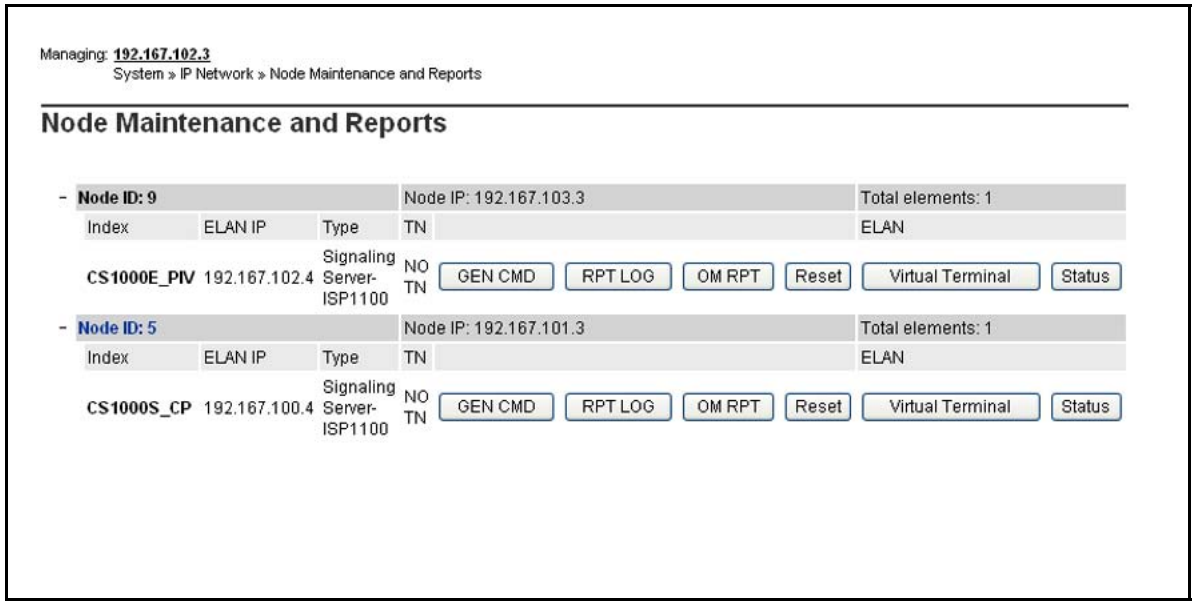
Figure 66
Node Maintenance and Reports Web page



This Web page contains information on 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 *IP Line Fundamentals (NN43100-500)* () .

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 (for Signaling Servers) or **SYS LOG** — Launches the System log file Web page (for IP Telephony Cards).
- **OM RPT** — Launches the **Operational Management Report** Web page.
- **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.

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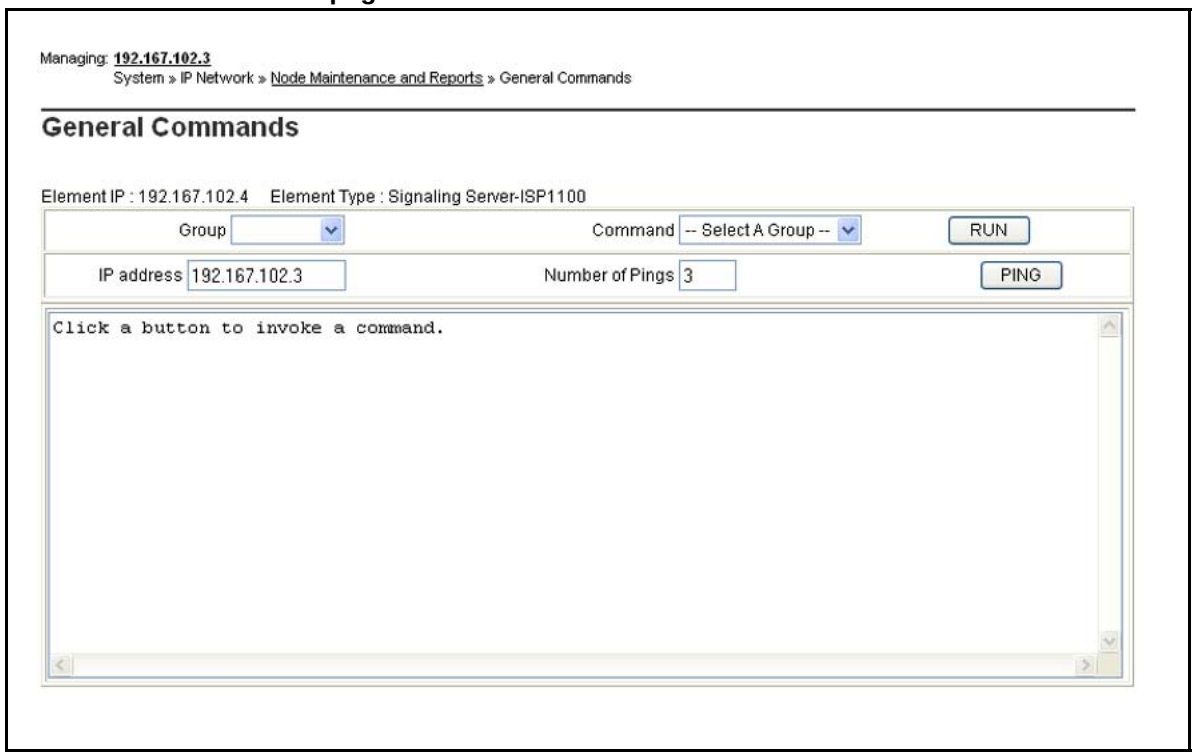
General Commands

Click the **GEN CMD** button, located beside the information for an IP Telephony element as shown in Figure 66 "Node Maintenance and Reports Web page" (page 140), to open the **General Commands** Web page for that element. See Figure 67 "General Commands Web page" (page 141).

Figure 67
General Commands Web page



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

To issue an IP Line application command:

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--

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Detailed procedures for issuing General Commands can be found in *IP Line Fundamentals (NN43100-500)* () .

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 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:

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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.
3	Click **Ping**.

--End--

Report Log

Click the **RPT LOG** button, located beside the information for the Signaling Server as shown in Figure 66 "Node Maintenance and Reports Web page" (page 140), to open the **Node Report Logs** Web page for the Signaling Server (see Figure 68 "Node Report Logs Web page" (page 144)).

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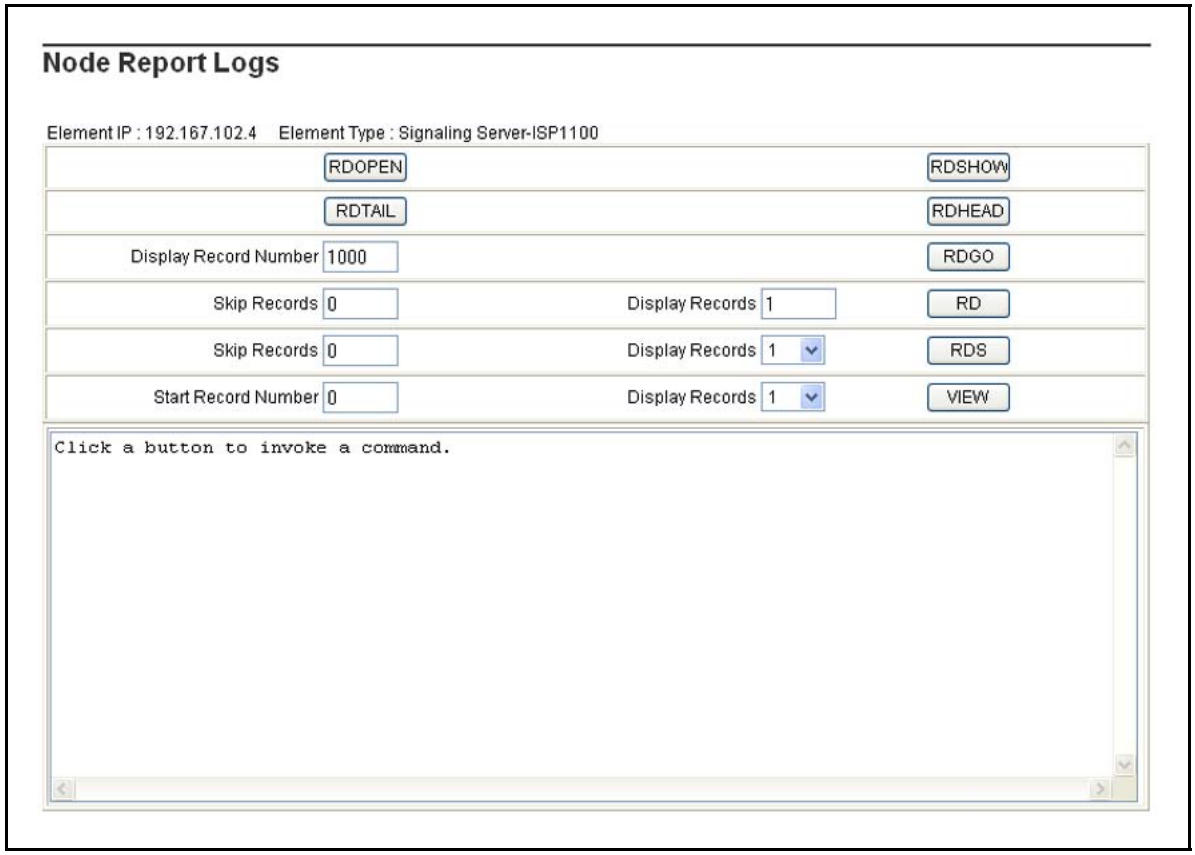
Figure 68
Node Report Logs Web page



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

- **RDOPEN** — Opens the latest report file.
- **RDSHOW** — Shows a summary of the report file.
- **RDTAIL** — Shows x records up to the newest record in the report file (where x is the configured display size).
- **RDHEAD** — Shows 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.

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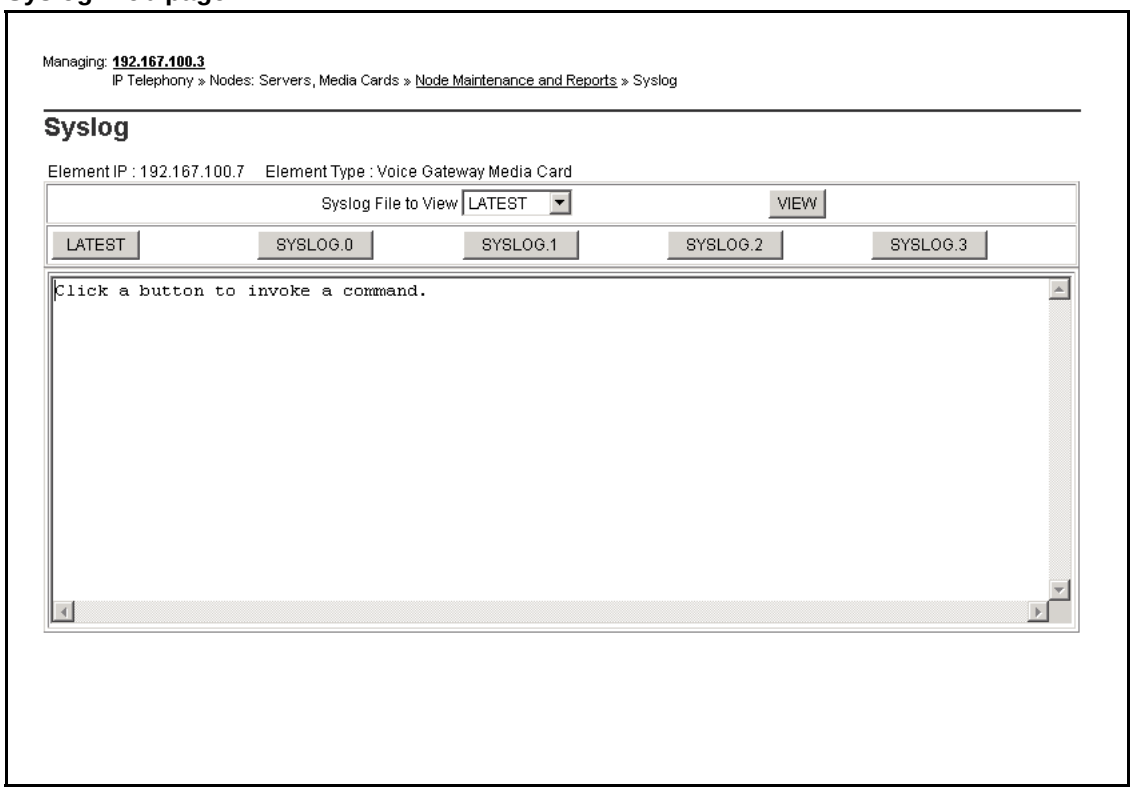
- **RDS** — Browses the report records with (symbolic) memory dump. Enter the number of records to skip, and select the number of records to display using the adjacent text box and drop-down list.
- **VIEW** — Views selected records. Enter a starting record number and select the number of records to view using the adjacent text box and drop-down list. Negative numbers indicate records previous to the starting record.

The results are displayed in the box at the bottom of the Web page.

System log

Click the **SYS LOG** button, located beside the information for an IP Telephony card, to open the **Syslog** Web page for the IP Telephony card, as shown in Figure 69 "Syslog Web page" (page 145).

Figure 69
Syslog Web page



To view a System log file:

Step	Action
1	Select a file using the **Syslog File to View** drop-down list.

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2 Click **VIEW**.

--End--

Alternatively, click one of the five buttons below the Syslog File to view the dialog box:

- **LATEST** — Displays the most recent record in the system log file.
- **SYSLOG.0** — Displays the file /C:/log/syslog.0 located on the Media Card.
- **SYSLOG.1** — Displays the file /C:/log/syslog.1 located on the Media Card.
- **SYSLOG.2** — Displays the file /C:/log/syslog.2 located on the Media Card.
- **SYSLOG.3** — Displays the file /C:/log/syslog.3 located on the Media Card.

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

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 66 "Node Maintenance and Reports Web page" (page 140), to open the **OM Reports** Web page for that element, as shown in Figure 70 "OM Reports Web page" (page 147).

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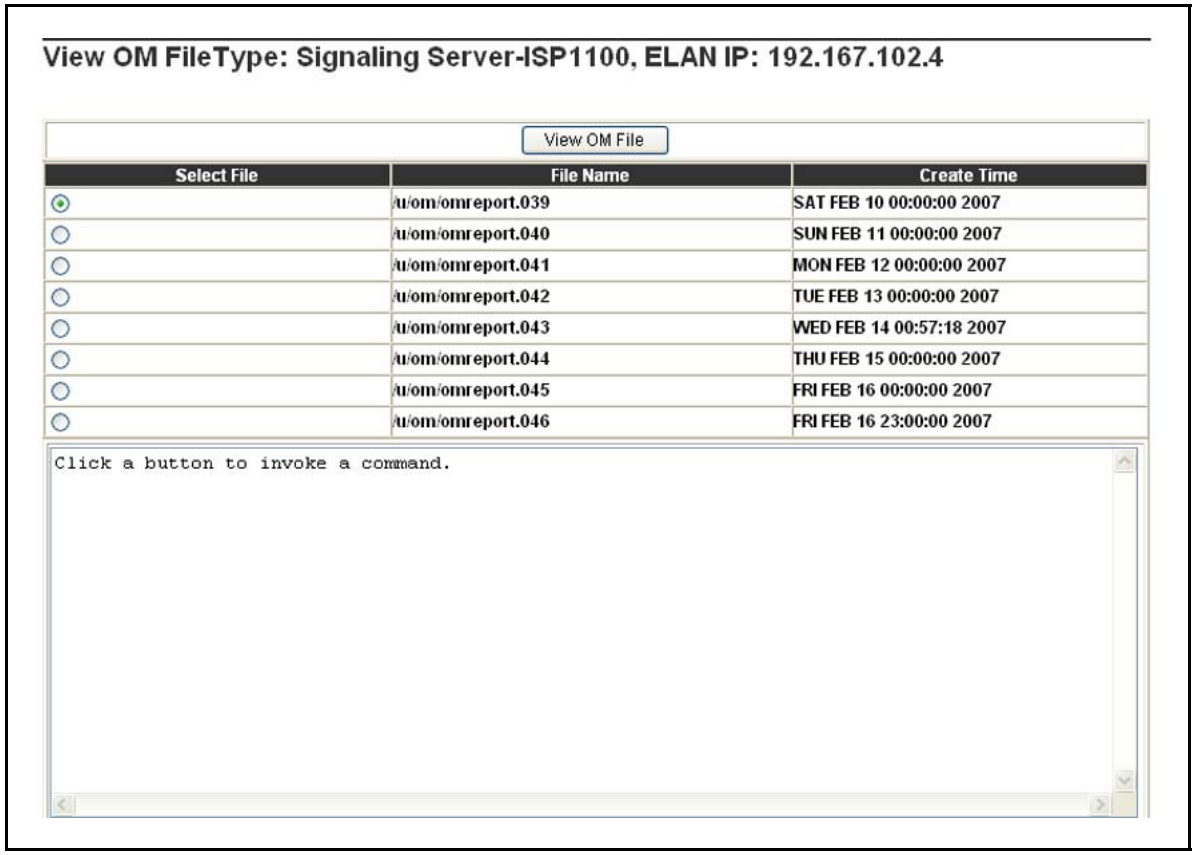
Figure 70
OM Reports Web page



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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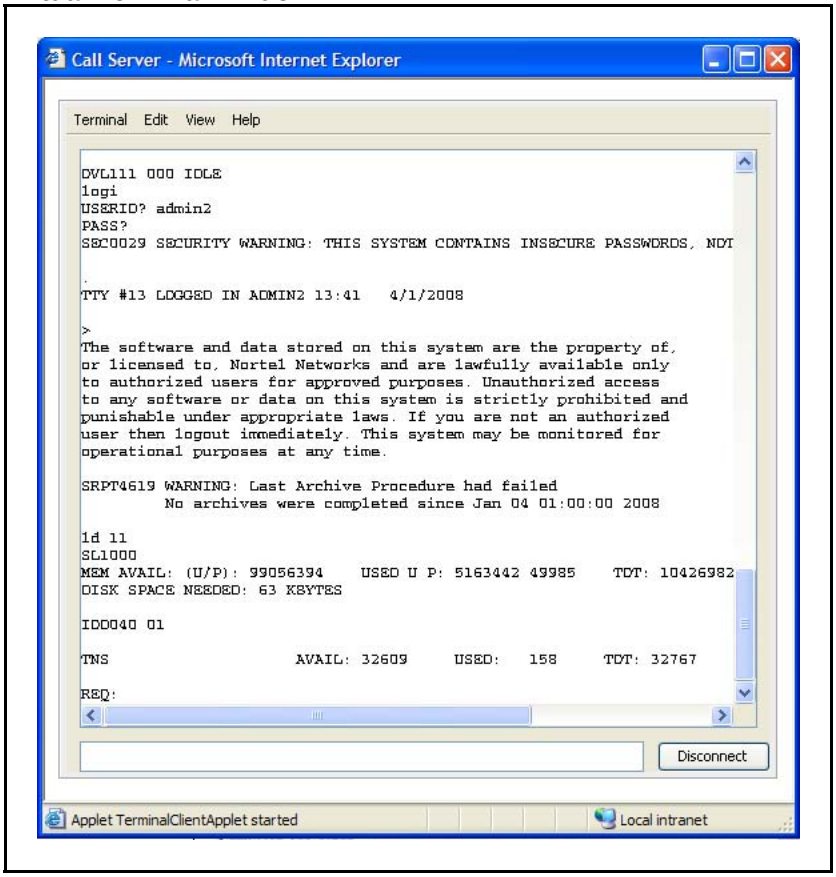
Click the **Virtual Terminal** button on the **Node Maintenance and Reports** Web page to open the **Virtual Terminal** window, as shown in Figure 71 "Virtual Terminal window" (page 148).

Figure 71
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. The **Virtual Terminal** window opens, as shown in Virtual Terminal window.

3 Enter the user name and password.

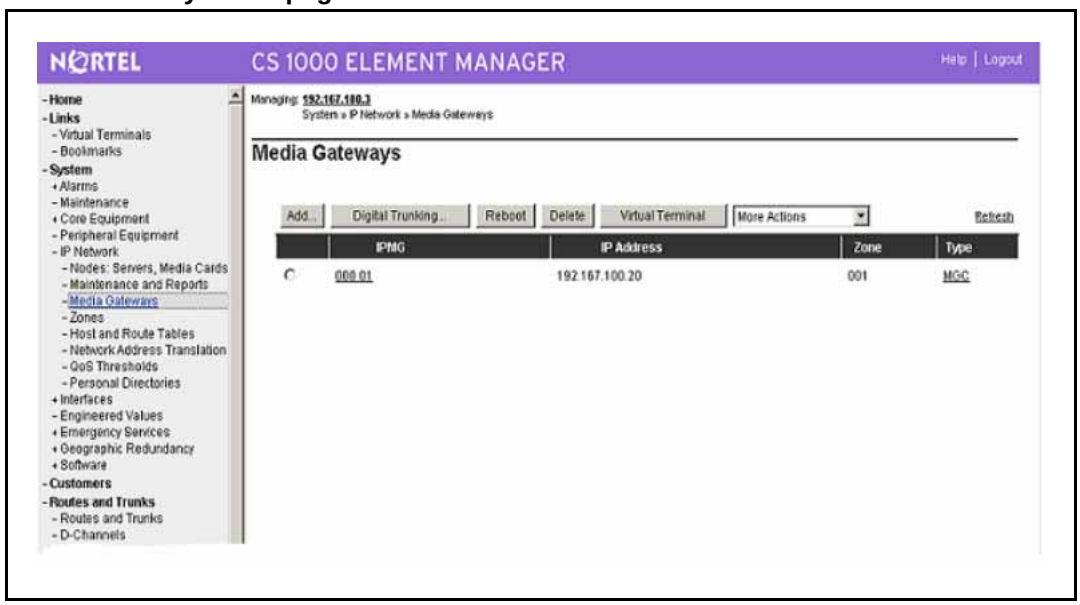
--End--

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

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 opens, as shown in Figure 72 "Media Gateways Web page" (page 149).

Figure 72
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).

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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 opens. See, Figure 72 "Media Gateways Web page" (page 149).

Procedure 84
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 opens. See, Figure 73 "General Commands" (page 151).
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--

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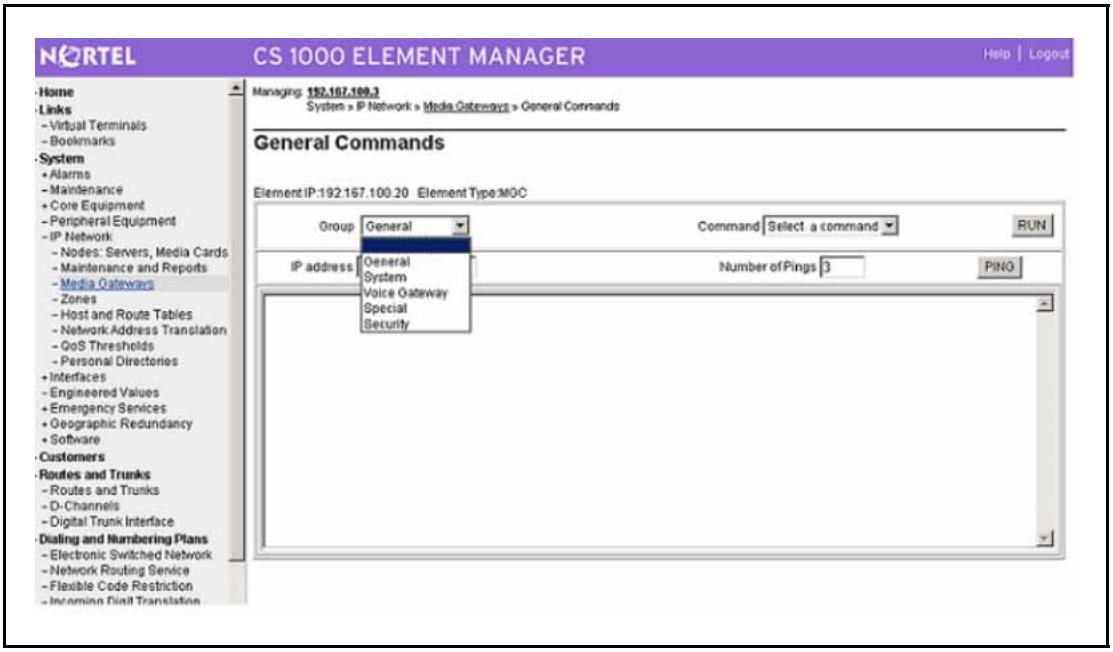
Figure 73
General Commands



General purpose commands

The following General purpose commands are supported from **Element Manager in General Commands** Web page:

- hosts — Prints a list of all known hosts on the network
- version — Identifies the version of VxWorks

System platform administration and maintenance commands

The following MGC platform administration and maintenance commands are supported from Element Manager under the System group in **General Commands** Web page:

- mgcInfoShow — Displays basic setup information
- macShow — Display MAC addresses
- diskShow — Display compact flash size
- memShow — Display memory usage
- ethSpeedShow — Show port speed and duplex setting
- dbHwShow — Display the model and revision numbers for installed DBs
- mgcDbShow — Display information about DSP DB
- rmonStatShow — Display RMON statistics for one port

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- rmonStatShowAll — Display all RMON statistics
- rmonStatReset — Reset RMON statistics for one port
- rmonStatResetAll — Reset all RMON statistics
- swVersionShow — Show software version
- displayShow — Show the faceplate message
- mspVersionShow — Display MSP Device type, ARM code, Voice DSP Revision, and T.38 Version

Voice Gateway commands

The following Voice Gateway commands under the Voice Gateway group are supported from Element Manager in **General Commands** Web page:

- dspNumShow — Displays the number of DSP channels for each DSP DB
- dspChanStateShow — Lists the state of all the channels on the DSP DBs
- dspHwCheck — Perform a basic DSP hardware diagnostic check
- dspLoopTest — Perform DSP loopback test for all inactive channels or for the channels entered
- vgwShow — Show information about busy gateway channels
- vgwCardShow — Show all channel's information for specified card
- vgwShowAll — Show information about all the gateway channels
- ommShow — Print the current OM data to the console

Special purpose PDT commands

The following Special purpose PDT command is supported from Element Manager in the **General Commands** Web page:

- testAlarm — Test SNMP alarm

IP Security commands

The following Intra-system and cryptographic key support commands are supported from Element Manager under Security group in the **General Commands** Web page:

- disInsecureShells — Disables all insecure shells in the system
- disSecureShells — Disable all secure shells in the system
- enlInsecureShells — Enable all insecure shells in the system
- enlSecureShells — Enables all secure shells

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- isecChgPsk — Change ISEC Psk locally
- isecChgLevel — Change ISEC security level locally
- isecNewTarget — Add a new target to the ISEC target list
- isecOutTarget — Delete a target from the ISEC target list
- isecEnlTarget — Enable the target ISEC
- isecDisTarget — Disable the target ISEC
- isecProfileShow — Show all ISEC profiles
- sshKeyActivate — Activate the SSH key
- sshKeyClear — Clears the SSH key
- sshKeyGenerate — Generate the SSH key
- sshKeyShow — Generate the SSH key
- statInsecureShells — Show whether insecure shell access is enabled or disabled
- statSecureShells — Show whether secure shell access is enabled or disabled

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 opens. Choose an MGC and select **Report Log** from the **More Actions** drop-down list. The **MGC Report Log** Web page opens, as shown in Figure 74 "MGC Report Logs Web page" (page 154).

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).

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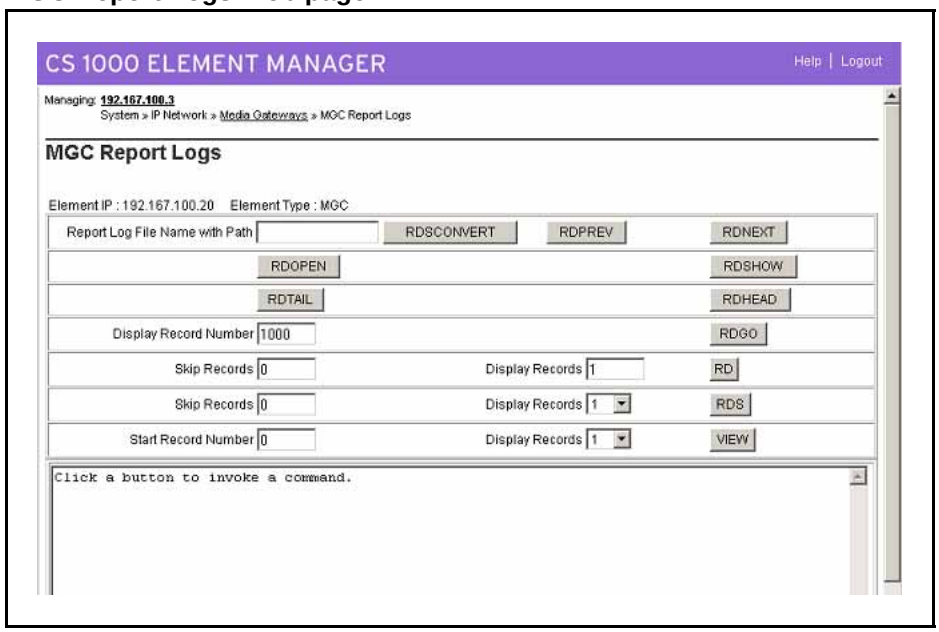
To view selected detail data on records in the report file, use the text boxes, the drop-down lists, and the following buttons:

- 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.

Figure 74
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.

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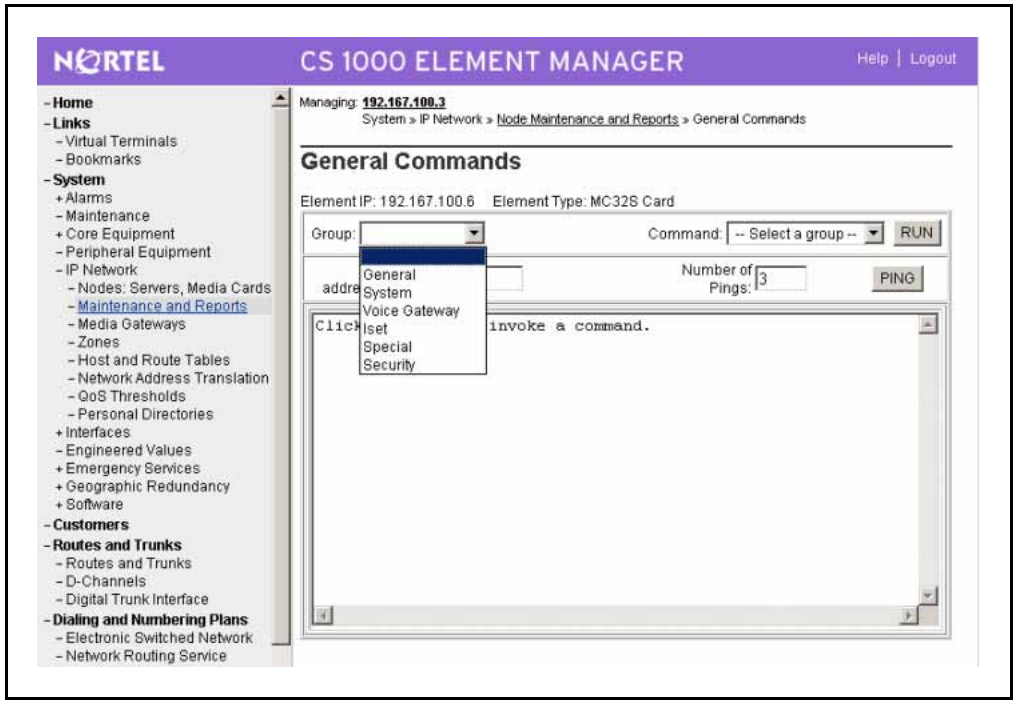
The following MC32S CLI command groups are supported from Element Manager:

- General — General purpose commands
- System — System commands
- Voice Gateway — Voice Gateway application administration and maintenance commands
- Iset — IP Phone and LTPS 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 opens. Click **GEN CMD** for the MC32S card from the list. The **General Commands** Web page opens for the MC32S card, as shown in Figure 75 "MC32S General Commands Web page" (page 155).

Figure 75
MC32S General Commands Web page



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Procedure 85
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--

General commands

The following MC32S General purpose commands are supported from Element Manager under General group in the **General Commands** Web page:

- hosts
- version
- ifShow

System commands

The following MC32S System commands are supported from Element Manager under System group in the **General Commands** Web page:

- mc32sInfoShow — Display basic setup information
- macShow — Display MAC Addresses
- diskShow — Display compact flash size
- memShow — Display memory usage
- ethSpeedShow — Show port speed and duplex setting
- dbHwshow — Display the model and revision numbers for installed DBs
- rmonStatShow — Display RMON statistics for one port
- rmonStatShowAll — Display all RMON statistics
- rmonStatReset — Reset RMON statistics for one port
- rmonStatResetAll — Reset all RMON statistics
- IPInfoShow — Display basic setup information
- logConsoleOn — Turn on logging to the console

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- logConsoleOff — Turn off logging to the console
- logShow — Show information about the current logging configuration
- pbxLinkShow — Show PBX link status
- routeAdd — Add a route to the routing tables
- routeShow — Display host and network routing tables
- serialNumShow — Print out card serial number
- swVersionShow — Display software version
- setLeader — Set a leader card
- clearLeader — Clear the leader info in NVRAM
- disiAll — Graceful disable LTPS and VGW
- enaAll — Enable LTPS and VGW (opposite of disiAll)
- firmwareVersionShow — Prints out firmware version number
- itgAlarmTest — Generates ITGXXXX test alarms
- itgCardShow — Show card info
- itgMemShow — Show the memory usage
- displayShow — Show the faceplate message
- mspVersionShow — Display MSP Device type, ARM code, Voice DSP Revision, and T.38 Version

Voice Gateway commands

The following Voice Gateway commands under Voice Gateway group are supported from Element Manager in the **General Commands** Web page:

- dspNumShow — Displays the number of DSP channels for each DSP DB
- dspChanStateShow — Lists the state of all the channels on the DSP DBs
- dspHwCheck — Perform a basic DSP hardware diagnostic check
- dspLoopTest — Perform DSP loopback
- vgwCardShow — Show all channel's information for specified card
- vgwShow — Show information about busy gateway channels
- vgwShowAll — Show information about all the gateway channels
- numChannelsShow — Prints out number of available channels
- ommShow — Print the current OM data to the console

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- resetOm — Reset the operational measurement file timer
- itgChanStateShow — Show State for channels, e.g. busy or idle

IP Phone and LTPS Administration and Maintenance commands (Iset)

The following MC32S Platform IP Phone and LTPS Administration and Maintenance commands are supported from Element Manager under ISET group in the **General Commands** Web page:

- isetReset — Reset registered IP set
- isetResetAll — Reset all registered IP sets
- isetShow — Show general information for all registered sets
- nodePwdSet — Set password for current node
- nodePwdShow — Show node password setting
- nodePwdEnable — Enable node password setting
- nodePwdDisable — Disable node password setting
- nodeTempPwdClear — Clear the temporary password for current node
- nodeTempPwdSet — Set a temporary password for current node
- isetNATShow — Show information about registered sets behind a NAT router
- isetLocShow — Show location information for all connected sets or specified set
- isetLocNeedUpdateShow — Show location information for connected sets that need a location update
- isetCount — Show total number of registered sets based on given query
- isetGet — Show a list of IP phones based on a given query
- isetFWGet — Show a list of IP phones firmwares based on a given query
- eStatShow — Show Ethernet statistics for specified IP set
- isetInfoShow — Show DHCP configurations and iset information for specified IP set
- rTraceRoute — Request specified IP set to trace route a IP address
- rTraceRouteStop — Request a IP set to stop tracing route
- rudpStatShow — Show RUDP/UNIStim statistics for specified IP set
- tpsShow — Show TPS info

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- disTPS — Gracefully switch the registered sets to the other cards in the same node
- forcedisTPS — Force all registered line TPS to unregister from the local server
- enlTPS — Causes line TPS application to be enabled and to accept set registration
- loadBalance — Balance the registration load of sets between node components
- uftpNodeShow — Show IP telephone f/w download summary of node
- disServices — Gracefully switch the registered resources to the other servers in the same node
- forcedisServices — Force switch the registered resources to the other services in the same node
- enlServices — Causes all the services to accept registration of resources
- servicesStatusShow — Show the status of services

IP Security commands

The following Intra-system and cryptographic key support commands are supported from Element Manager under Security group in the **General Commands** Web page:

- disInsecureShells — Disables all insecure shells in the system
- disSecureShells — Disable all secure shells in the system
- enlInsecureShells — Enable all insecure shells in the system
- enlSecureShells — Enables all secure shells
- isecChgPsk — Change ISEC Psk locally
- isecChgLevel — Change ISEC security level locally
- isecNewTarget — Add a new target to the ISEC target list
- isecOutTarget — Delete a target from the ISEC target list
- isecEnlTarget — Enable the target ISEC
- isecDisTarget — Disable the target ISEC
- isecProfileShow — Show all ISEC profiles
- sshKeyActivate — Activate the SSH key
- sshKeyClear — Clears the SSH key
- sshKeyGenerate — Clears the SSH key

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- sshKeyShow — Display the SSH key
- statInsecureShells — Show whether insecure shell access is enabled or disabled
- statSecureShells — Show whether secure shell access is enabled or disabled

Special Purpose PDT commands

The following Special purpose PDT command is supported from Element Manager under Special group in the General Commands Web page:

- testAlarm — Test SNMP alarm

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 opens. Choose an MC32S card and click **RPT Log**. The **Node Report Logs** Web page opens, as shown in Figure 76 "MC32S Node Report Logs Web page" (page 161).

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.

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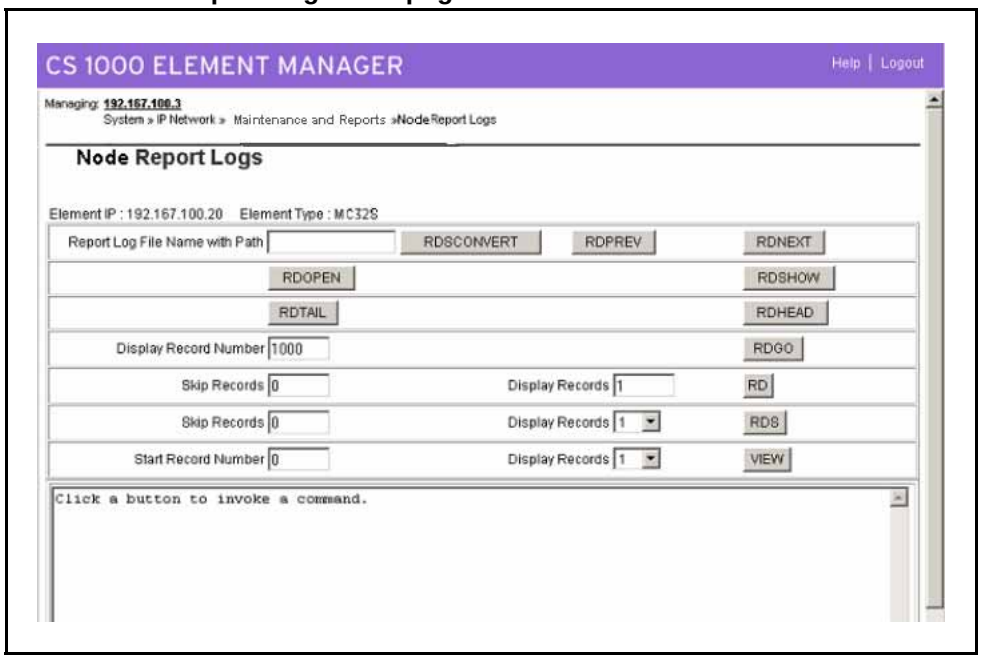
- RDS — Browses the report records with (symbolic) memory dump. Enter the number of records to skip, and select the number of records to display using the adjacent text box and drop-down list.
- VIEW — Views selected records. Enter a starting record number and select the number of records to view using the adjacent text box and drop-down list. Negative numbers indicate records previous to the starting record.

Figure 76
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 zone information, click the **Zones** link in the **IP Network** branch of the Element Manager navigator. The **Zones** Web page opens (see Figure 77 "Zones Web page" (page 162)).

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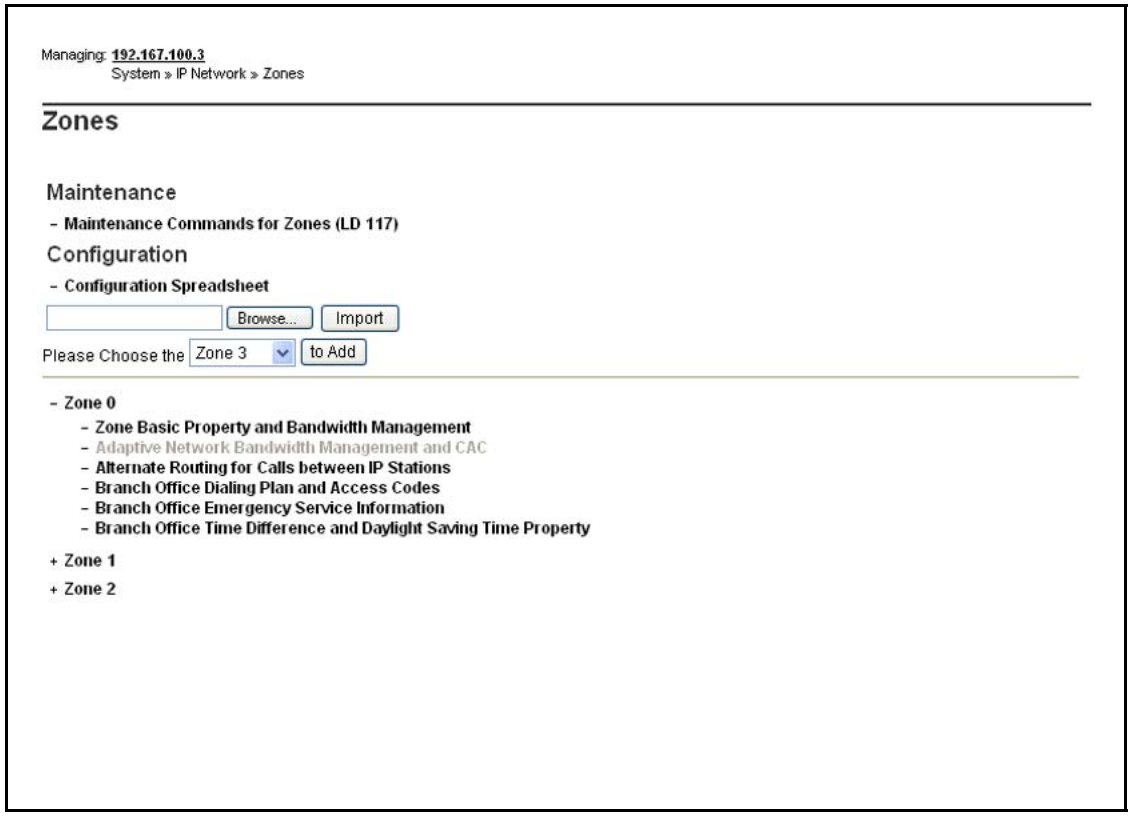
Figure 77
Zones Web page



Note: Zone 0 is not included in the selection box listing the Zones in Element Manager. Zone 0 should never be used or configured. There are no bandwidth restrictions in Zone "0" and Bandwidth Management parameters cannot be configured. However, if Zone 0 was configured through the CLI (which should not be done), Delete functionality for Zone 0 is available in Element Manager to enable the deletion of Zone 0.

The user can view a spreadsheet populated 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 opens, which can be saved to the user's local drive.

Note: All rows must be entered sequentially in the Microsoft Excel spreadsheet, if a blank row is encountered further rows are not taken into account.

From the **Zones** Web page, add Zones by selecting a **Zone number** from the drop-down list and clicking **to Add**.

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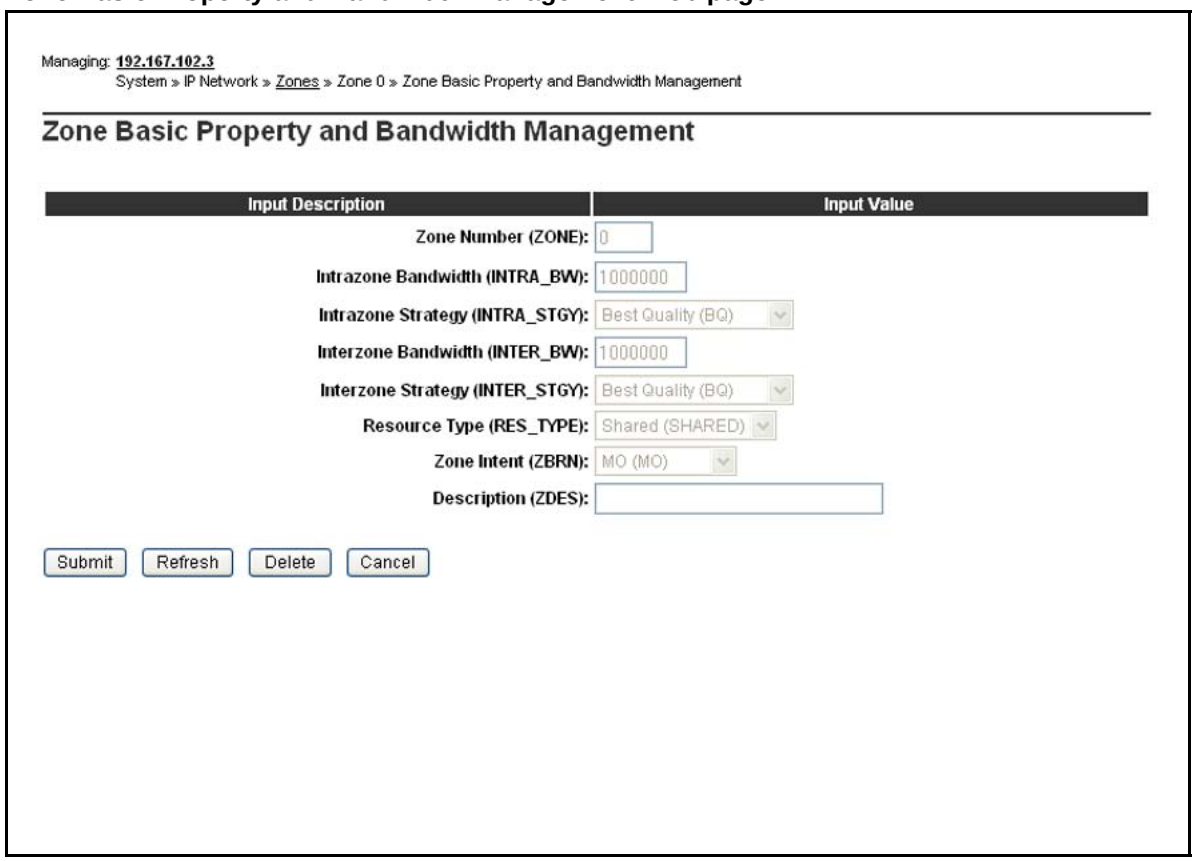
This Web page also contains links to the six categories of Zone configuration data for each Zone configured. Click the plus sign to the left of next to the Zone number to see the following:

- 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 Emergency Service Information
- Branch Office Time Difference and Daylight Saving Time Property

For information on 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 opens. See Figure 78 "Zone Basic Property and Bandwidth Management Web page" (page 163).

Figure 78
Zone Basic Property and Bandwidth Management Web page



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

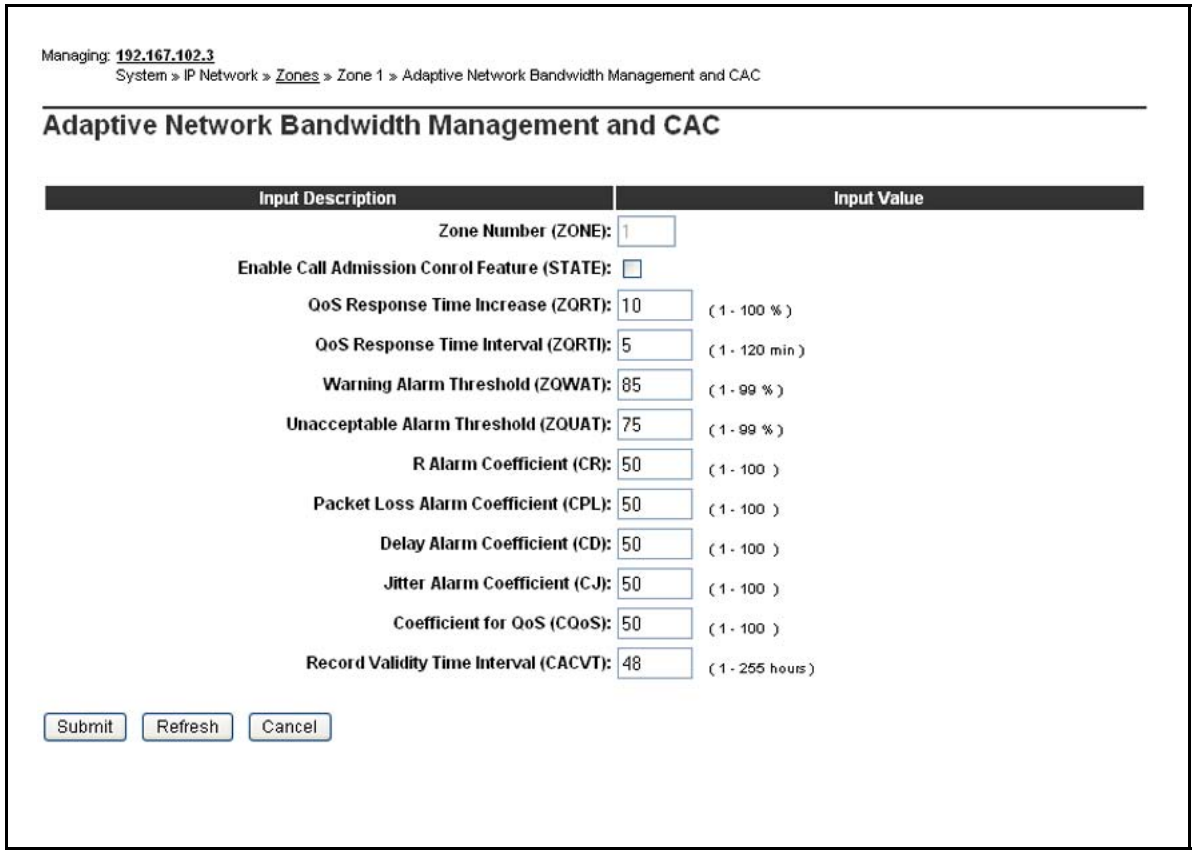
To save changes made in **Zone Basic Property and Bandwidth Management** parameters, click **Submit** at the bottom of the Web page.

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

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 opens, as shown in Figure 79 "Adaptive Network Bandwidth Management and CAC Web page" (page 164).

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



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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.
- 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. Once 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 opens, as shown in Figure 80 "Alternate Routing for Calls between IP Stations" (page 166).

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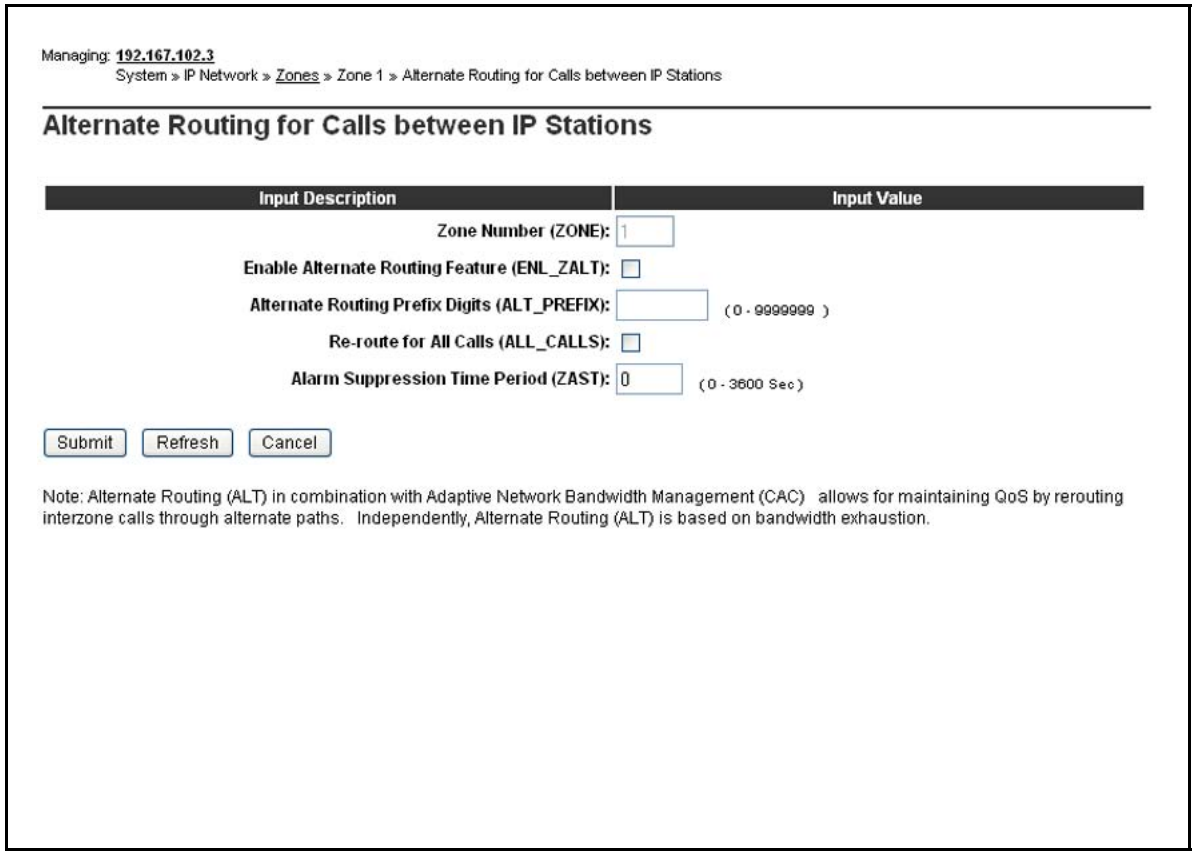
Figure 80
Alternate Routing for Calls between IP Stations



- 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 opens. See Figure 81 "Zone Dialing Plan and Access Codes Web page" (page 167).

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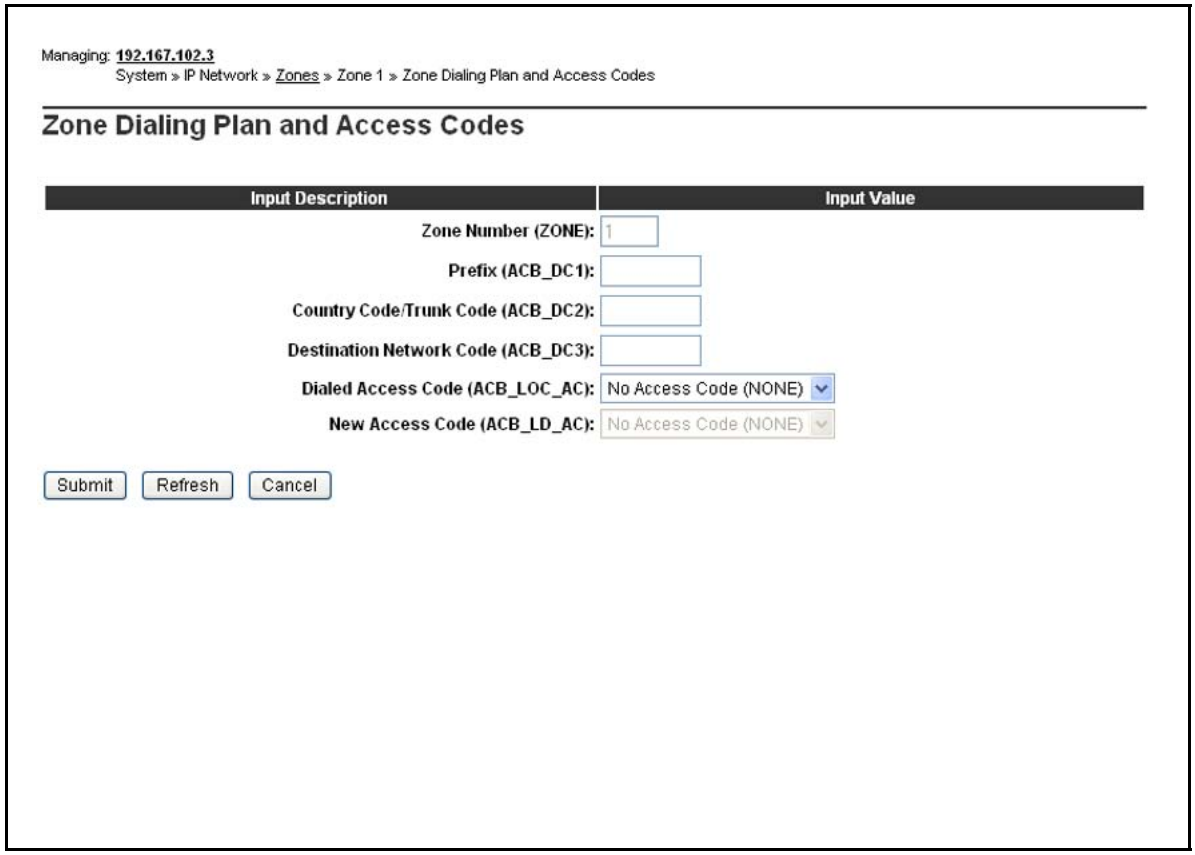
Figure 81
Zone Dialing Plan and Access Codes Web page



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 opens (see Figure 82 "Time Difference and Daylight Saving Time Property Web page" (page 168)).

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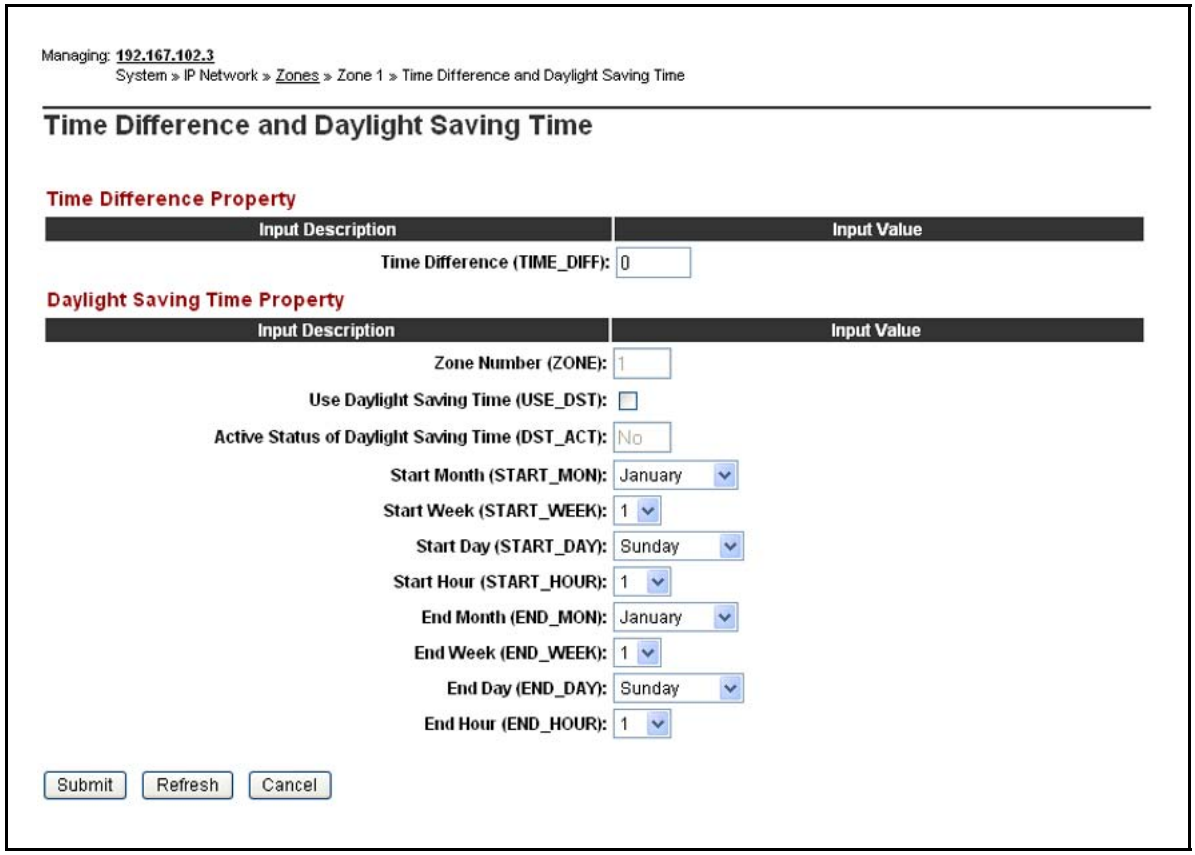
Figure 82
Time Difference and Daylight Saving Time Property Web page



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.

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.

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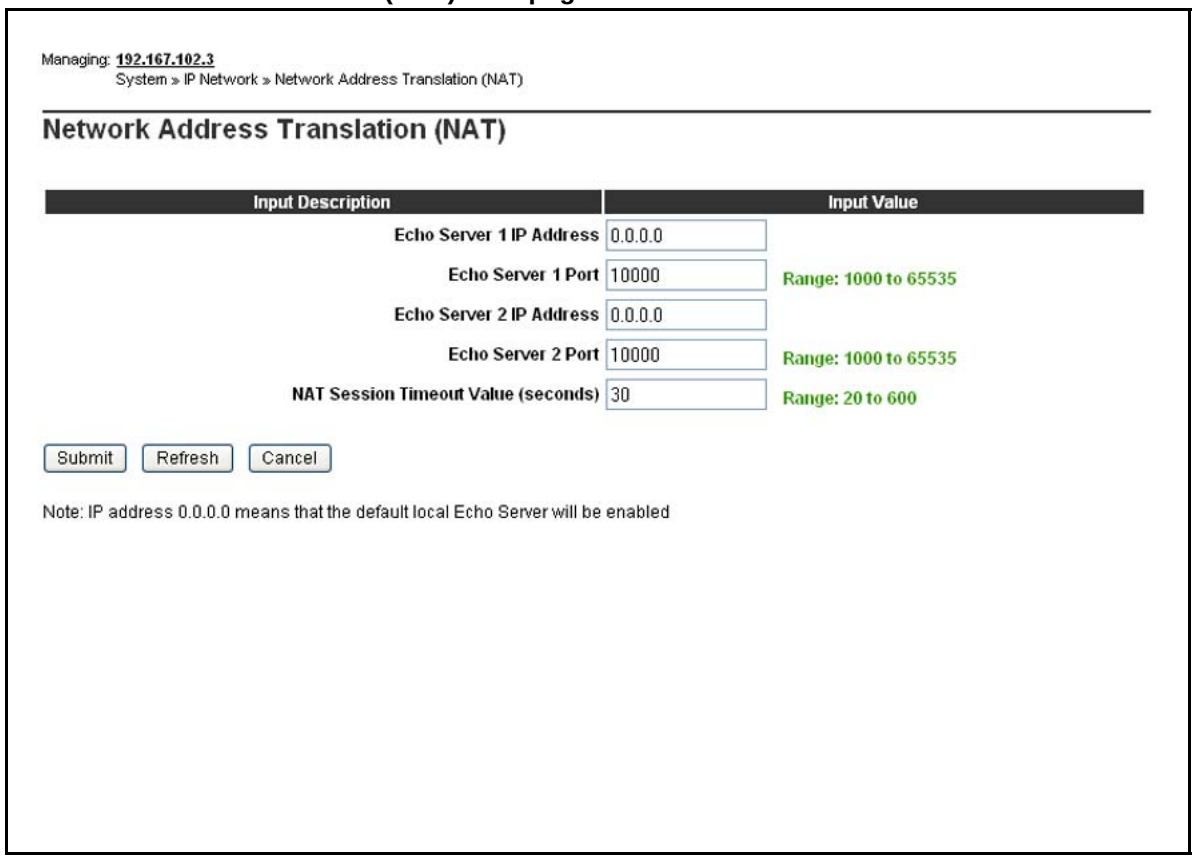
Network Address Translation (NAT)

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 opens, as shown in Figure 83 "Network Address Translation (NAT) Web page" (page 169).

Figure 83
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 *IP Line Fundamentals (NN43100-500)* () .

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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.

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% (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%, then zone alarms are issued if over 2% 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% compared to 2%). 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 opens (see Figure 84 "Quality of Service (QoS) Thresholds Web page" (page 171)).

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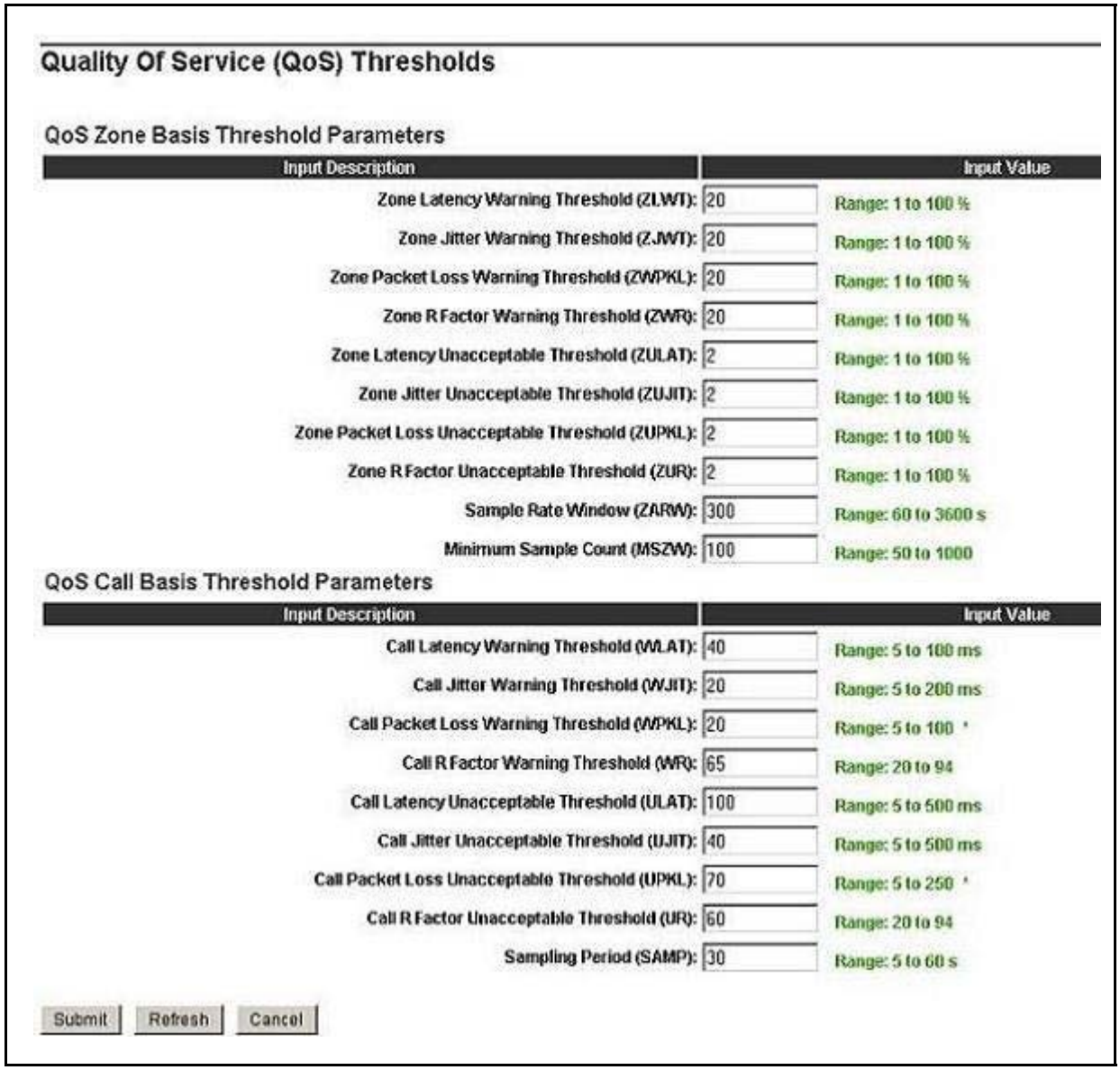
Figure 84
Quality of Service (QoS) Thresholds Web page



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, Redial List, and Callers List feature runs on either a leader or follower Signaling Server. It can run on the same Signaling Server as Element Manager if the number of users is less than 1000. If the Signaling Server supports more than 1000 users, use a separate Signaling Server.

For more information about Personal Directories, Redial List, and Callers List, see *IP Line Fundamentals (NN43100-500)* () .

Interfaces

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

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 opens as shown in Figure 85 "Value Added Server Web page" (page 173).

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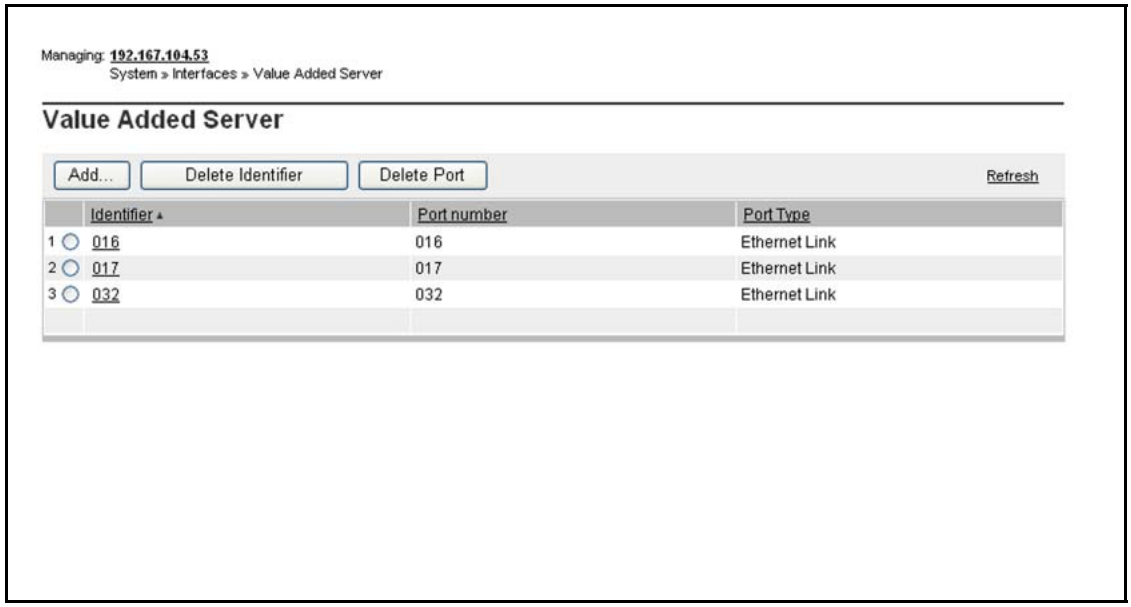
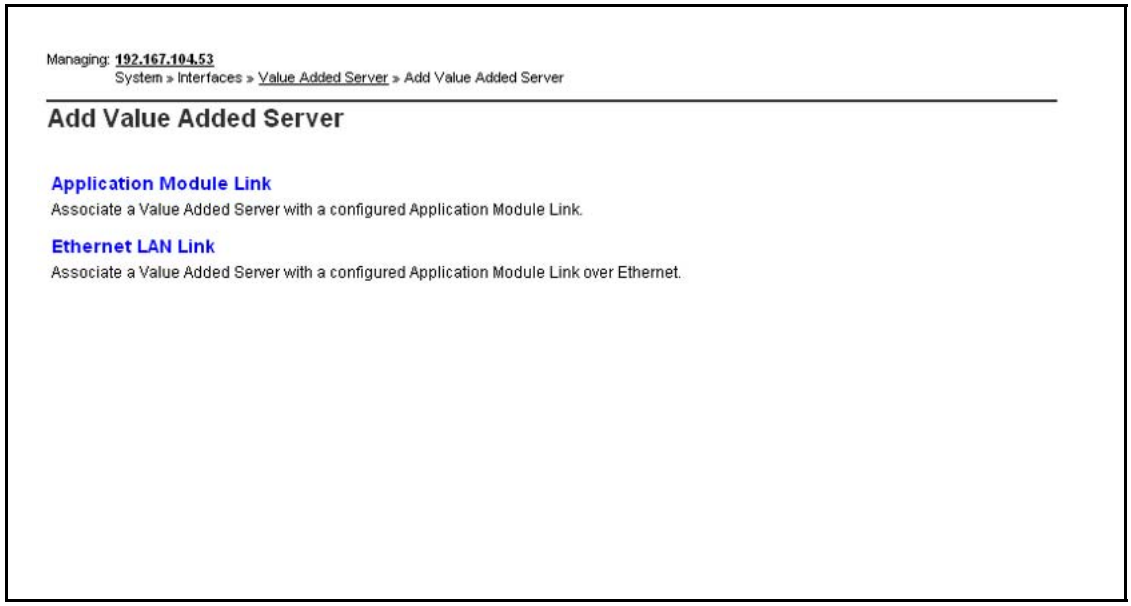
Figure 85
Value Added Server Web page



To add a Value Added Server, click **Add**. The **Add Value Added Server** Web page opens, as shown in Figure 86 "Add Value Added Server Web page" (page 173).

Figure 86
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 opens, as shown in Figure 87 "Application Module Link Web page" (page 174).

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Figure 87
Application Module Link Web page

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

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 opens, as shown in Figure 88 "Ethernet Link Web page" (page 174).

Figure 88
Ethernet Link Web page

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

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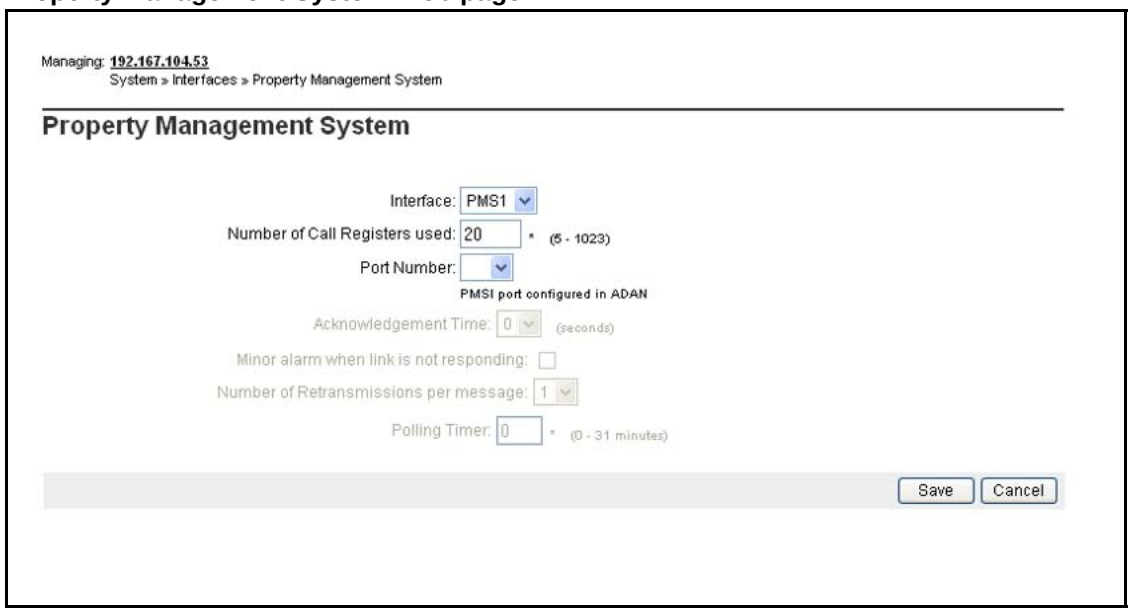
Property Management System

Click the **Interfaces > Property Management System** link in the **System** branch of the Element Manager navigator. The **Property Management System** Web page opens, as shown in Figure 89 "Property Management System Web page" (page 175).

Figure 89
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 90 "Engineered Values Web page" (page 176).

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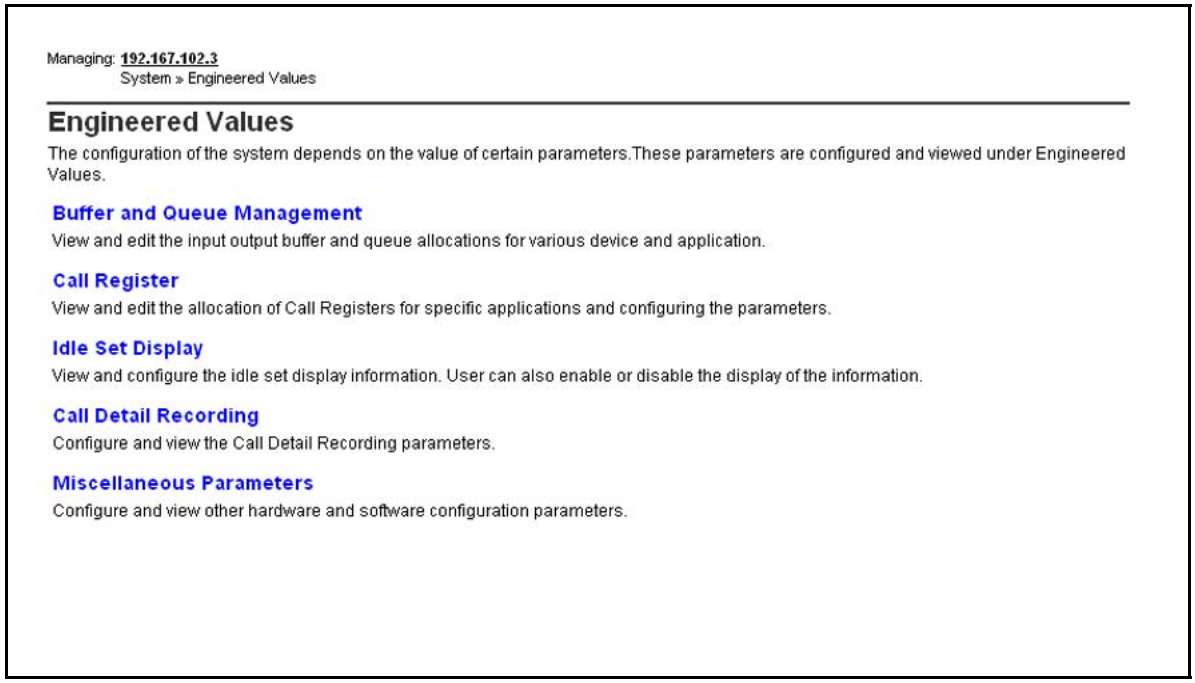
Figure 90
Engineered Values Web page



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 91 "Buffer and Queue Management Web page" (page 177).

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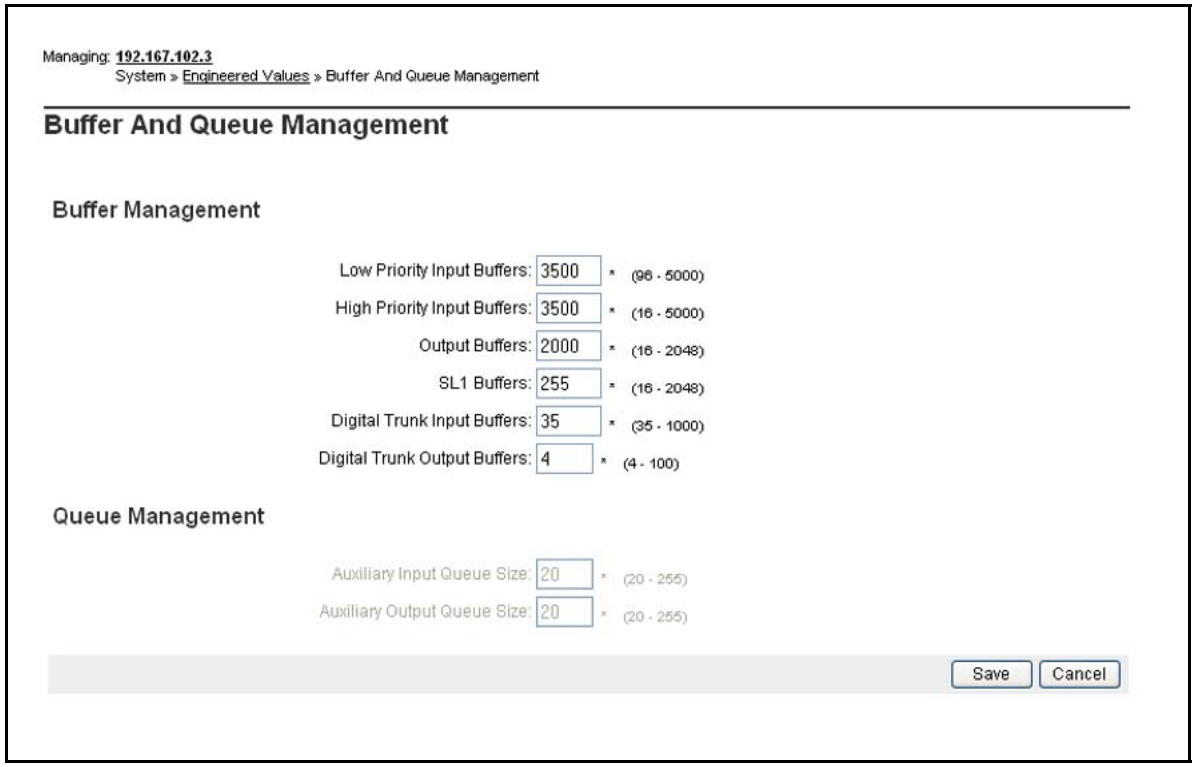
Figure 91
Buffer and Queue Management Web page



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 92 "Call Register Web page" (page 178).

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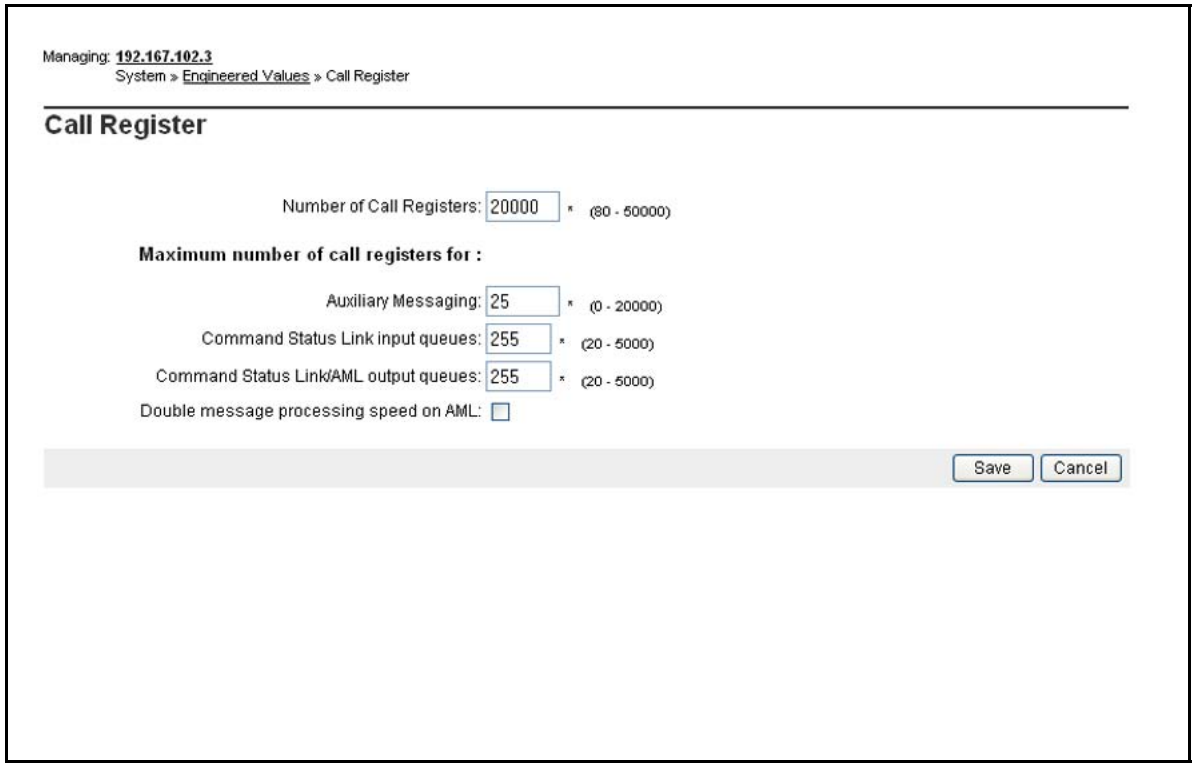
Figure 92
Call Register Web page



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 93 "Idle Set Display Web page" (page 179).

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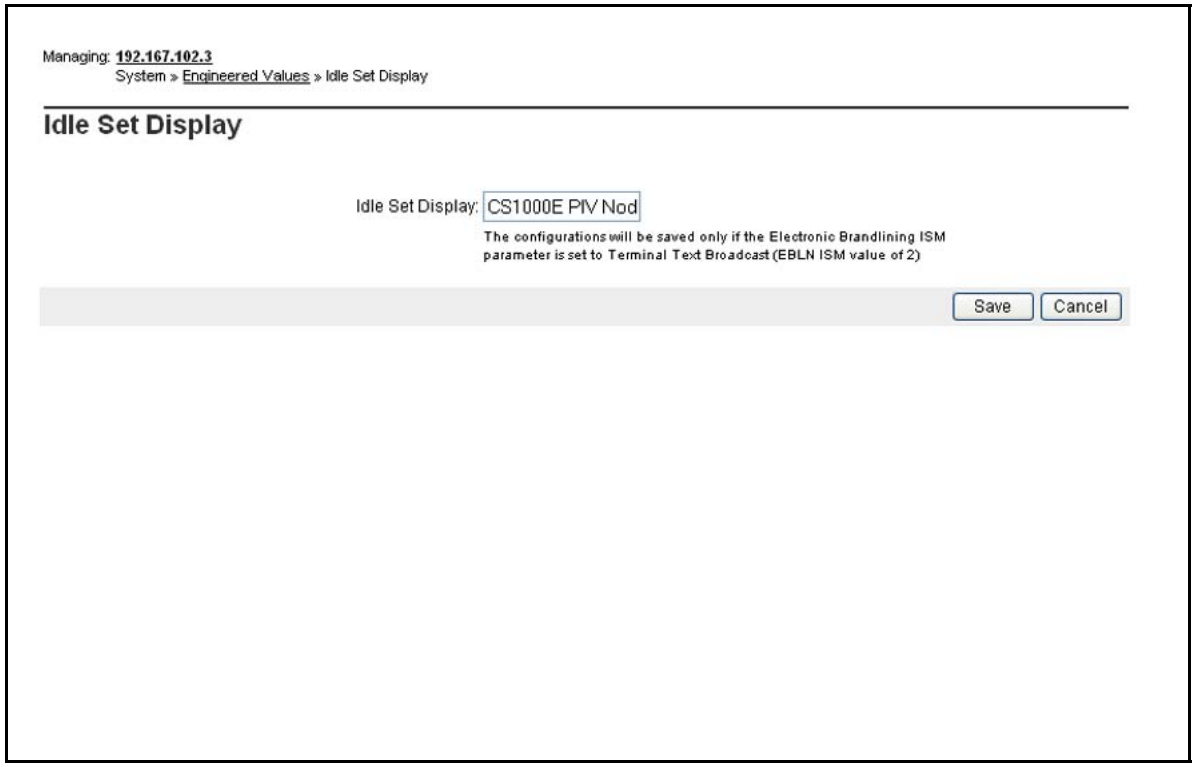
Figure 93
Idle Set Display Web page



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 94 "Call Detail Recording Web page" (page 180).

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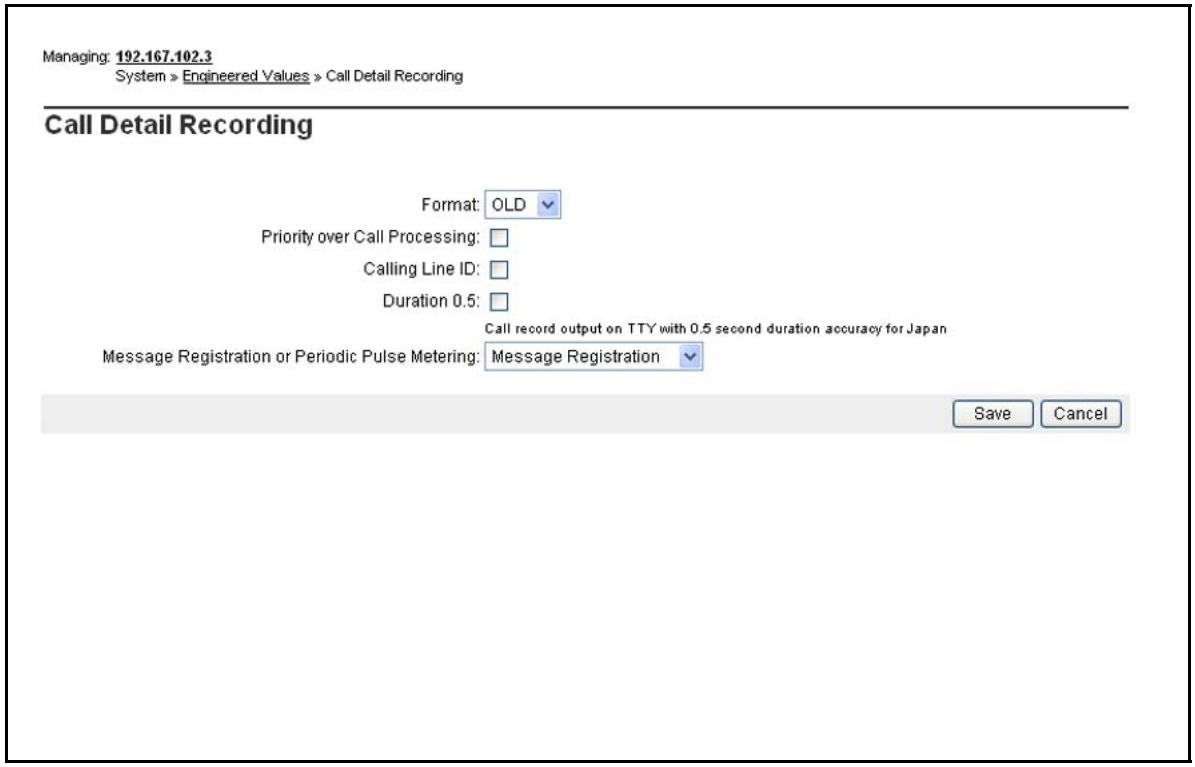
Figure 94
Call Detail Recording Web page



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 95 "Miscellaneous Parameters Web page" (page 181).

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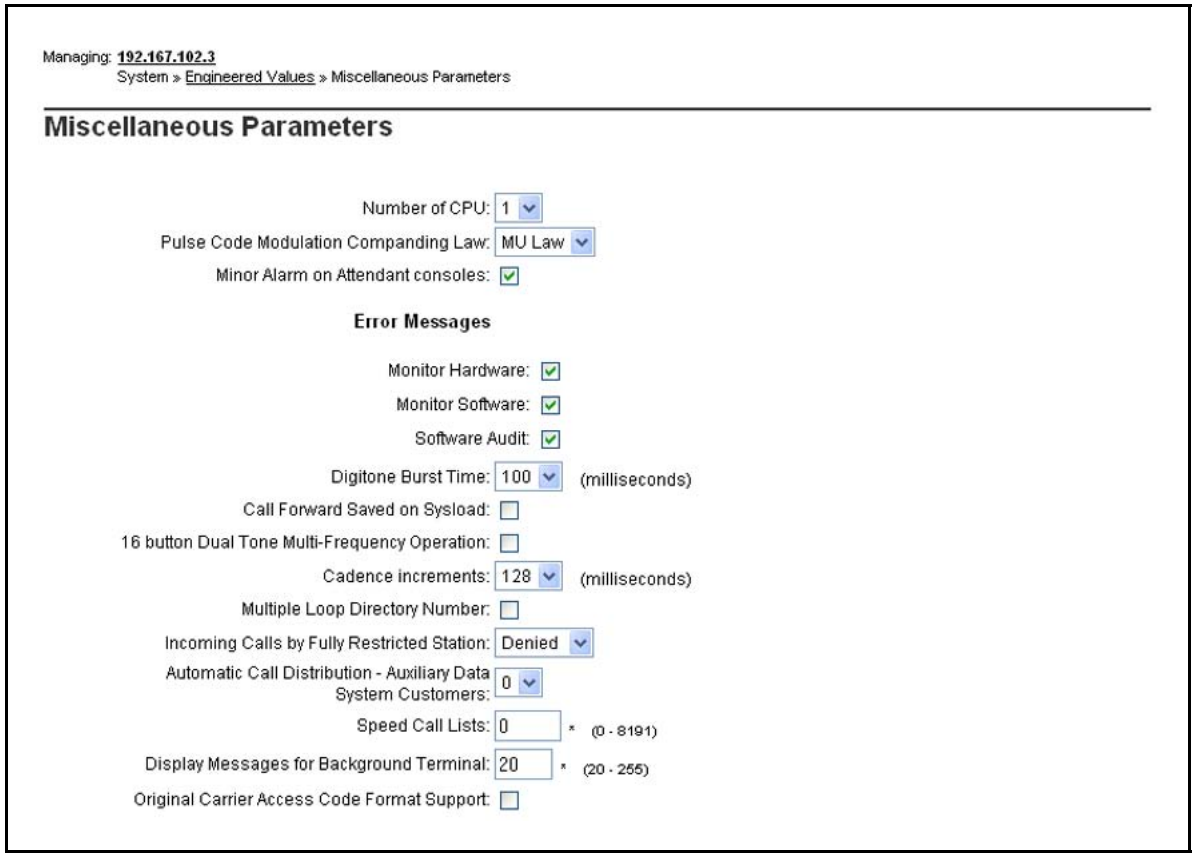
Figure 95
Miscellaneous Parameters Web page



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 96 "Service Parameters Web page" (page 182).

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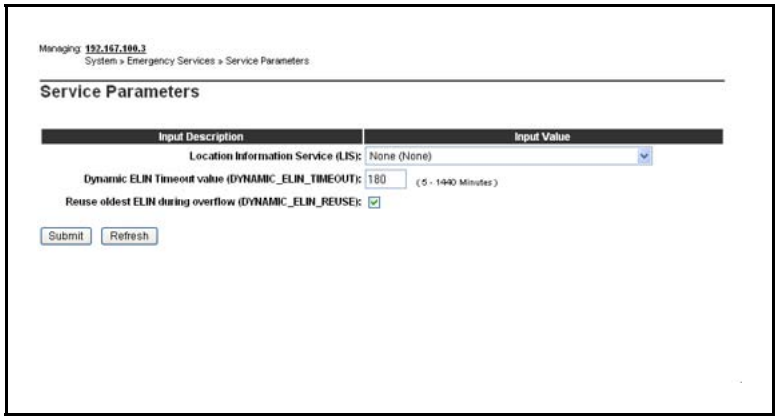
Figure 96
Service Parameters Web page



- 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 97 "Access Numbers and Routing Web page" (page 183).

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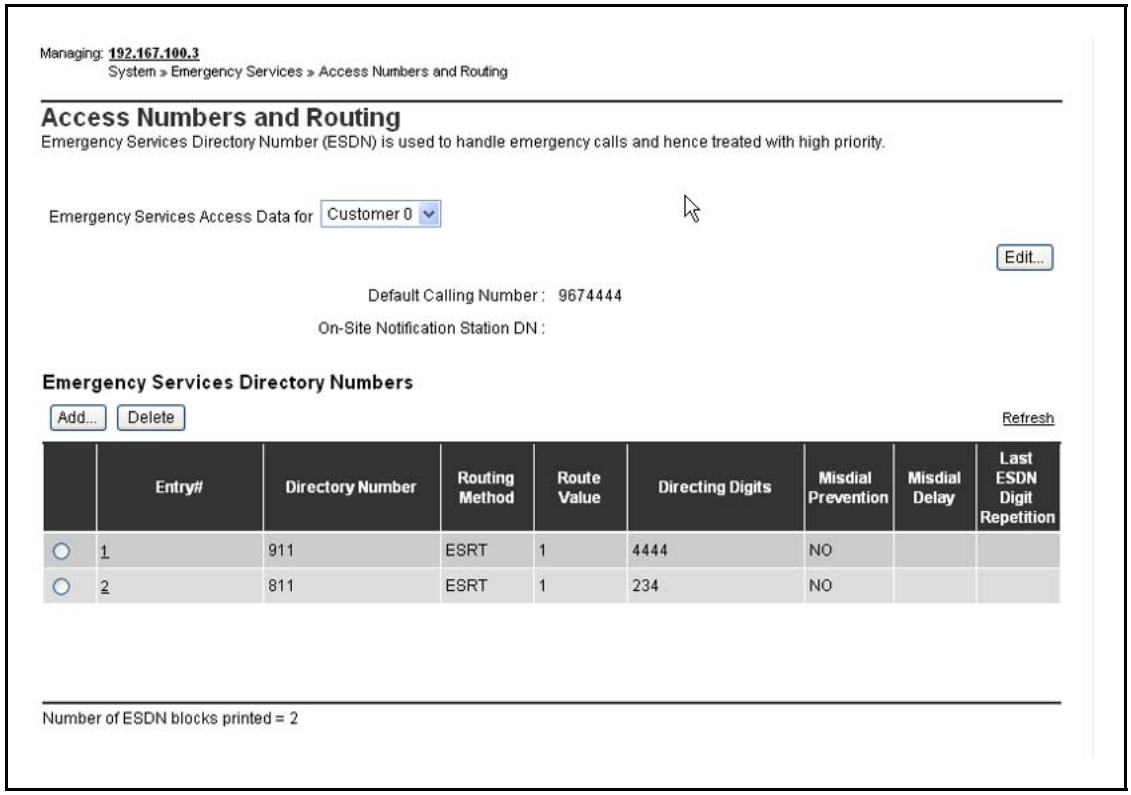
Figure 97
Access Numbers and Routing Web page



To add an Emergency Services Directory Number, click **Add**. The **Add Emergency Services Directory Number** Web page opens, as shown in Figure 98 "Add Emergency Services Directory Number Web page" (page 184).

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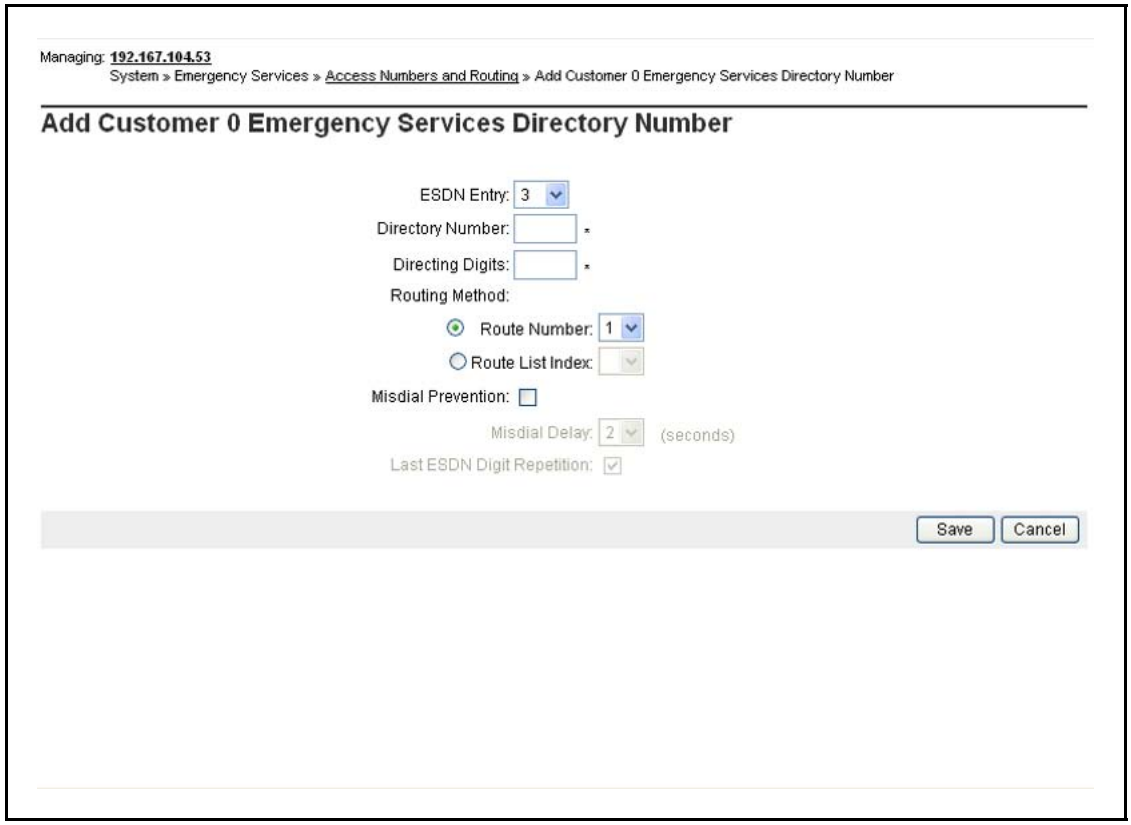
Figure 98
Add Emergency Services Directory Number Web page



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 opens, as shown in Figure 99 "Edit Emergency Services Directory Number Web page" (page 185).

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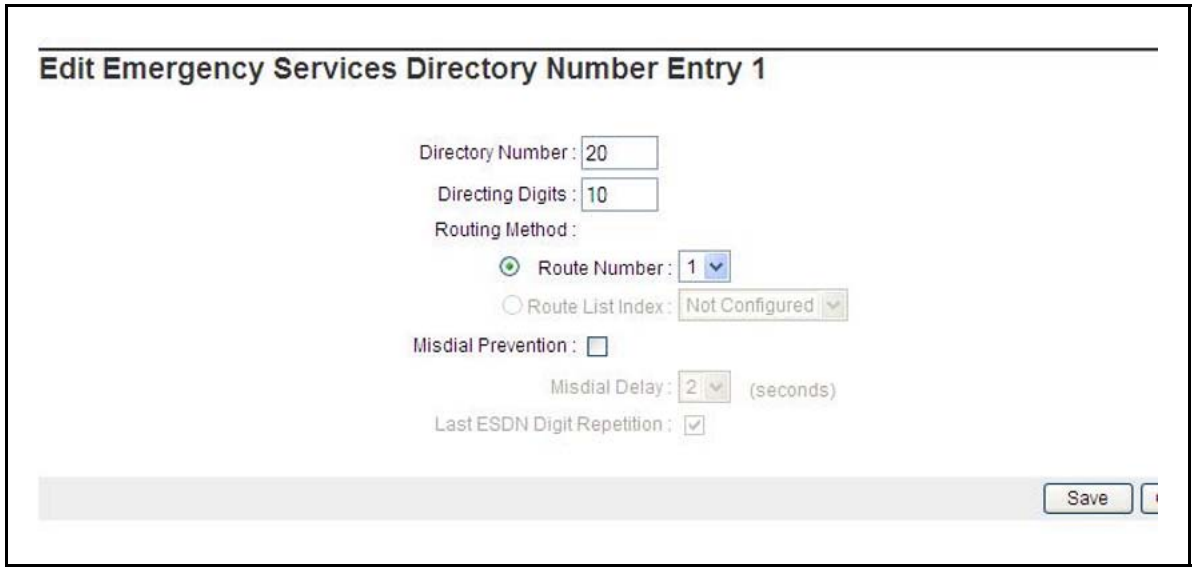
Figure 99
Edit Emergency Services Directory Number Web page



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 opens, as shown in Figure 100 "Edit Access Numbers and Routing Web page" (page 186).

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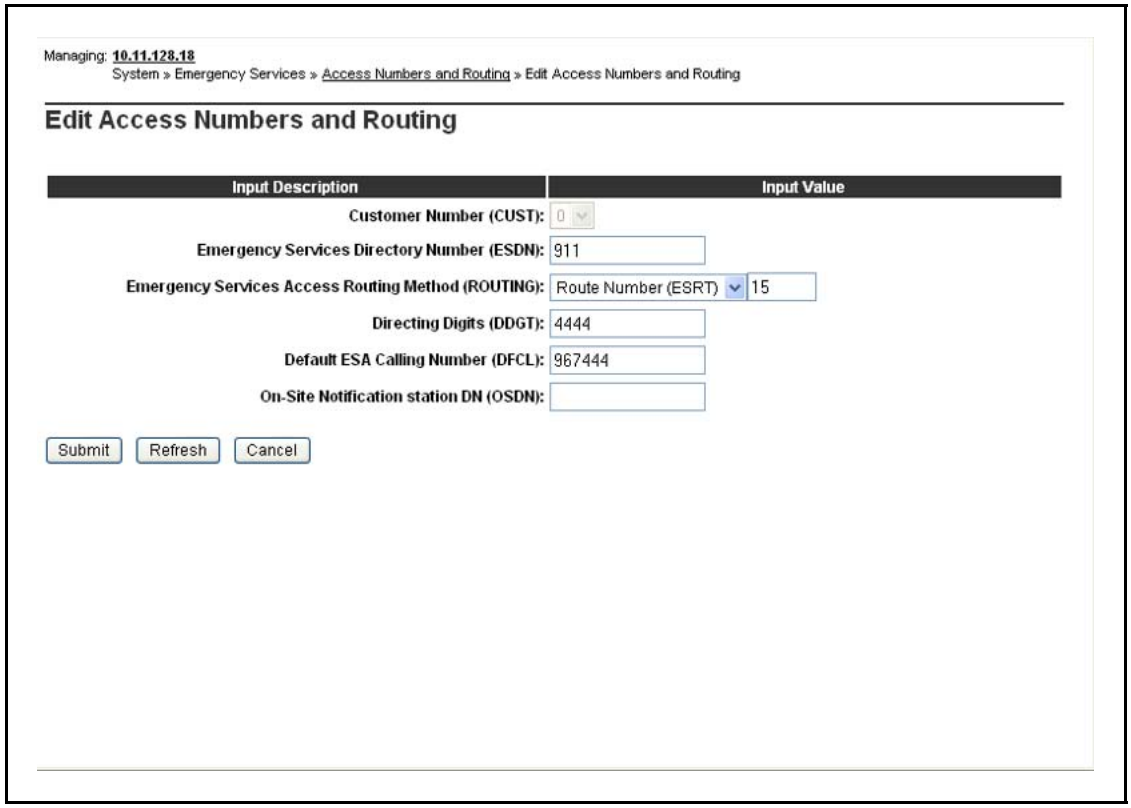
Figure 100
Edit Access Numbers and Routing Web page



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 opens, as shown in Figure 101 "Add Access Numbers and Routing Web page" (page 187).

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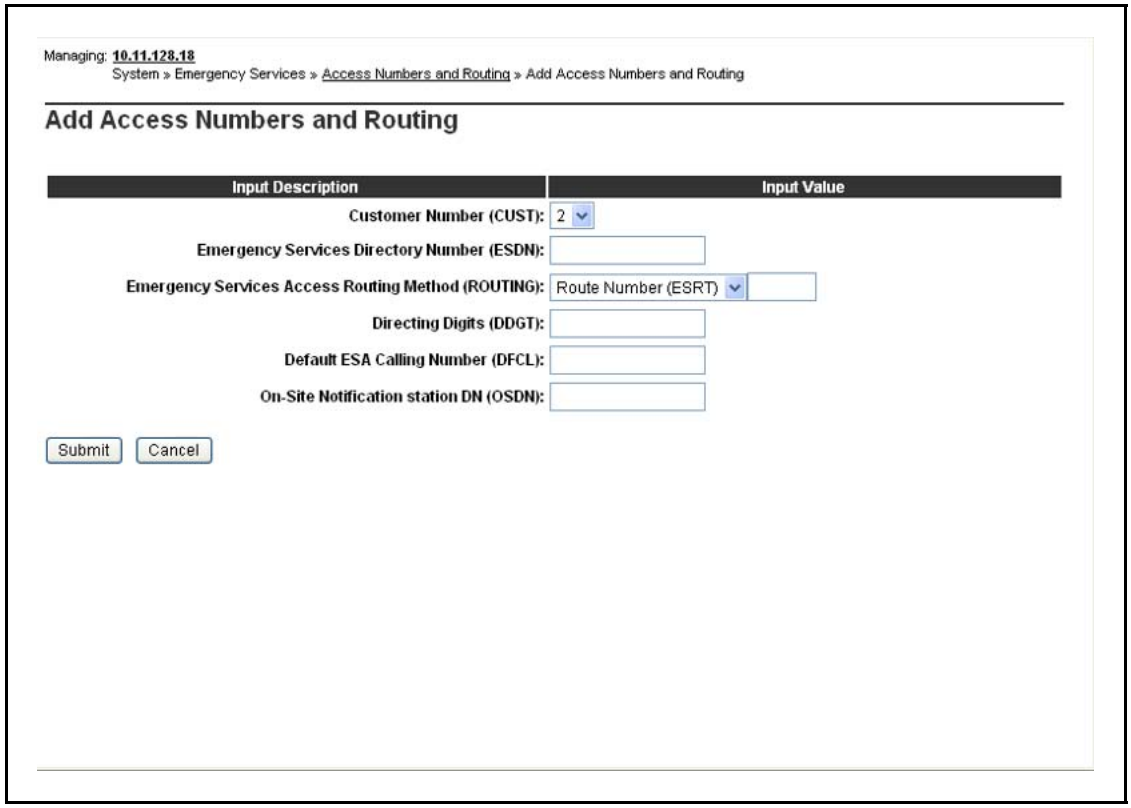
Figure 101
Add Access Numbers and Routing Web page



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 102 "Emergency Response Location Web page" (page 188).

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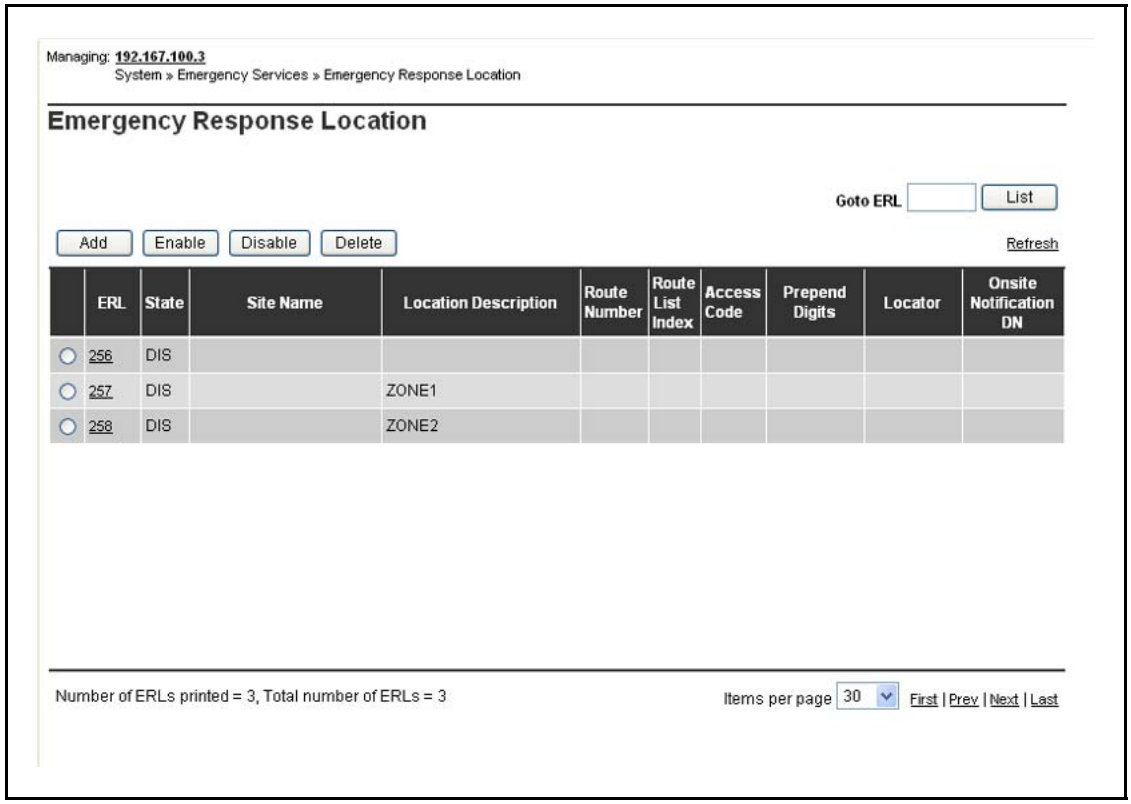
Figure 102
Emergency Response Location Web page



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 opens, as shown in Figure 103 "Edit Emergency Response Location Web page" (page 189).

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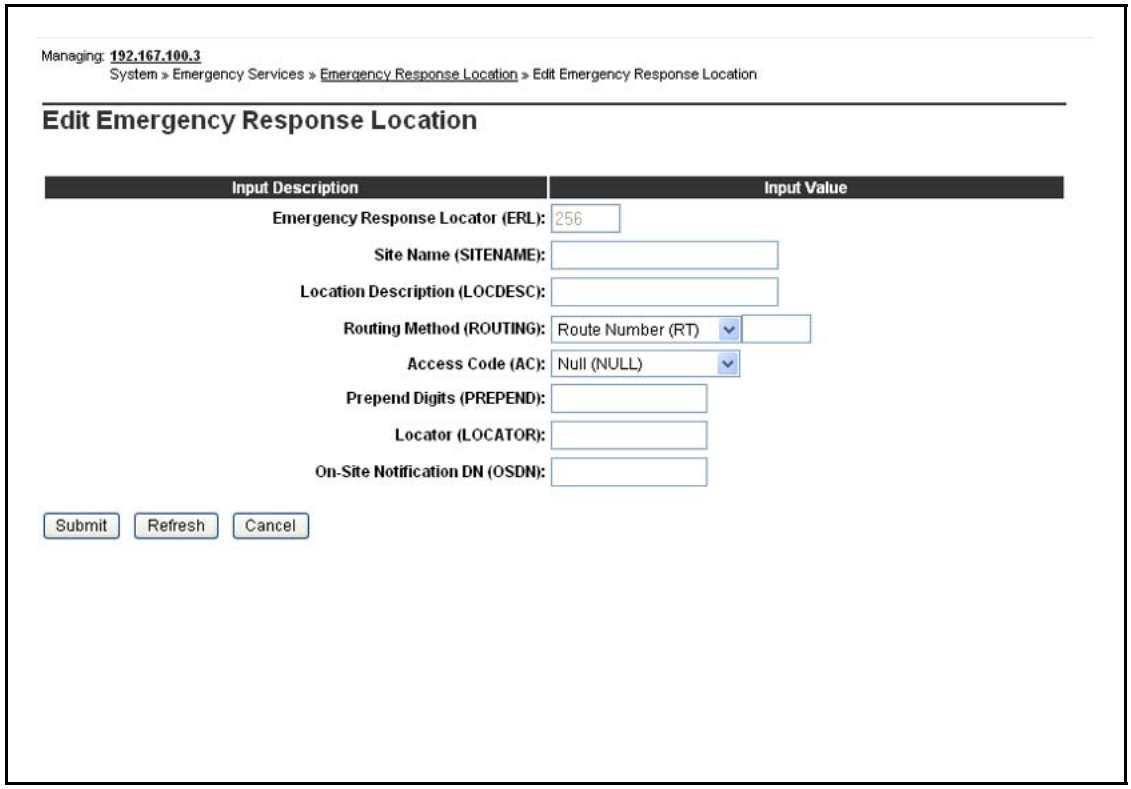
Figure 103
Edit Emergency Response Location Web page



To add an ERL, from the **Emergency Response Location** Web page click **Add**. The **Add Emergency Response Location** Web page opens, as shown in Figure 104 "Add Emergency Response Location Web page" (page 190).

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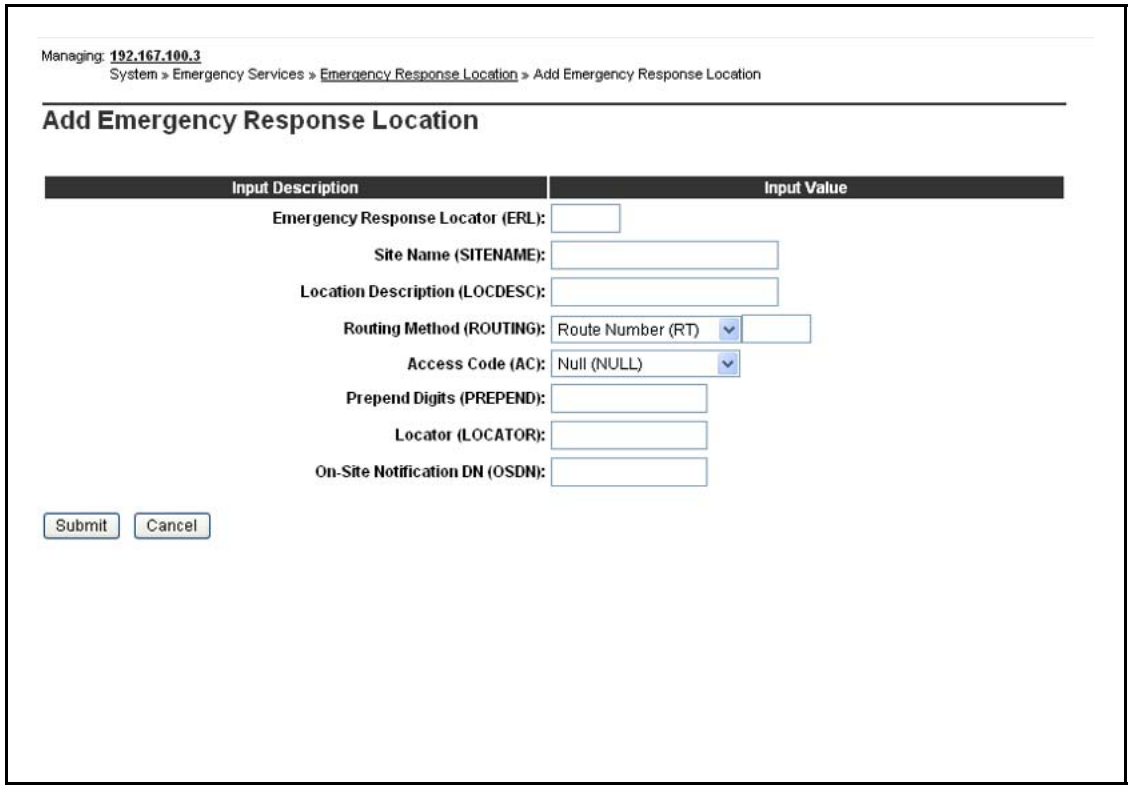
Figure 104
Add Emergency Response Location Web page



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 105 "Subnet Location Information Service Web page" (page 191).

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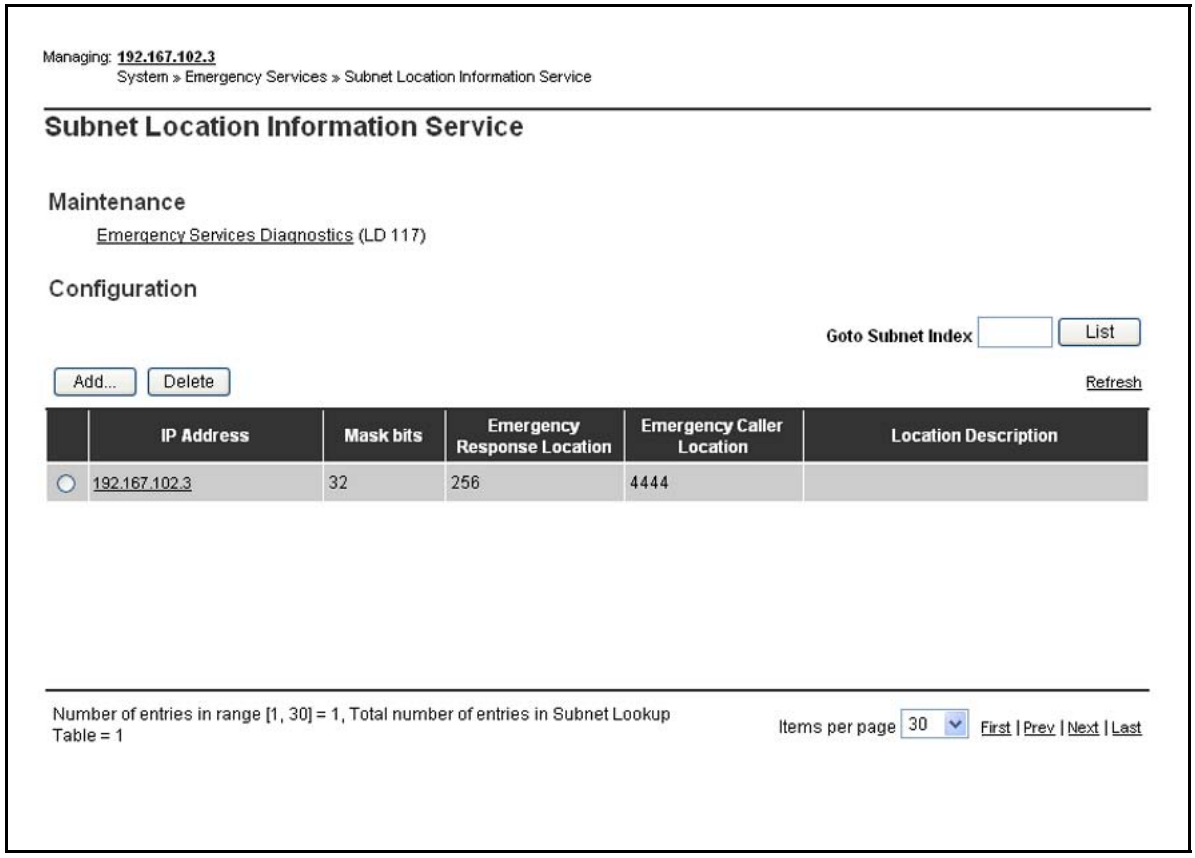
Figure 105
Subnet Location Information Service Web page



The Maintenance section contains a link to the **Emergency Services Diagnostics** Web page. See “Emergency Services Diagnostics” (page 78).

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 opens, as shown in Figure 106 "Edit Subnet Location Information Web page" (page 192).

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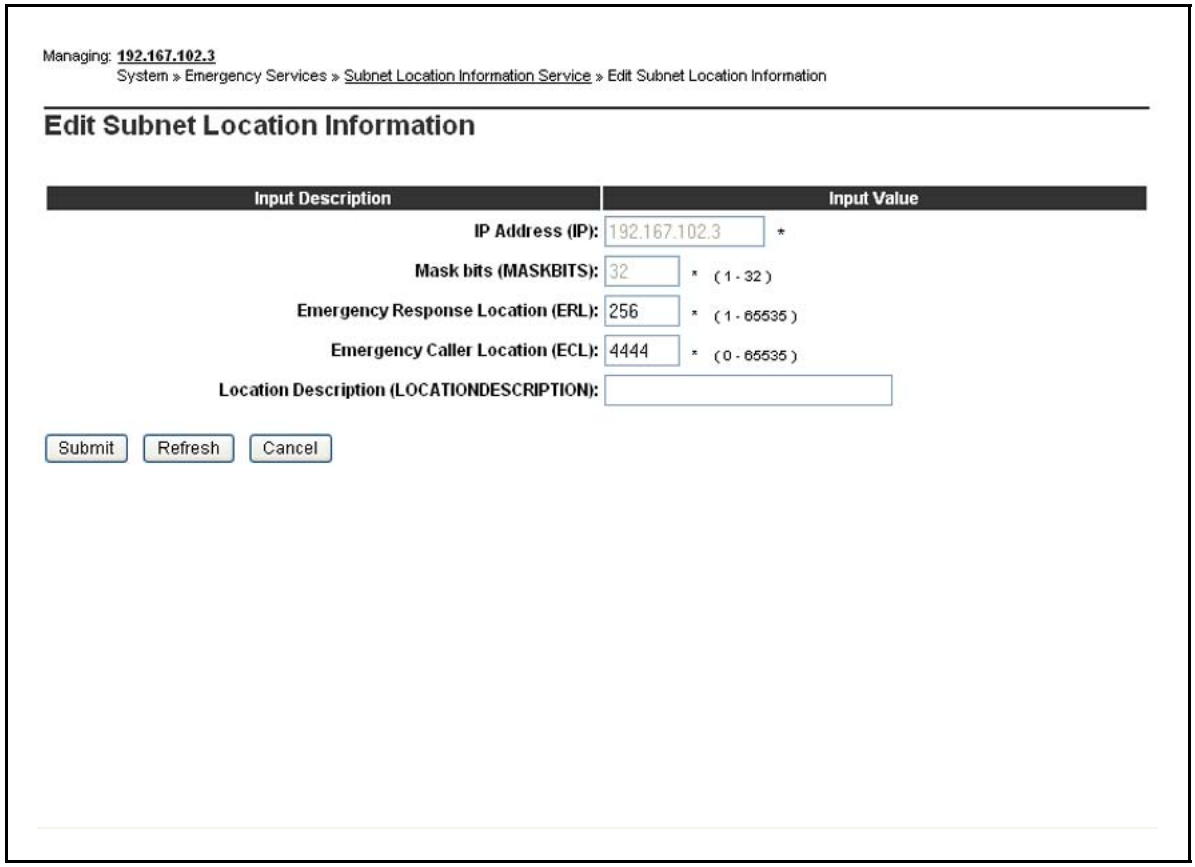
Figure 106
Edit Subnet Location Information Web page



To add a Subnet Location, from the **Subnet Location Information Service** Web page click **Add**. The **Add Subnet Location Information** Web page opens, as shown in Figure 107 "Add Subnet Location Information Web page" (page 193).

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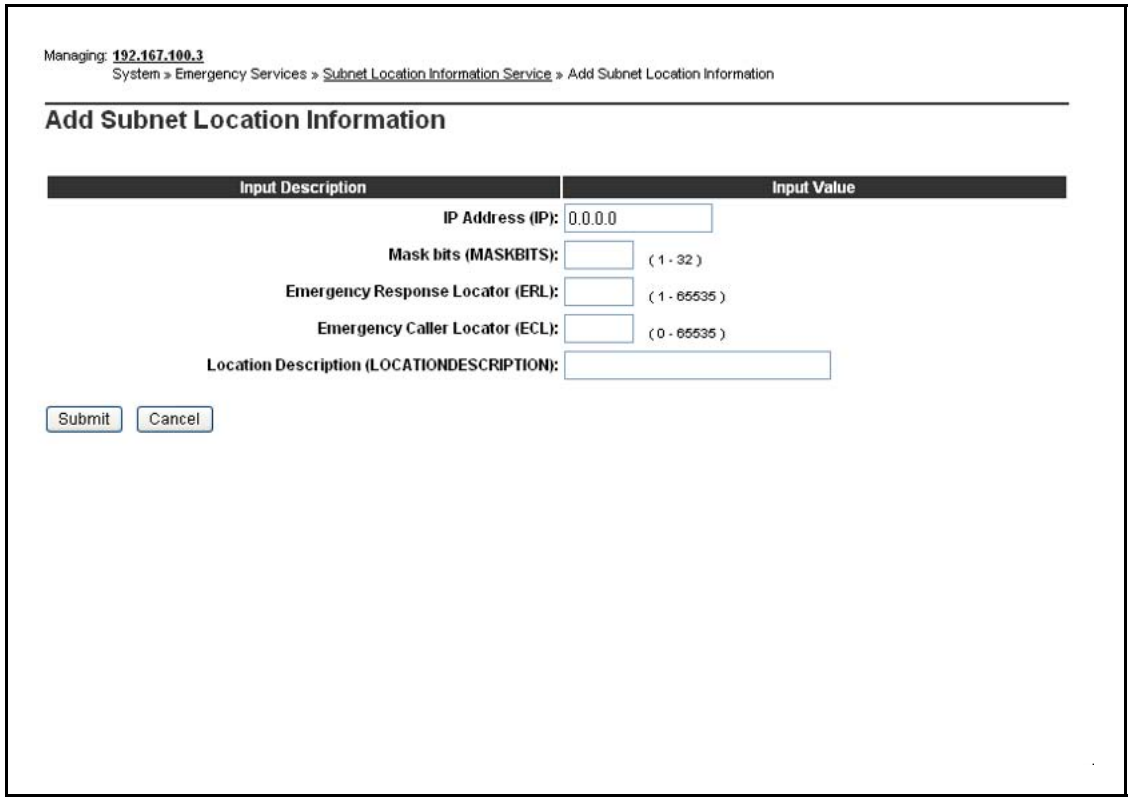
Figure 107
Add Subnet Location Information Web page



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 108 "Dynamic ELIN Web page" (page 194).

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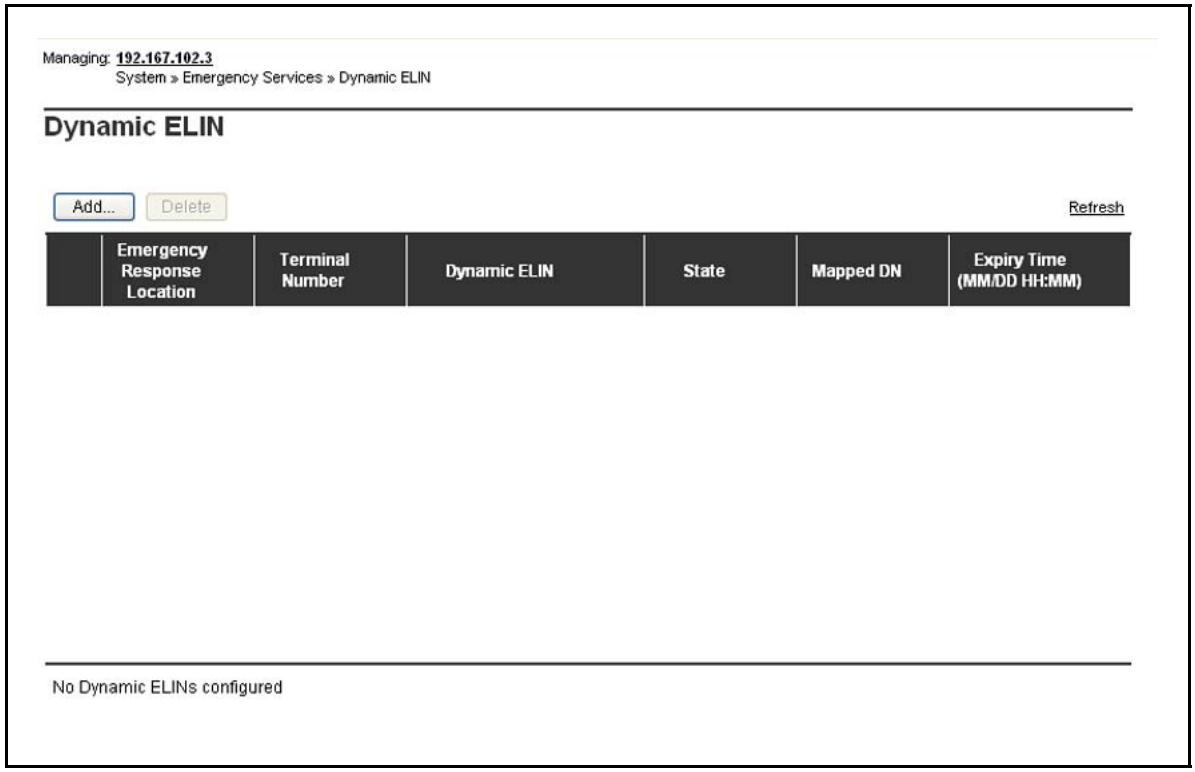
Figure 108
Dynamic ELIN Web page

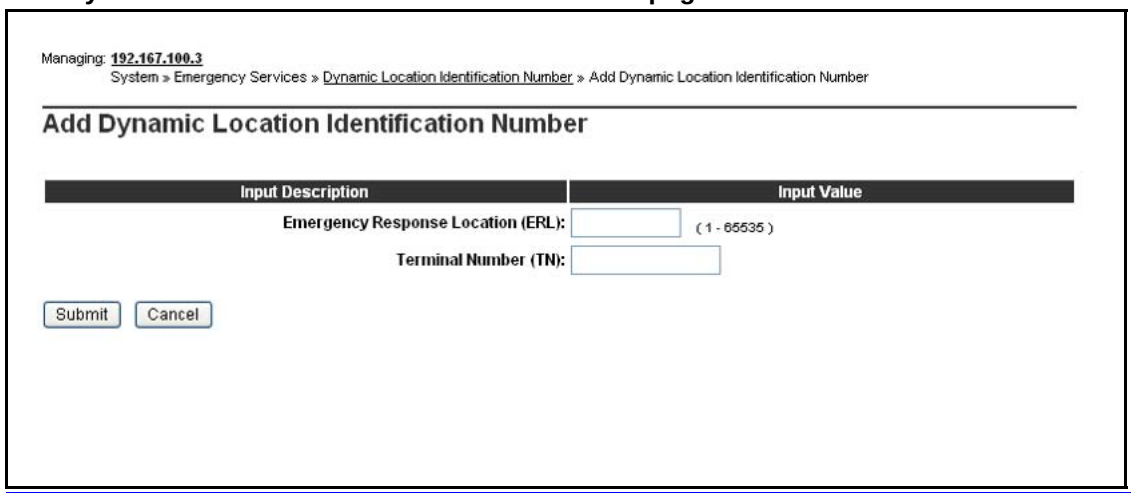


This Web page lists the configured Dynamic ELINs.

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 opens, as shown in Figure 109 "Add Dynamic Location Identification Number Web page" (page 194).

Figure 109
Add Dynamic Location Identification Number Web page



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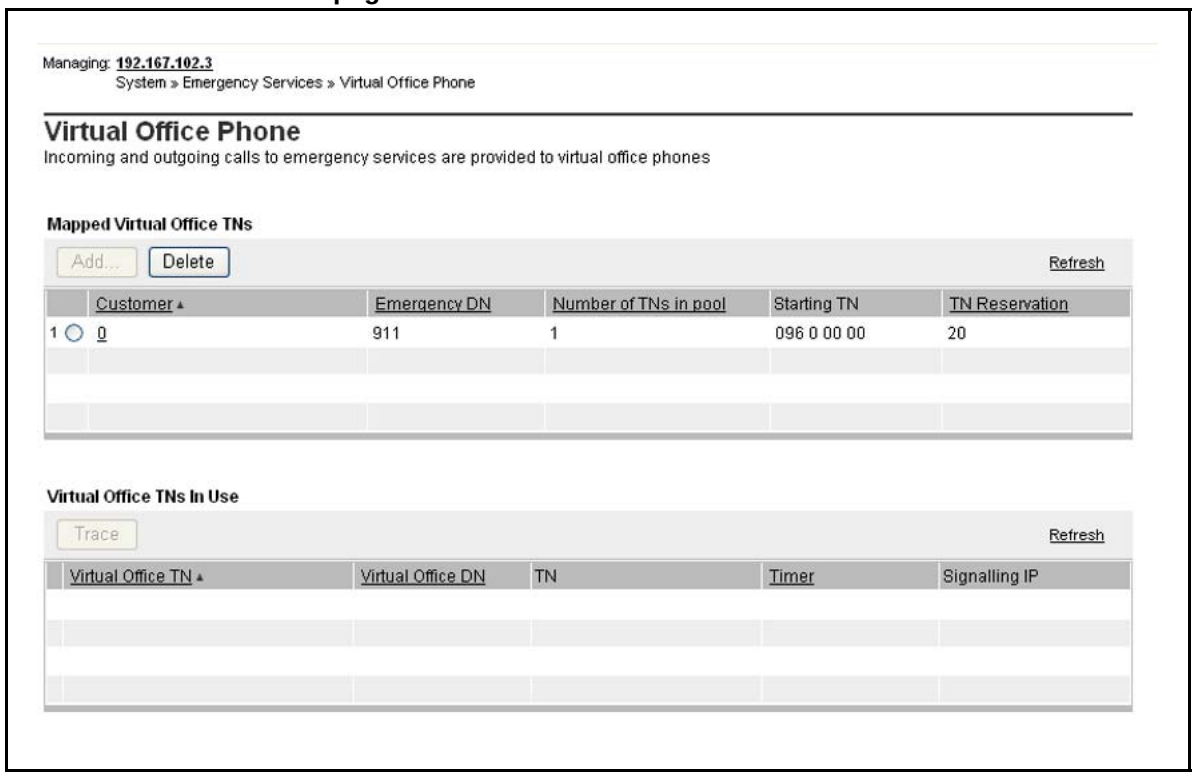
Enter the information for the new ELIN and click **Submit**.

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 110 "Virtual Office Phone Web page" (page 195).

Figure 110
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.

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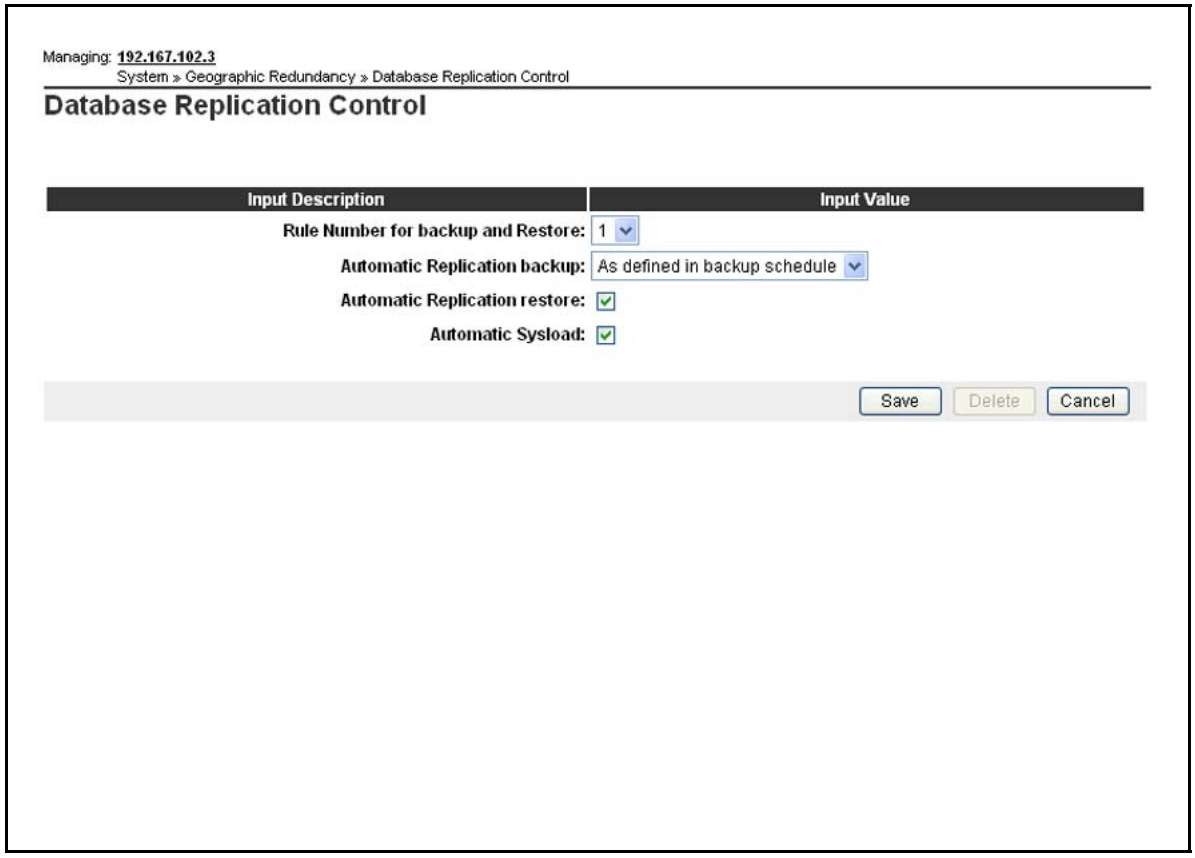
Geographic Redundancy

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

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 opens as shown in Figure 111 "Database Replication Control Web page" (page 196).

Figure 111
Database Replication Control Web page



On the **Database Replication Control** Web page, users can configure:

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

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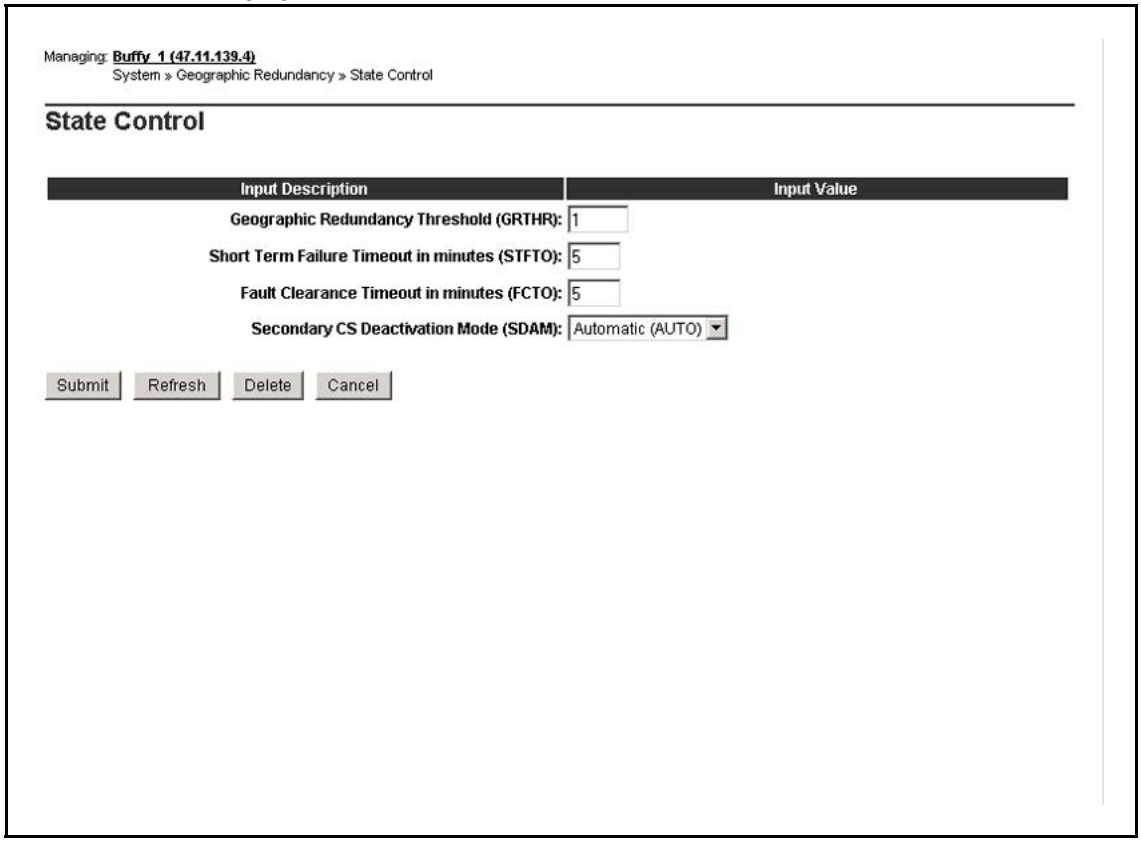
State Control

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 opens as shown in Figure 112 "State Control Web page" (page 197).

Figure 112
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 opens, as shown in Figure 113 "Call Server Web page" (page 199).

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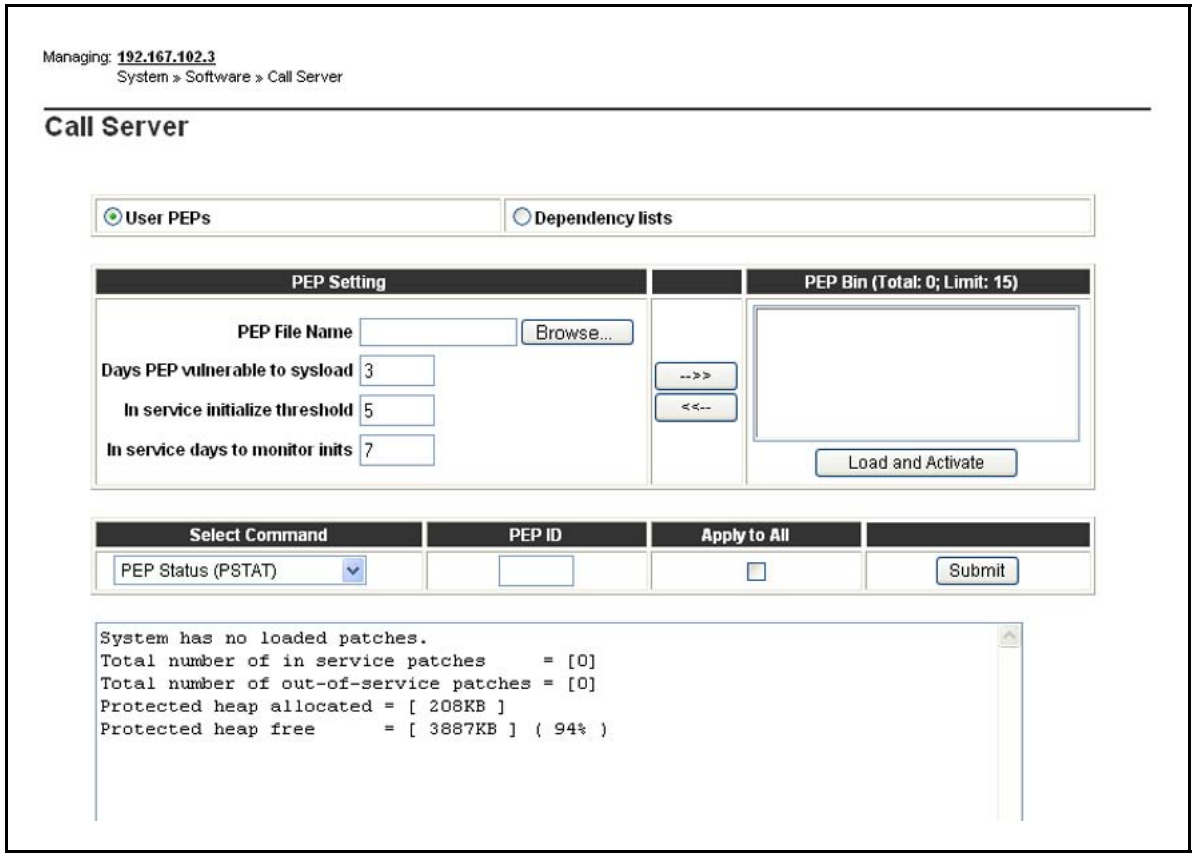
Figure 113
Call Server Web page



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 114 "Call Server Web page - Dependency Lists" (page 201).

For Dependency List distribution and functionality instructions, refer to the "PEP Dependency tools" section 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.

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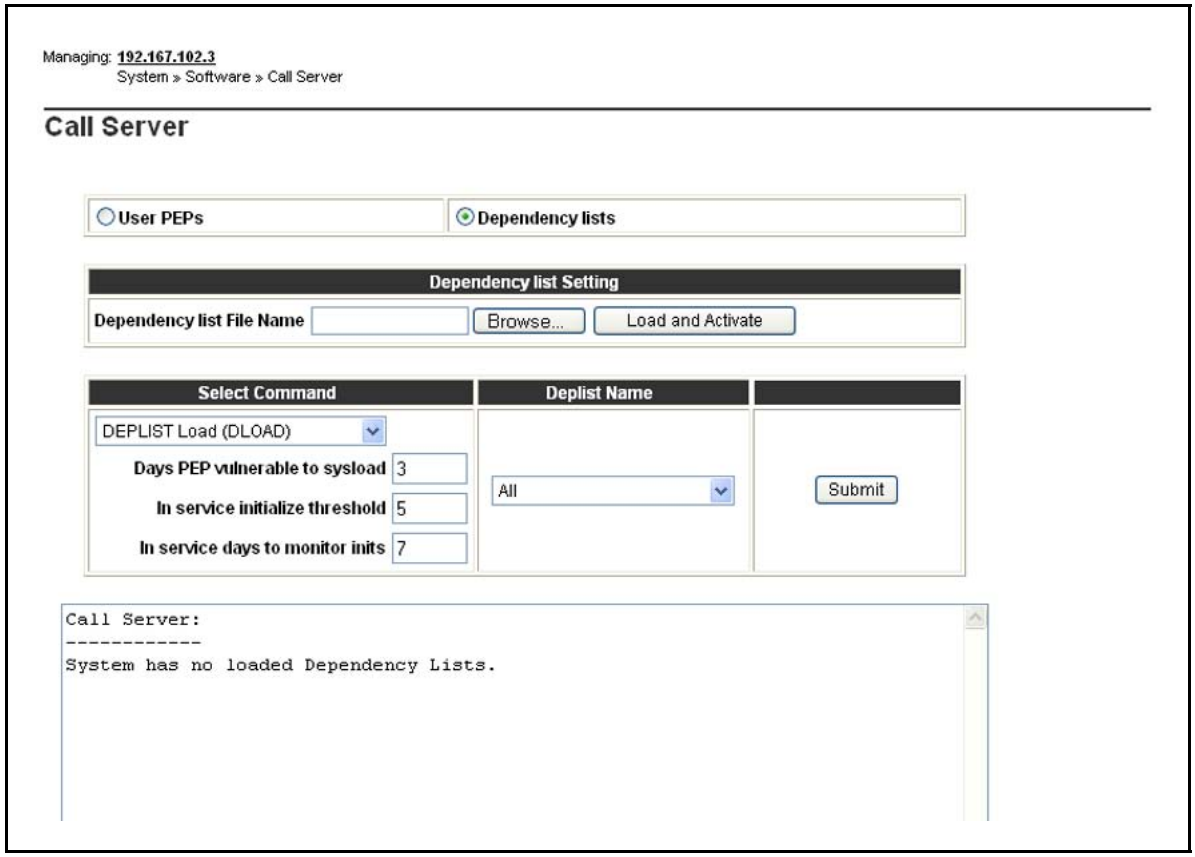
Figure 114
Call Server Web page - Dependency Lists



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.

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

- Enterprise Voice Solutions Patch Reference and Best Practice Guidelines.
- PEP Dependency Tools
- Matrix Dependency List User Guide (X21 Rls 4.0 and higher)
- Enhanced Patch Audit and DepList Generation Tool
- Upgrades" - Meridian ISSP Report and Conflict Checker (MIRCC)
- Communication Server 1000 / Meridian 1 PEP Tools
- Multimedia PEP Tools

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- Business Communications Manager (BCM) PEP Tools
- Serviceability Updates and Loadware/Firmware Distribution Tools

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 opens.
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** drop down box 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**.

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 opens.

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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--

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.

Media Gateway PEPs

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.

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 > Voice Media Gateway Card** link in the **System** branch of the navigator.

For more information about the file upload function, see *IP Line Fundamentals (NN43100-500)* () .

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 *IP Line Fundamentals (NN43100-500)* () .

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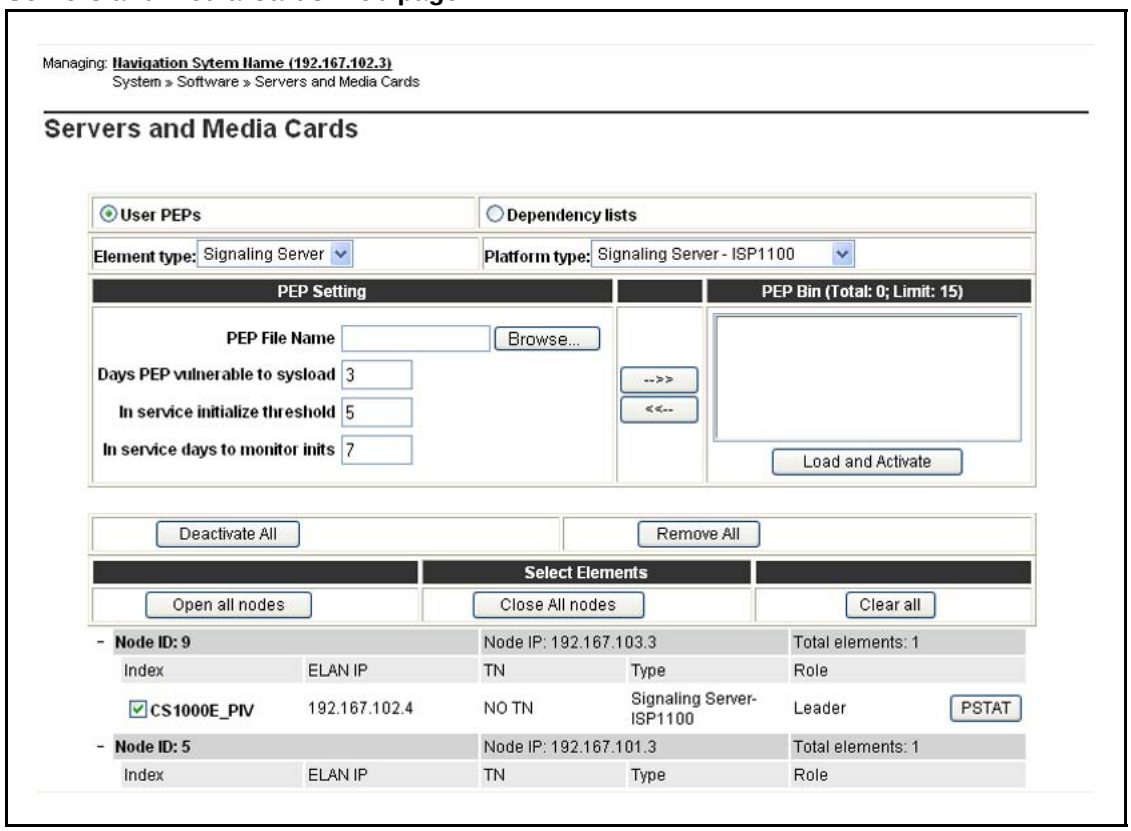
Servers and Media Cards

Click the **Software > Servers, Media Cards PEPs** link in the **System** branch of the Element Manager navigator to open the **Servers and Media Cards** Web page as shown in Figure 115 "Servers and Media Cards Web page" (page 204).

Figure 115
Servers and 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 86
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 opens.
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. See Figure 116 "Type Web page" (page 206).

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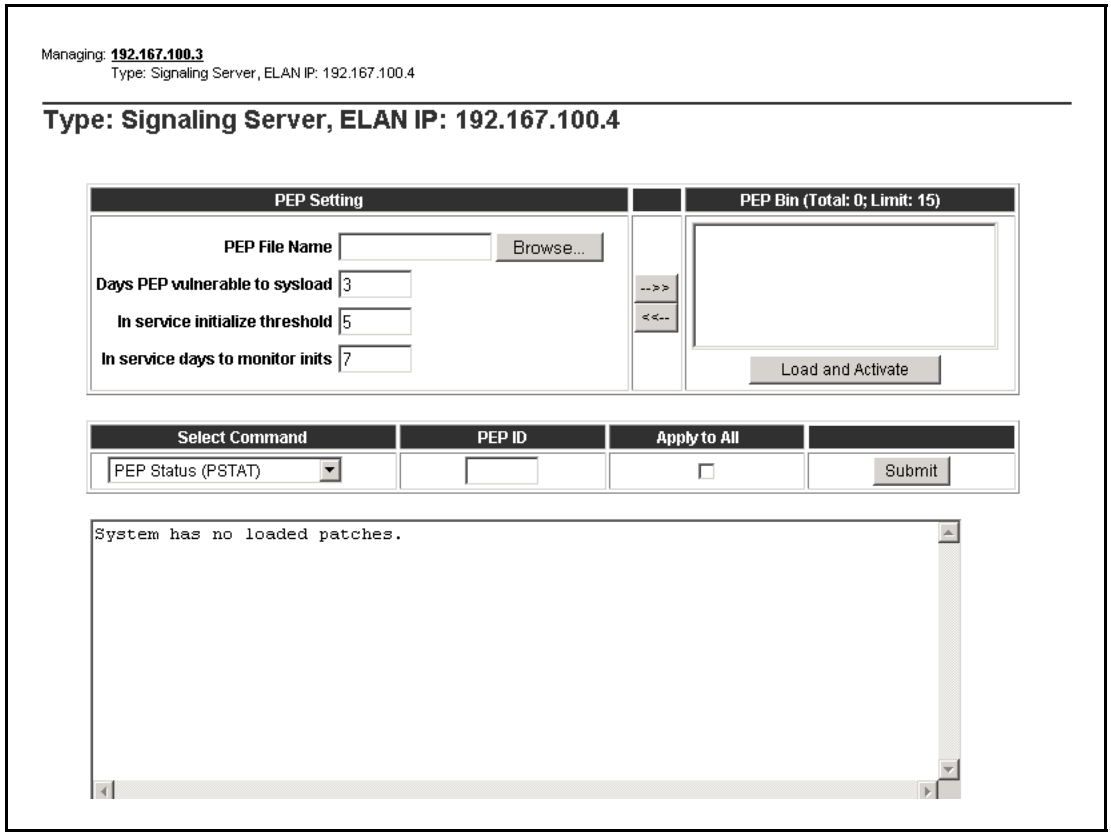
Figure 116
Type Web page



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.

Procedure 87
Loading and Activating Dependency lists on the Signaling Server

Step	Action
1	Select the **Dependency lists** radio button on the **Servers and Media Cards** page.
2	Select the **Element type** from the drop down menu
3	Select the **Platform type** from the drop down menu
4	Click the **Browse** button. The Choose file window opens.
5	Choose a file to be downloaded and click **Open**.
6	Select an Element from the list of elements under the appropriate node that you would like to apply the Deplist to.

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7 Click **Transfer** to submit the selected Deplist to the Signaling Server. The Deplist is uploaded to the selected Element.

8 From the **MDP Commands** drop down menu select one of the following commands and select **Submit**.

--End--

Additional Commands:

- **Install Deplist (MDP REFRESH)** - To install the deplist
- **Show Status (MDP Stat)** - To find out the transfer status of the deplist
- **Revert Deplist (MDP REVERT)** - To remove the current PEPs and possibly install previous PEPs

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Customers, Routes and Trunks

Contents

This section contains information on the following topics:

“Introduction” (page 209)

“Customers” (page 209)

“Route and Trunk Configuration” (page 235)

    “Routes and Trunks” (page 235)

“D-channels” (page 246)

“Digital Trunk Interface” (page 250)

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 opens, as shown in Figure 117 "Customers Web page" (page 210). To configure customer data, click the **Customer Number**.

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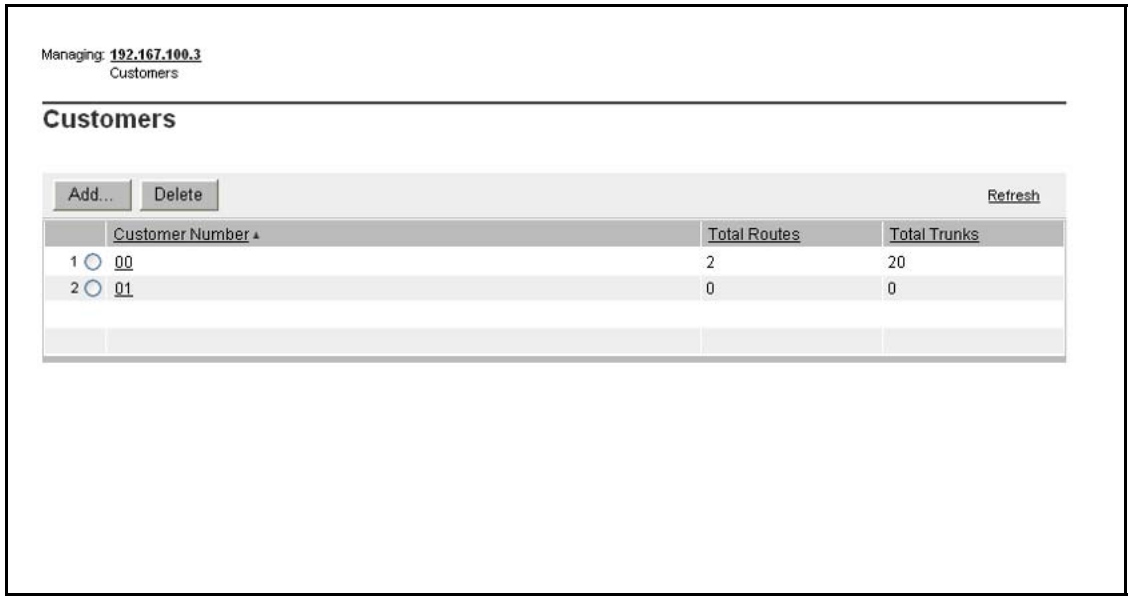
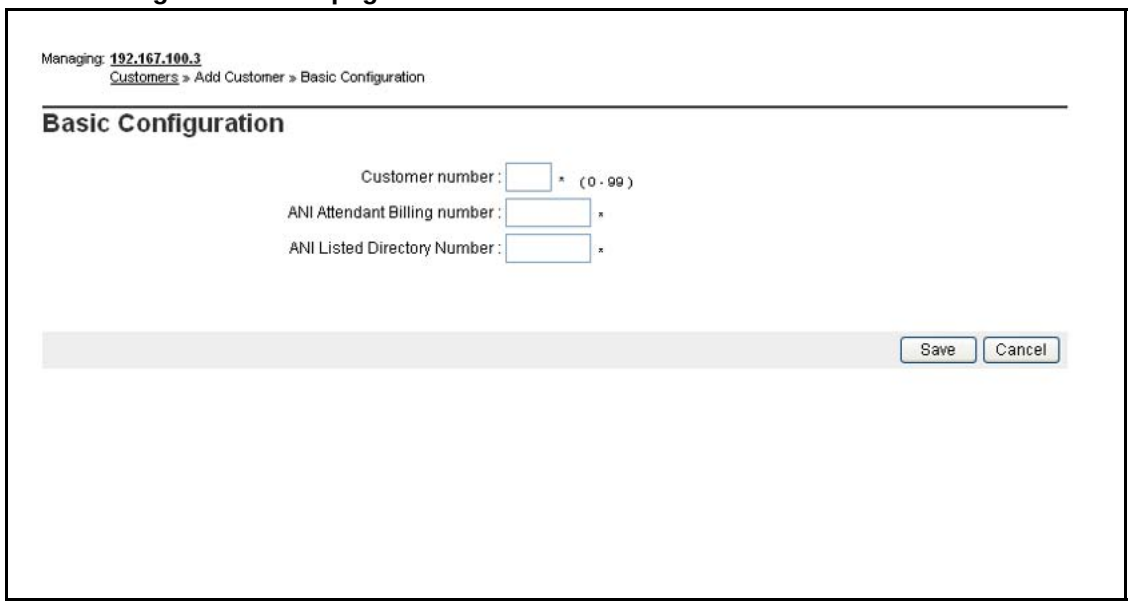
Figure 117
Customers Web page



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

The **Basic Configuration** Web page opens, as shown in Figure 118 "Basic Configuration Web page" (page 210).

Figure 118
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.

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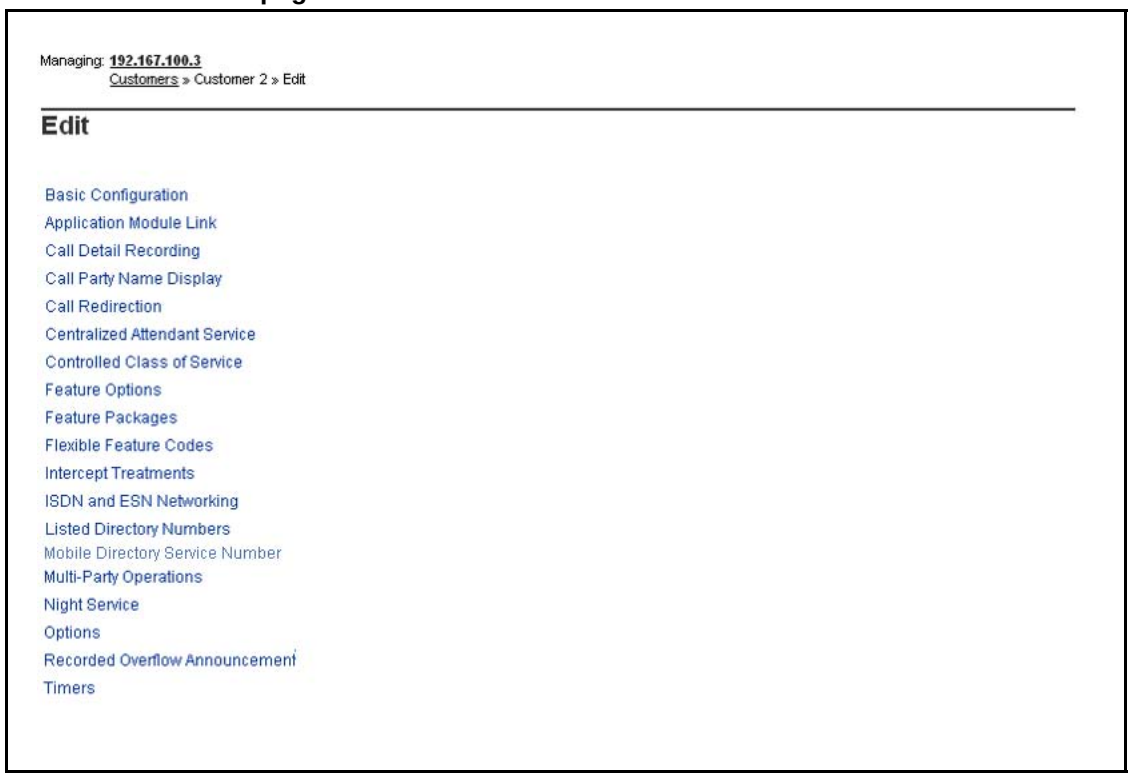
Enter the required information in the three fields and click **Save**.

The **Edit** Web page opens, as shown in Figure 119 "Edit Customer Web page" (page 211).

Figure 119
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 120 "Application Module Link Web page" (page 212).

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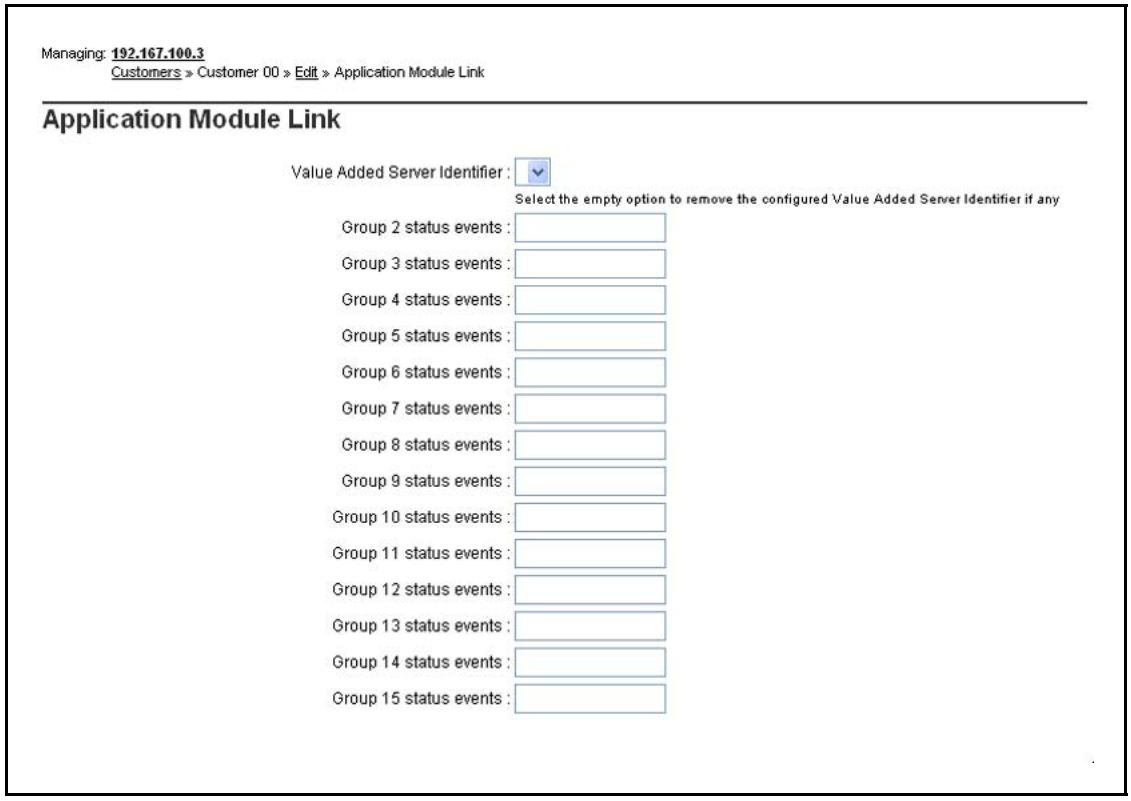
Figure 120
Application Module Link Web page



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 121 "Call Detail Recording Web page" (page 213).

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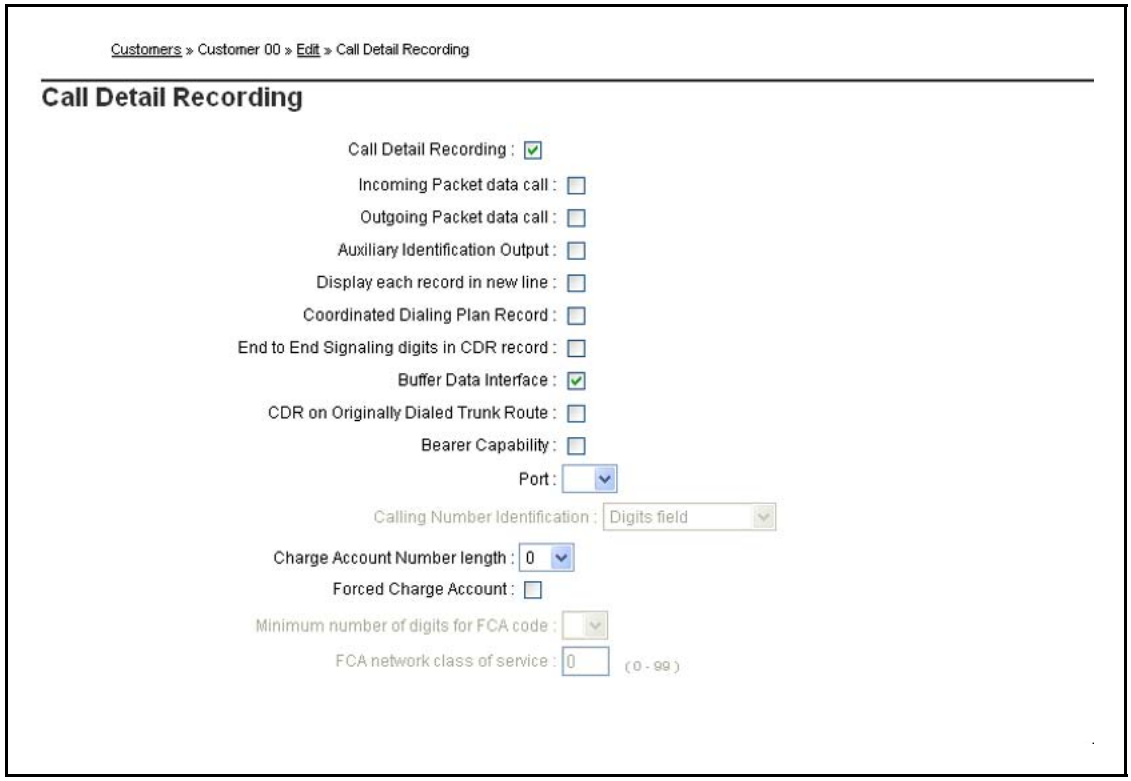
Figure 121
Call Detail Recording Web page



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 122 "Call Party Name Display Web page" (page 214).

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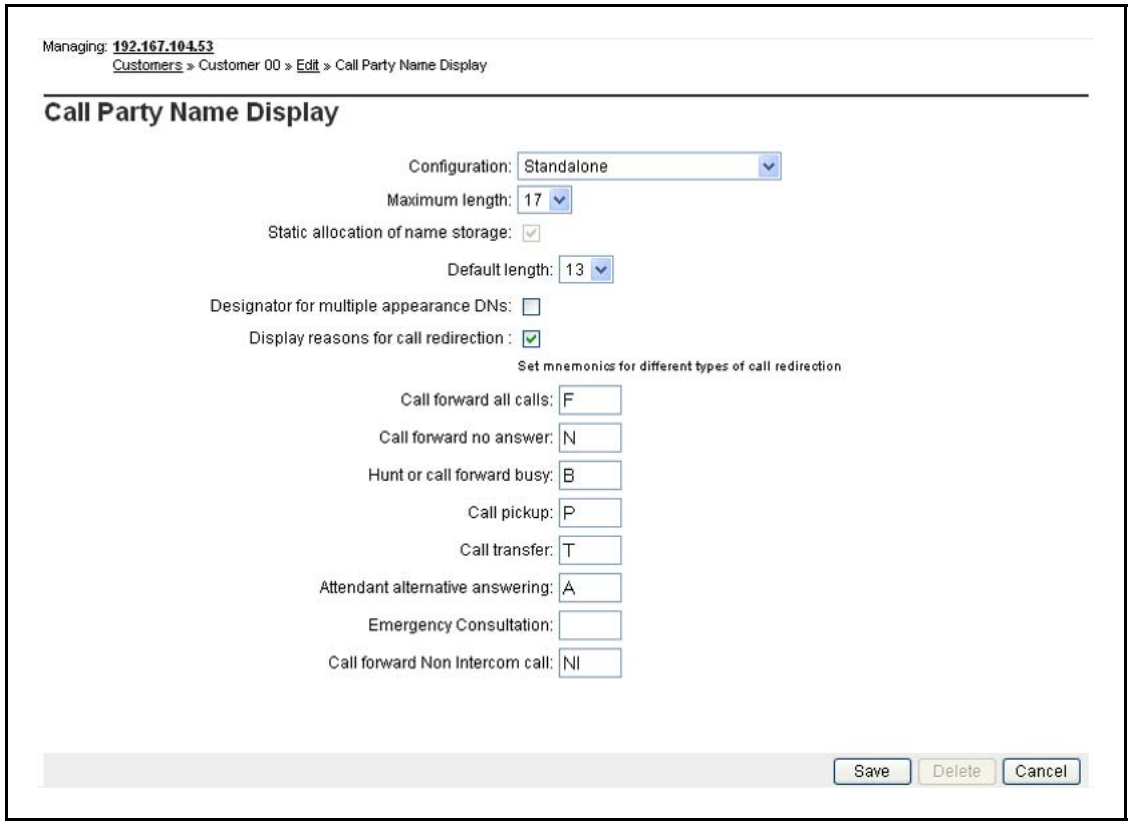
Figure 122
Call Party Name Display Web page



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 123 "Call Redirection Web page" (page 215).

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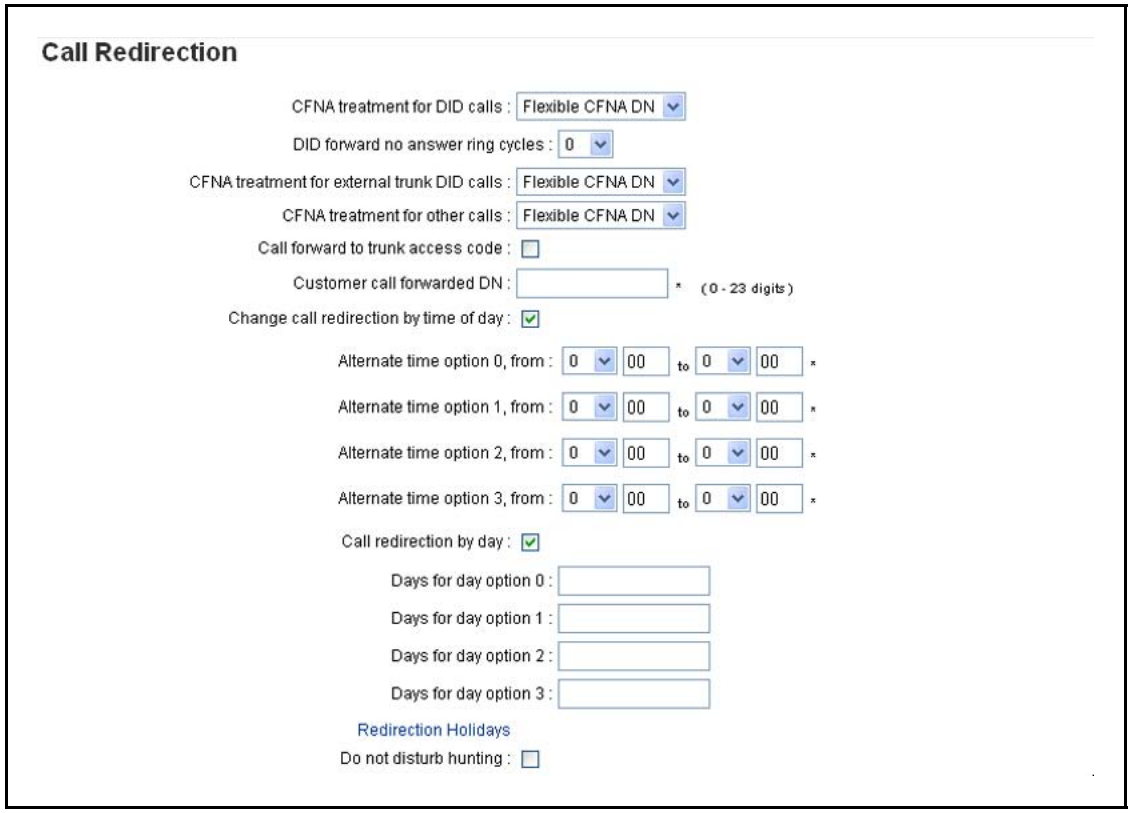
Figure 123
Call Redirection Web page



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

Click **Redirection Holidays** to open the **Redirection Holidays** Web page, as shown in Figure 124 "Redirection Holidays Web page" (page 216).

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

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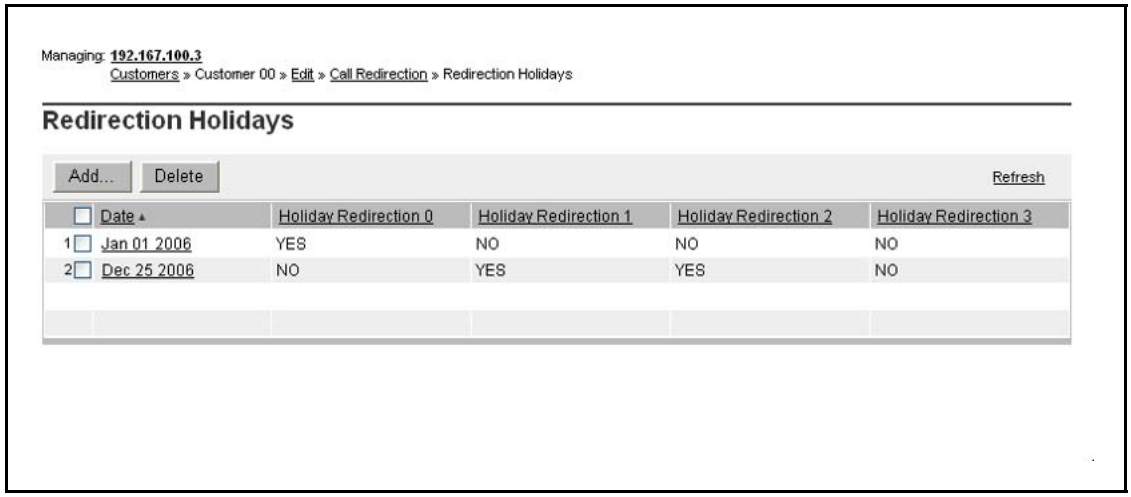
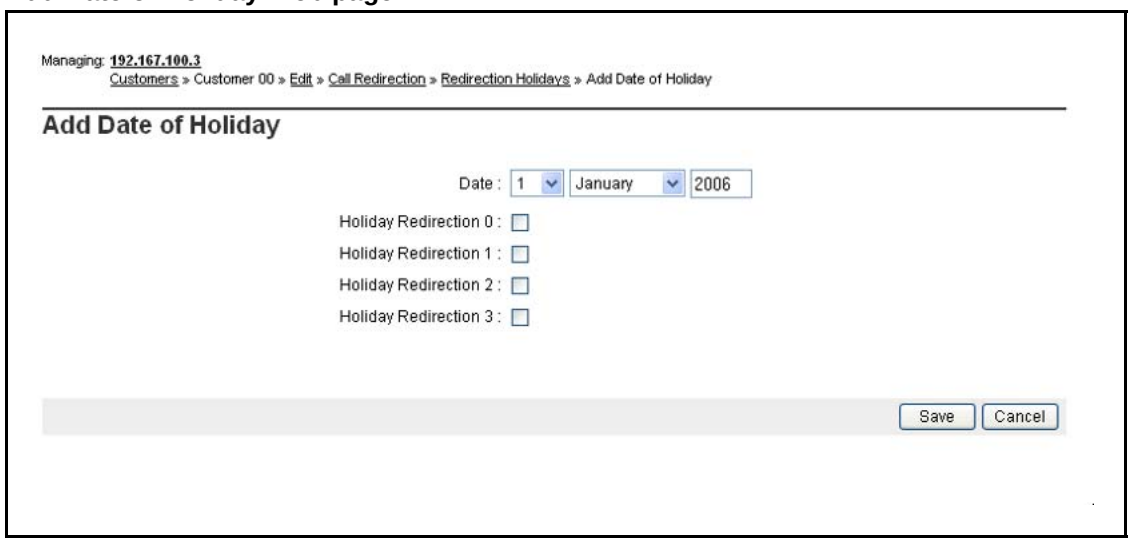
Figure 124
Redirection Holidays Web page



To add a holiday, click **Add**. The **Add Date of Holiday** Web page opens, as shown in Figure 125 "Add Date of Holiday Web page" (page 216).

Figure 125
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 126 "Centralized Attendant Service Web page" (page 217).

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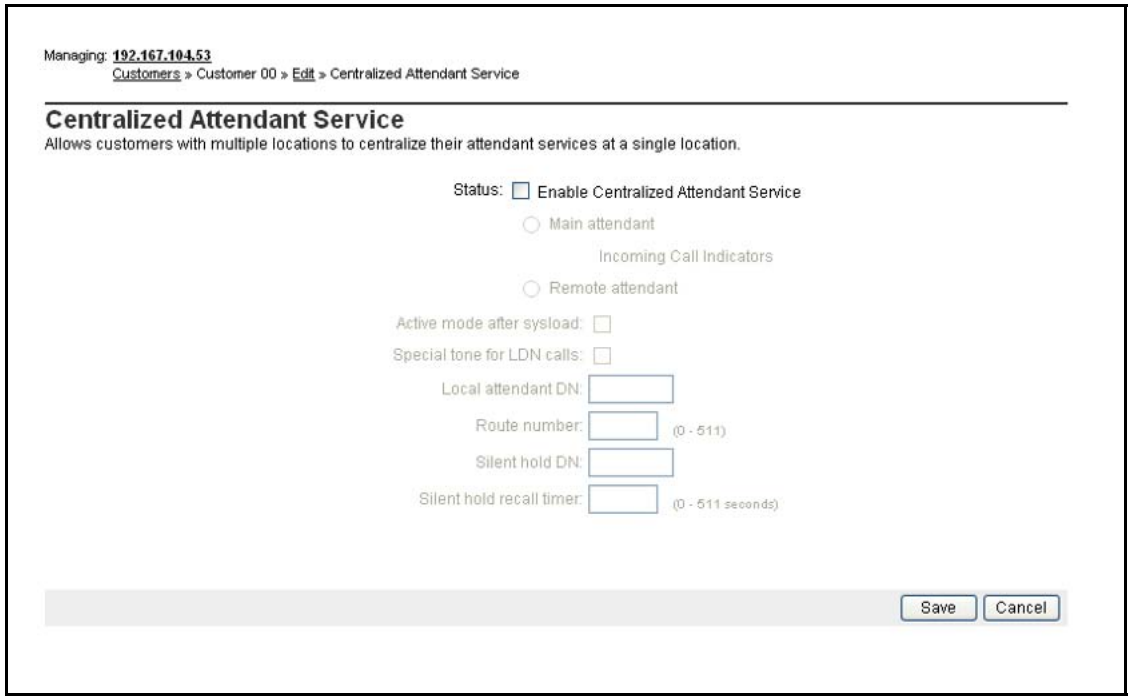
Figure 126
Centralized Attendant Service Web page



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 opens, as shown in Figure 127 "Edit Attendant ICI Web page" (page 218).

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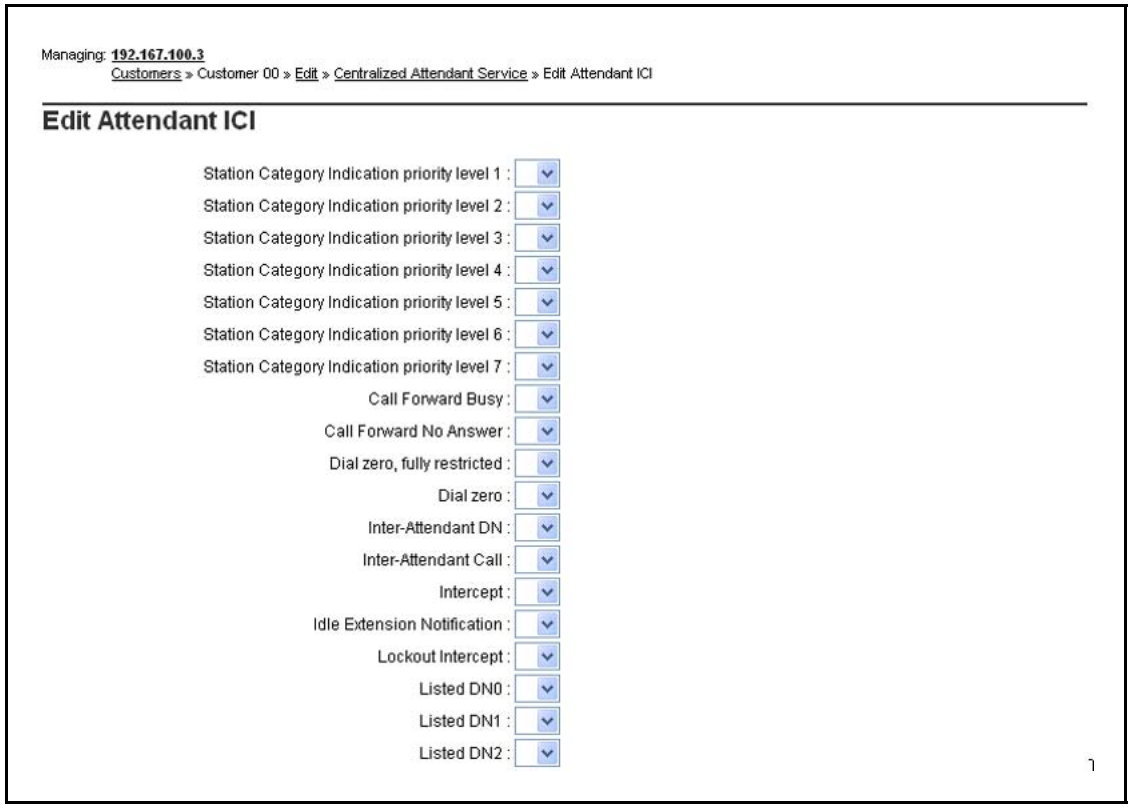
Figure 127
Edit Attendant ICI Web page



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 128 "Controlled Class of Service Web page" (page 219).

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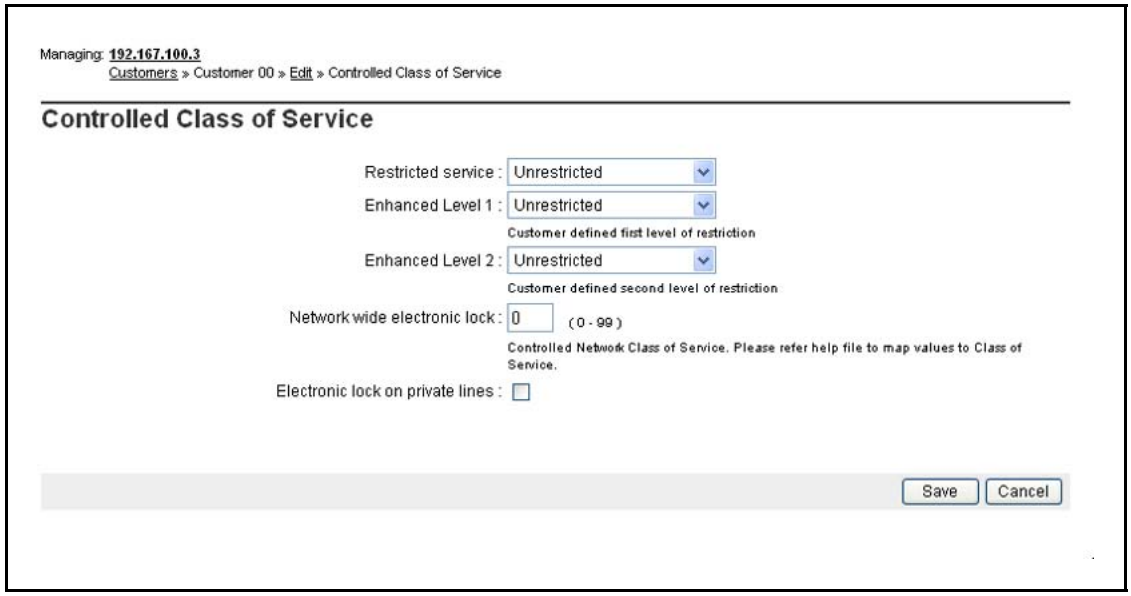
Figure 128
Controlled Class of Service Web page



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 129 "Flexible Feature Codes Web page" (page 220).

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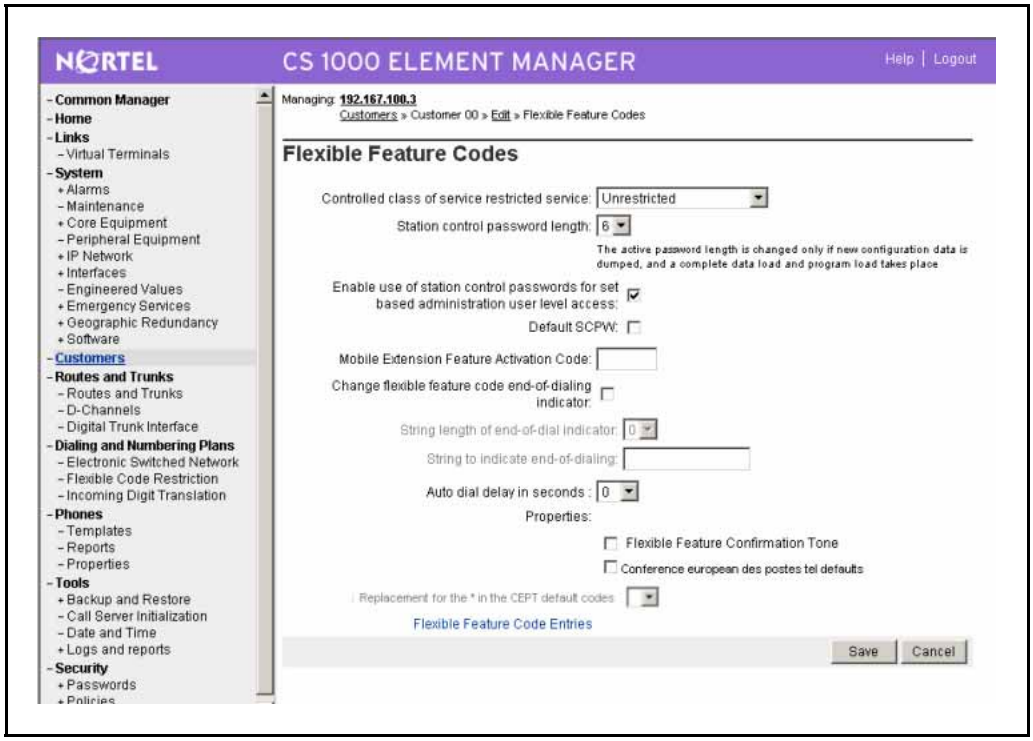
Figure 129
Flexible Feature Codes Web page



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 opens as shown in Figure 130 "Search for Flexible Feature Code Entries Web page" (page 221).

> ***Note:*** To access **Flexible Feature Code Entries** Web page for a Customer the FCC data block must be configured, see Procedure 91 “Configuring Flexible Feature Codes” (page 222). 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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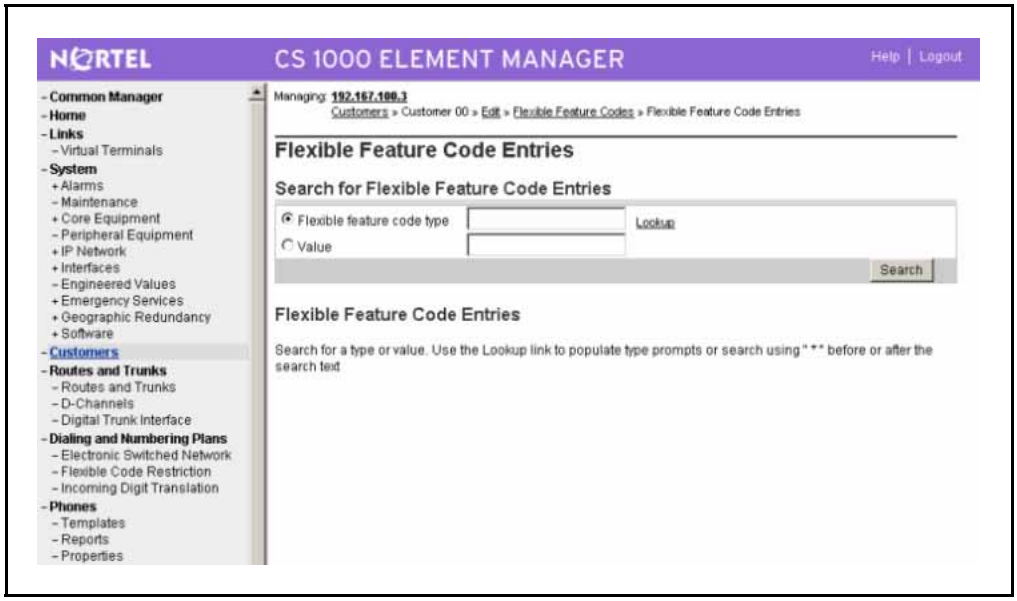
Figure 130
Search for Flexible Feature Code Entries Web page



To search for specific Flexible Feature Codes, follow the steps in Procedure 88 “Searching for Flexible Feature Codes” (page 221).

Procedure 88
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 89 “Searching for Flexible Feature Codes by Value” (page 222).

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Procedure 89
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 90 “Searching for Flexible Feature Codes (Advanced)” (page 222).

Procedure 90
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 91 “Configuring Flexible Feature Codes” (page 222).

Procedure 91
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 92 “Adding Flexible Feature Codes” (page 223).

Procedure 92
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 opens.
2	Click **Add** in the **Flexible Feature Code Entries** Web page. The **Add Flexible Feature Code** Web page opens.
3	Click the **Look up** hyperlink adjacent to the **Flexible feature code type** input box. The **Flexible Feature Code Lookup** popup window opens 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 131 "Feature Options Web page" (page 224).

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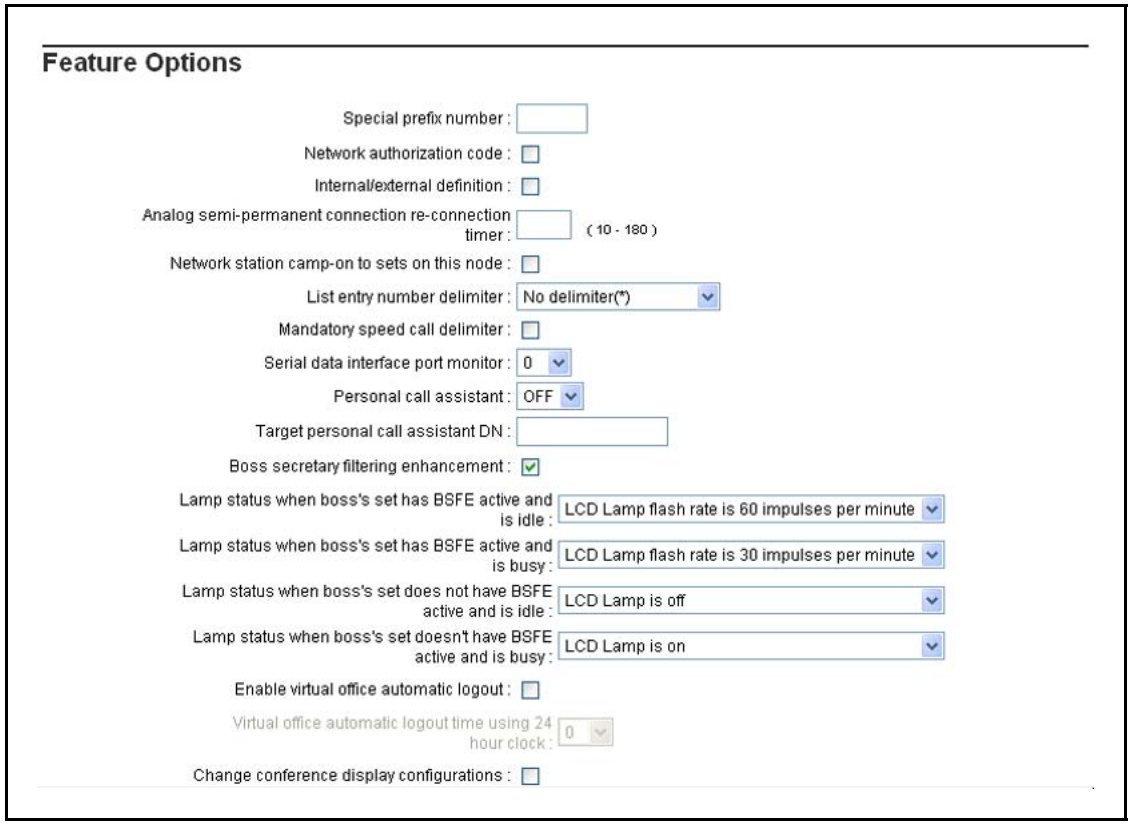
Figure 131
Feature Options Web page



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 132 "Listed Directory Numbers Web page" (page 225).

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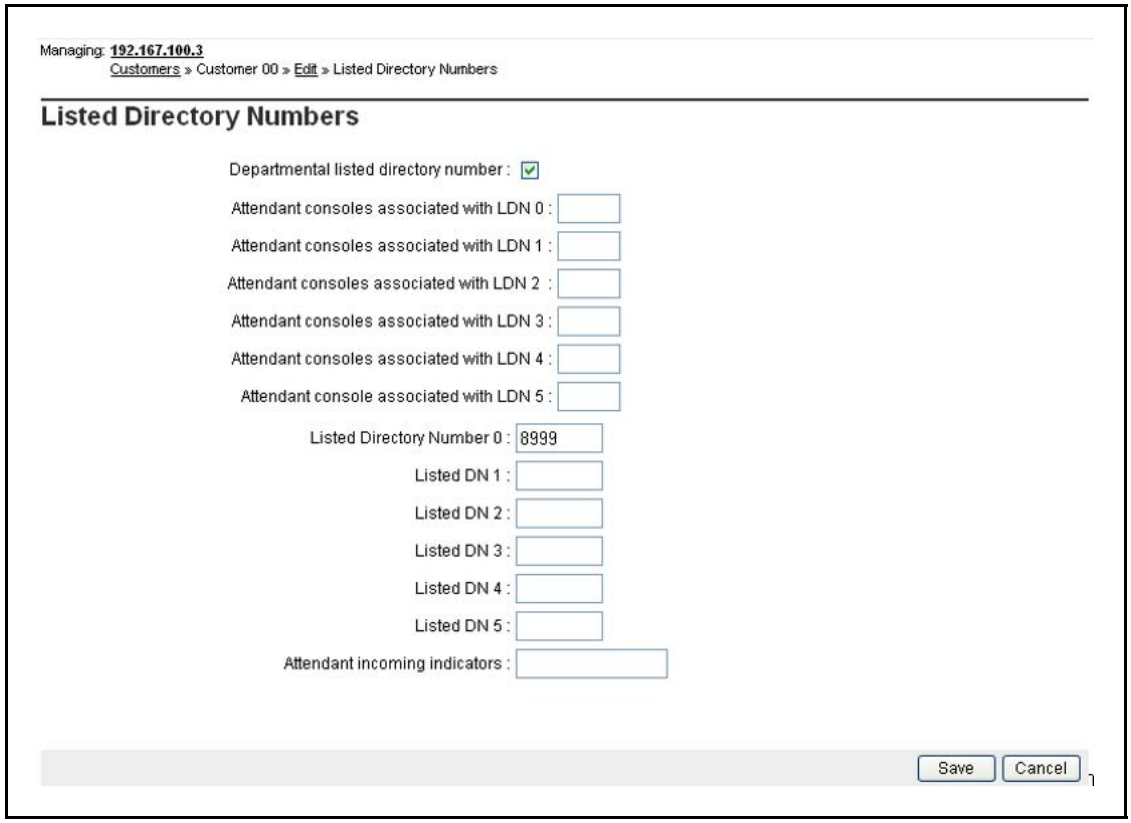
Figure 132
Listed Directory Numbers Web page



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 133 "Mobile Service Directory Numbers Web page" (page 226). 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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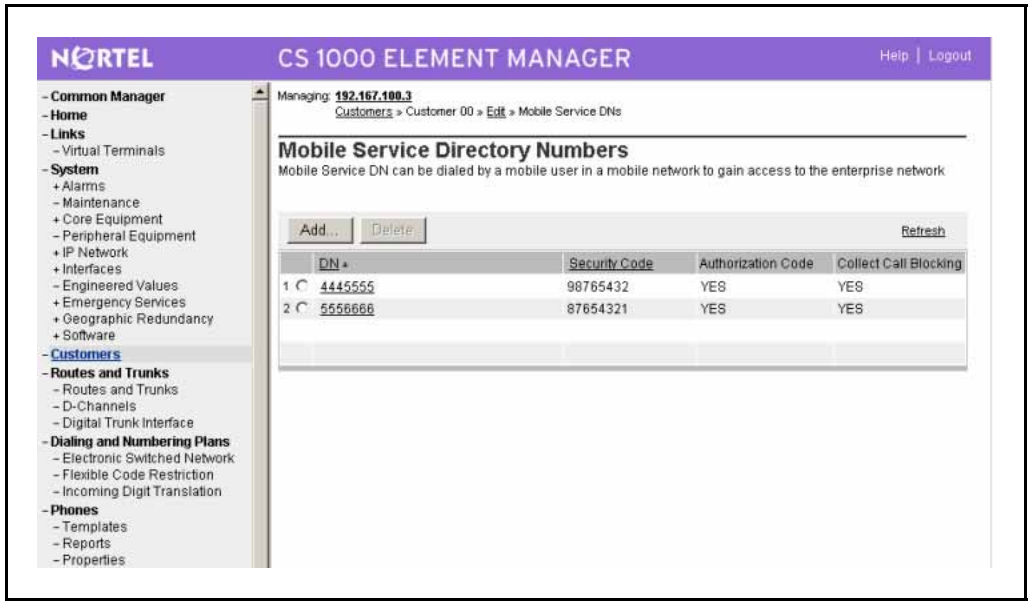
Figure 133
Mobile Service Directory Numbers Web page



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 134 "ISDN and ESDN Networking Web page" (page 227).

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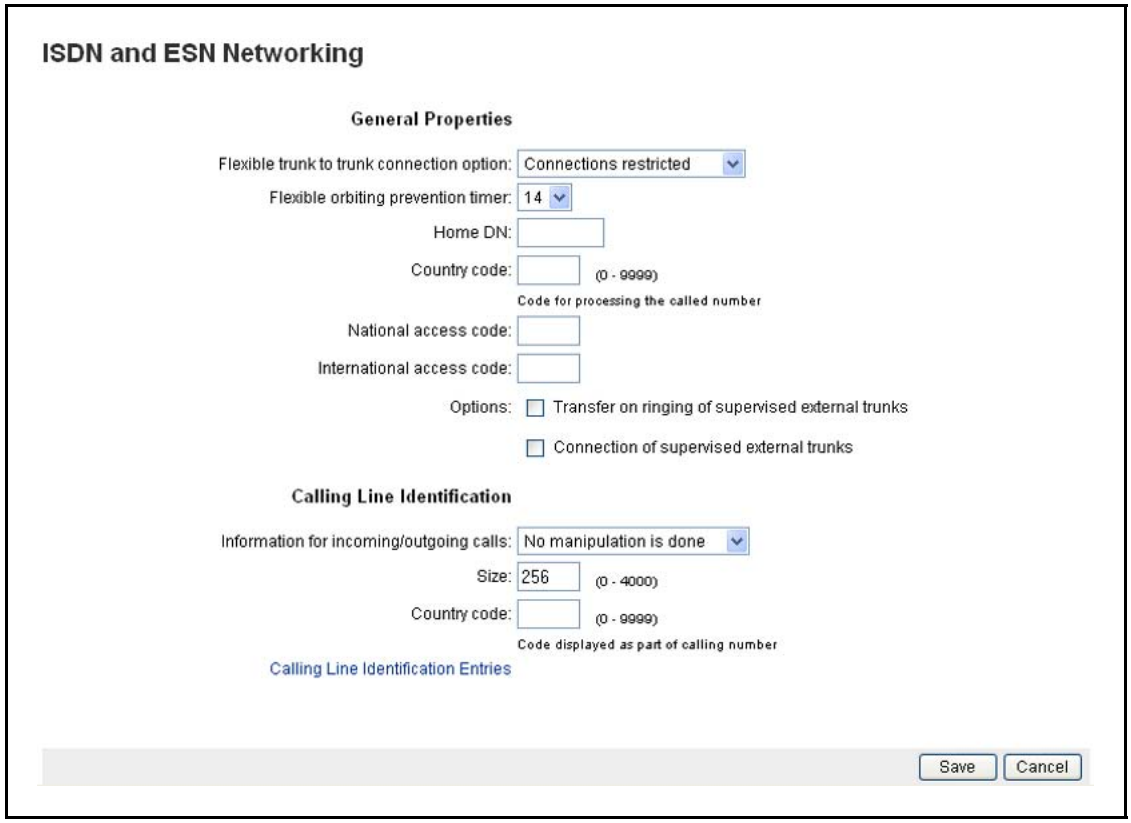
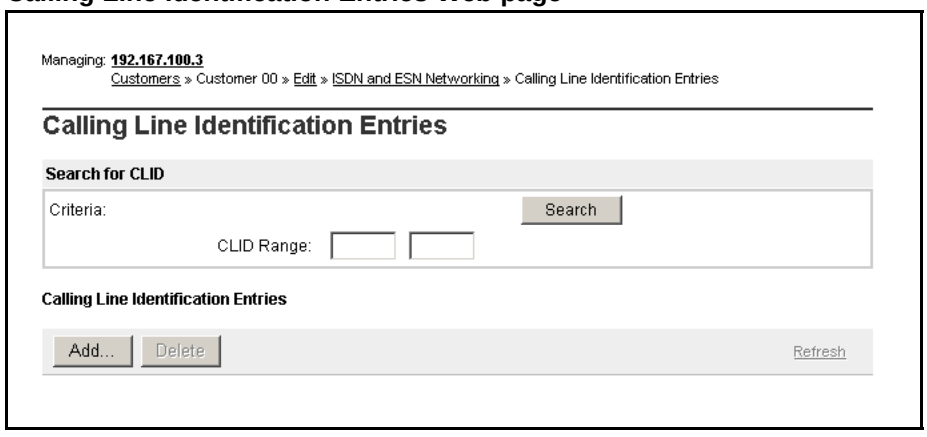
Figure 134
ISDN and ESDN Networking Web page



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 opens, as shown in Figure 135 "Calling Line Identification Entries Web page" (page 227).

Figure 135
Calling Line Identification Entries Web page



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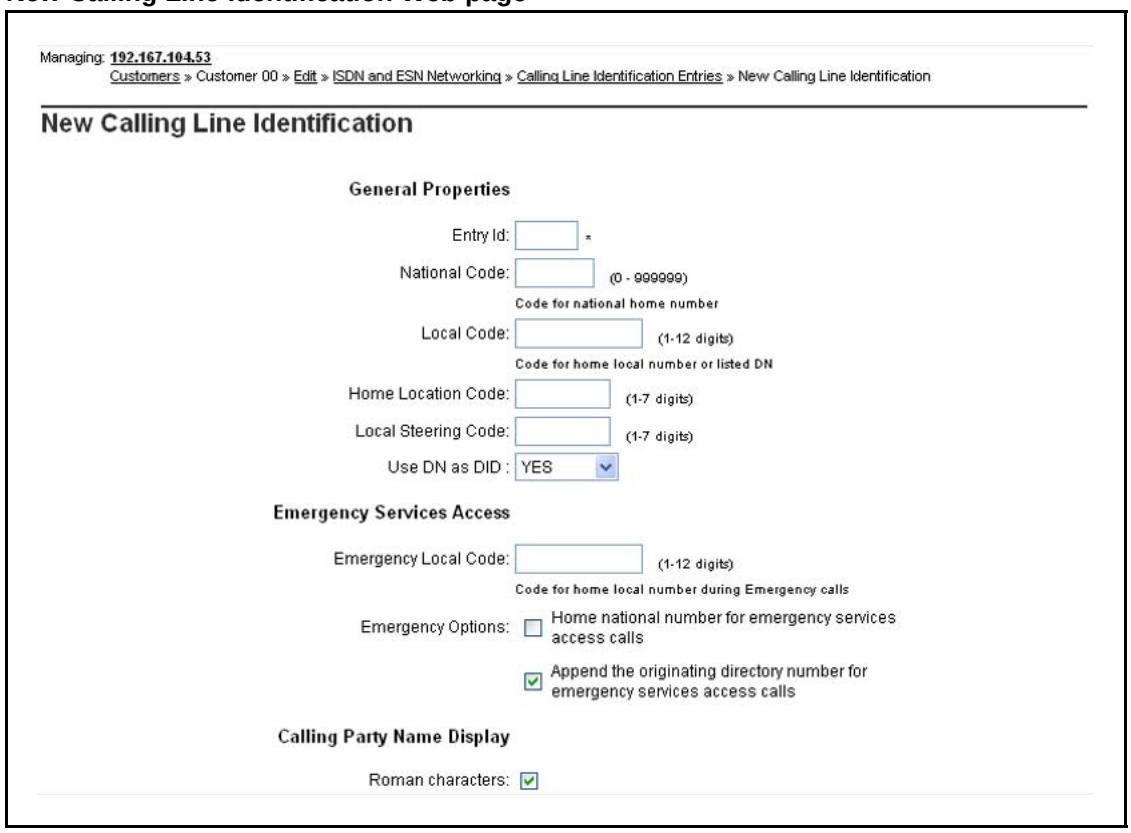
To search for a CLID, enter the **CLID Range** and click **Search**.

To add a CLID, click **Add**. The **New Calling Line Identification** Web page opens, as shown in Figure 136 "New Calling Line Identification Web page" (page 228).

Figure 136
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 137 "Night Service Web page" (page 229).

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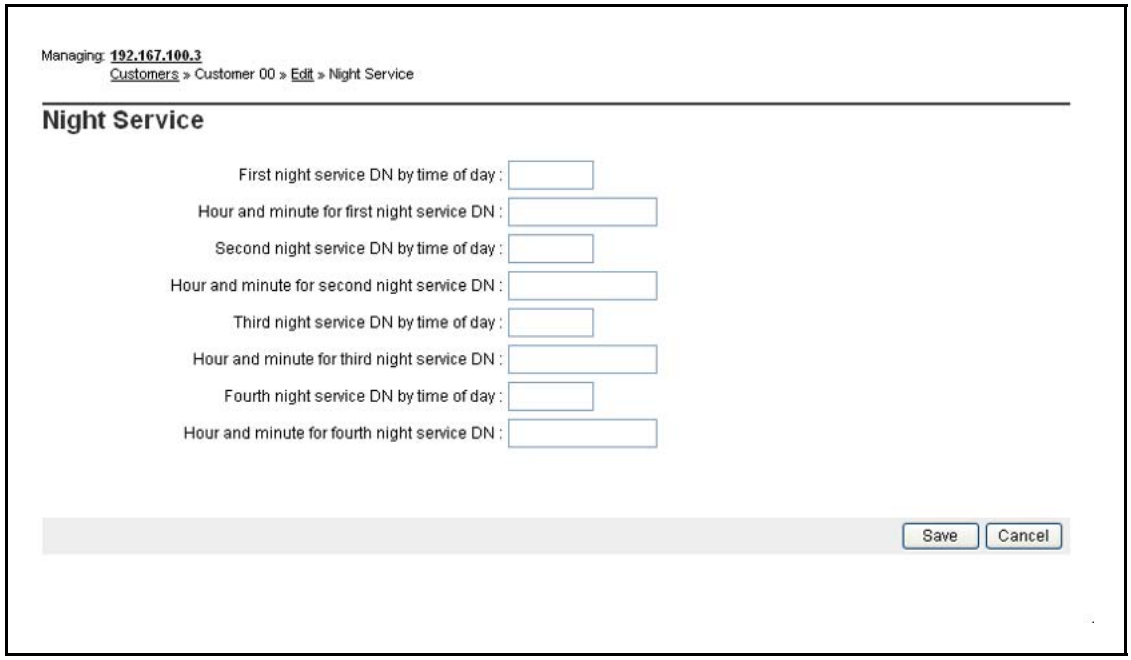
Figure 137
Night Service Web page



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 138 "Feature Packages Web page" (page 230).

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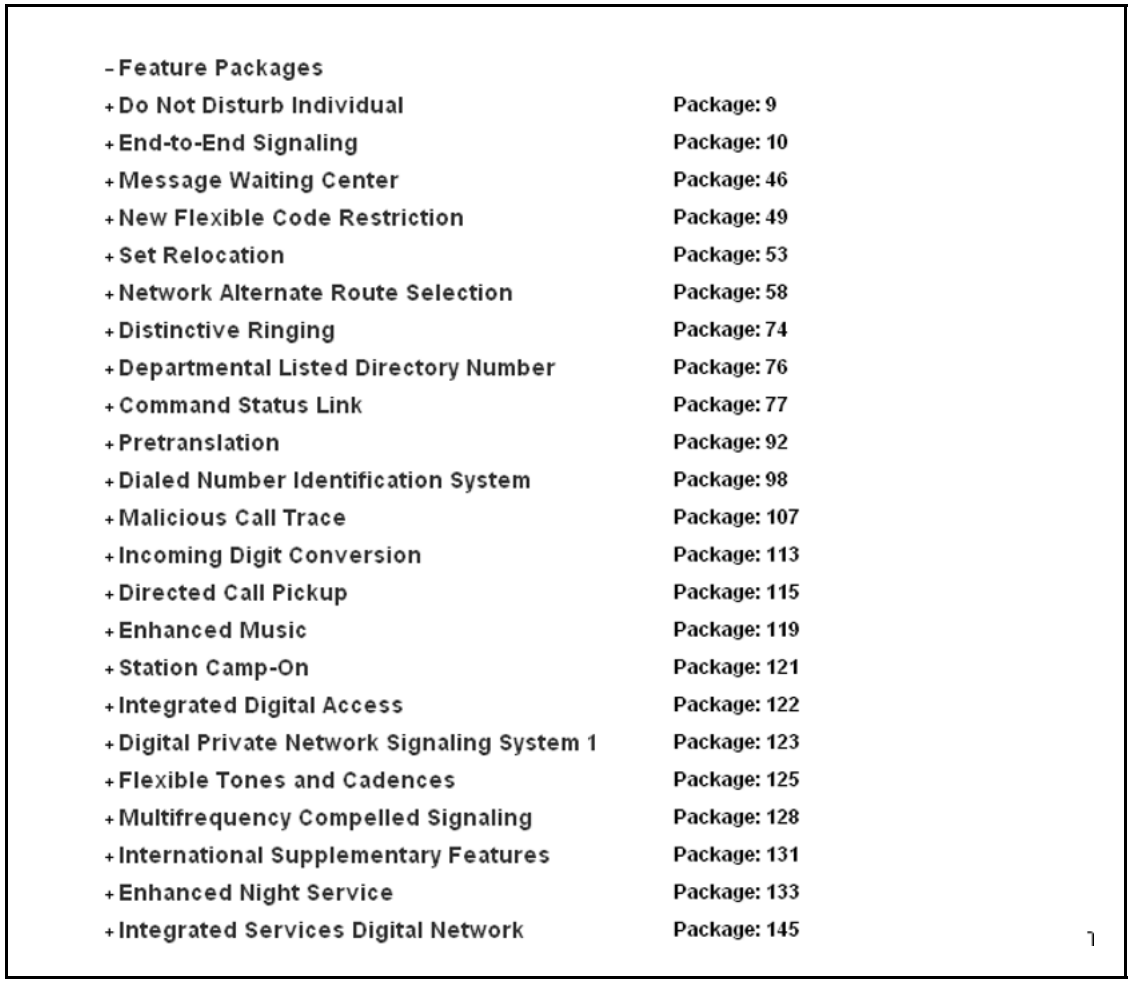
Figure 138
Feature Packages Web page



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**.

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.

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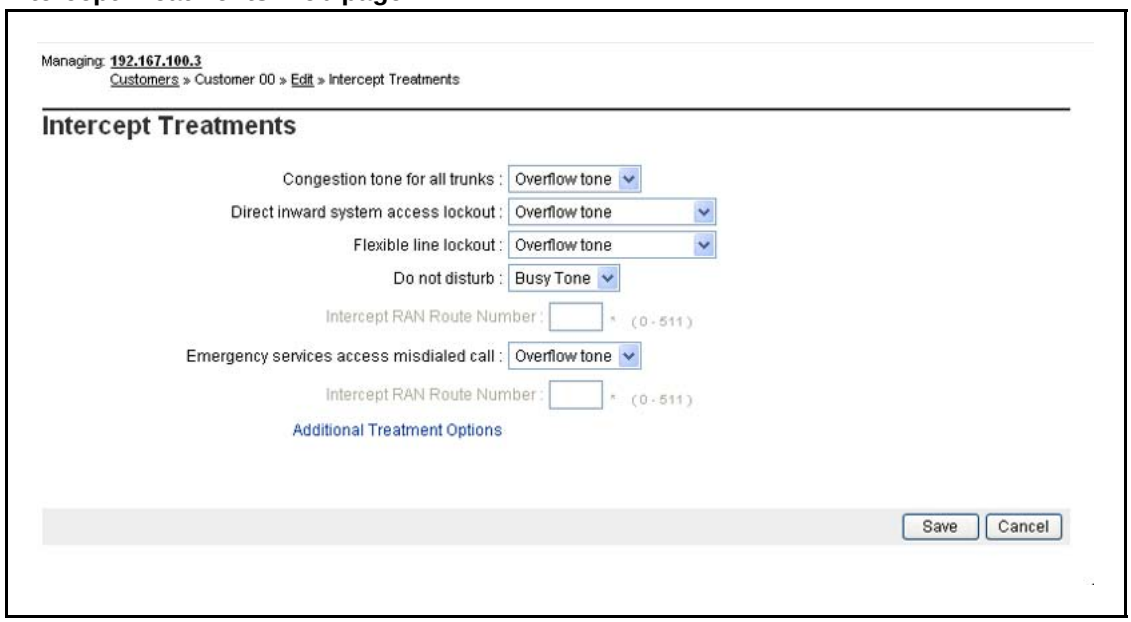
Intercept Treatments

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 139 "Intercept Treatments Web page" (page 231).

Figure 139
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 opens, as shown in Figure 140 "Intercept Treatments Options Web page" (page 232).

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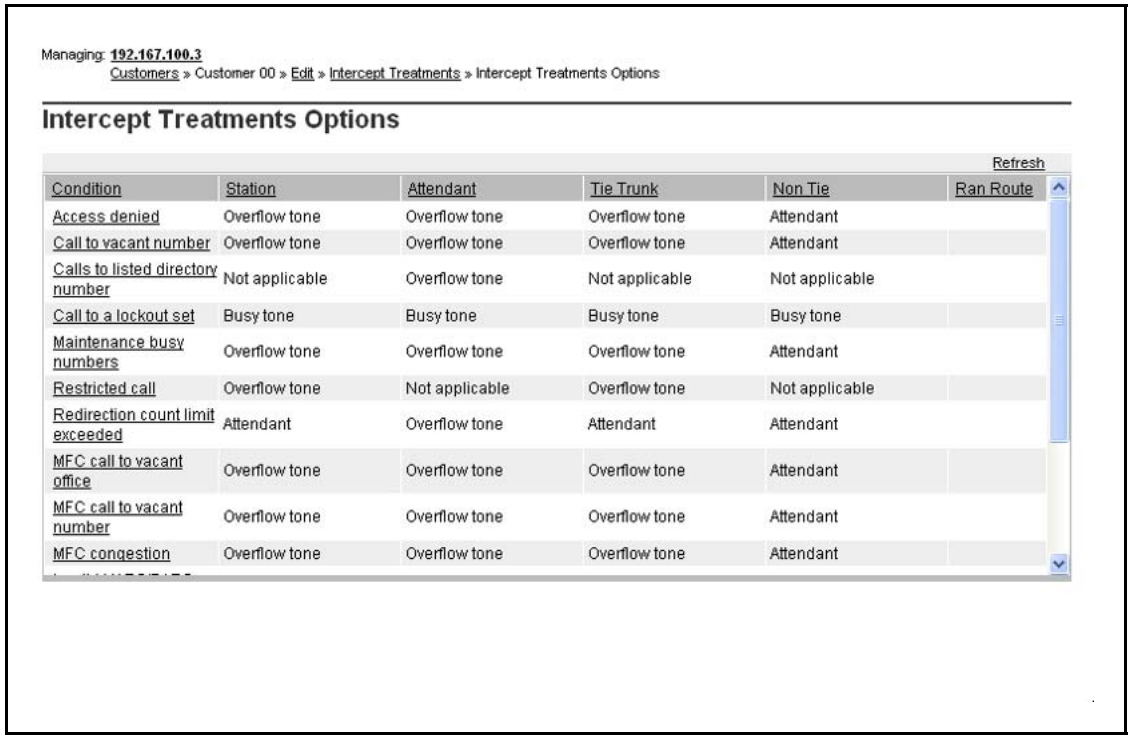
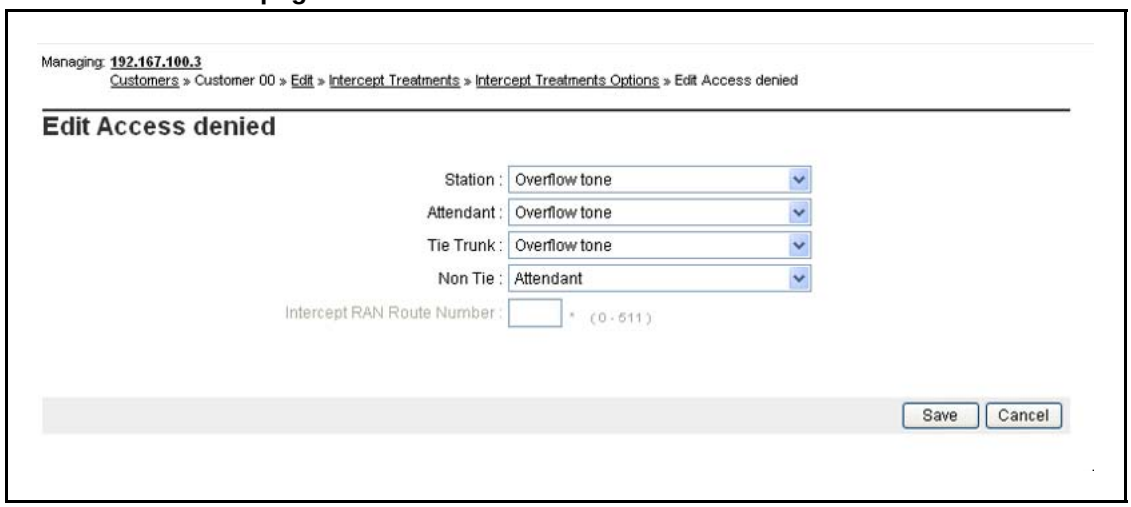
Figure 140
Intercept Treatments Options Web page



To edit an Intercept Treatment for a customer, click the **Condition**. The **Edit** Web page for that Condition is displayed, as shown in Figure 141 "Edit Condition Web page" (page 232).

Figure 141
Edit Condition Web page



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

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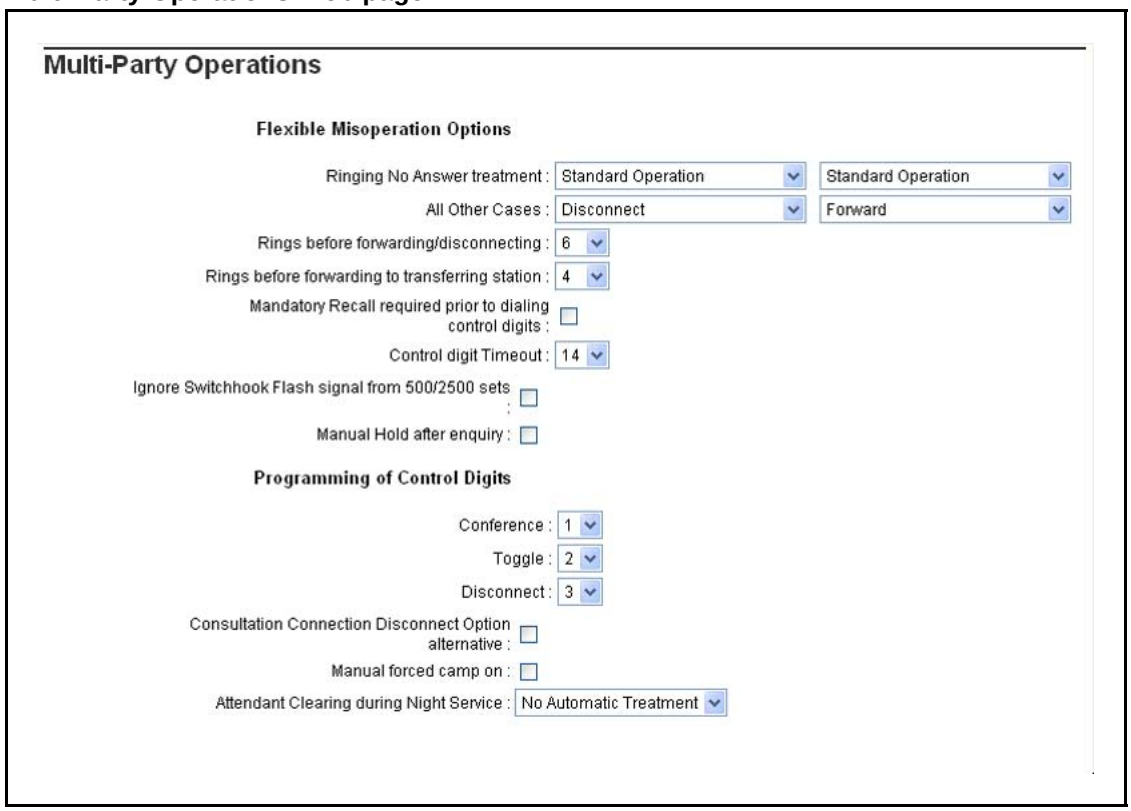
Multi Party Operations

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 142 "Multi Party Operations Web page" (page 233).

Figure 142
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 143 "Recorded Overflow Announcement Web page" (page 234).

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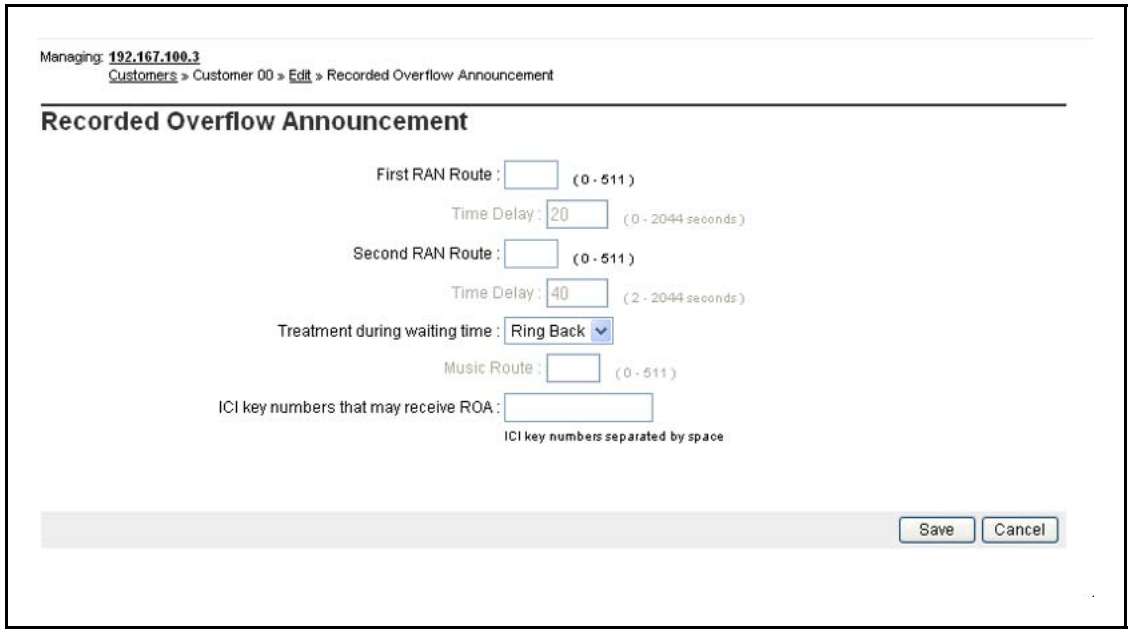
Figure 143
Recorded Overflow Announcement Web page



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

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 144 "Timers Web page" (page 235).

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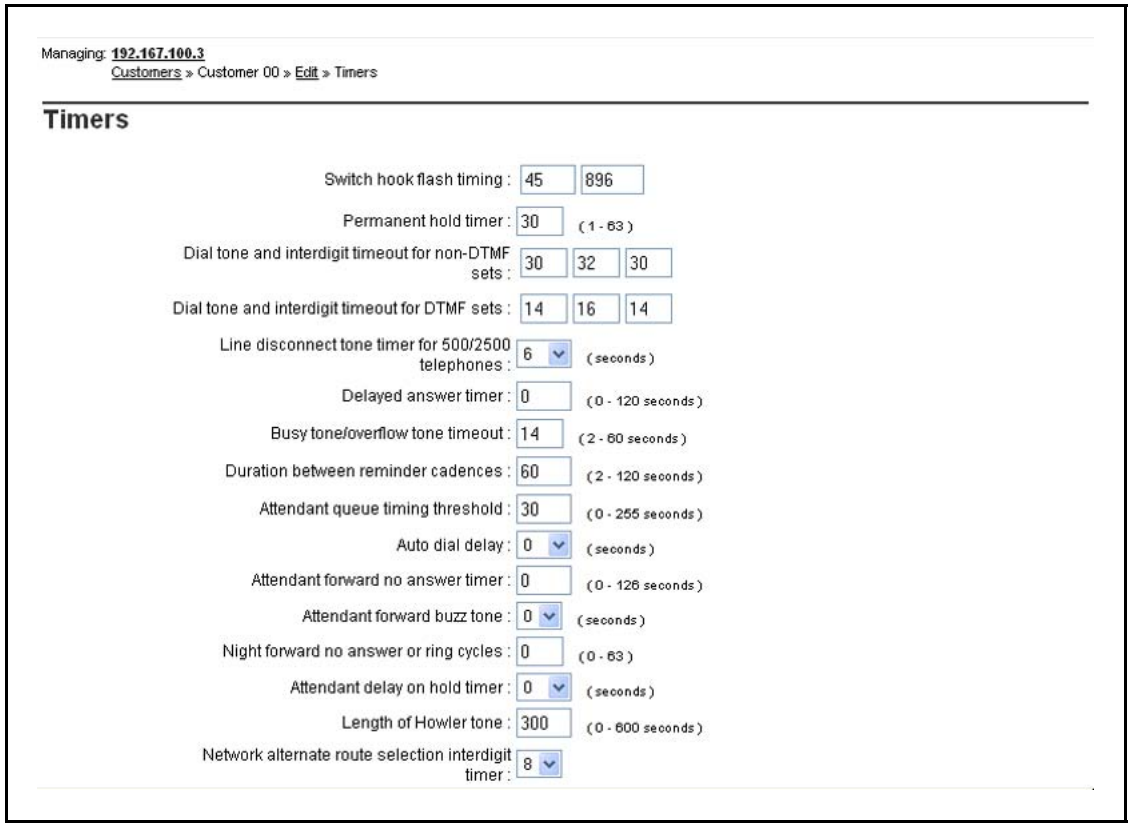
Figure 144
Timers Web page



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 145 "Routes and Trunks Web page" (page 236). From this Web page, users can view information on existing customers, routes, and trunks.

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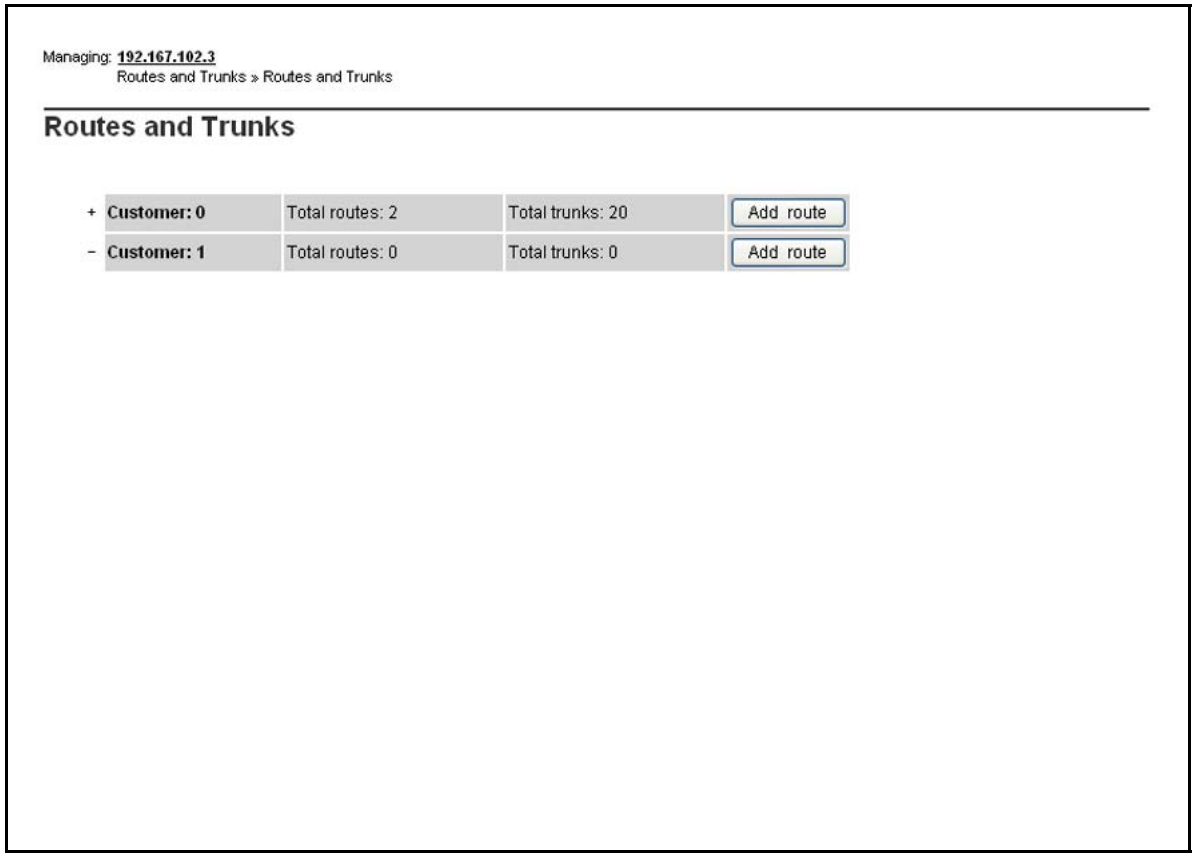
Figure 145
Routes and Trunks Web page



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 146 "Route Property Configuration Web page" (page 237).

Note: If there are a large number of routes or trunks, this Web page can be slow to load.

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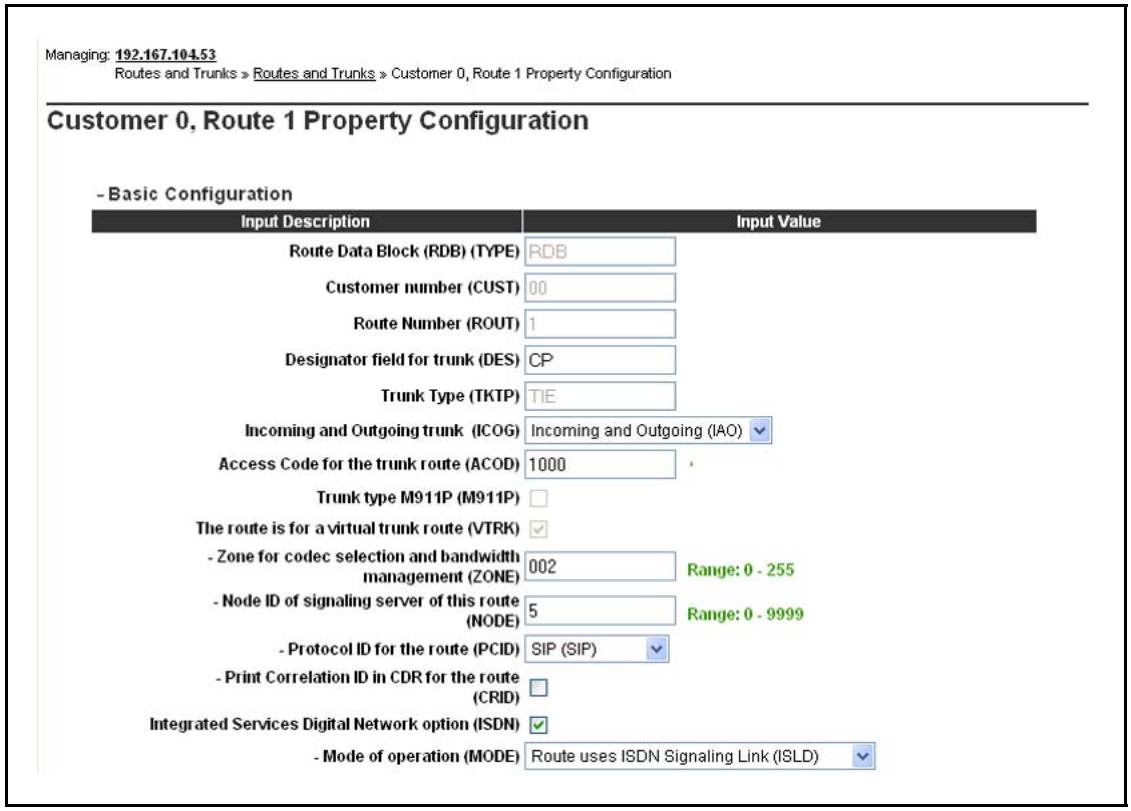
The information entered in the **Basic Configuration** section of this Web page corresponds to Route Data Block information traditionally configured using LD 16 - Route Data Block.

Note: H.323 and SIP must not use the same route.

For information on configuring routes, see *IP Peer Networking Installation and Commissioning (NN43001-313)* () .

Figure 146
Route Property Configuration Web page



Basic Configuration

In the **Basic Configuration** section of this Web page (see Figure 147 "Basic Configuration for routes" (page 238)), 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.

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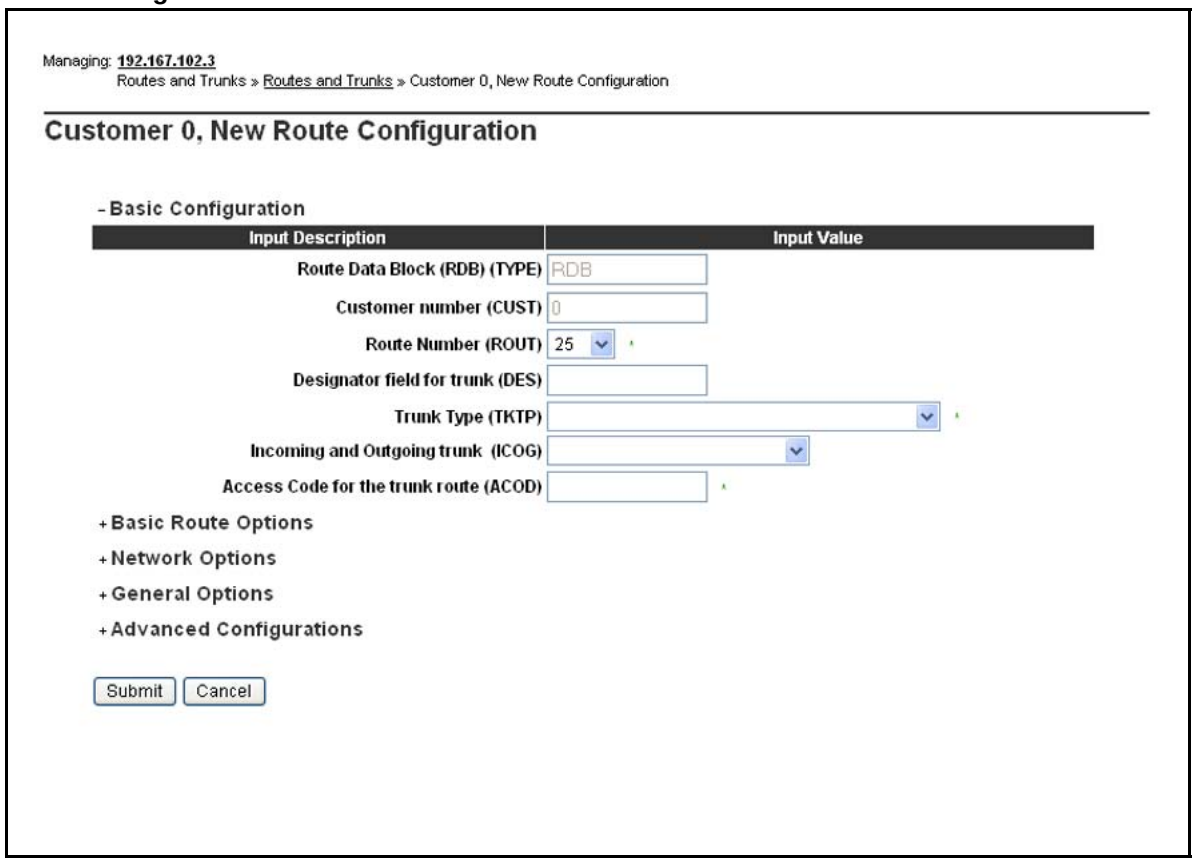
- Use the drop-down list to indicate that the trunk is **Incoming and/or Outgoing** (ICOG).
- Assign an **Access Code** (ACOD) to the trunk route.

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 147
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 148 "Basic Route Options configuration" (page 239)), use the check boxes to activate the following options for this route:

- Billing Number Required (BILN)
- Call Detail Recording (CDR)

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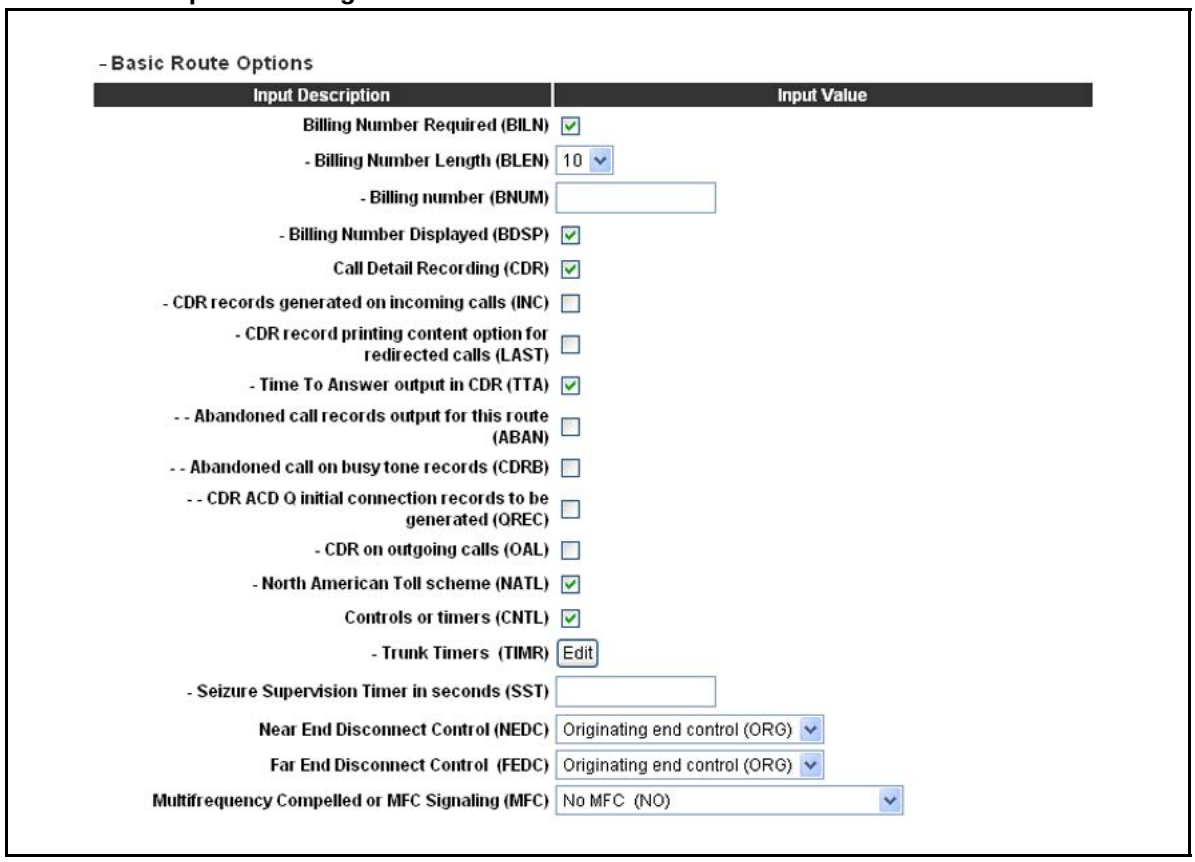
- Controls or timers (CNTL)
- Conventional (TIE trunk only) (CNVT)
- Incoming DID Digit Conversion (IDC)
- Process Notification Networked Calls (PNNC)

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 148 "Basic Route Options configuration" (page 239).

Figure 148
Basic Route Options configuration



To save changes made in this section, click **Submit** at the bottom of the **Route Property Configuration** Web page.

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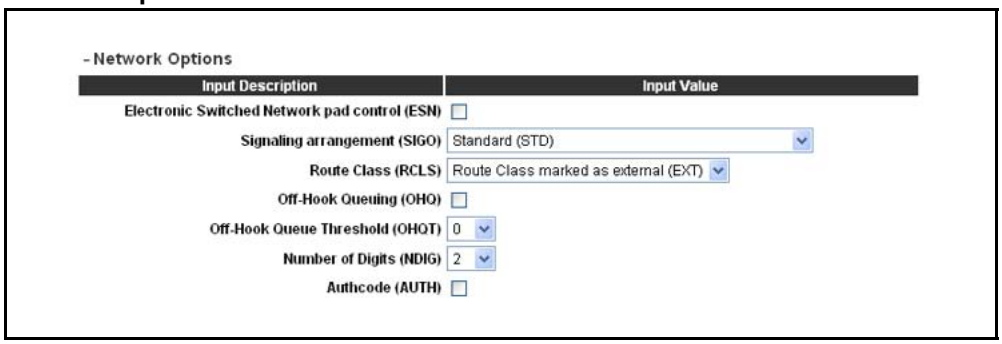
Network Options

Figure 149 "Network Options for routes" (page 240) provides an example of the input requested in the **Network Options** section for the route shown in Figure 146 "Route Property Configuration Web page" (page 237). The actual input that Element Manager requests varies depending on the type of route and the responses to earlier input requests.

Figure 149
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 150 "General Options for routes" (page 241) provides an example of the input requested in the **General Options** section for the route shown in Figure 146 "Route Property Configuration Web page" (page 237). 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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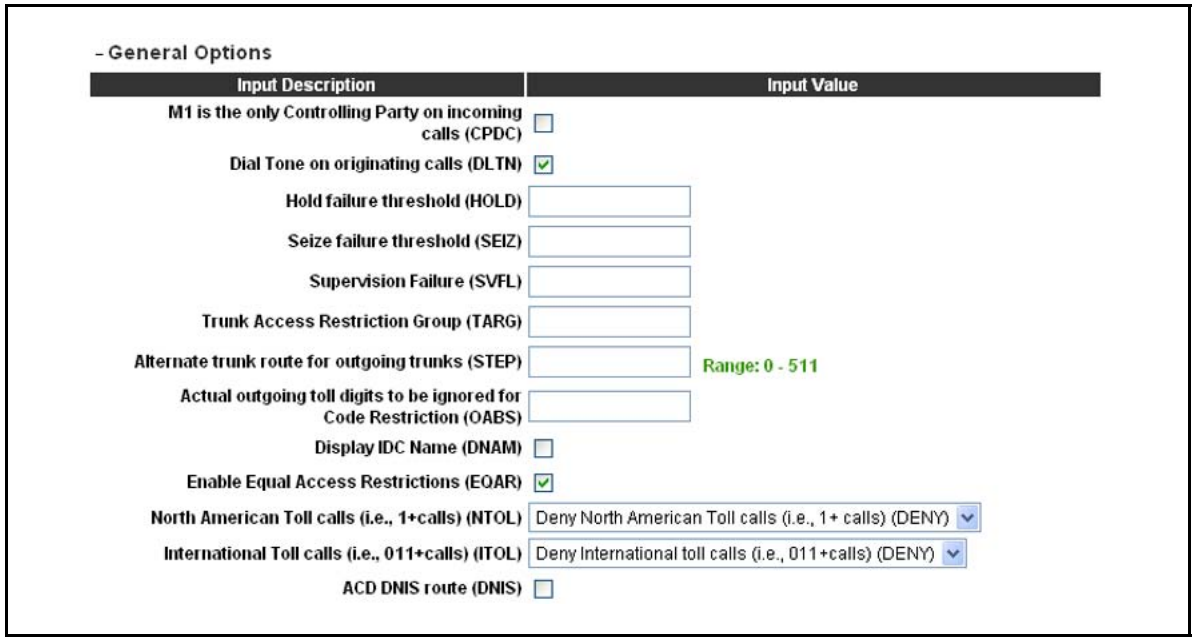
Figure 150
General Options for routes



To save changes made in this section, click **Submit** at the bottom of the **Route Property Configuration** Web page.

Advanced Configurations

Figure 151 "Advanced Configurations for routes" (page 242) provides an example of the input requested in the **Advanced Configurations** section for the route shown in Figure 146 "Route Property Configuration Web page" (page 237). 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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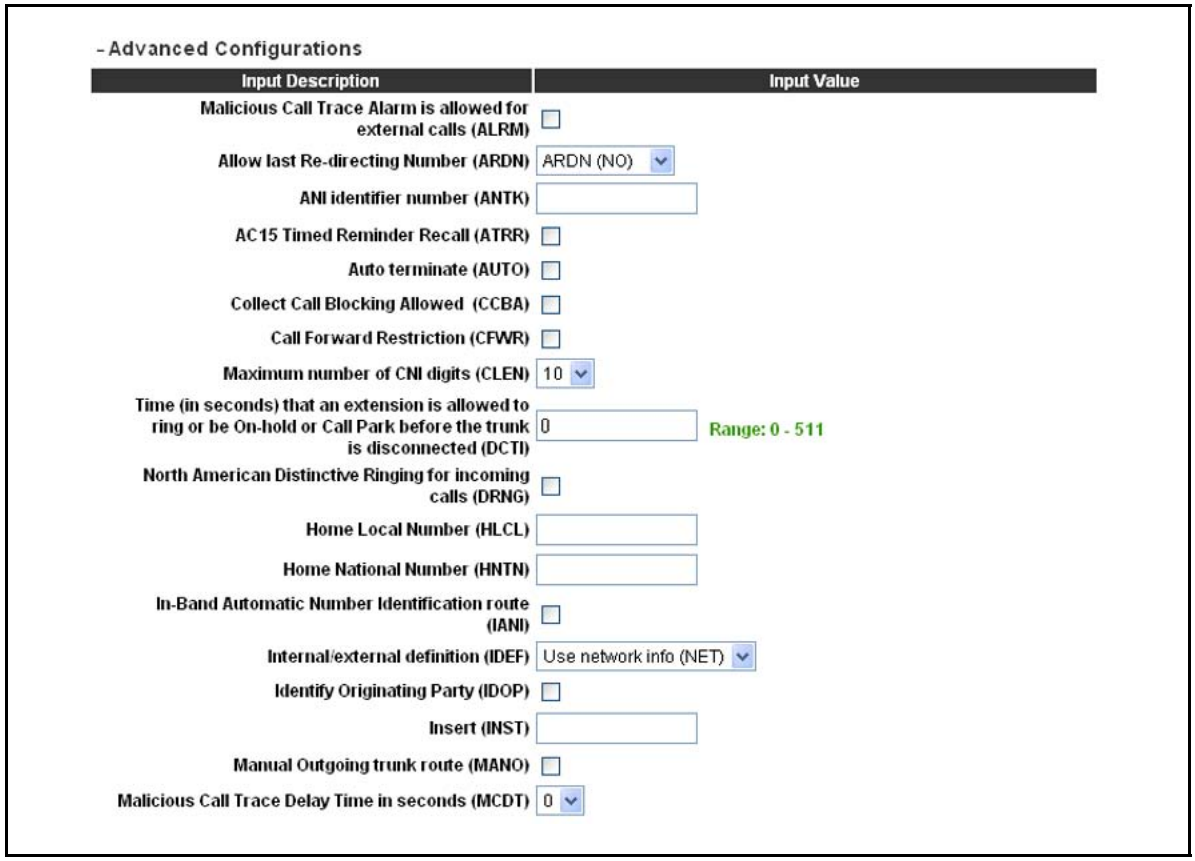
Figure 151
Advanced Configurations for routes



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 152 "New Trunk Configuration Web page" (page 243).

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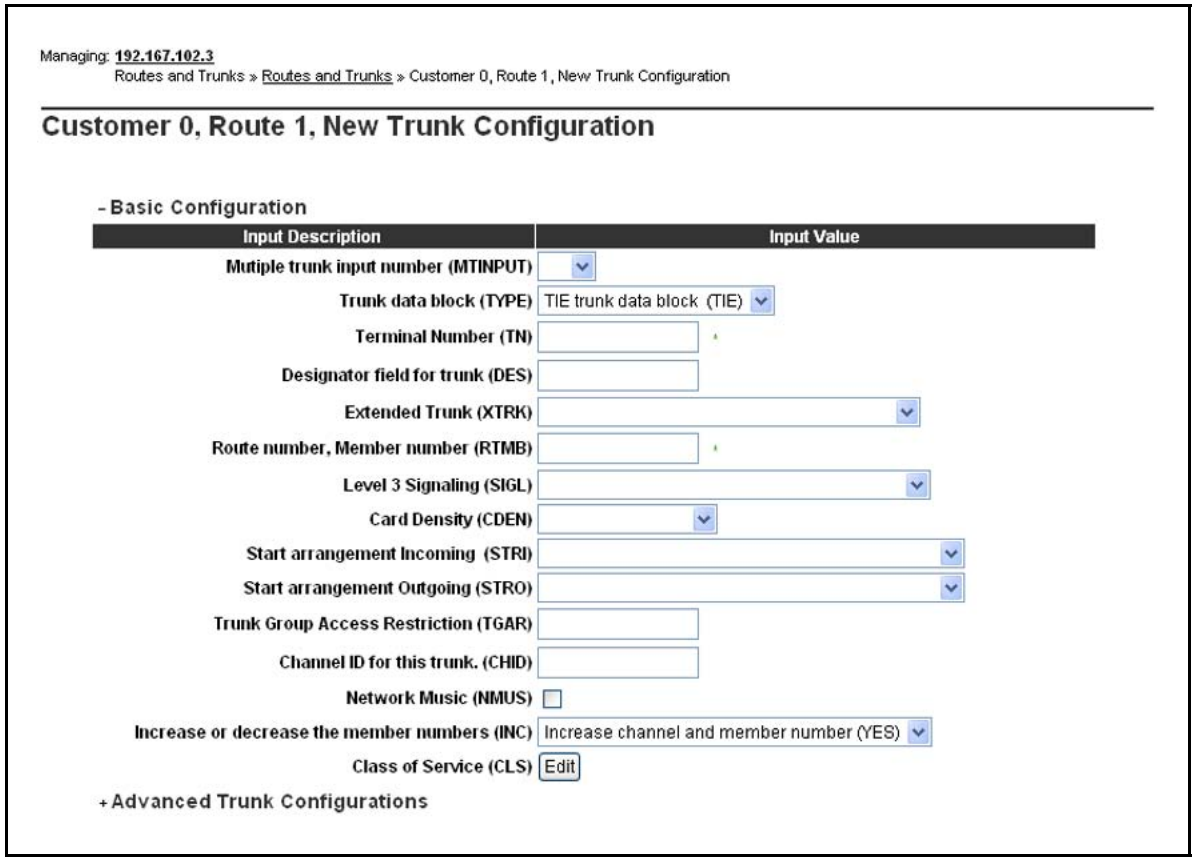
Figure 152
New Trunk Configuration Web page



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 152 "New Trunk Configuration Web page" (page 243)), 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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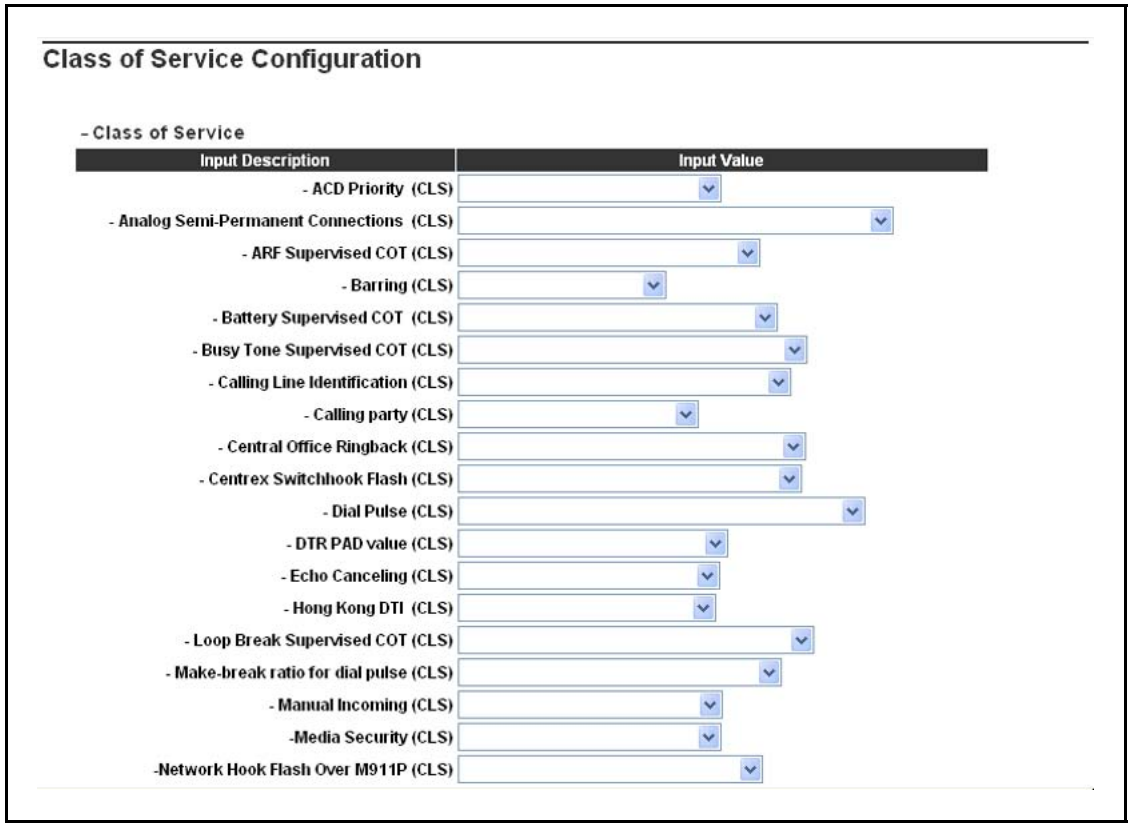
- Use the **Start arrangement Incoming (STRI)** drop-down list to select a start arrangement for incoming calls.
- Use the **Start arrangement Outgoing (STRO)** drop-down list to select a start arrangement for outgoing calls.
- Use the **Increase or decrease the member numbers (INC)** drop-down list 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 153 "Class of Service Configuration Web page" (page 244).

Figure 153
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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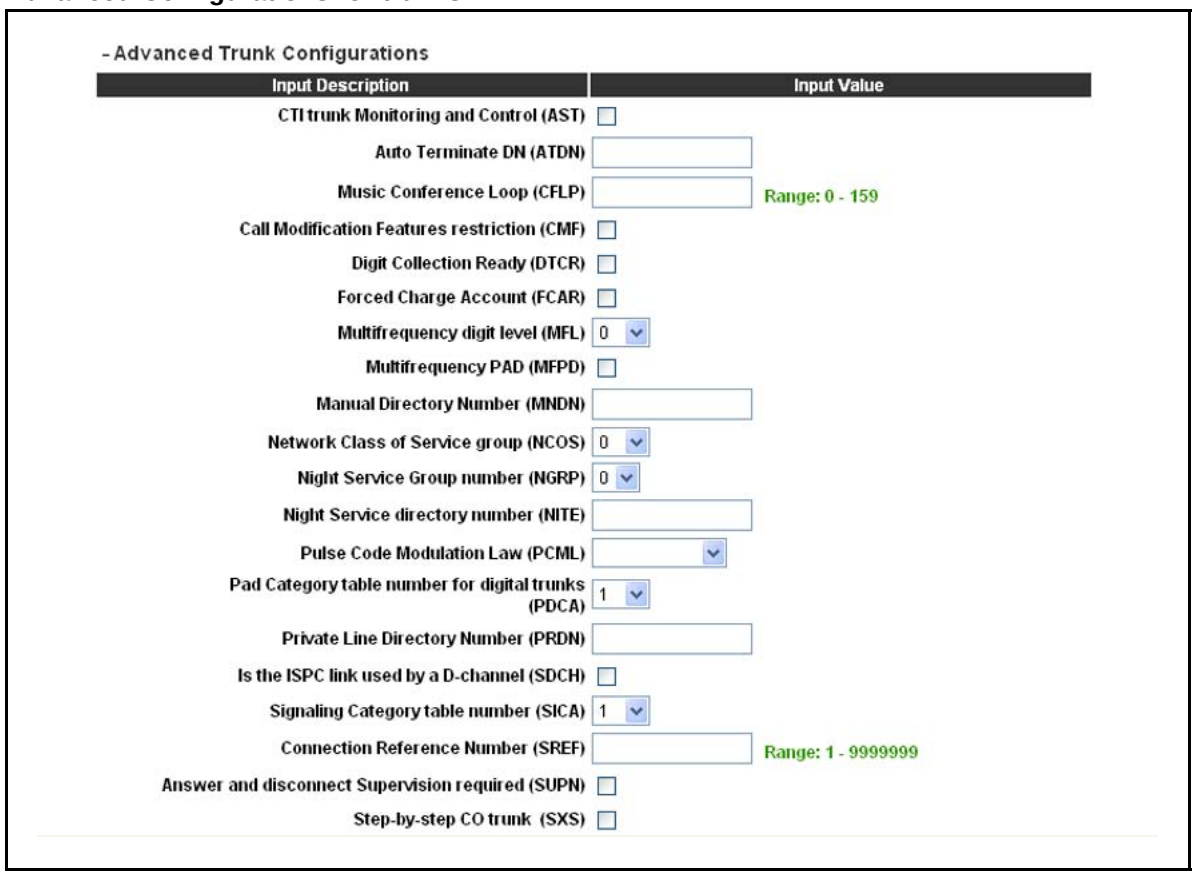
Advanced Trunk Configurations

Figure 154 "Advanced Configurations for trunks" (page 245) provides an example of the input requested in the **Advanced Trunk Configurations** section for the TIE Trunk shown in Figure 152 "New Trunk Configuration Web page" (page 243).

Figure 154
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 155 "Delete multiple trunk members page" (page 246). On this Web page, the information for the Parent Route is read-only.

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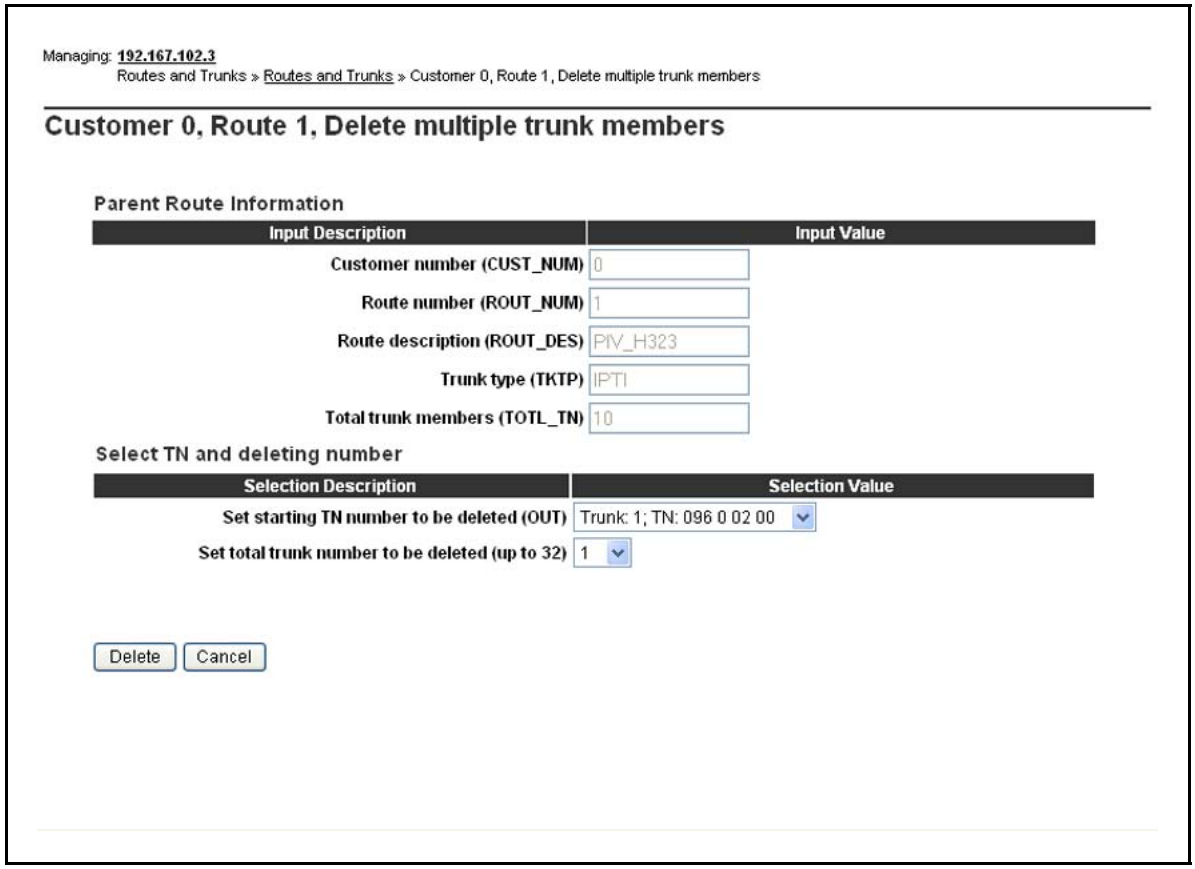
Figure 155
Delete multiple trunk members page



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 156 "D-Channels Web page" (page 247).

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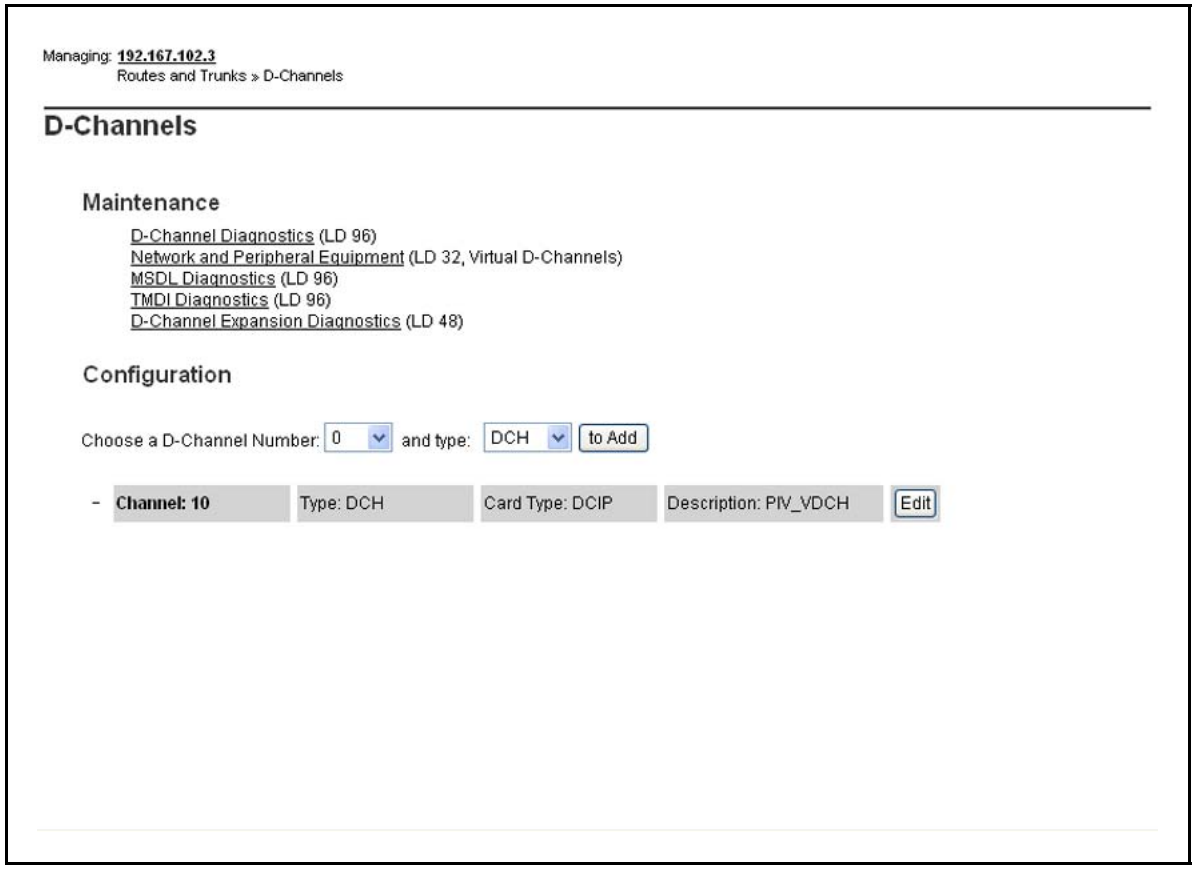
Figure 156
D-Channels Web page



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 39).

Configuration

From the **D-Channels** Web page users can view basic information on 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:

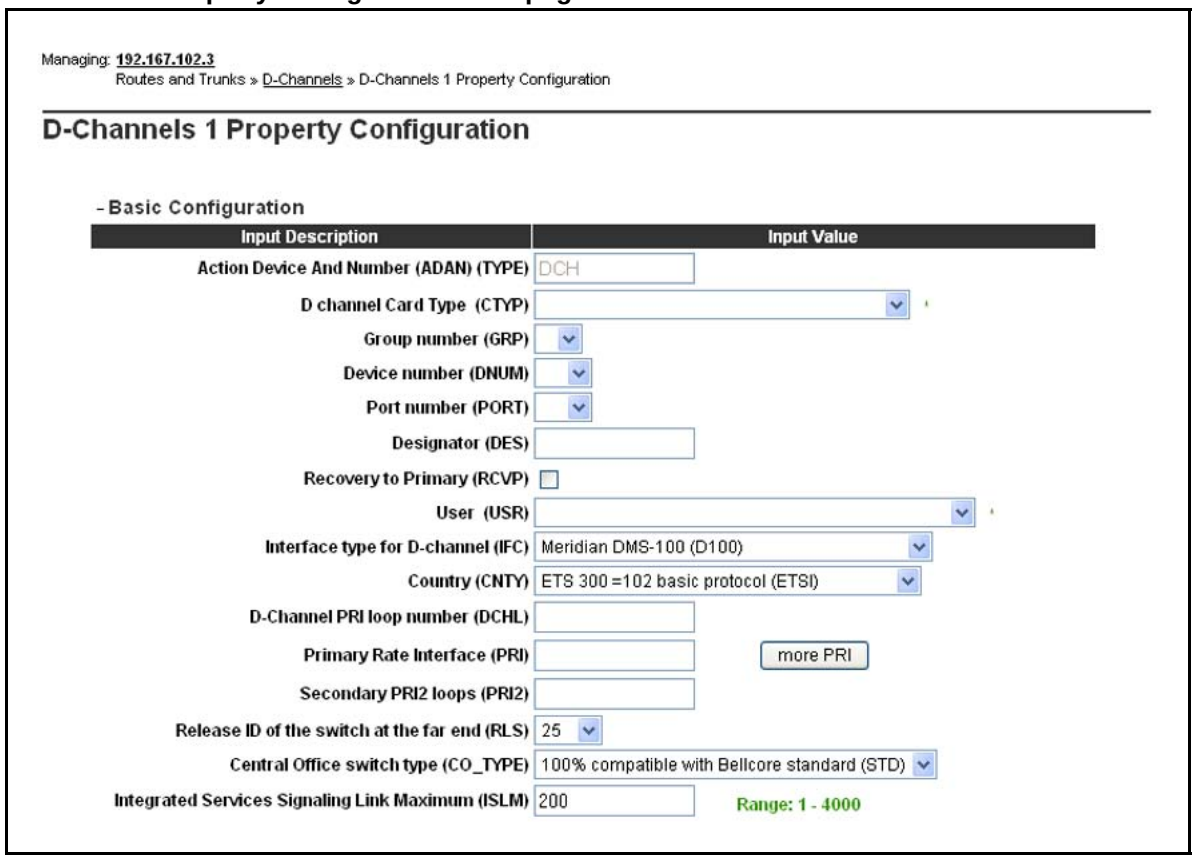
- add a new D-channel
- edit D-channel data

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 on 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 157 "D-Channels Property Configuration Web page" (page 248)).

Note: H.323 and SIP can use the same D-channel.

Figure 157
D-Channels Property Configuration Web page



In the **D-Channels Property Configuration** Web page, users can:

- Enter information on the **Basic Configuration** Web page.

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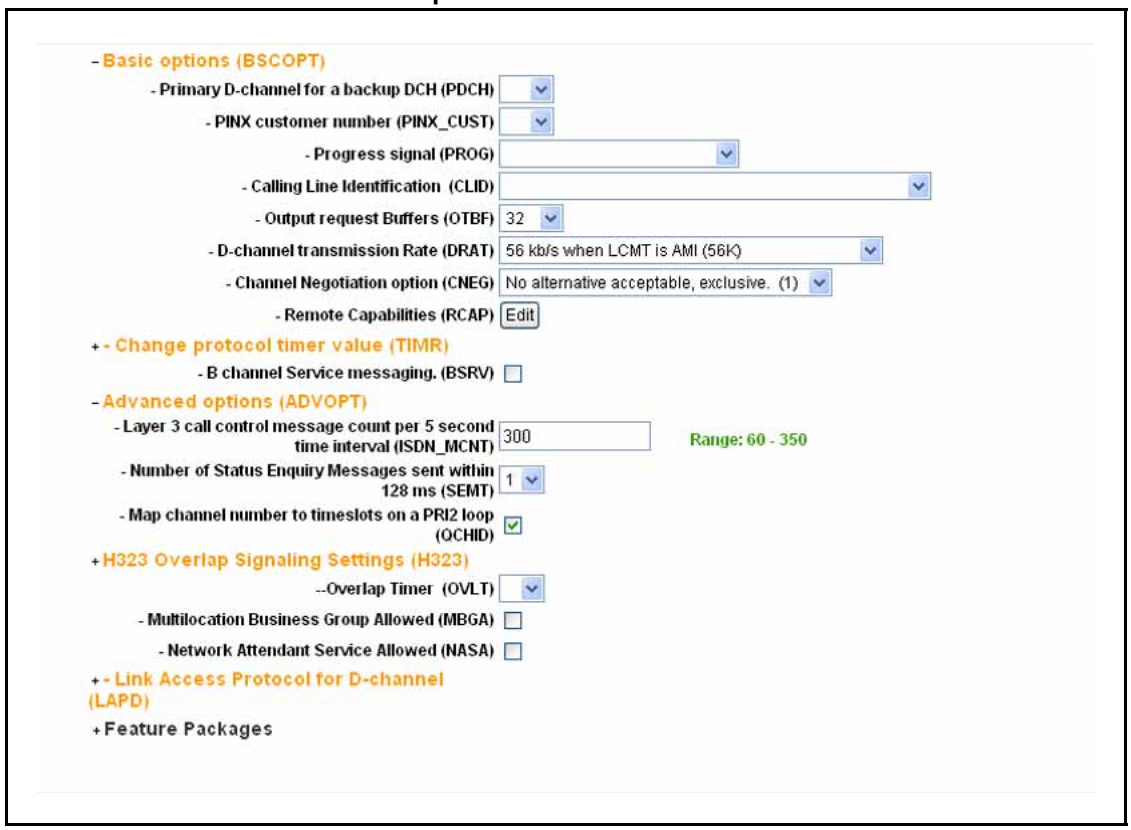
— The information entered in this section corresponds to ADAN and ADAN DCH (Action Device and Number, D-channel and back-up D-channels) data traditionally configured using LD 17 - Configuration Record 1. In addition to basic D-channel configuration, additional information can be entered for optional settings in the following two categories:

– Basic D-channel options (BSCOPT)

– Advanced D-channel options (ADVOPT)

These options are shown in Figure 158 "Basic and Advanced D-Channel options" (page 249).

Figure 158
Basic and Advanced D-Channel options



- Configure information on the **Feature Packages** Web page.

  — Digital Private Networking Signaling System 1 (Package 123)

  — Virtual Network Services (Package 183)

To save changes made in this section, click **Submit** at the bottom of the **D-channels Property Configuration** Web page.

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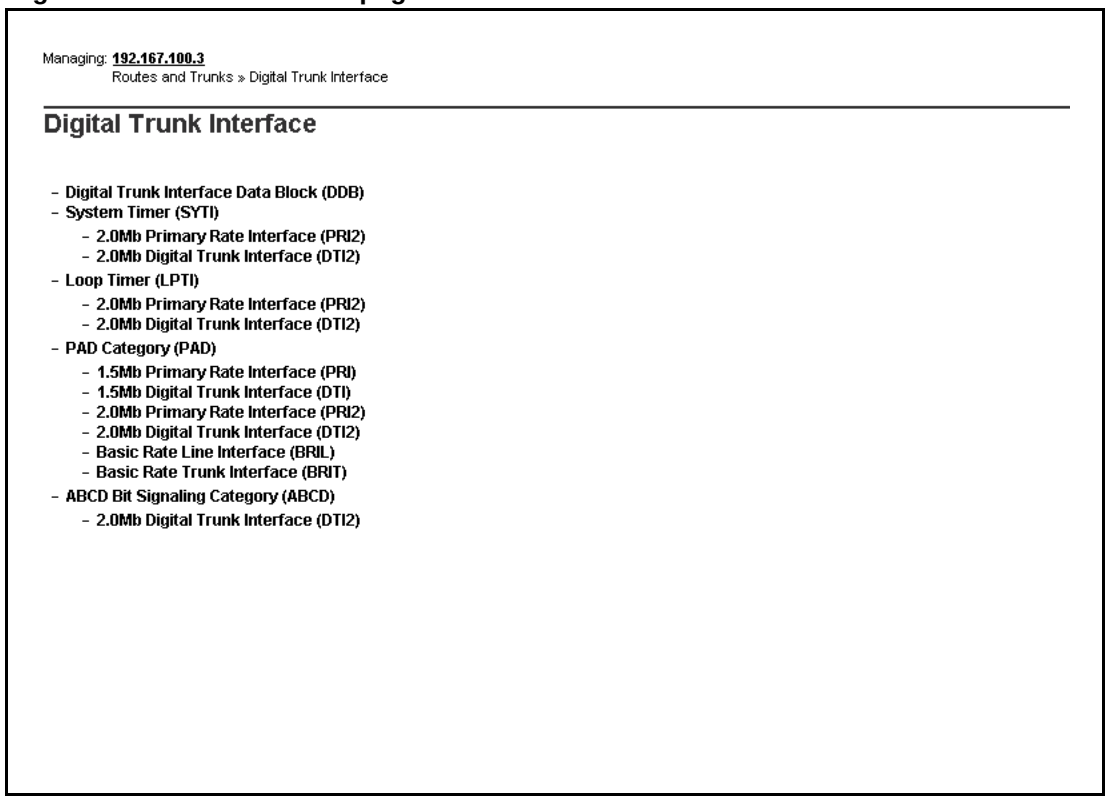
Digital Trunk Interface

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 opens, as shown in Figure 159 "Digital Trunk Interface Web page" (page 250). This Web page allows the user to configure or edit Digital Trunk Interface information.

Figure 159
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)
- configure PAD Category (PAD) parameters for:

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— 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)

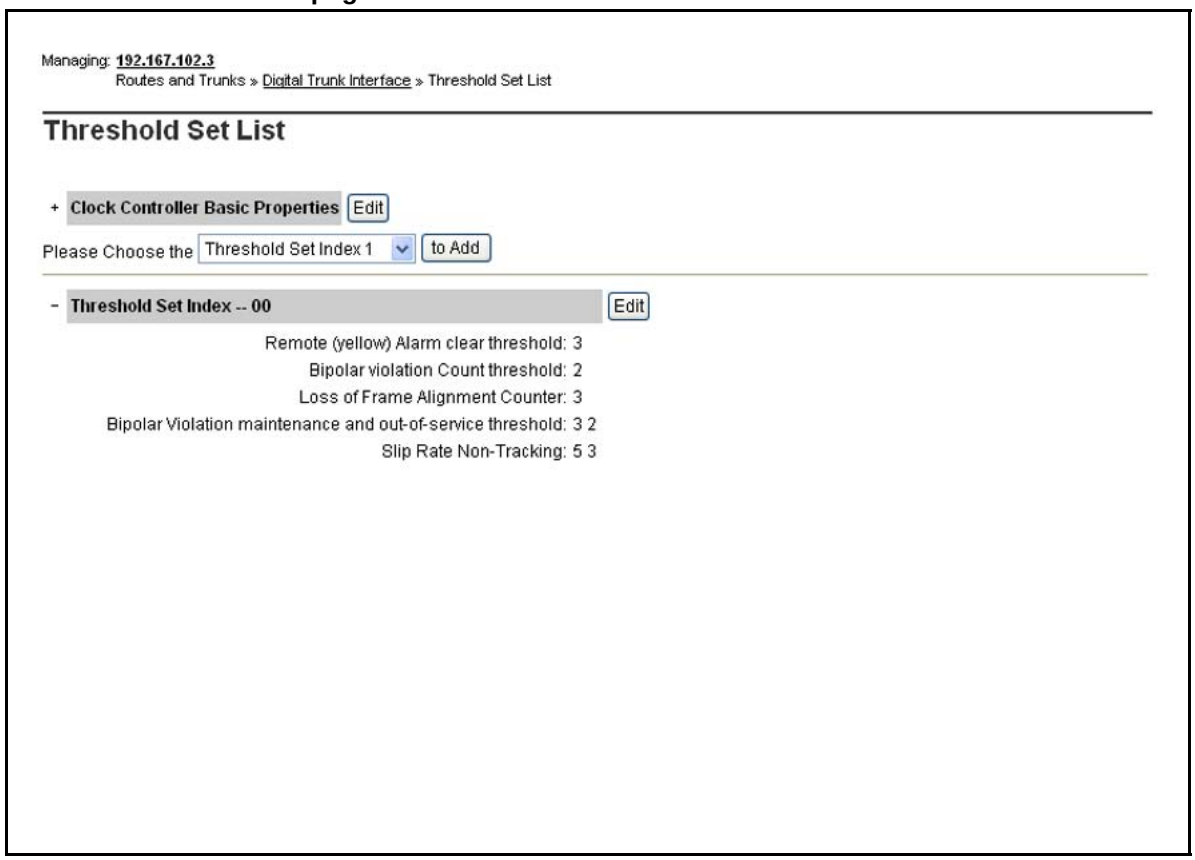
— Basic Rate Line Interface (BRIL)

— 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 opens. See Figure 160 "Threshold Set List Web page" (page 251).

Figure 160
Threshold Set List Web page



From this Web page, users can access additional Web pages to perform the following functions:

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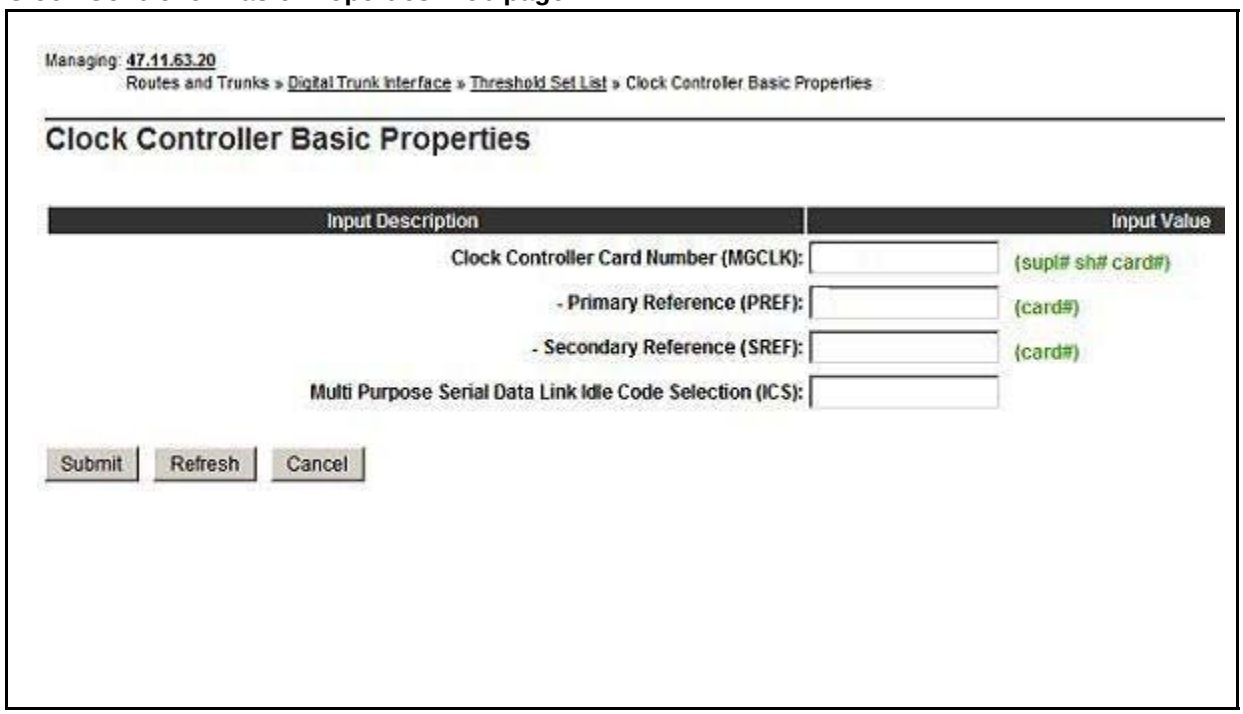
- edit Clock Controller Basic Properties
- add a Threshold Set Index
- edit an existing Threshold Set Block

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 opens, as shown in Figure 161 "Clock Controller Basic Properties Web page" (page 252).

Figure 161
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 93 “Adding or editing a Threshold Set Index” (page 252).

Procedure 93
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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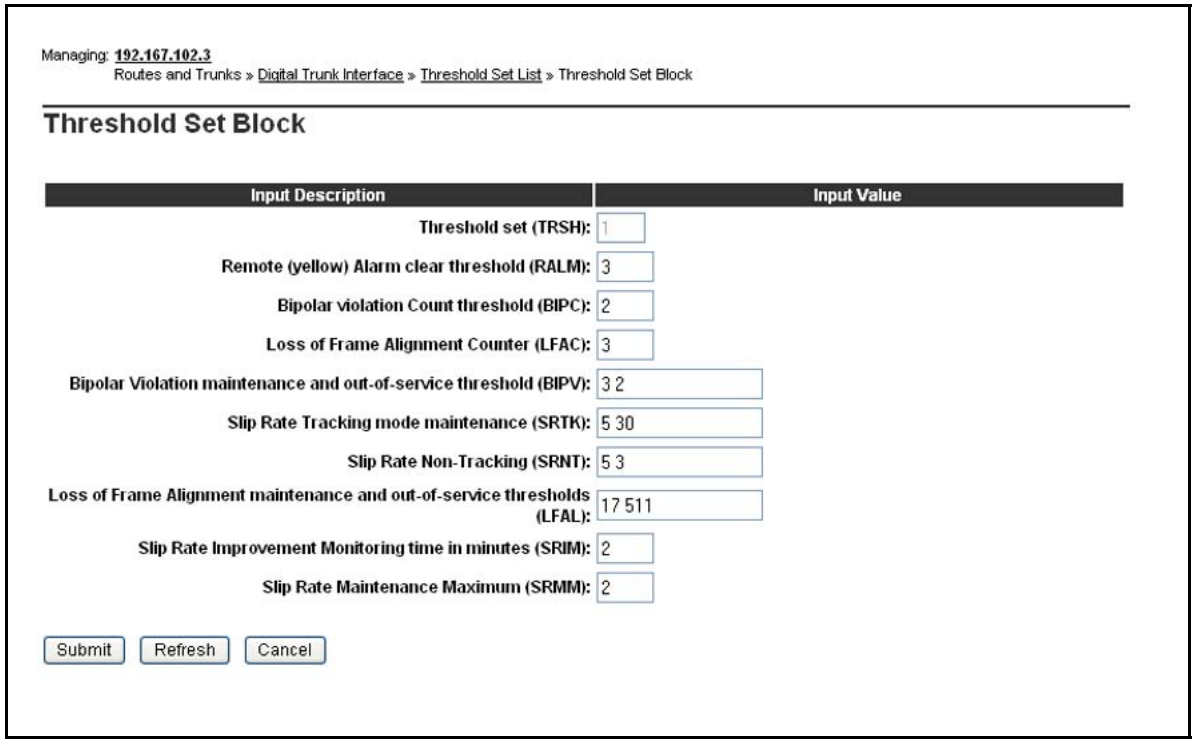
To edit the configuration information in an existing Threshold Set Block, click **Edit** located to the right of the index number.

--End--

When the **to Add** button or a Threshold Set Index Edit button is clicked on Figure 160 "Threshold Set List Web page" (page 251), the **Threshold Set Block** Web page for that index opens, as shown in Figure 162 "Threshold Set Block Web page" (page 253).

Figure 162
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 on the following topics:

"Introduction" (page 255)

"Electronic Switched Network" (page 255)

"Network Routing Service and NRS Manager" (page 258)

"Flexible Code Restriction" (page 263)

"Incoming Digit Translation" (page 266)

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 163 "Electronic Switched Network (ESN) Web page" (page 256). From this Web page users can configure the Dialing and Numbering Plan for each customer on the Electronic Switched Network.

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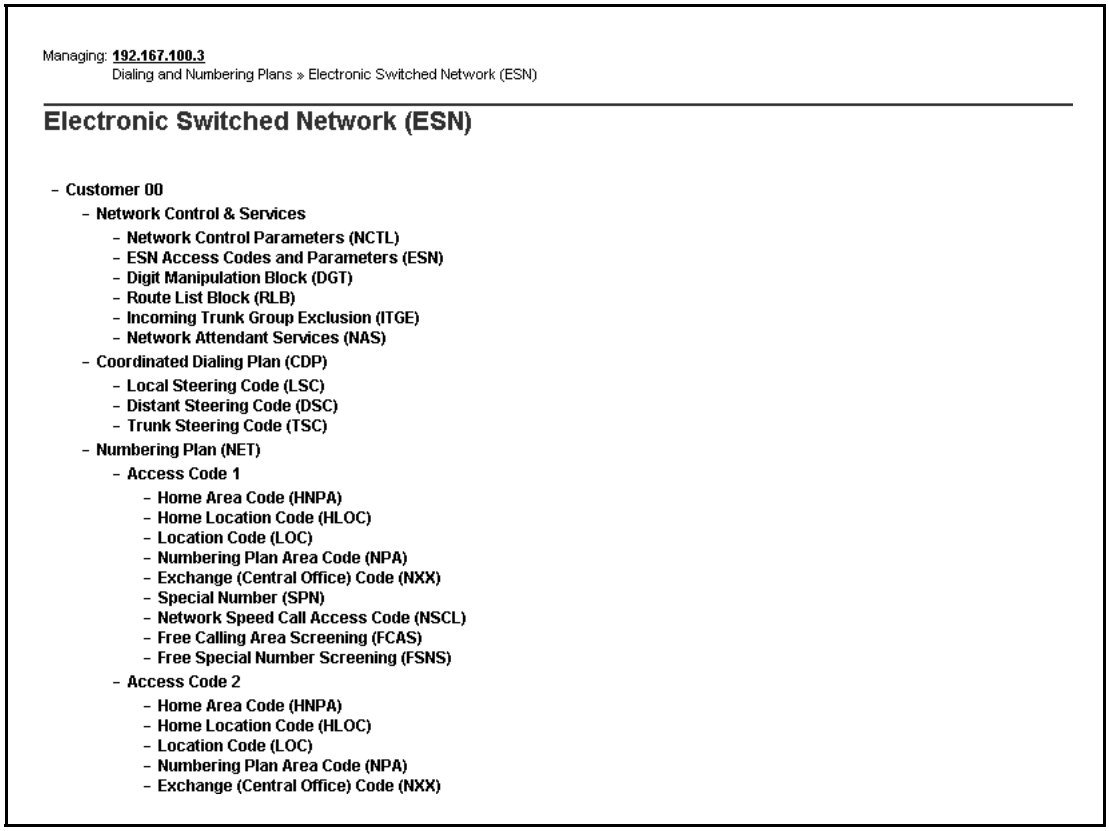
Element Manager provides access to the following Dialing and Numbering Plan parameters:

- Network Control & Services
- Coordinated Dialing Plan (CDP)
- Numbering Plan (NET)

Figure 163
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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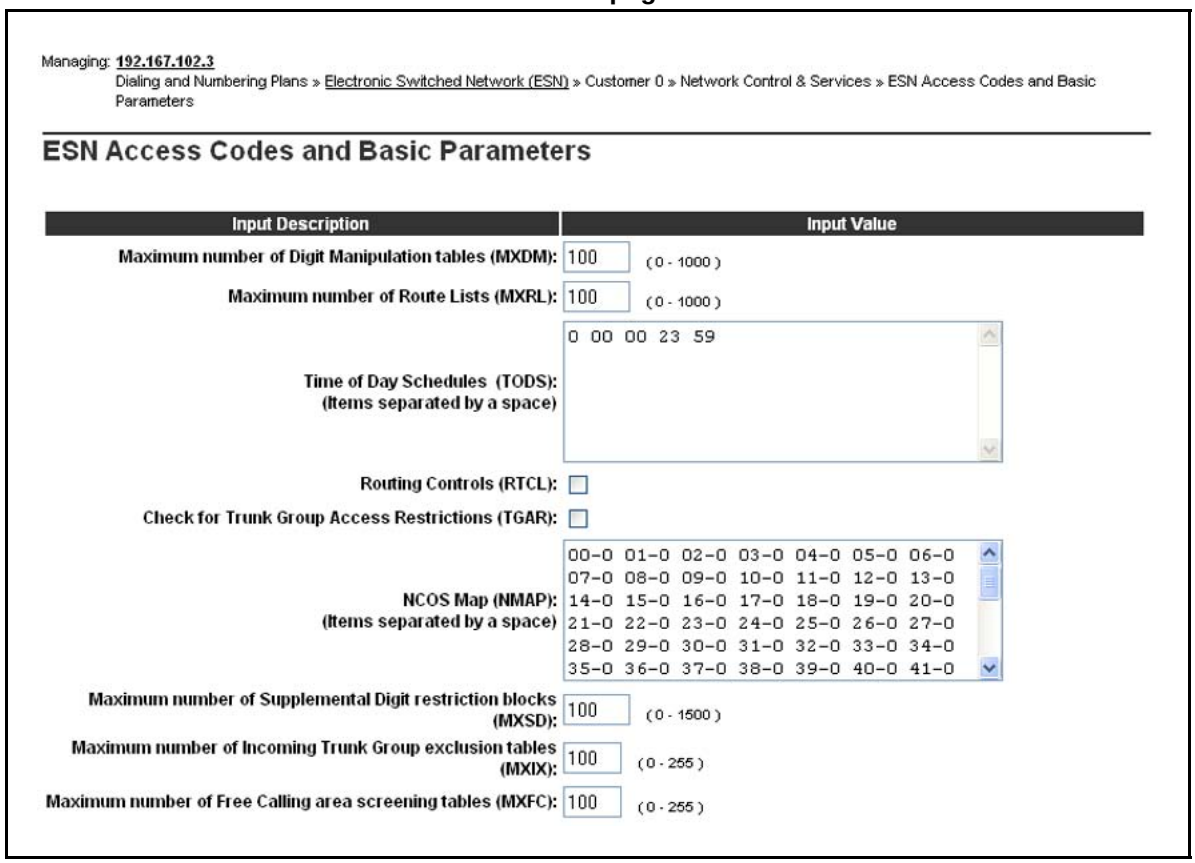
The Network Control Parameters (NCTL) that are configurable using Element Manager correspond to data traditionally configured in LD 87. The settings for the remaining five items under Network Control & Services correspond to CLI prompts and responses in LD 86.

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 164 "ESN Access Codes and Basic Parameters Web page" (page 257).

Figure 164
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)

Network Routing Service and NRS Manager

On VxWorks, Network Routing Service (NRS) Manager can be launched from Element Manager. On Linux, NRS Manager is launched from the Enterprise Common Manager framework.

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The NRS Manager is a Web-based application that runs on the Signaling Server. The purpose of the NRS Manager is as follows:

- It populates the location and registration database.
- It adds the appearance of the proxy in the customer network.
- It facilitates a translation database, for phone numbers contained within the SIP Uniform Request Identifier (URI) to present a well formed, syntactically correct, phone number to the location service within the proxy.

For more information about NRS and NRS Manager, see *Network Routing Services Installation and Commissioning (NN43001-564)* () .

All systems in the network are registered with the NRS. The NRS runs on an Enterprise Translations Server and provides routing services to several service provider networks. The hierarchy consists of:

- Service Domain — represents a service provider network
- Level 1 Domain (User Data Protocol) — represents a sub-domain in a service domain, and is referred to as the L1-domain
- Level 0 Domain (Coordinated Dialing Plan) — represents a sub-domain in an L-1 domain, and is referred to as the L0-domain.
- Gateway Endpoint — represents a gateway, and exists within an L0-domain.
- User Endpoint — represents a SIP Pone. It exists with the L0 domain. A site can have many SIP Phones.
- Routing Entry — represents a range of addresses that a gateway can terminate calls to, and exists within a gateway.
- Collaborative Server — a server in another network zone that can be used to resolve requests when the NRS cannot find a match in its numbering plan database.

For redundancy purposes, the NRS translation servers can be organized into hierarchical clusters.

The NRS handles a centralized numbering plan for the network. This enables simplified management of the network. The NRS supports H.323, SIP, and Network Connection Server (NCS) protocols. The NRS can provide NRS features to other H.323- and SIP-compliant endpoints (for example, IP Trunk 4.0 endpoints).

NRS Manager must be running Microsoft Internet Explorer 6.00 or later. Netscape Navigator is not supported. Click the **Network Routing Service** link in the **Dialing and Numbering Plans** branch of the Element Manager

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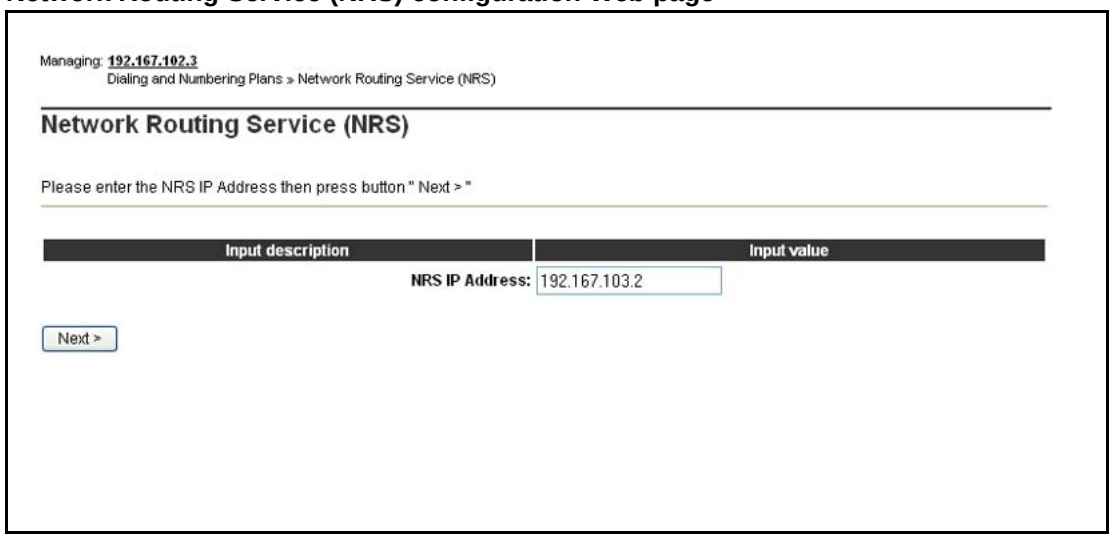
navigator to access the NRS Manager as shown in Figure 165 "Network Routing Service (NRS) configuration Web page" (page 260). The format of the NRS URL is http://<NRSM_server_IP_address>/nrs.

Figure 165
Network Routing Service (NRS) configuration Web page



An alternate way to connect to the NRS is to enter the NRS IP address followed by /nrs as a URL from any Web browser on the network. For example, enter http://47.11.249.84/nrs.

Specifying the complete URL and including nrs is important. The NRS can be co-resident with other applications running on the Signaling Server platform. If other Signaling Server applications (for example, Terminal Proxy Server) also use a Web-based management tool, then those management tools can use the URL http://47.11.249.84/tps.

The **Network Routing Service Manager login** Web page opens (see Figure 166 "NRS Manager login Web page" (page 261)). Enter the user name and password and click **Login**.

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Figure 166
NRS Manager login Web page

The **NRS Home** Web page opens (see Figure 167 "NRS Home Web page" (page 262)).

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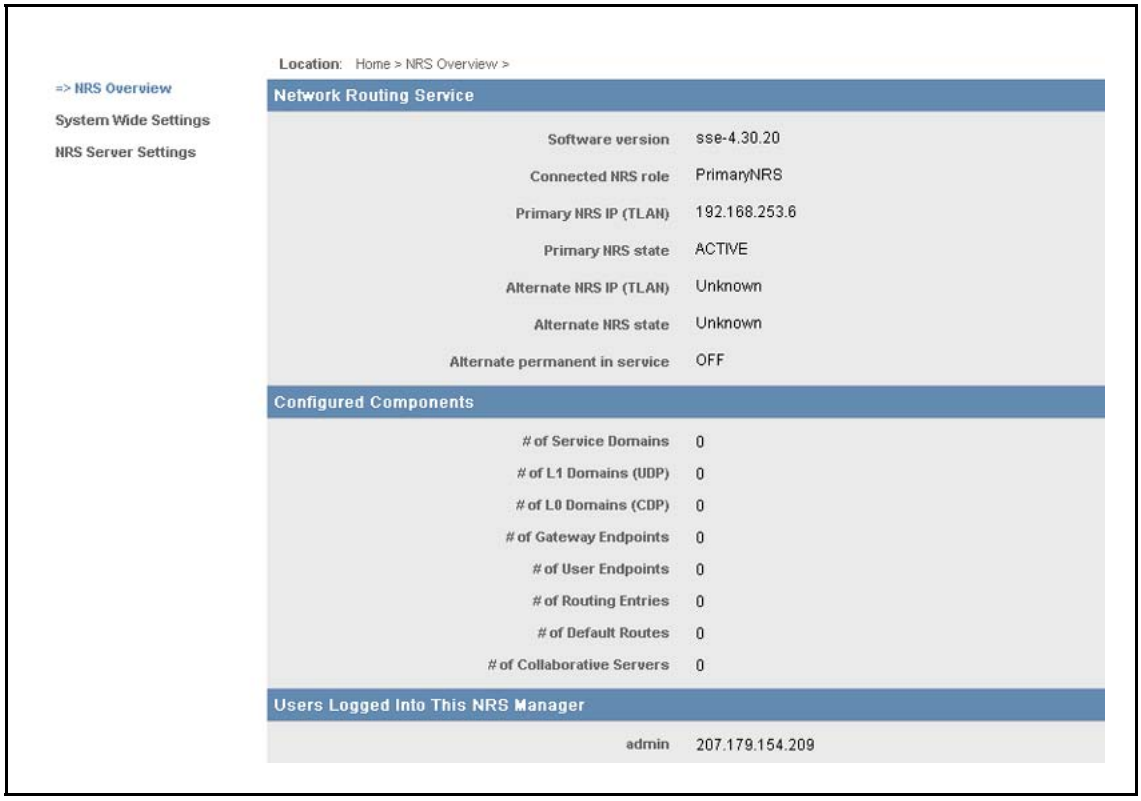
Figure 167
NRS Home Web page



Access levels

NRS Manager provides two levels of access:

1. **Monitor access.** Enables the user to view configuration data and view the output from performance monitoring functions. The user cannot modify any NRS configurations or settings, including monitor login user name and password.

2. **Administrator access.** Enables full administrative access to the NRS Manager. All configuration entries can be updated and full write access is given to the database, including the ability to change all system passwords.

   When logging in using Administrator access, NRS opens with the Web page shown in Figure 167 "NRS Home Web page" (page 262).

Monitor access

When accessing the NRS Manager as a monitor, users can view configuration data and reports from the performance monitoring functions.

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Administrator access

To make changes to the NRS configuration, log into the NRS Manager using administrator access. In addition to the monitoring functionality available with Guest access, administrators can access configuration and administration functions.

Use the NRS Manager to:

- configure system-wide settings
- configure NRS server settings
- provision Network Numbering Plans (Service Domains, L1 Domains, L0 Domains, Gateway Endpoints, routing entries, default routes, and collaborative servers)
- test Numbering Plans
- perform NRS server actions
- perform database actions
- perform Gatekeeper/NRS data conversion
- perform SIP phone context mapping
- view database sync and database status reports
- configure users

For detailed information on performing these procedures and managing the NRS using Element Manager, see *IP Peer Networking Installation and Commissioning (NN43001-313)* () .

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 opens, as shown in Figure 168 "Flexible Code Restriction Web page" (page 264).

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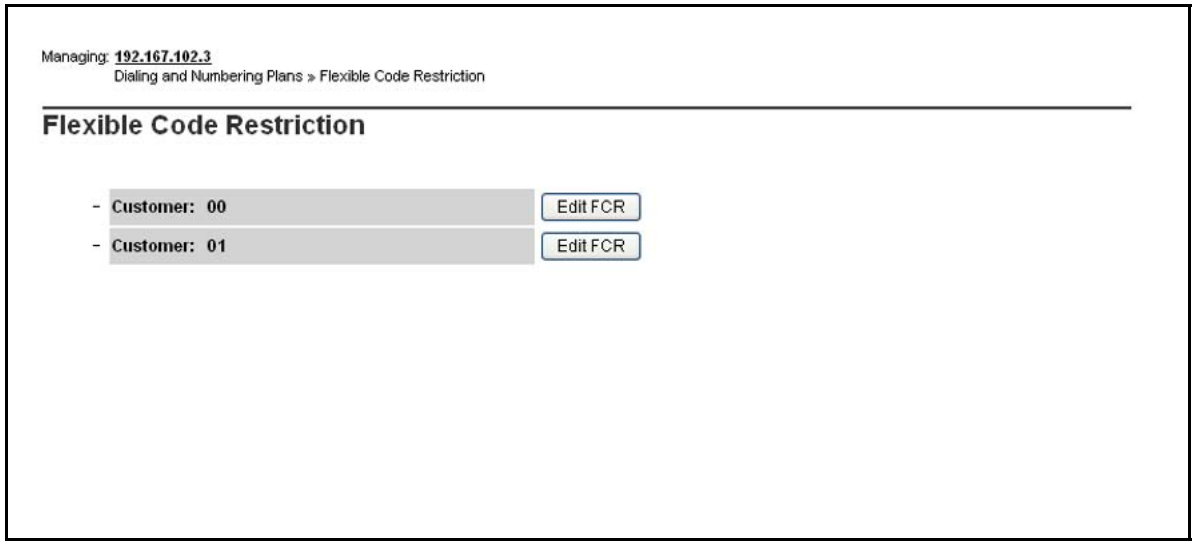
Figure 168
Flexible Code Restriction Web page



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 169 "Flexible Code Restriction Property Web page" (page 265)).

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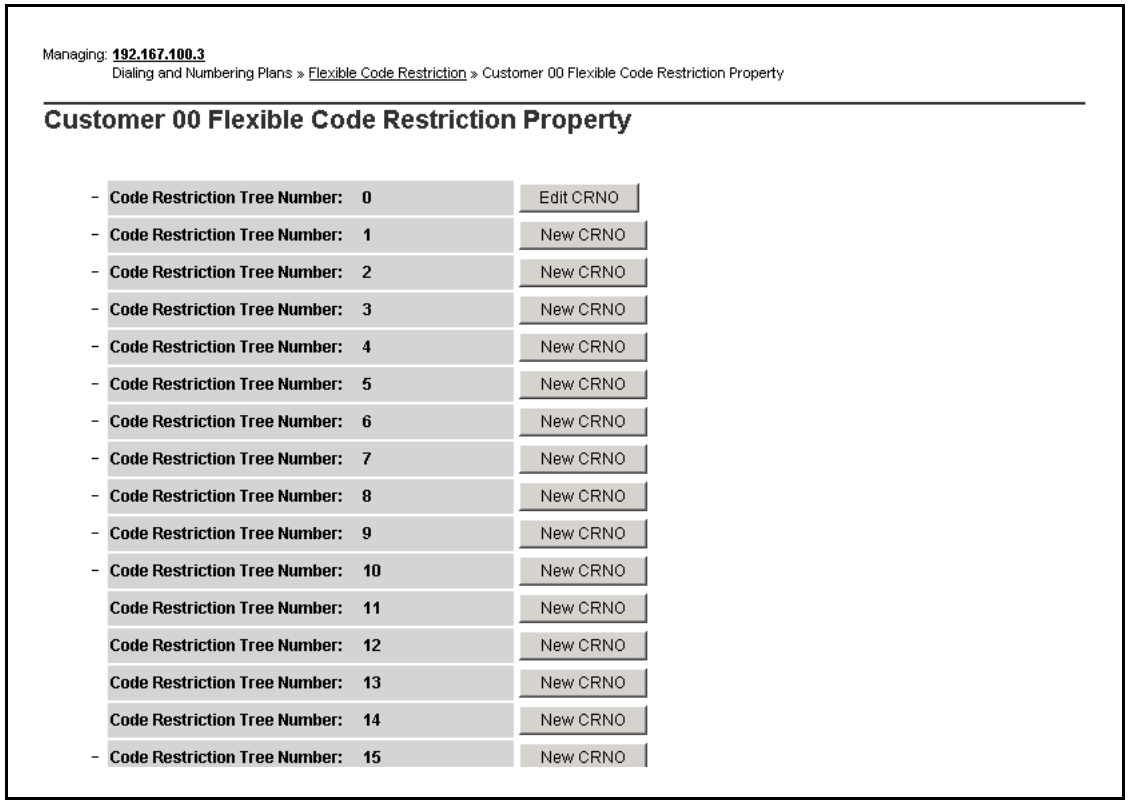
Figure 169
Flexible Code Restriction Property Web page



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 170 "Code Restriction Tree Configuration Web page" (page 266).

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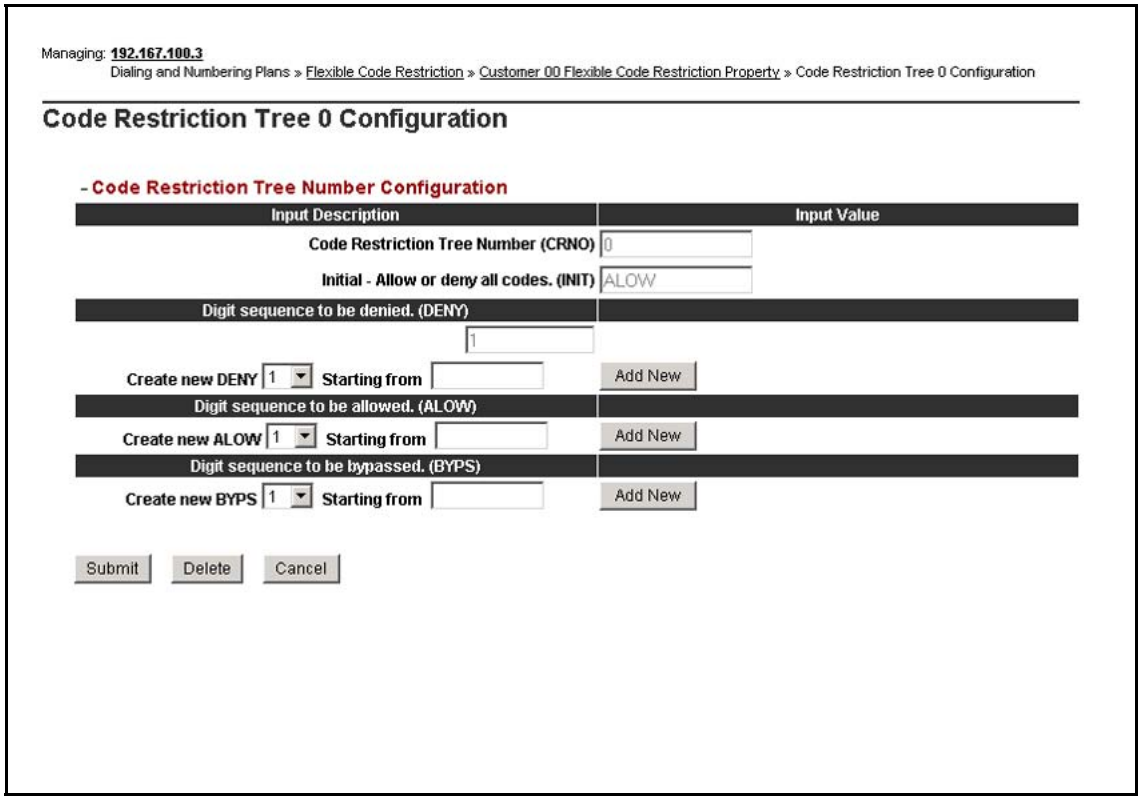
Figure 170
Code Restriction Tree Configuration Web page



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 opens, as shown in Figure 171 "Incoming Digit Translation Web page" (page 267).

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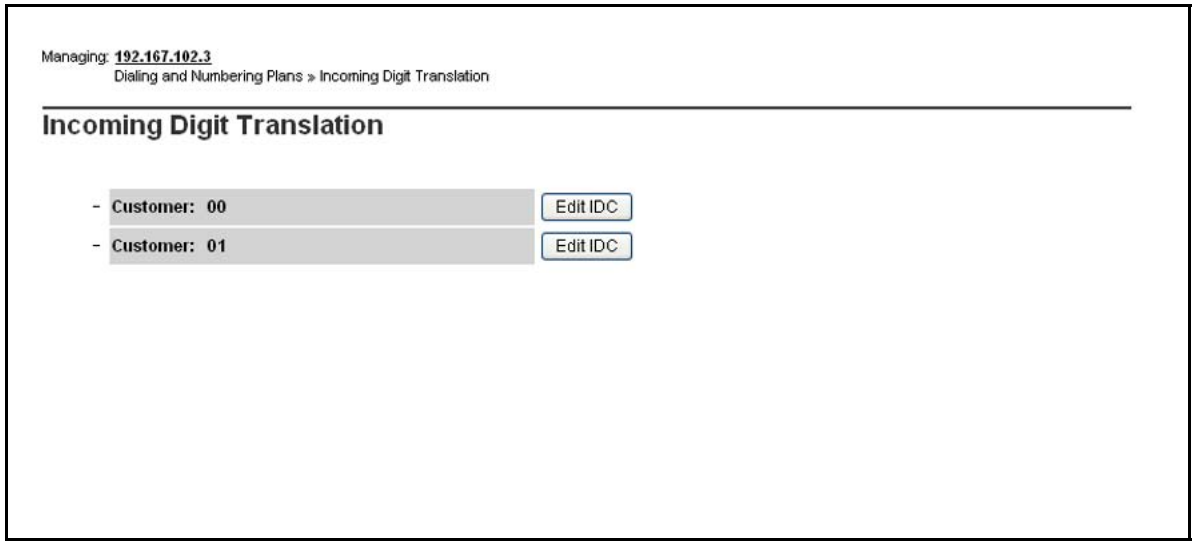
Figure 171
Incoming Digit Translation Web page



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 opens. See Figure 172 "Incoming Digit Conversion Property Web page" (page 268).

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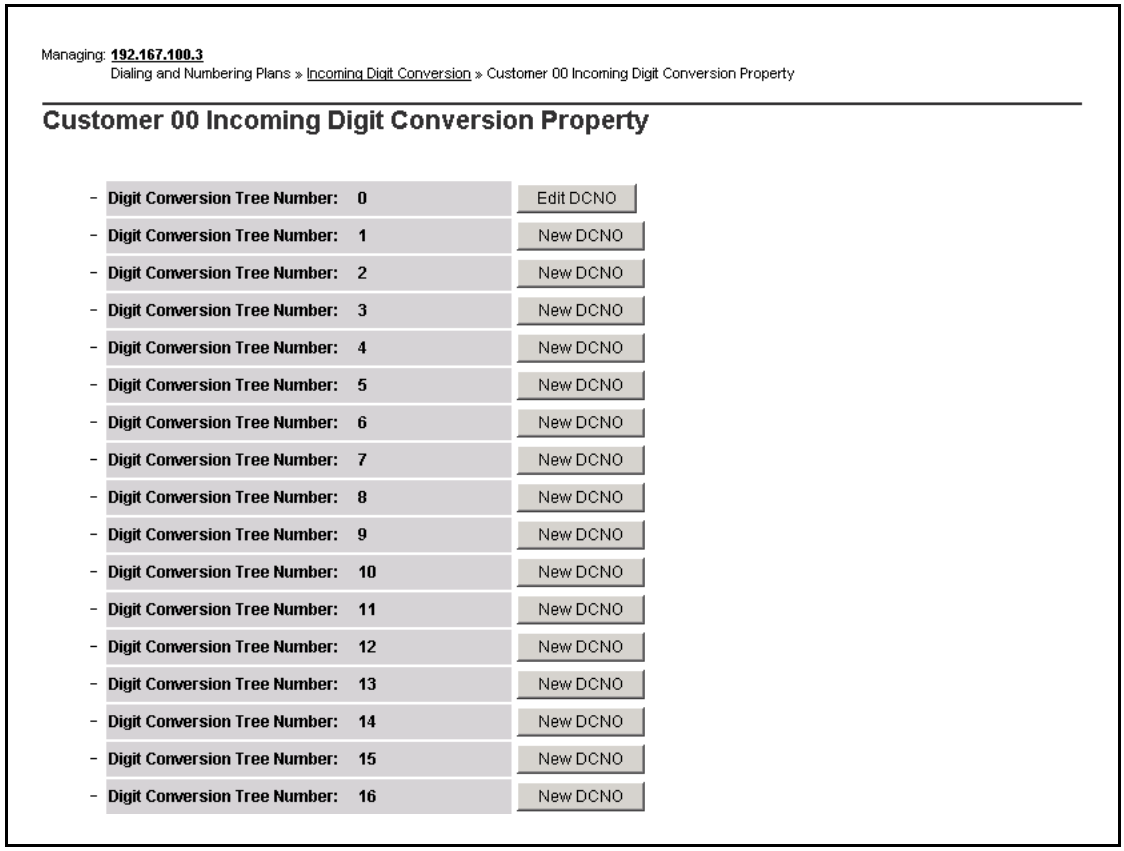
Figure 172
Incoming Digit Conversion Property Web page



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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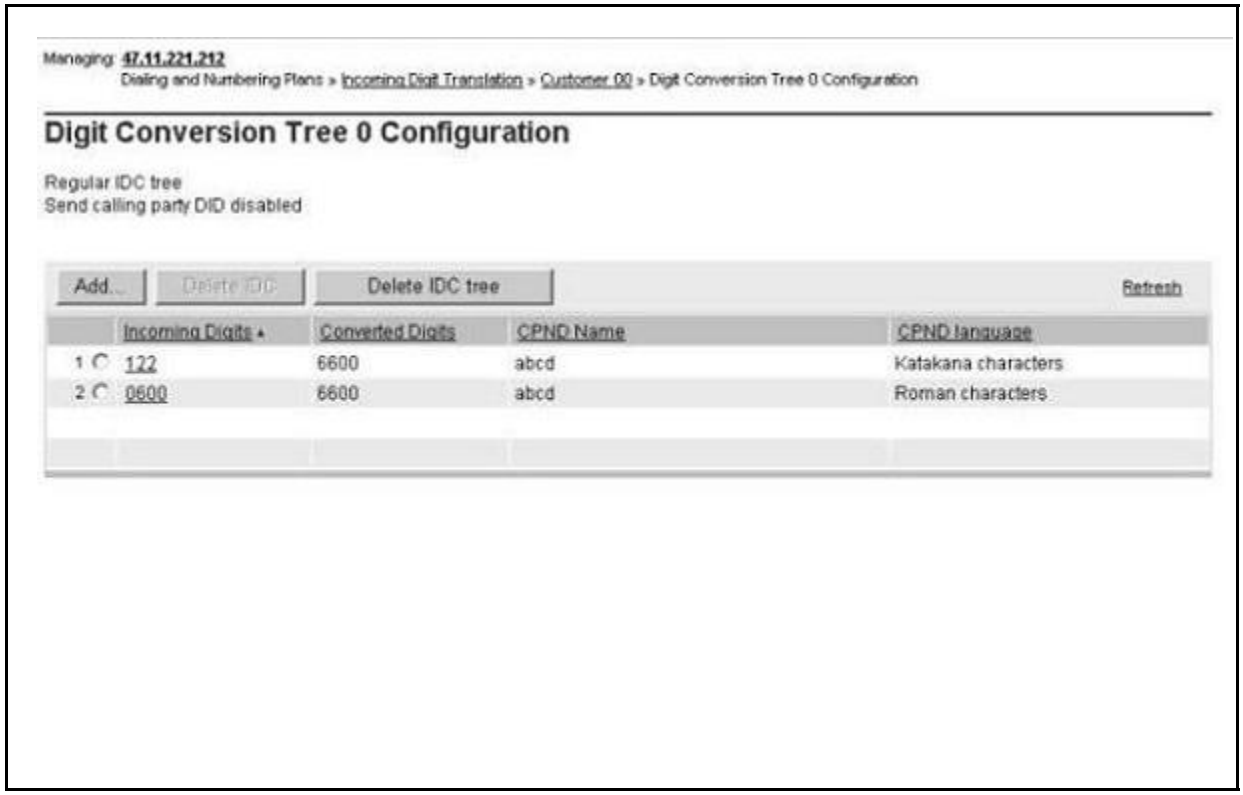
Figure 173
Digit Conversion Tree Configuration Web page



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 information on the following topics:

"Introduction" (page 271)

"Database Update" (page 272)

- "Station Fast Sync feature" (page 273)
- "Templates" (page 273)
- "Search Phones" (page 277)
- "Add Phones" (page 280)
- "Edit Phones" (page 290)
- "Import Telephones" (page 294)
- "Move Phones" (page 300)
- "Retrieve Phones" (page 301)
- "Delete Phones" (page 302)
- "Swap Phones" (page 303)
- "Courtesy Change" (page 304)
- "Reports" (page 305)

Introduction

Element Manager enables users to configure Phones for the Call Server. The information configured 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 and they correspond to Print Routines traditionally performed in LD 20, LD 21, LD 22 and LD 95.

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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).

Note: The Phones link (BCC) can only be accessed through ECM.

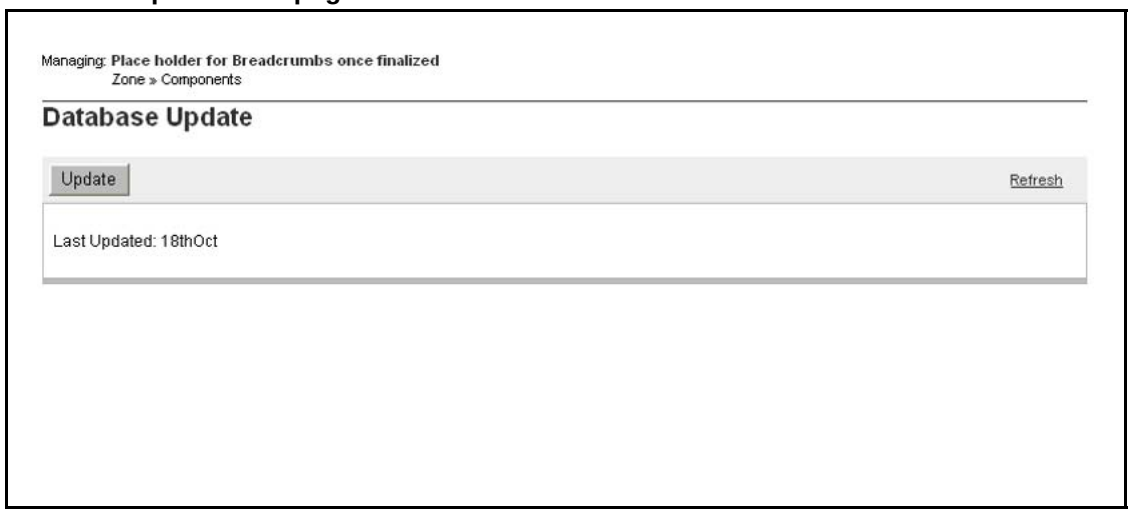
Database Update

When launching Phones for the very first time, the application automatically performs a Database Update in the background. A message is displayed to the user: “Please wait for requested page to load while system properties are being updated.”. The user can proceed to Phones configuration after the update has been completed.

The Database Update can be manually activated by clicking on the **Properties** link of the **Phones** branch of the Element Manager navigator and clicking on **Update** of the Database Update section of the **Properties** Web page.

The **Database Update** Web page opens, as shown in Figure 174 "Database Update Web page" (page 272)

Figure 174
Database Update Web page



The **Last Updated** field displays the timestamp of the last update performed.

Note: It is recommended to perform an update before managing phones to retrieve configuration changes in packages, customer data blocks and CPND customer blocks.

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Station Fast Sync feature

The Station Fast Sync feature keeps the Phones database synchronized with the PBX. This feature monitors and logs station data changes on the CS 1000 PBX.

An SNMP trap is sent from the Call Server to Element Manager with error code MGMT0001. To enable this functionality, configure the Element Manager IP address as an SNMP trap destination in LD 117. See Communication Server 1000 Fault Management - SNMP (NN43001-719).

When Element Manager receives the notification, it retrieves any changes or deletes the TN/DN as required.

A log entry is created for each Fast Sync notification received.

Note: Nortel recommends that a manual “Retrieve and Reconcile All” function is executed occasionally to ensure data consistency with the Call Server. The fast sync auto update process relies on SNMP traps and overlay access to maintain the data. Blocked or dropped SNMP traps and overlay conflicts could result in a data mismatch between the Call Server and EM.

Templates

Element Manager enables users to access Templates which contain attributes common to a CS1000 phone type. Once a Template is created, you can use it to apply these common attributes to a group 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.

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 175 "Templates Web page" (page 274). The **Templates** Web page lists all available Templates by name, to what type of phone they apply and, the time and date of the last update. The action bar has buttons to add and delete Templates.

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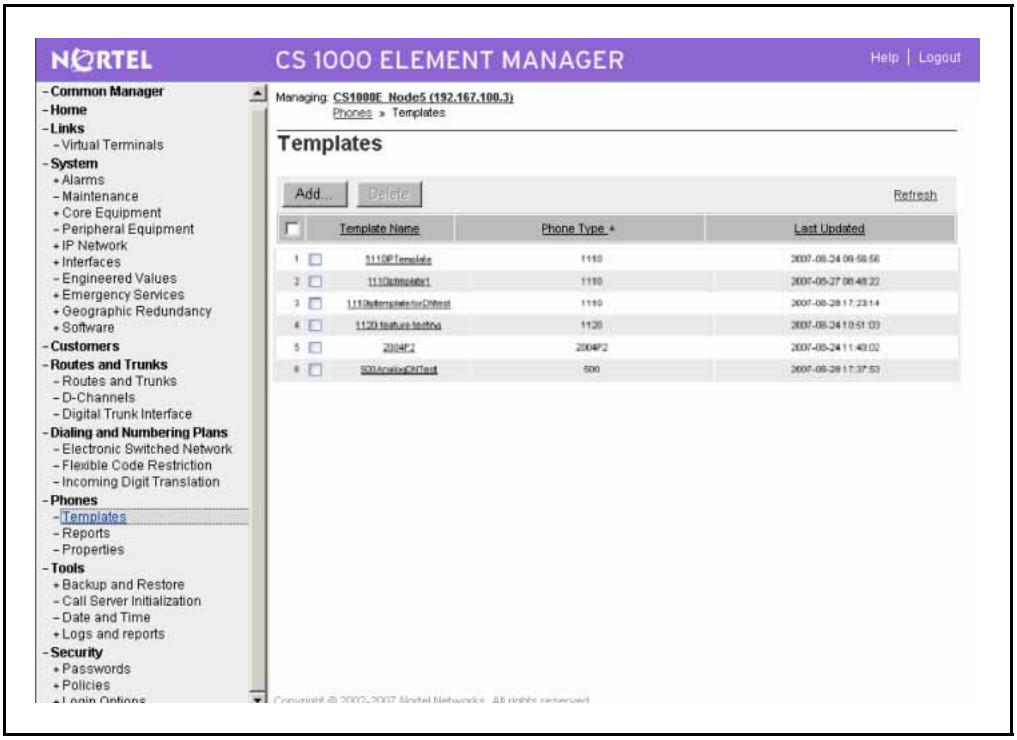
Figure 175
Templates Web page



Create a Template

To add a Template click **Add** on the **Templates** Web page. The **Template Details** Web page opens as shown in Figure 176 "Template Details Web page" (page 275). The telephone type 500-Analog Standard is shown as the default. The user must select the telephone type to be used for the Template they create.

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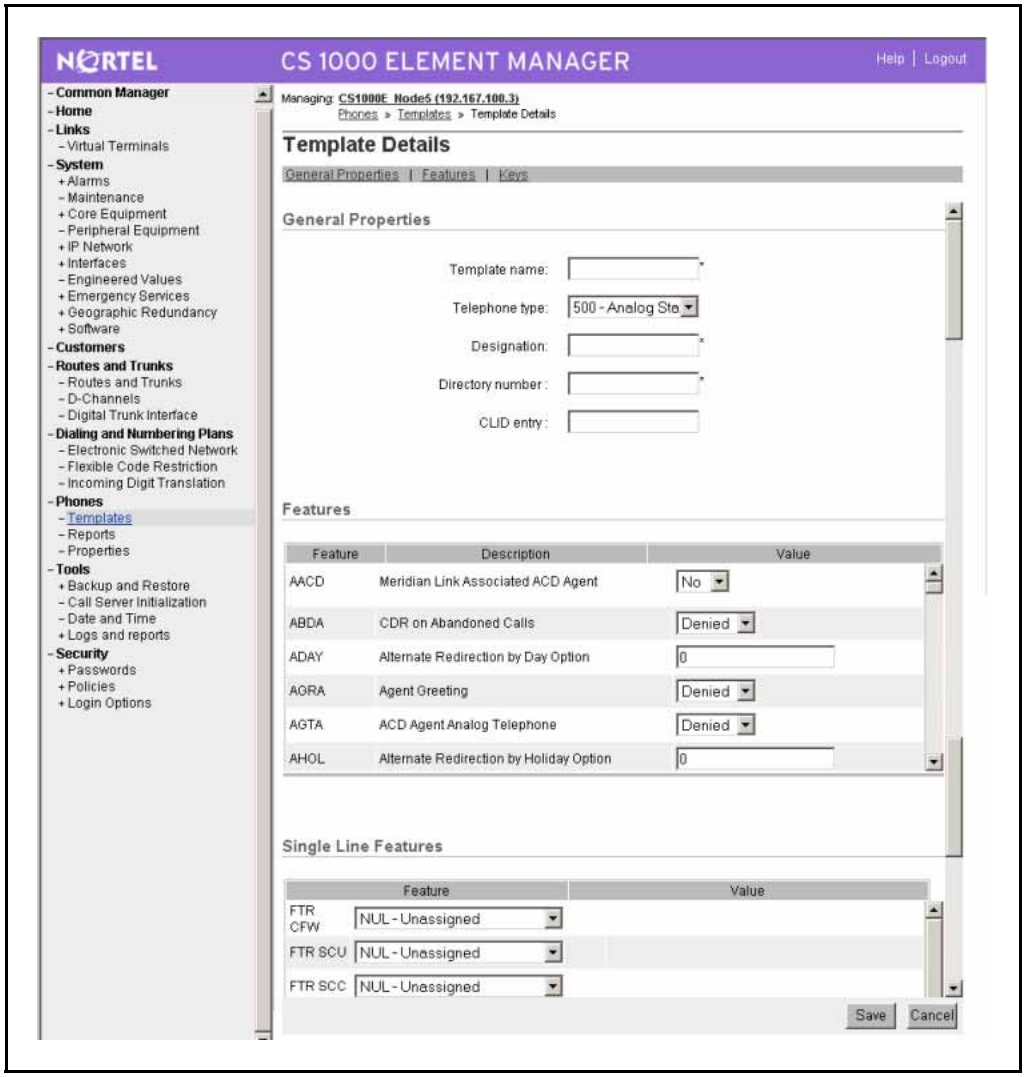
Figure 176
Template Details Web page



The fields marked with an asterisk (*) are mandatory and must be filled.

The Template name identifies the Template. If there is already a Template present with the same name as specified, then an error message, *Template name already in use. Please specify another Template name* is displayed to the user after attempting to save the new Template.

The features and key features available on the **Template Details** Web page are based on the selected phone type. The available features and key features change based on the phone type the user selects. Since

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the Templates are not system specific, all the phone features and keys applicable to the selected phone type are available for configuration in the **Template Details** Web page.

> ***Note:*** The user can enter a partial DN as part of the key configuration parameter. This enables a phone configured with this Template to pick up a DN as per the partial DN definition.

The user can configure all the required parameters and click **Save** to save the Template. Clicking on **Save** takes the user back to the **Templates** Web page, and the view is refreshed to display the newly added Template.

Templates are global in nature. Once a Template is created, it can be used to add phones in any system. When a Template is used for adding a phone, only those keys and features which are valid for the system in context are displayed in the Phone Details Web page.

View/Update a Template

To view Template details, click the Template name link in the **Templates** Web page. The **Template Details** Web page opens displaying the selected Template.

If necessary the user can modify the Template and click **Save** to save the changes.

> ***Note:*** When a user updates a Template, the phones associated with this Template are not automatically updated. See, “Update phones using the phone Templates” (page 287).

Delete a Template

The user can select any Template from the **Templates** Web page and click **Delete** to delete the Template.

The user is asked to confirm the deletion operation. When the user clicks **OK**, the selected Template is deleted immediately. If the user clicks **Cancel**, the delete action is cancelled and the user is returned to the **Templates** Web page.

> ***Note 1:*** When a user selects a second Template to delete but then clicks **Cancel**, another message is displayed, and the user must click **Retry** or **Cancel** a second time to return to the **Template** Web page.
>
> ***Note 2:*** When a user deletes a Template it automatically remove its association with phones. But the phones are not deleted.

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Search Phones

The Phones functions performed using Element Manager are accessed from the **Search for Phones** Web page. A user can perform a search for phones based on the following criteria:

- Prime DN
- Phone Type
- Terminal Number
- Designation
- Customer
- Template
- UXID

For example, choosing **Phone Type** as a criteria and selecting a type of phone from the **Value** drop-down list, performs a search for all phones of the type selected. Procedure 94 “Search for phones” (page 277) describes searching for phones using Template as the criteria.

Procedure 94
Search for phones

Step	Action
1	Click the **Phones** branch of the Element Manager navigator to open this Web page, as shown in Figure 177 "Search for Phones Web page" (page 278).

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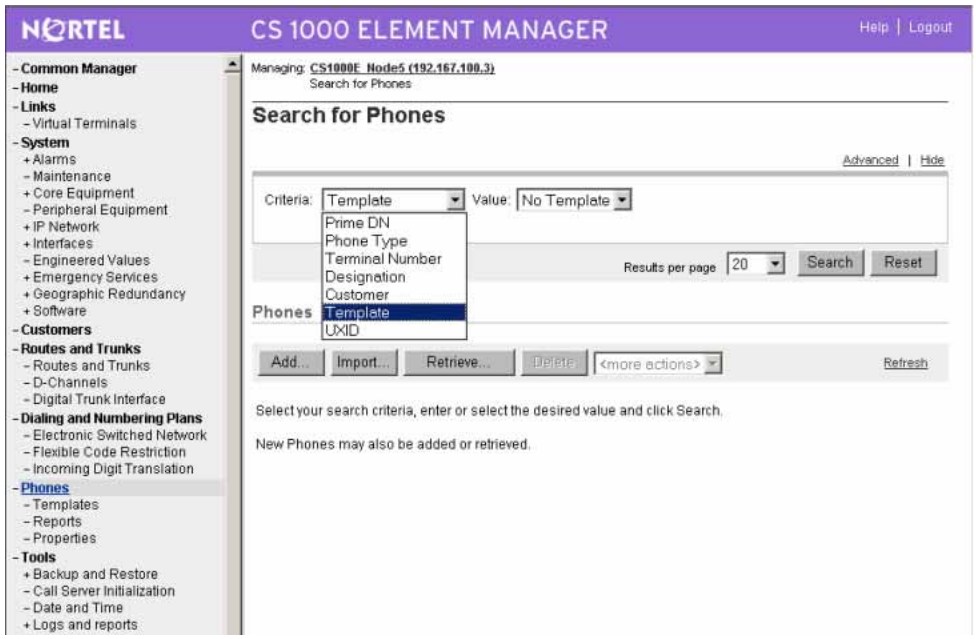
Figure 177
Search for Phones Web page



2 Select **Template** as the criteria from the **Criteria** drop-down list.

3 Enter a **Value** for the Template to search for.

4 Click **Search**. For example, when the value from the drop-down list is **ABDA** the **Search for Phones** Web page displays the phones attached to the specified Template as shown in Figure 178 "Search for Phones Web page" (page 279).

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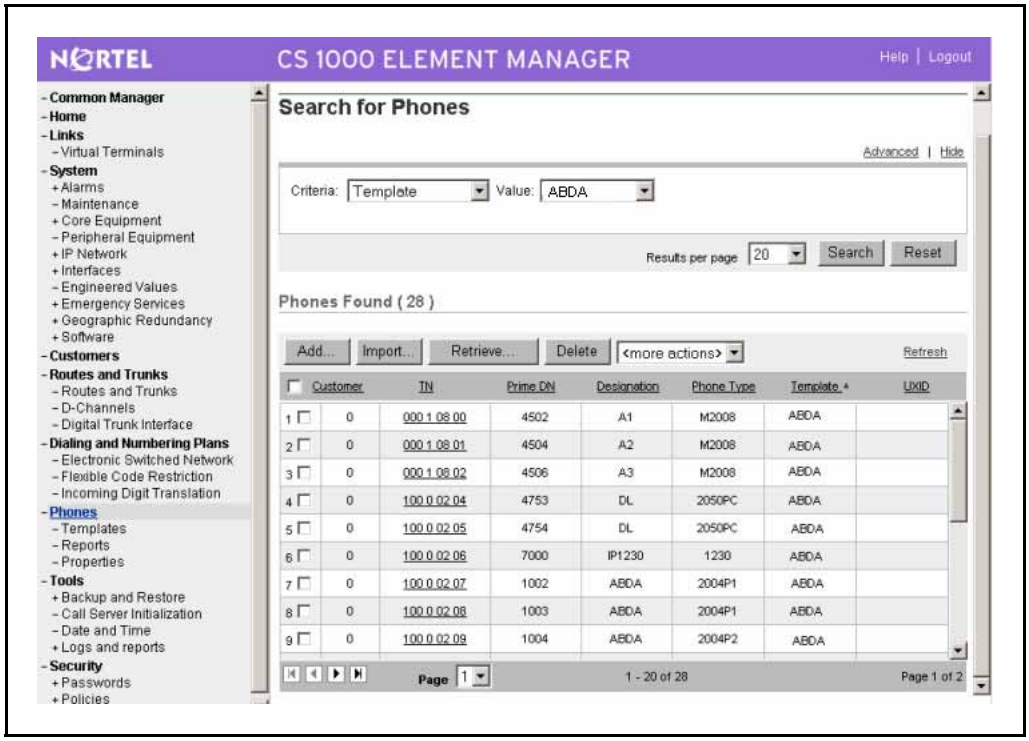
Figure 178
Search for Phones Web page



--End--

To perform a search using additional criteria, click the **Advanced** link in the top right hand corner. The **Advanced Search for Phones** Web page opens, as shown in Figure 179 "Advanced Search for Phones Web page" (page 280).

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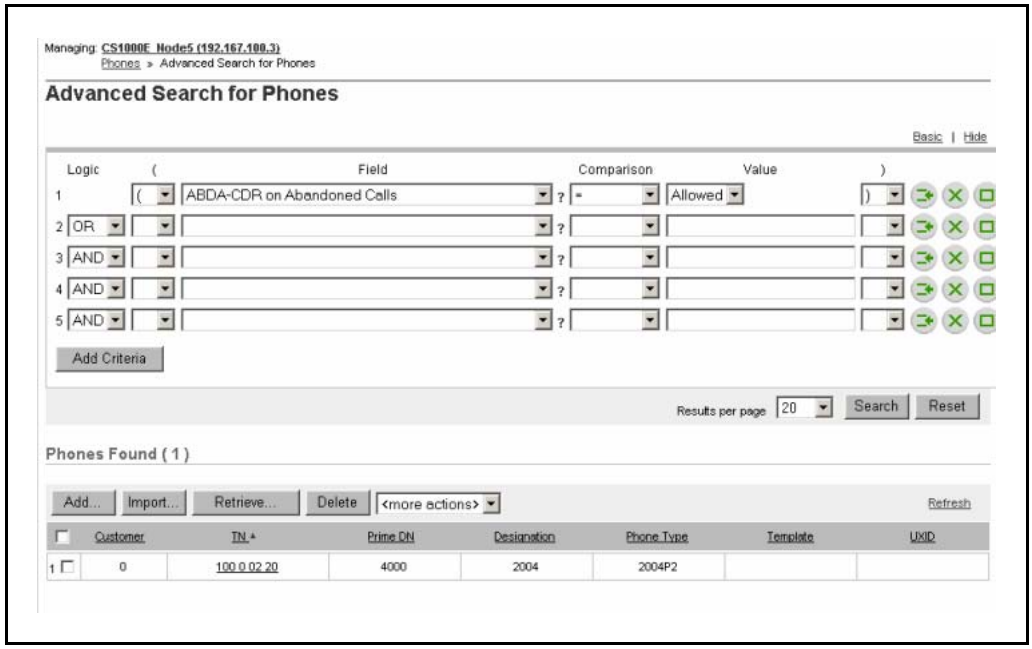
Figure 179
Advanced Search for Phones Web page



Enter the criteria for the advanced search and click **Search**.

Add Phones

To add a single phone, follow the steps in Procedure 95 “Add Single Phone” (page 280).

Procedure 95
Add Single Phone

Step	Action
1	From the **Search for Phones** Web page, click **Add**. The **New Phones** Web page opens, as shown in Figure 180 "New Phones Web page" (page 281) .

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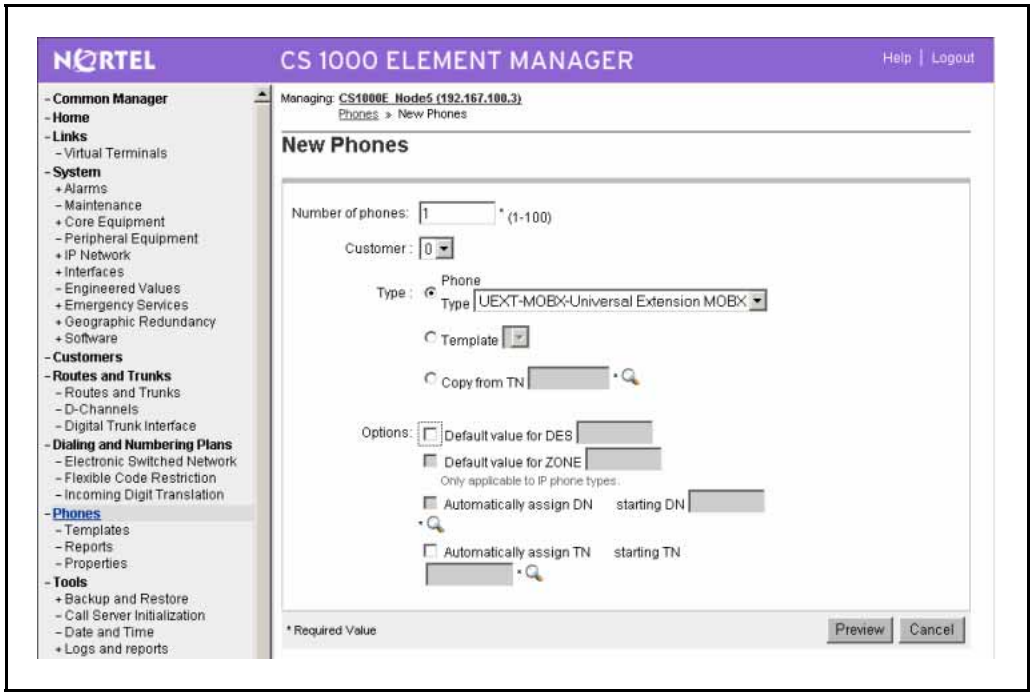
Figure 180
New Phones Web page



2 Enter **1** in the **Number of phones** box.

3 Select the customer with which this telephone will be associated from the **Customer** drop-down list.

4 Select the **Phone Type** from the drop down list.

5 Select **Default value for DES** and type the value in the text box.

6 If the phone type is analog, select **Automatically assign DN** to automatically assign the next DN from the given starting DN value.

Note 1: Click the Magnifying Glass to look up a DN.

Note 2: The user can only select **Automatically assign DN** for analog phone types.

7 Select **Automatically assign TN** to automatically assign the next available TN from the given starting TN value.

Note 1: Click the Magnifying Glass to look up a TN

Note 2: When using this option, the maximum number of phones that can be added is 32 as only the TN Unit value is incremented.

8 Click **Preview**

The **Phone Details** Web page opens, as shown in Figure 181 "Phone Details Web page" (page 282).

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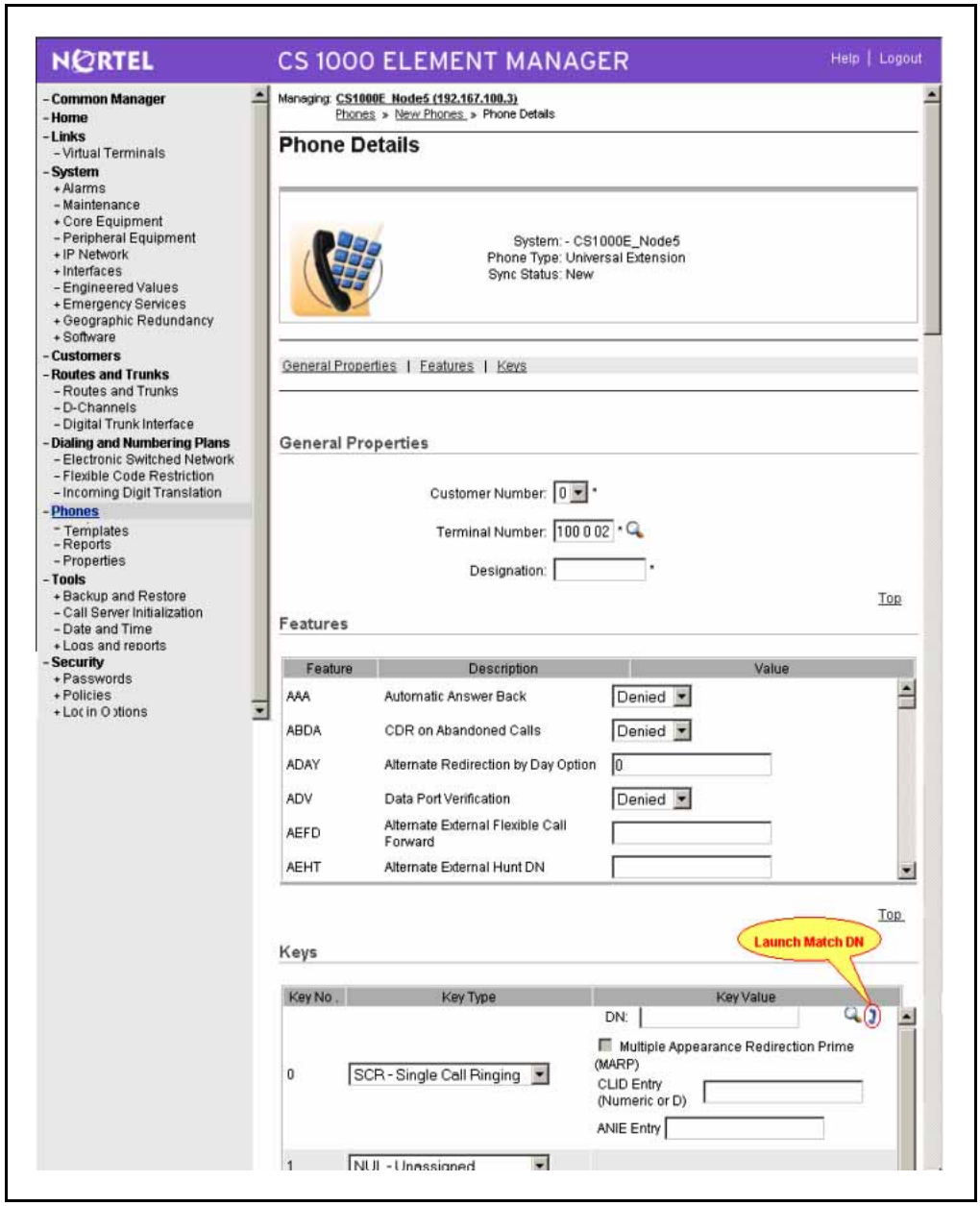
Figure 181
Phone Details Web page



9 Select another customer from the **Customer Number** drop-down list.

The default **Customer Number** will be that chosen on the **New Phones** Web page, but can be changed if desired.

10 If the **Terminal Number** field is empty, click on the magnifying glass icon and select an available TN.

11 Enter or update the DES value in the **Designation** field.

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12 Choose the desired features in the **Features** section.

13 Choose the desired keys in the **Keys** section.

Note 1: If the phone type is an analog phone, the **Keys** section is not available.

Note 2: When Single Call Ringing (SCR) is selected for Key 0 the telephone icon (Match DN) appears. You can launch the Match DN Web page which displays all UEXT/desktop phones already configured with the same DN. If the user selects any phone and clicks **Assign** then FDN, HUNT, NCOS, TGAR, and CLS features of the selected phone are copied to the phone being configured/edited.

14 Click **Validate** to save and validate the new telephone.

The status of the Validation process appears, listing any validation errors that occur. If there are validation errors, 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 undo the last action performed on the page. You can click the **Cancel** repeatedly to continue to undo actions performed.

--End--

If the user selects the **Copy from TN** radio button on the **New Phones** Web page, the new Phone will assume 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.

The user can Add Phones using the Template selection field. The Template selection field displays all the Templates. This enables the user to add a new phone using a Template selected from the Template type drop-down list. When a phone is added using a Template, the phone to Template association is stored in the database.

A partial DN specified in the Template is ignored if Auto Assign DN is switched on and when a starting DN is specified.

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When Auto Assign DN is switched on and when a starting DN is specified, 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.

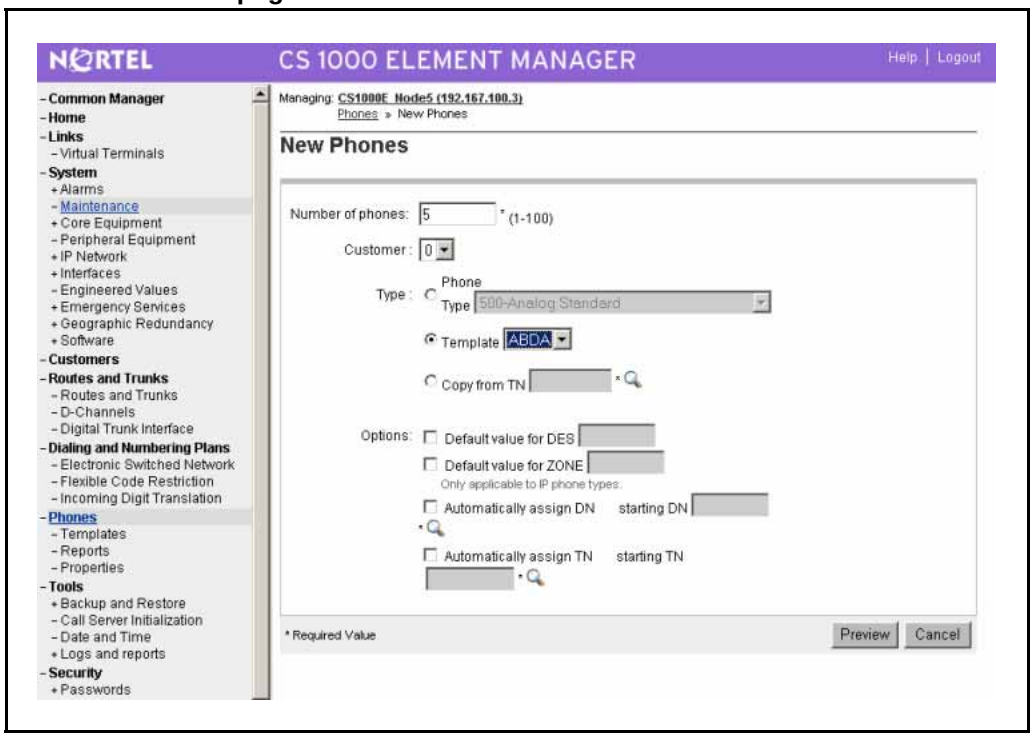
When Auto Assign DN is switched off, a Partial DN specified in the Template becomes the DN. The Add Phones fails unless the user corrects the DN. The message, “The current DN is the partial DN specified in the Template. The DN must be modified to successfully add the phone.” is displayed.

To add multiple phones, follow the steps in Procedure 96 “Add Multiple Phones” (page 284).

Procedure 96
Add Multiple Phones

Step	Action
1	From the **Search for Phones** Web page, click **Add**. The **New Phones** Web page opens, as shown in Figure 182 "New Phones Web page" (page 284).

Figure 182
New Phones Web page



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2 Enter the number of phones to be added in the **Number of phones** field.

The user can add up to 100 phones at a time.

3 Select the customer with which these telephones are associated from the **Customer** drop-down list.

4 Select **Default value for DES** and type the value in the text box.

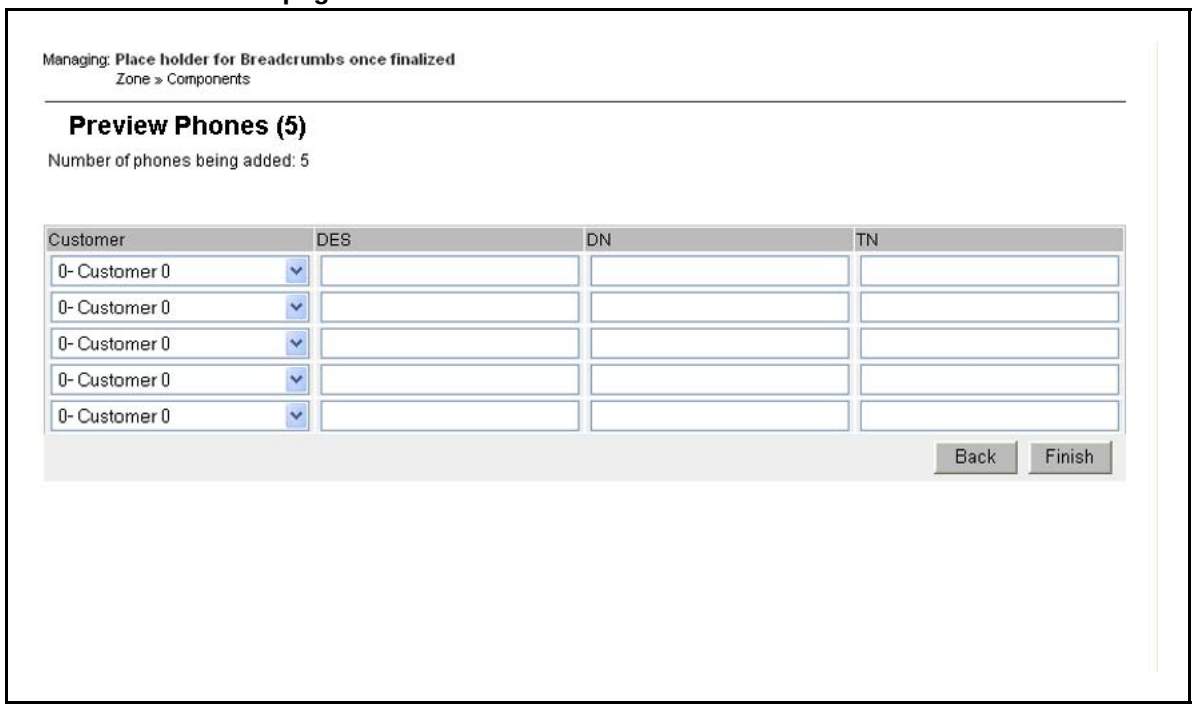
5 Select **Automatically assign DN** to automatically assign the next available Direct Inward Dialing (DID) DN in the Customer Numbering Plan for the specific system.

6 Select **Automatically assign TN** to automatically assign the next available TN (Loop, Shelf, Card, Port or Unit) to the specified telephones as defined in the Hardware database for the specific system.

7 Click **Preview**.

The **Preview Phones** Web page opens, as shown in Figure 183 "Preview Phones Web page" (page 285).

Figure 183
Preview Phones Web page



This Web page lists the attributes of each new phone based on the selections entered in the **New Phones** Web page in previous steps.

8 If the **Customer** number is incorrect, select the correct value from the drop-down list.

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9 If the **DES** field is empty or incorrect, type in the correct value.

10 If the **DN** field is missing or incorrect, type in the correct value.

11 If the **TN** field is missing or incorrect, type in the correct value.

12 Click **Finish** to add the phones to the database.

--End--

The user can select a Template to add multiple phones.

To add multiple analog phones 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 the user adds 3 phones then 100, 101, and 102 are the DNs. This is displayed in the **Preview Phones** Web page and user is allowed to edit it.

To add multiple analog phones when Auto Assign DN is switched off, the Partial DN specified in the Template becomes the DN. Add multiple 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 to successfully add the phone.” is displayed.

To add multiple digital or virtual phones 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 3 phones then 100, 101 and 102 will be the DNs. This is not displayed in the **Preview Phones** Web page so the user cannot modify the DNs.

To add multiple digital or virtual phones when Auto Assign DN is switched off, the user is prevented from using the Template with partial DN for adding multiple digital or virtual phones. The error message “Multiple phone addition is not allowed since the Template selected has a partial DN” is displayed indicating that this scenario is not allowed. However, no restriction is placed on the addition of phones if the Template does not contain a partial DN.

Edit phones

Use the Edit feature to edit a single telephone or multiple telephones.

> ***Note:*** Only one field (mnemonic) can be updated at a time. Depending on the field to be updated, the Old Value and New Value fields are text boxes or drop-down lists. If you select a Key field to update, additional old and new value fields are displayed corresponding to the parameters of the Key field.

Click the **Phones** branch of the Element Manager navigator to open the **Search for Phones** Web page.

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To edit a single phone or multiple telephones, follow Procedure 97 “Editing single or multiple telephones” (page 287).

Procedure 97
Editing single or multiple telephones

Step	Action
1	To search for phones to edit, select a search criteria from the **Criteria** drop-down list
2	Sort the resultant set of phones by phone type.
3	Click the box beside the phones to update.
4	Select **Edit** from the **<more actions>** drop-down list. The **Bulk Phone Edit** Web page opens.
5	In the edit **Field**, select the field (mnemonic) to update. Some selected fields require the user to enter other values.
6	Enter the old value in the **Old Value** text box or select it from the **Old Value** drop-down list. If you are updating a Key field, enter the old value of any parameter to be changed 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** drop-down list. If you are updating a Key field, enter the new value of any parameter to be changed 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--

Update phones using the phone Templates

The association of phones to a Template simplifies the bulk change ability for users. This association enables a change to the Template content to be applied to all phones having that Template.

The **Bulk Phone Edit** Web page allows the user to update the phone from Templates. The value **Template** of the edit **Field** drop-down list, enables the user to update the phone based on the value present in the Template.

In the edit **Field**, if the value selected is Template, then the **Old Value** field displays an asterisk. The **New Value** field displays all the Templates configured for the phone type of the selected phone as seen in Figure 184 "Bulk Phone Edit Web page" (page 288).

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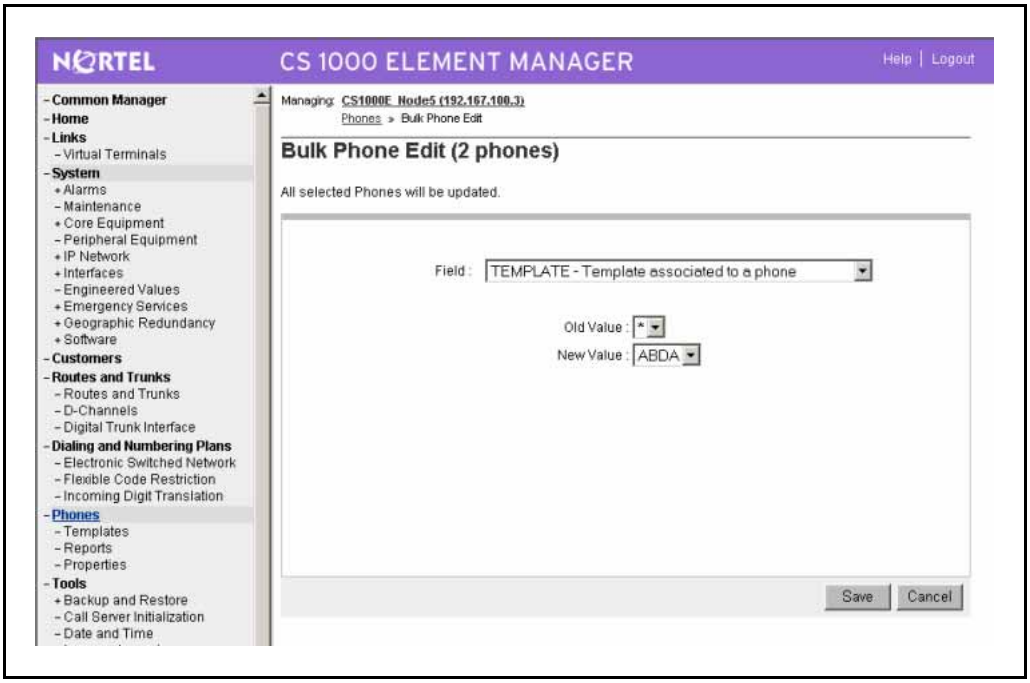
Figure 184
Bulk Phone Edit Web page



The Template is considered the master during this update. All configured phone attributes are overwritten with the attributes present in the selected Template. The CPND name configured in the phone is retained during the update.

Note 1: If the selected phones to be updated are of different phone types, then the **Template** field is not available in the edit **Field** drop-down list. The following properties of the phone cannot be changed while doing an update using Templates. These properties are set differently for every telephone and updating it from Template is not supported.

- ***Designator (DES) – This property is part of General Properties section of phone details page***
- ***Station Control Password (SCPW) – This property is part of Features section of phone details page.***
- ***Directory number parameter of any key feature***

In addition, there are certain properties, which are not part of the Template, and can be changed in the phone. Below is the list of those properties:

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- • ***Terminal Number (TN) - This property is part of General Properties section of phone details page.***
- • ***Call Party Name Display (CPND) - This property is part of Keys section of phone details page.***
- • ***Voice Mail Box (VMB) - This property is part of Keys section of phone details page.***

Note 2: If a Template has a partial DN configured, updating a phone with the Template using the Edit functionality is not allowed. The error message “Editing phones is not allowed since the Template selected has a partial DN” is displayed. However, no restriction is placed on the editing of phones if the Template does not contain partial DN.

The user is able to associate a Template to those phones that are not associated with a Template. To associate a Template to those phones that are not associated with a Template follow Procedure 98 “Associating a Template to Phones” (page 289).

Procedure 98
Associating a Template to Phones

Step	Action
1	Search for phones that are not associated to any Templates.
2	Sort the resultant set of phones by phone type.
3	Select phones to be updated.
4	Select **Edit** from the **<more actions>** drop-down list. The **Bulk Phone Edit** Web page opens.
5	In the edit **Field**, specify the value to be updated as **Template**.
6	In the Old Value field, select **Asterisk** (*).
7	In the **New Value** field, select the Template to be associated.
8	Click **Save** to complete the edit or click **Cancel** to undo changes and return to the **Search for Phones** Web page.

--End--

Note: Updating the phone may drive an update to the account in Subscriber Manager depending on the attributes that are updated.

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Phone properties that can be changed without breaking the Template association

Certain phone properties should be set differently for every telephone and therefore changing these properties does not break the telephone to Template association. Below is the list of those properties:

- Designator (DES) – This property is part of General Properties section of phone details page.
- Station Control Password (SCPW) – This property is part of Features section of phone details page.
- Directory number parameter of any key feature.

In addition, there are certain properties, which are not part of the Template, and can be changed in the phone. Below is the list of those properties:

- Terminal Number (TN) – This property is part of General Properties section of phone details page
- Call Party Name Display (CPND) – This property is part of Keys section of phone details page.
- Voice Mail Box (VMB) – This property is part of Keys section of phone details page.

Edit Phones

Use the Edit feature to edit a single telephone or multiple telephones.

Note: Only one field (mnemonic) can be updated at a time. Depending on the field to be updated, the Old Value and New Value fields are text boxes or drop-down lists. If you select a Key field to update, additional old and new value fields are displayed corresponding to the parameters of the Key field.

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 phone or multiple phones, follow Procedure 99 “Editing single or multiple phones” (page 290).

Procedure 99
Editing single or multiple phones

Step	Action
1	To search for phones to edit, select a search criteria from the **Criteria** drop-down list

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2 Sort the resultant set of phones by phone type.

3 Click the box beside the phones to update.

4 Select **Edit** from the **<more actions>** drop-down list. The **Bulk Phone Edit** Web page opens.

5 In the edit **Field**, select the field (mnemonic) to update. Some selected fields require the user to enter other values.

6 Enter the old value in the **Old Value** text box or select it from the **Old Value** drop-down list. If you are updating a Key field, enter the old value of any parameter to be changed 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** drop-down list. If you are updating a Key field, enter the new value of any parameter to be changed 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--

Update phones using the phone Templates

The association of phones to a Template simplifies the bulk change ability for users. This association enables a change to the Template content to be applied to all phones having that Template.

The **Bulk Phone Edit** Web page allows the user to update the phone from Templates. The value **Template** of the edit **Field** drop-down list, enables the user to update the phone based on the value present in the Template.

In the edit **Field**, if the value selected is Template, then the **Old Value** field displays an asterisk. The **New Value** field displays all the Templates configured for the phone type of the selected phone as seen in Figure 185 "Bulk Phone Edit Web page" (page 292).

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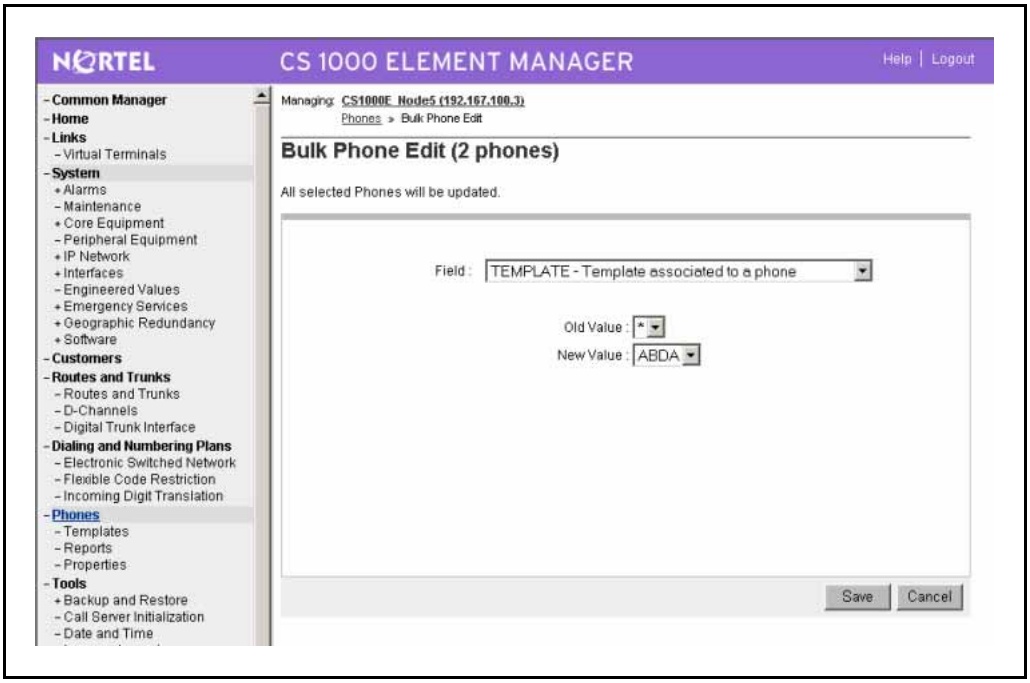
Figure 185
Bulk Phone Edit Web page



The Template is considered the master during this update. All configured phone attributes are overwritten with the attributes present in the selected Template. The CPND name configured in the phone is retained during the update.

Note 1: If the selected phones to be updated are of different phone types, then the **Template** field is not available in the edit **Field** drop-down list. The following properties of the phone cannot be changed while doing an update using Templates. These properties are set differently for every telephone and updating it from Template is not supported.

- ***Designator (DES) – This property is part of General Properties section of phone details page***
- ***Station Control Password (SCPW) – This property is part of Features section of phone details page.***
- ***Directory number parameter of any key feature***

In addition, there are certain properties, which are not part of the Template, and can be changed in the phone. Below is the list of those properties:

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- • ***Terminal Number (TN) - This property is part of General Properties section of phone details page.***
- • ***Call Party Name Display (CPND) - This property is part of Keys section of phone details page.***
- • ***Voice Mail Box (VMB) - This property is part of Keys section of phone details page.***

Note 2: If a Template has a partial DN configured, updating a phone with the Template using the Edit functionality is not allowed. The error message “Editing phones is not allowed since the Template selected has a partial DN” is displayed. However, no restriction is placed on the editing of phones if the Template does not contain partial DN.

The user is able to associate a Template to those phones that are not associated with a Template. To associate a Template to those phones that are not associated with a Template follow Procedure 100 “Associating a Template to Phones” (page 293).

Procedure 100
Associating a Template to Phones

Step	Action
1	Search for phones that are not associated to any Templates.
2	Sort the resultant set of phones by phone type.
3	Select phones to be updated.
4	Select **Edit** from the **<more actions>** drop-down list. The **Bulk Phone Edit** Web page opens.
5	In the edit **Field**, specify the value to be updated as **Template**.
6	In the Old Value field, select **Asterisk** (*).
7	In the **New Value** field, select the Template to be associated.
8	Click **Save** to complete the edit or click **Cancel** to undo changes and return to the **Search for Phones** Web page.

--End--

Note: Updating the phone may drive an update to the account in Subscriber Manager depending on the attributes that are updated.

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Phone properties that can be changed without breaking the Template association

Certain phone properties should be set differently for every telephone and therefore changing these properties does not break the telephone to Template association. Below is the list of those properties:

- Designator (DES) – This property is part of General Properties section of phone details page.
- Station Control Password (SCPW) – This property is part of Features section of phone details page.
- Directory number parameter of any key feature.

In addition, there are certain properties, which are not part of the Template, and can be changed in the phone. Below is the list of those properties:

- Terminal Number (TN) – This property is part of General Properties section of phone details page
- Call Party Name Display (CPND) – This property is part of Keys section of phone details page.
- Voice Mail Box (VMB) – This property is part of Keys section of phone details page.

Import Telephones

Telephones can be imported into the phone database by using the import operation. The Import Telephones feature allows the user to import telephone data into the database from a comma separated value (CSV) file. The **Import Telephones** Web page is launched by first clicking the **Phones** link in EM navigator and then clicking **Import** from the **Search for Phones** Web page, as shown in Figure 186 "Search for Phones Web page" (page 295).

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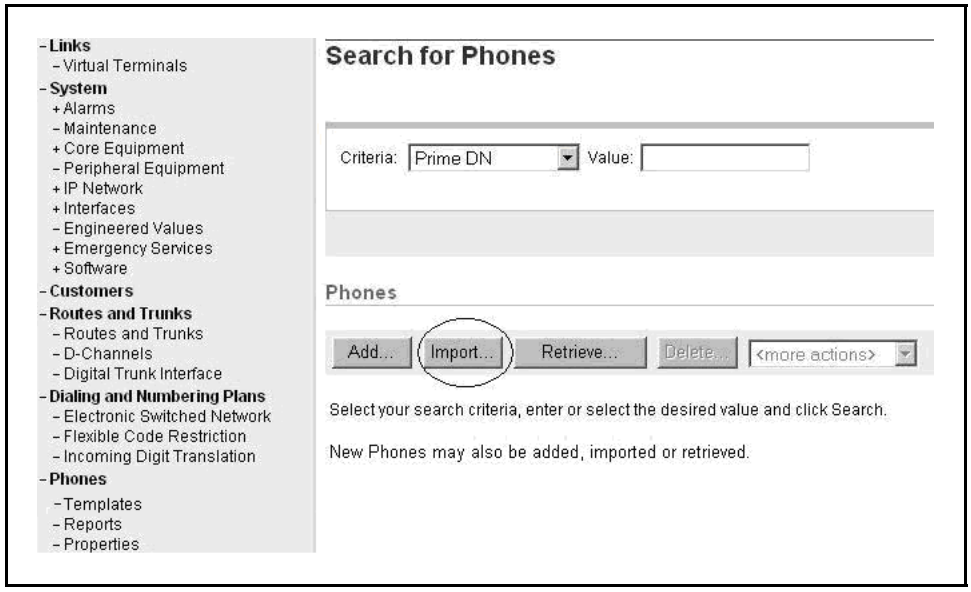
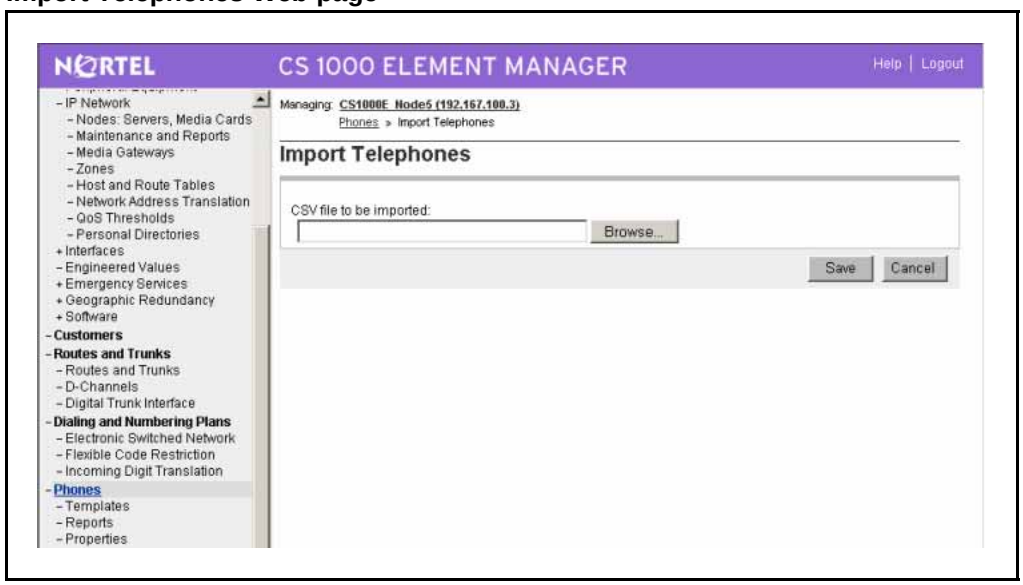
Figure 186
Search for Phones Web page



The Import Telephones Web page opens, as shown in Figure 187 "Import Telephones Web page" (page 295).

Figure 187
Import Telephones Web page



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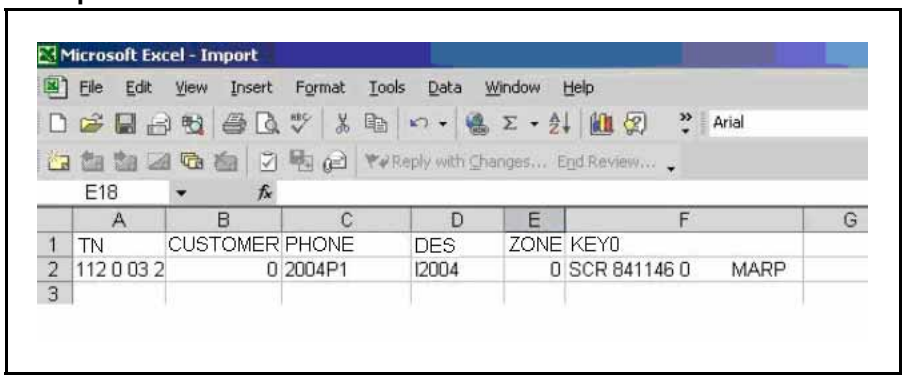
Specifications for CSV file

- The data file must be in standard ASCII Comma Separated Value (CSV) format.
- The first line in the CSV file should contain a list of fields which need to be imported.
- Subsequent lines in the CSV file should contain data values for each of the fields being imported and should be in the same order as their corresponding field names appear in the first line.

Figure 188
Example Contents of CSV file



The valid field names which can be used while importing data into the database are listed 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 305). For more information refer to, *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 to be updated.

Table 2
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)

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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)

If PRIMEDN is used as first column, import process can be used only for updating telephones.

If TN is used as first column, import can be used to either add or update a telephone.

If for a TN, a matching telephone is found then; its 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 DCS sets are to be added, the user cannot assign a TN to the phone. The TN is automatically assigned by the call server once the set is successfully added. So in case of DCS sets, the business logic still allows the set to be imported if the TN field is left blank. If a TN is assigned for DCS set, 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 should be of the format *Key <number>*where,*<number>*is the key number. For example, to import Key 10, the field name should be **Key10** The value for key should be specified in the following format:

<mnemonic> [<parameters>] [MARP] [ANIE(<value>)] [CPND_FIRS T_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)]

The entries indicated in square brackets ([]) are optional and can be specified by user 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 mentioned in this section are dependent on key feature mnemonic.

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- MARP – If specified indicates that DN specified in the <parameters> section should be MARPed on the key.
- ANIE(<value>) – Specifies the value for ANIE entry. The <value> represents the ANIE entry value.

The set of sections whose names start with *CPND_* can be used to import CPND name for the DN specified in <parameters> section. To import new CPND names, a nonblank value should be specified for at least one of the two name fields:

- PND_FIRST_NAME and CPND_LAST_NAME. To update existing CPND names using import, the user can choose to specify values for only those fields which need to be updated. It is not mandatory to specify a value for all fields.
- CPND_FIRST_NAME – This section can be used to specify CPND first name for the DN specified in <parameters> section.
- CPND_LAST_NAME – This section can be used to specify CPND last name for the DN specified in <parameters> section.
- CPND_LANG – This section can be used to specify CPND language for the CPND name.
- CPND_DISPLAY_FORMAT – This section can be used to specify CPND display format for the CPND name.

The set of sections whose names start with *VMB__* can be used to import VMB configuration data for the DN specified in the <parameters> section. It is not mandatory to specify values for all fields; a user can specify a value only for those fields which needs to be updated:

- VMB_CLASS_OF_SERVICE – This section can be used to specify the class of service value for VMB.
- VMB_SECOND_DN – This section can be used to specify second DN for the VMB.
- VMB_THIRD_DN – This section can be used to specify the third DN for the VMB.
- VMB_KEEP_MESSAGES – This section can be used to specify the preference for keep messages field of VMB.

The valid values which can be used are the same as accepted by PBX overlays.

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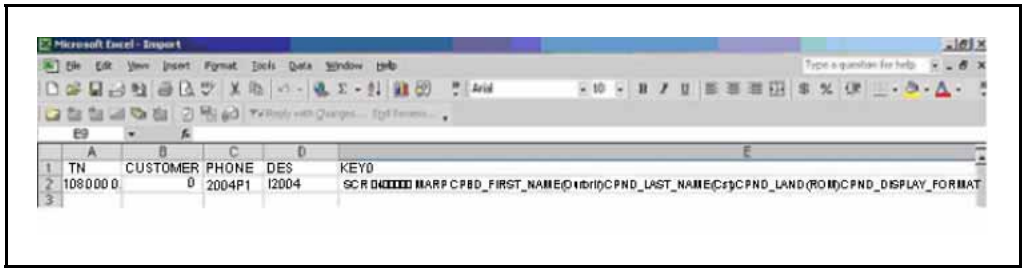
Figure 189
Example of a CSV file to import

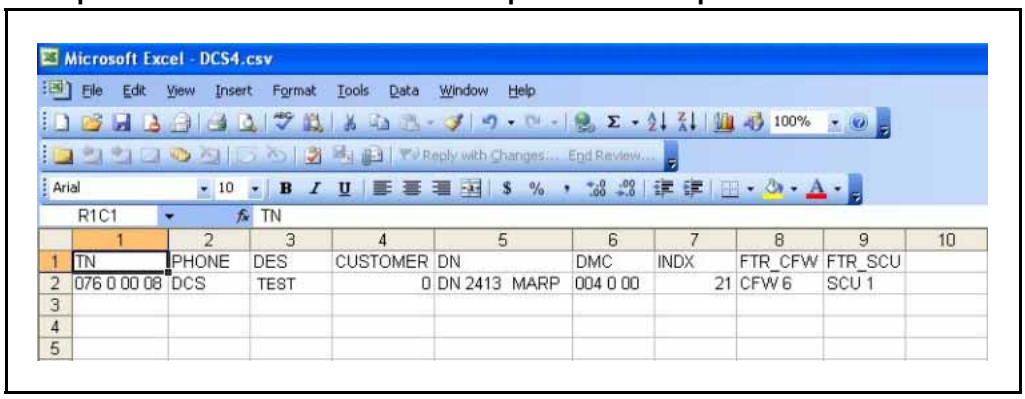


	A	B	C	D	E
1	TN	CUSTOMER	PHONE	DES	KEY0
2	108000 0	0	2004P1	I2004	SCR DN MARP CPBD_FIRST_NAME(Distrib)CPND_LAST_NAME(Cstj)CPND_LAND(ROM)CPND_DISPLAY_FORMAT
3					

Data requirements for importing Single Line Features

Single line features (FTR) can be imported 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 190
Example of a CSV file of FTR data to import for a DCS phone



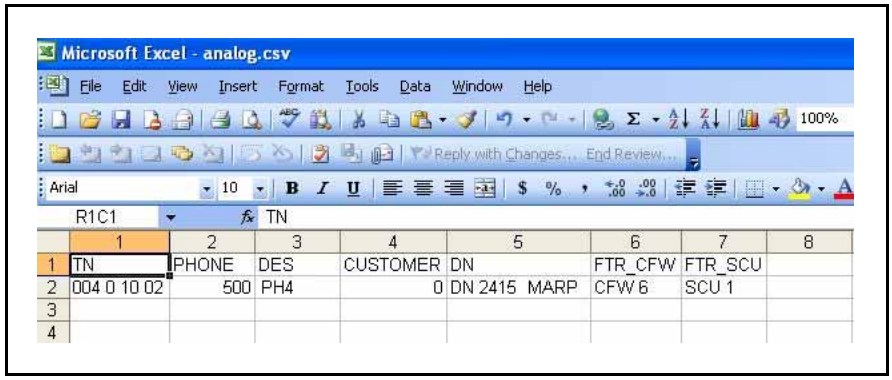
Microsoft Excel - DCS4.csv

File Edit View Insert Format Tools Data Window Help

Arial 10 R1C1 TN

	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 191
Example of a CSV file of FTR data to import for an analog phone



Microsoft Excel - analog.csv

File Edit View Insert Format Tools Data Window Help

Arial 10 R1C1 TN

	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								

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Data requirements for importing DN for analog telephones

DN field for analog telephones can have MARP and ANIE settings and also, CPND and VMB configuration. A DN field for analog telephones can be imported 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)]

To Import phones, follow the steps in Procedure 101 “Import Telephones” (page 300).

Procedure 101
Import Telephones

Step	Action
1	Click the **Phones** link in EM navigator. The **Search for Phones** Web page opens.
2	Click **Import** to launch 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--

When complete, the status of the import operation is displayed to the user. The user can get an initial format of the CSV file by generating a Report in CSV format using the Reports link of the Phones branch of the Element Manager navigation page.

Move Phones

The user can move a telephone to another TN with the same property values. To do this, follow the steps in Procedure 102 “Move Phones” (page 301).

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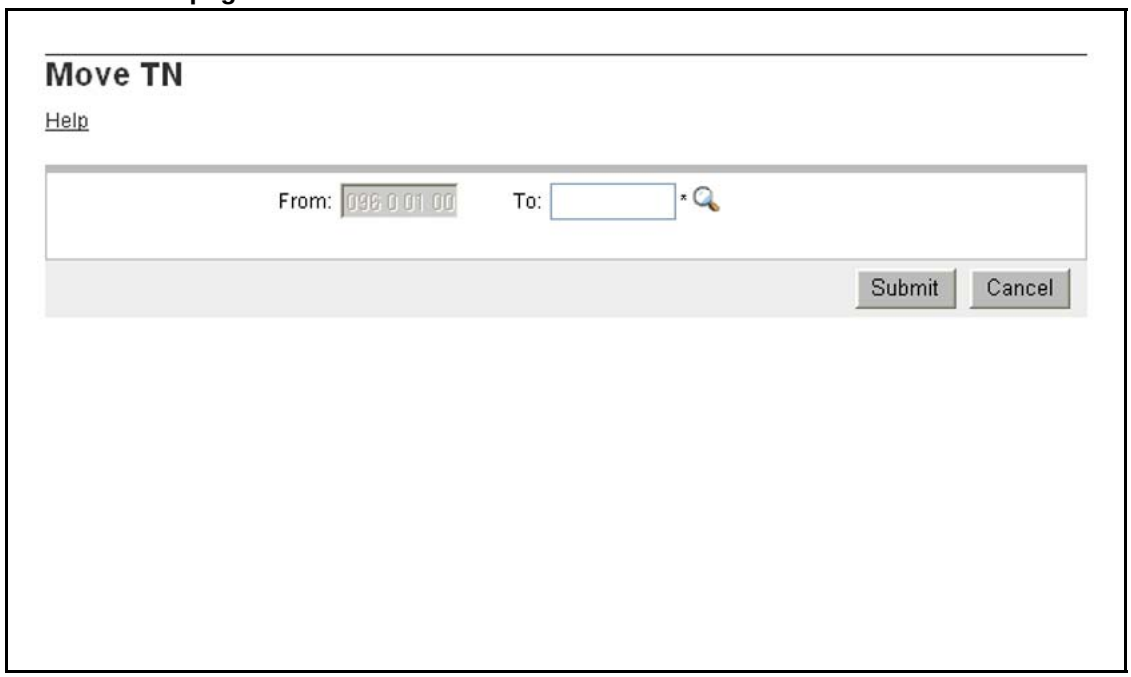
Procedure 102
Move Phones

Step	Action
1	From the **Search Results** section of the **Search for Phones** Web page, select **Move** from the **<more actions>** drop-down list. The **Move TN** Web page opens, as shown in Figure 192 "Move TN Web page" (page 301).

Figure 192
Move TN Web page



Step	Action
2	Enter the TN to move the Phone and click **Submit**.

--End--

Retrieve Phones

The Retrieve Phones function will synchronize data from the Call Server to the Phones database. To do this, follow the steps in Procedure 103 “Retrieve Phones” (page 301).

Procedure 103
Retrieve Phones

Step	Action
1	From the **Search for Phones** Web page, click **Retrieve**.

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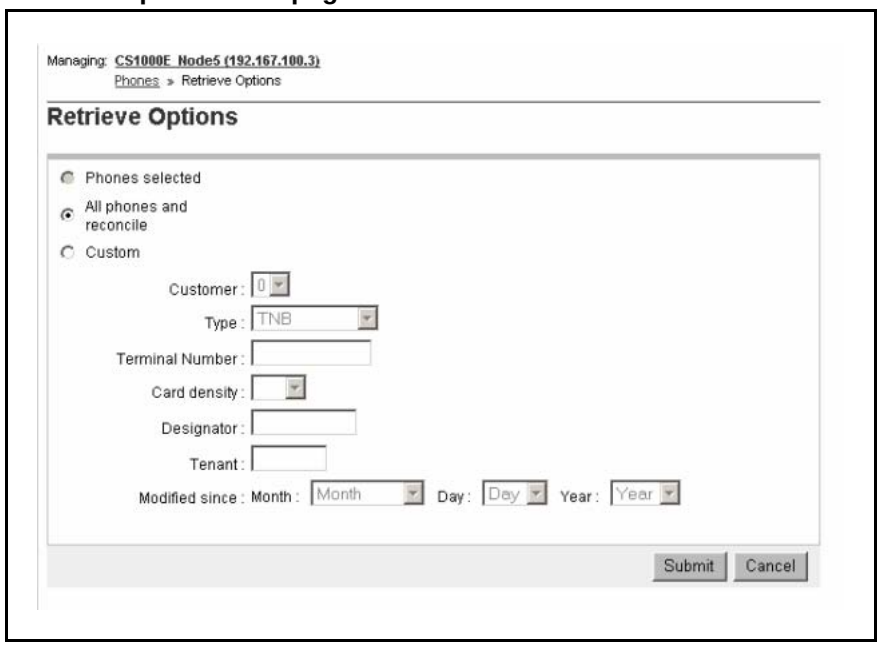
2 The **Retrieve Options** Web page opens, as shown in Figure 193 "Retrieve Options Web page" (page 302).

Figure 193
Retrieve Options Web page



3 Select one of the Retrieve Options, as follows:

Select **Phones selected** to retrieve the phones selected in the phone **Search Results** section.

Select **All phones and reconcile** to retrieve the phones.

Select **Custom** and enter any combination of search criteria as required to retrieve phones meeting those criteria.

4 Click **Submit.**

--End--

Delete Phones

To delete Phones, follow the steps in Procedure 104 “Delete Phones” (page 302).

Procedure 104
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.

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3 Click **Delete**.

4 Click **OK** to confirm the deletion of the telephones selected or click **Cancel** to cancel the operation.

--End--

Swap Phones

When the user performs a swap, two telephones exchange their TNs. The following limitations apply to the swap operation:

- The user 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, the user 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 sync 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 set in the acquired state.
- Swapping is not supported for telephones with a branch office link.

Procedure 105
Swap Phones

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 phones to be swapped.
3	Select **Swap** from the **<more actions>** drop-down list. The changes are submitted to the database.

--End--

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Courtesy Change

The Courtesy Change feature checks the telephone's busy/idle status before transmitting the changes to the switch. If the telephone is busy, the change is not transmitted, as this disconnects the active call and the following error message is transmitted: *Telephone is busy. Changes are not transmitted.*

Before a phone is transmitted to the call server, the overlay 32 STAT command is used to check the idle/busy status of the telephone. If the phone is busy, then the changes are not committed to the switch and the user will have to perform the operation again.

It is recommended to turn off this feature before doing an bulk import operation.

Enabling and disabling the Courtesy Change feature

The Courtesy Change feature can be turned on or off 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** as required.

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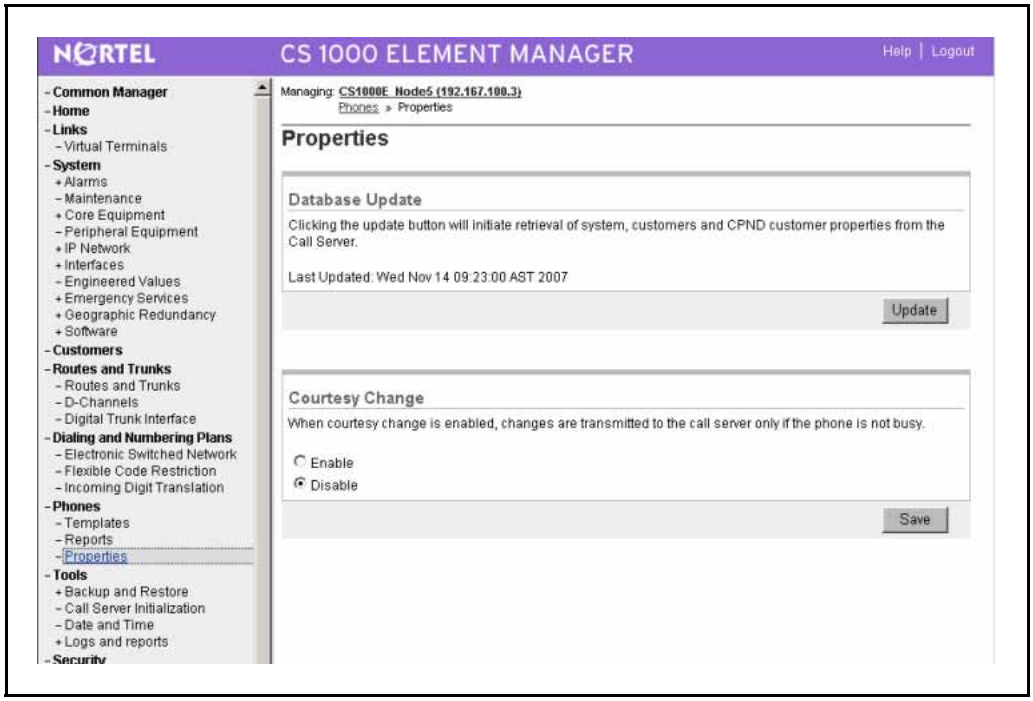
Figure 194
Properties Web page



Note: Turning on the Courtesy Change feature significantly impacts the performance of bulk add, delete or import operations. It is recommended to turn off the courtesy feature before such operations.

Reports

Element Manager provides users with the ability to construct complex SQL queries against the Phones database. The results can be in either HTML or CSV format. If HTML format is selected, only a maximum of 1000 records will be displayed.

Click the **Reports** link of the **Phones** branch of the Element Manager navigator. The **Edit a Report** Web page opens, as shown in Figure 195 "Edit a Report Web page" (page 306).

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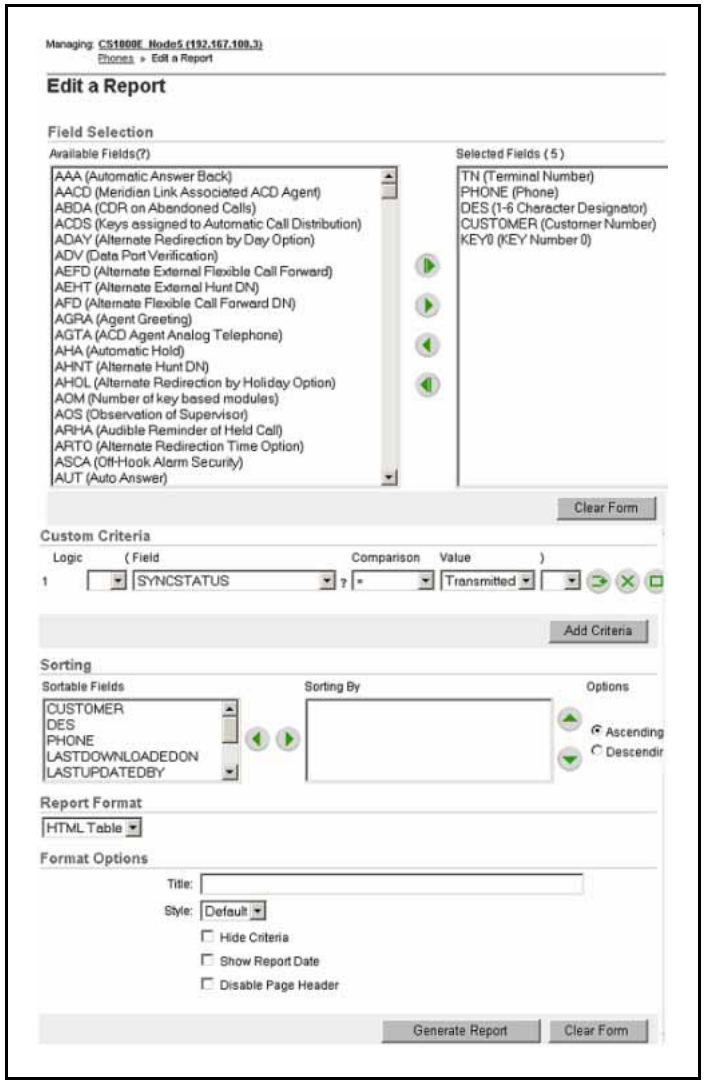
Figure 195
Edit a Report Web page



Enter the desired criteria and report format. Click **Generate Report** to generate the report.

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Tools

Contents

This section contains information on the following topics:

“Introduction” (page 307)

“Backup and Restore” (page 307)

“Date and Time” (page 316)

“Logs and Reports” (page 319)

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 196 "Call Server Backup and Restore Web page" (page 308)).

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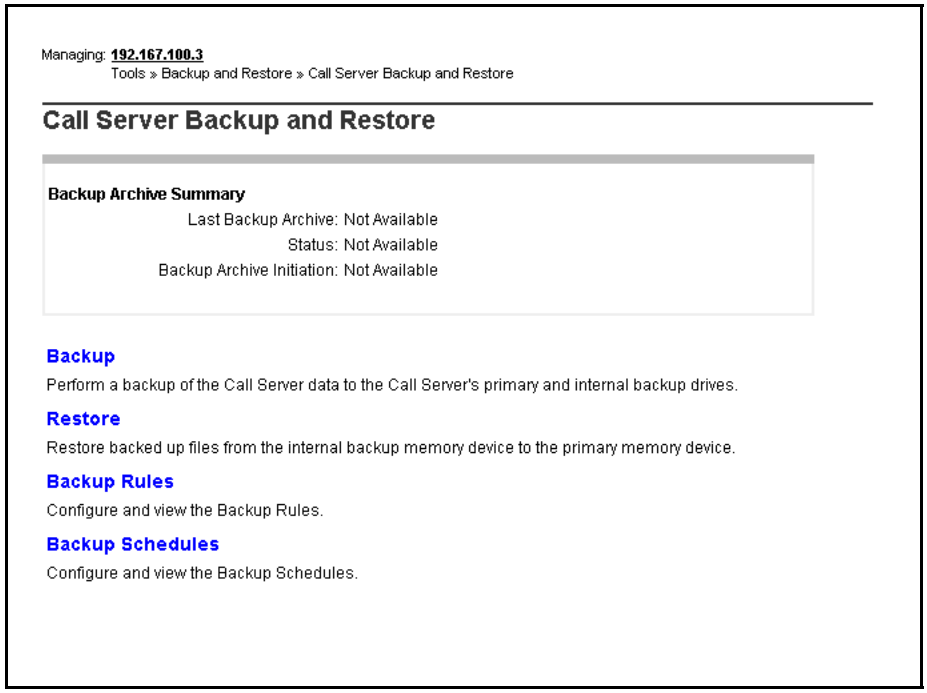
Figure 196
Call Server Backup and Restore Web page



Note: Backup Rules and Backup Schedules are available only on CPP II, 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 197 "Call Server Backup Web page" (page 309).

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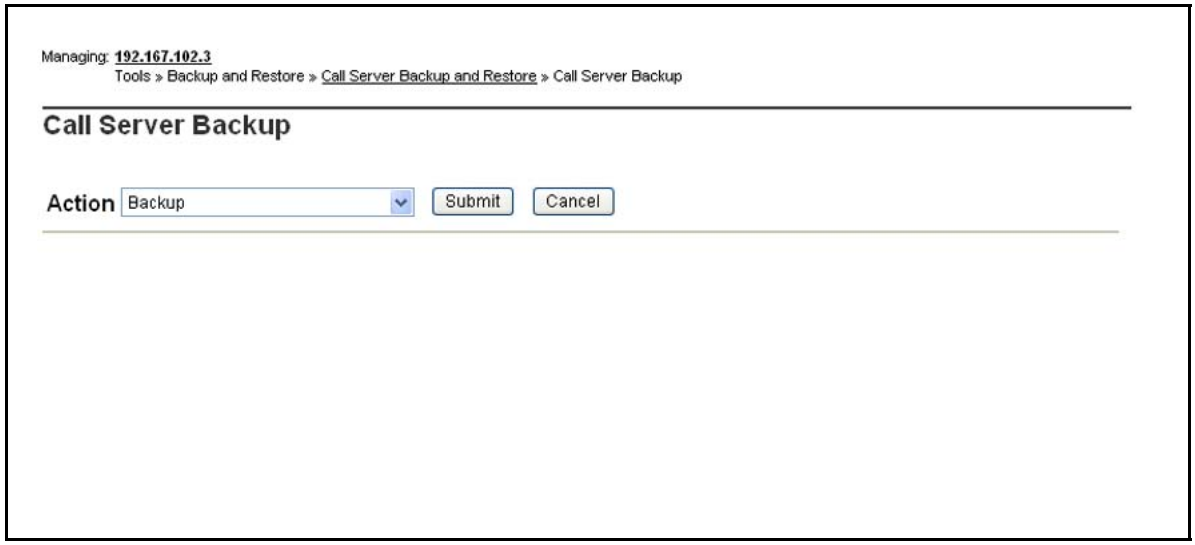
Figure 197
Call Server Backup Web page



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 on a Small System, on the **Call Server Backup** Web page select **Backup Clear** from the **Action** drop-down list, and click **Submit**.

To manually invoke the database replication process on a Large System, 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 about backing up and restoring databases for Geographic Redundancy, see *System Redundancy Fundamentals (NN43001-507)* () .

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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.

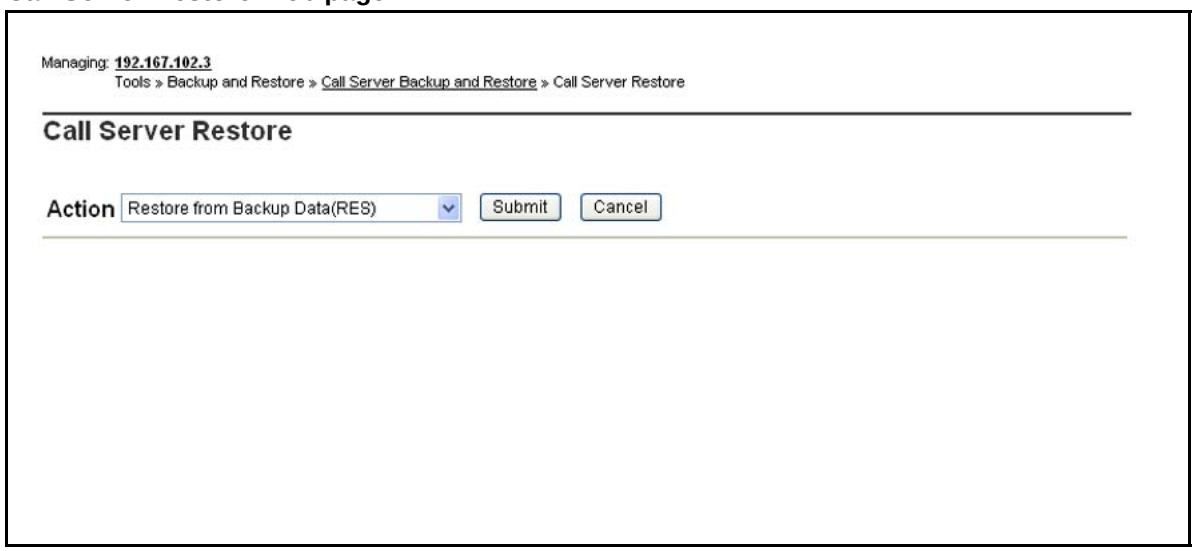
WARNING

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 198 "Call Server Restore Web page" (page 310)).

Figure 198
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.

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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.

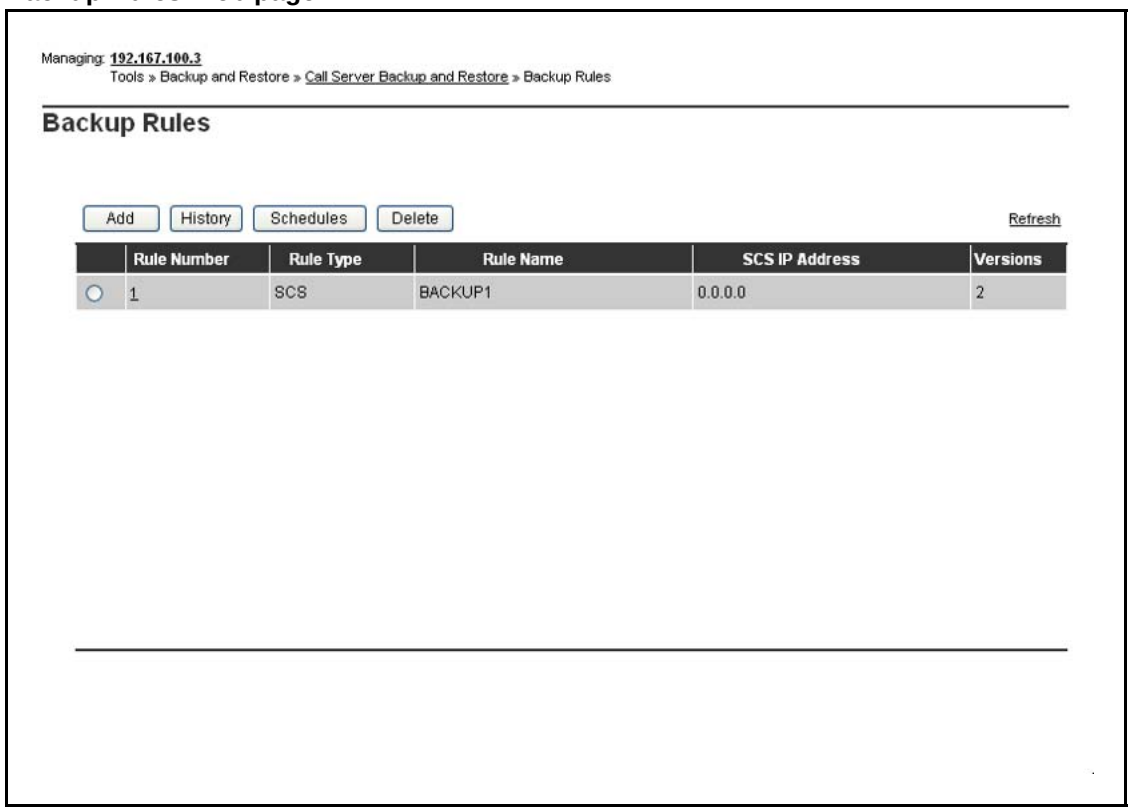
In the **Backup Rule Number** drop-down list, enter the Backup Rule number to use for the restore operation.

For more information about 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 199 "Backup Rules Web page" (page 311).

Figure 199
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.

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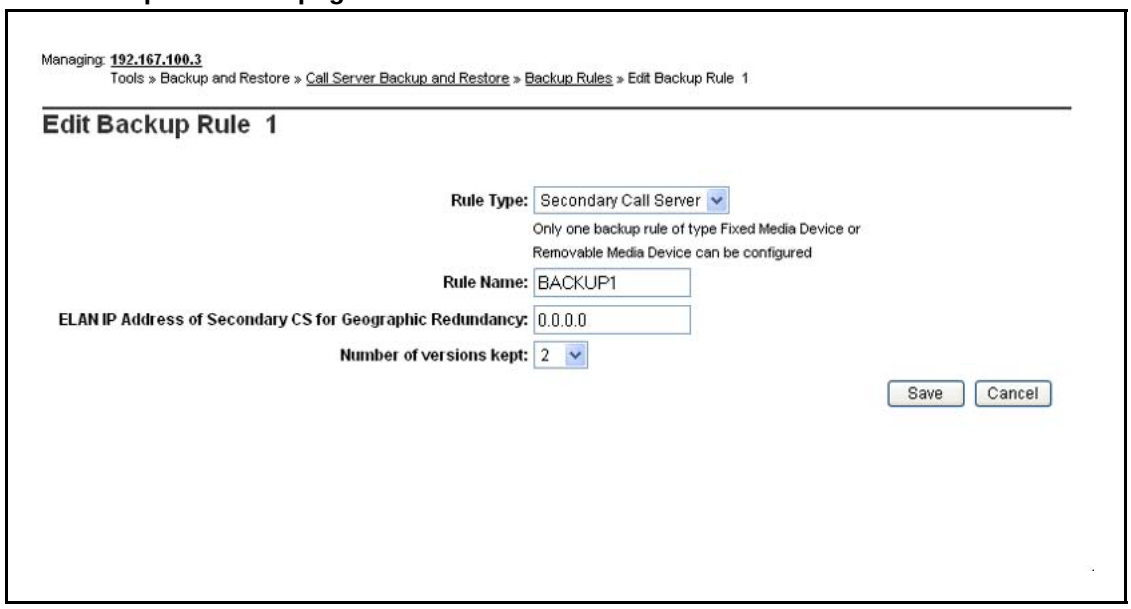
To add a Backup Rule, click **Add** on the **Backup Rules** Web page. The **Add Backup Rule** Web page opens. To edit a Backup Rule, click the Backup **Rule Number**. The **Edit Backup Rule** Web page opens, as shown in Figure 200 "Edit Backup Rule Web page" (page 312).

Figure 200
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 about 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 201 "Backup Schedules Web page" (page 313)

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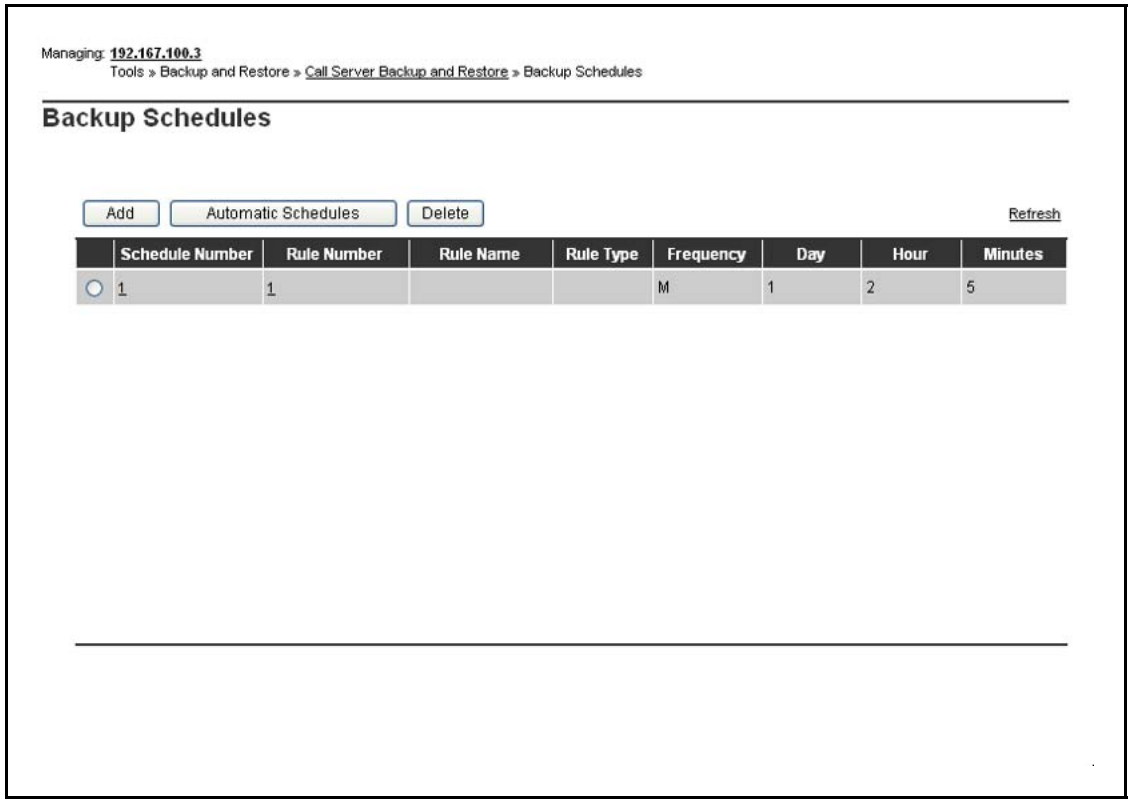
Figure 201
Backup Schedules Web page



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 202 "Edit Backup Schedule Web page" (page 314).

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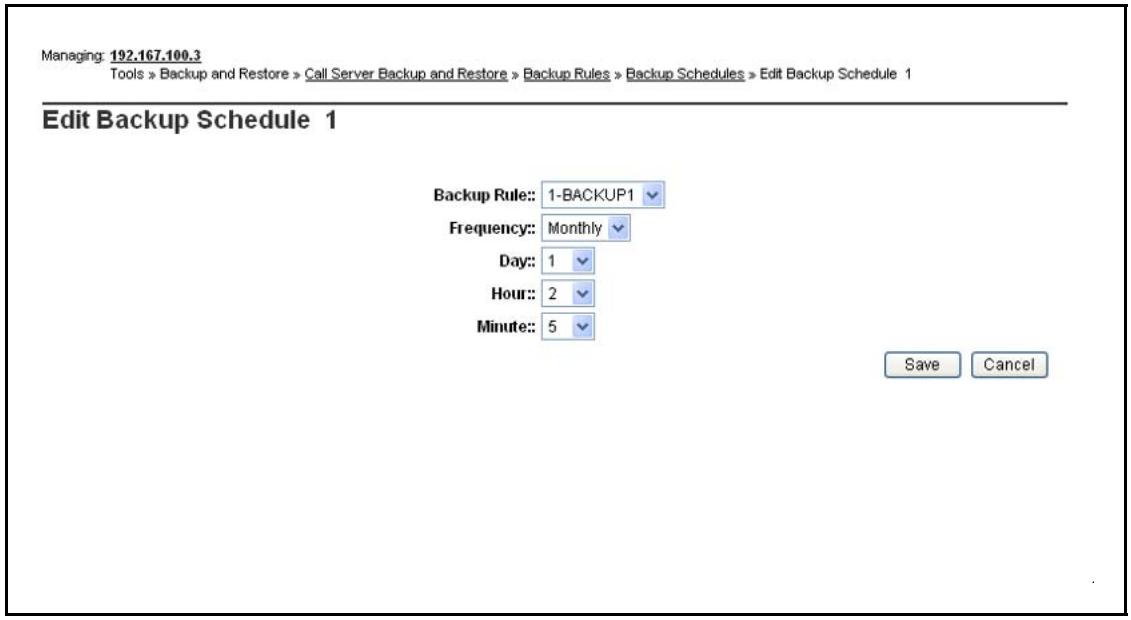
Figure 202
Edit Backup Schedule Web page



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

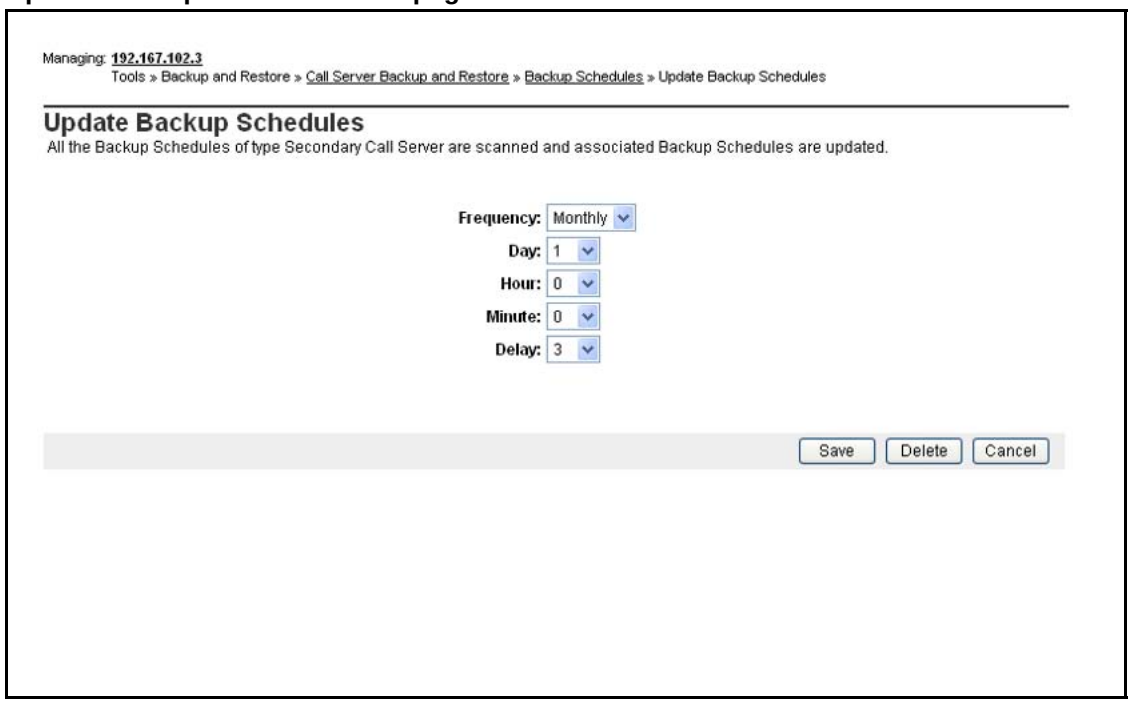
— FR

— 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 203 "Update Backup Schedules Web page" (page 315).

Figure 203
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

For information on Backup and Restore functions of Personal Directories, “Personal Directories” (page 172).

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Date and Time

The Date and Time function enables users to use Element Manager to modify the system's current time and date. The Date and Time function performs the same task as the CLI STAD command traditionally configured in LD 02.

Note 1: The date and time configured in either Element Manager or LD 02 is synchronized to all primary Signaling Servers and IP Telephony Leaders within the system. Users can specify, on a node basis, whether the Simple Network Time Protocol (SNTP) server (running on the primary Signaling Server) or the IP Telephony Leader cards actively push the date and time to the SNTP clients (IP Line 4.0/Voice Gateway cards and other Signaling Servers) or if the SNTP clients pull the date and time from the SNTP server.

Note 2: Synchronization can be set to occur on a regular interval, when modifications are made, or during a data dump, including a midnight routine data dump. As part of the Node configuration, users can specify how the date and time are propagated within the Node by configuring the primary Signal Servers or IP Telephony Leaders to run in broadcast mode or listen mode.

Note 3: Users must have SEC_ADMIN privileges to change date and time.

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 204 "System Date and Time Web page" (page 317).

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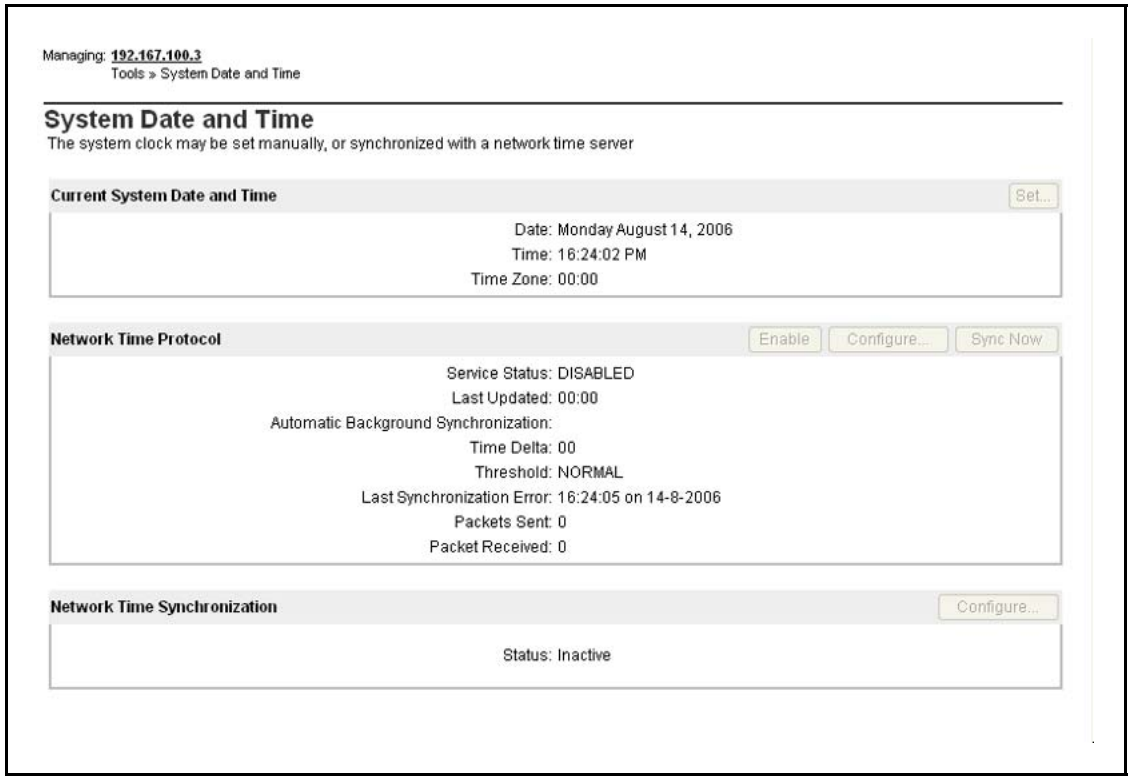
Figure 204
System Date and Time Web page



To modify the date and time, click **Set**. The **Edit Date and Time** Web page opens, as shown in Figure 205 "Edit Date and Time Web page" (page 318).

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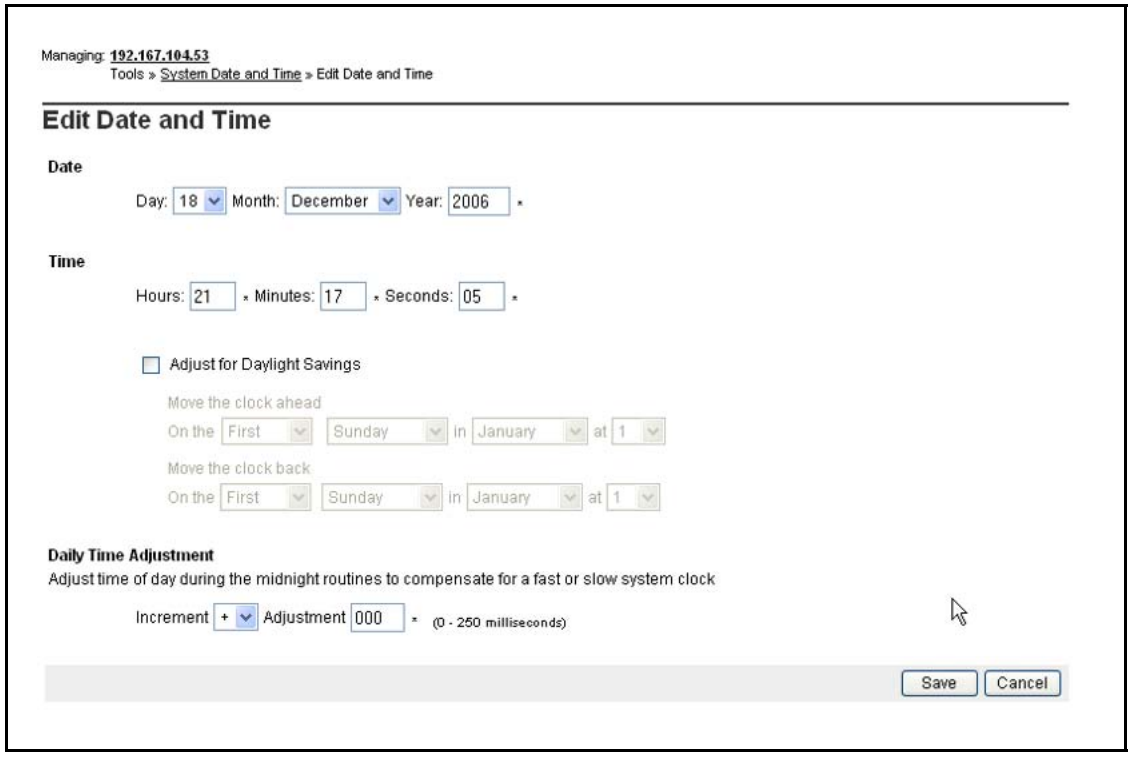
Figure 205
Edit Date and Time Web page



Enter the current **Date** and **Time**.

To account for an adjustment due to Daylight Savings Time, select the **Adjust for Daylight Savings** checkbox and enter the appropriate information.

To adjust the time of day due to a fast or slow system clock, enter the appropriate information in the **Daily time adjustment** section.

To save changes, click **Save**.

Network Time Synchronization

The Network Time Synchronization feature is ensures that all time stamps in a network are synchronized from one source.

To configure Network Time Synchronization parameters, in the **Network Time Synchronization** section click **Configure**. The **Network Time Synchronization** Web page opens, as shown in Figure 206 "Network Time Synchronization Web page" (page 319).

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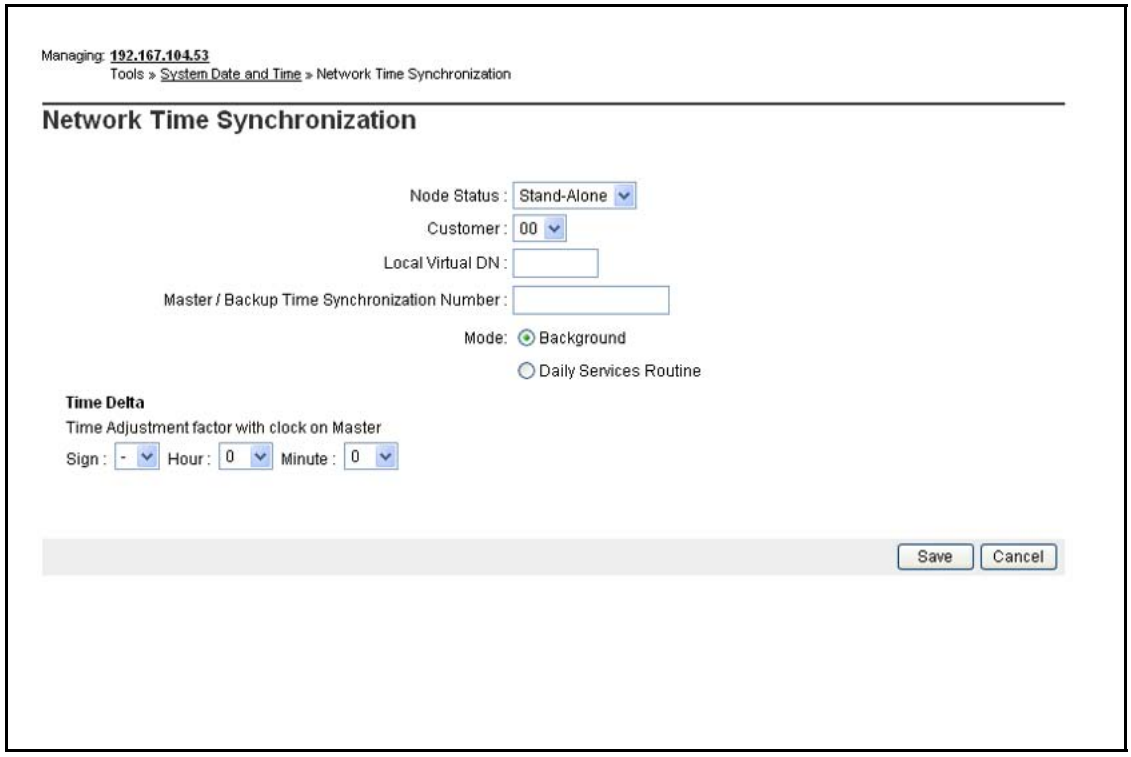
Figure 206
Network Time Synchronization Web page



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

Logs and Reports

For information on IP Telephony Node Maintenance and Reports, see “Nodes: Servers, Media Cards” (page 139).

In addition, information about the database status and synchronization are available under the Reports tab in NRS Manager. For more information about 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 207 "IP Phone Location Web page" (page 320).

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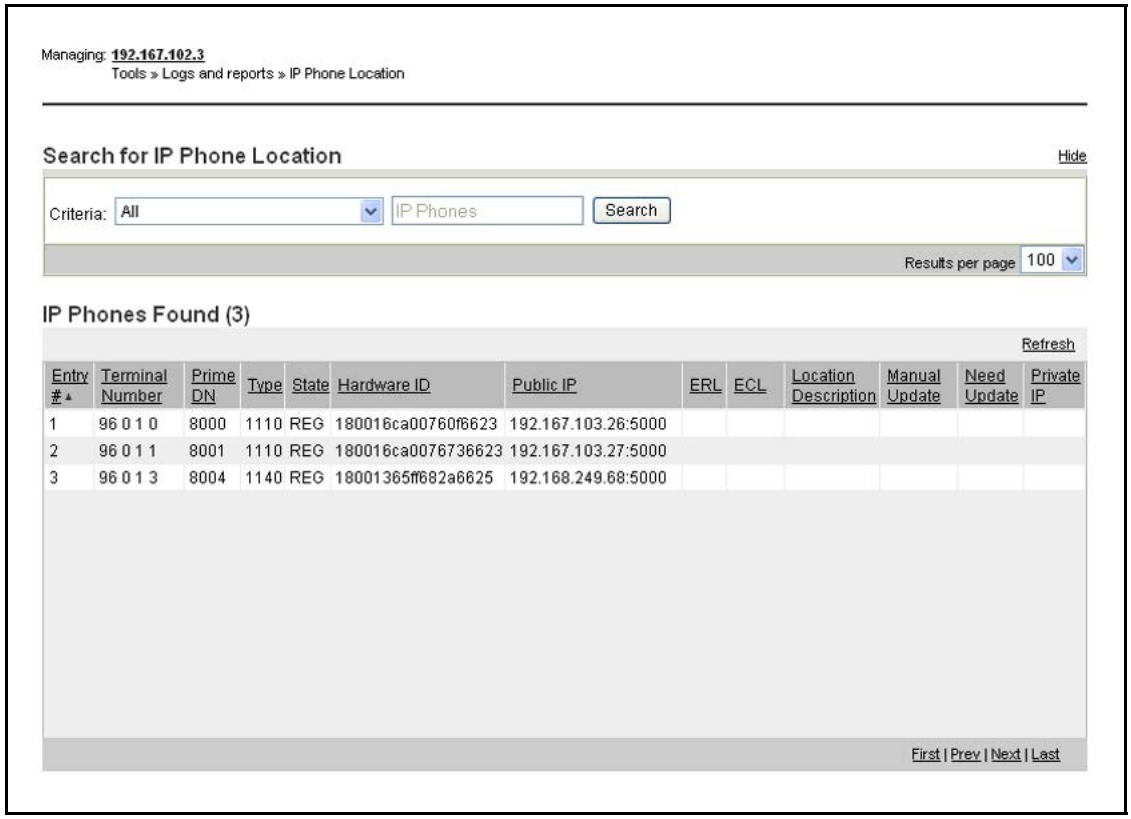
Figure 207
IP Phone Location Web page



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.

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 208 "Equipped Feature Packages List Web page" (page 321).

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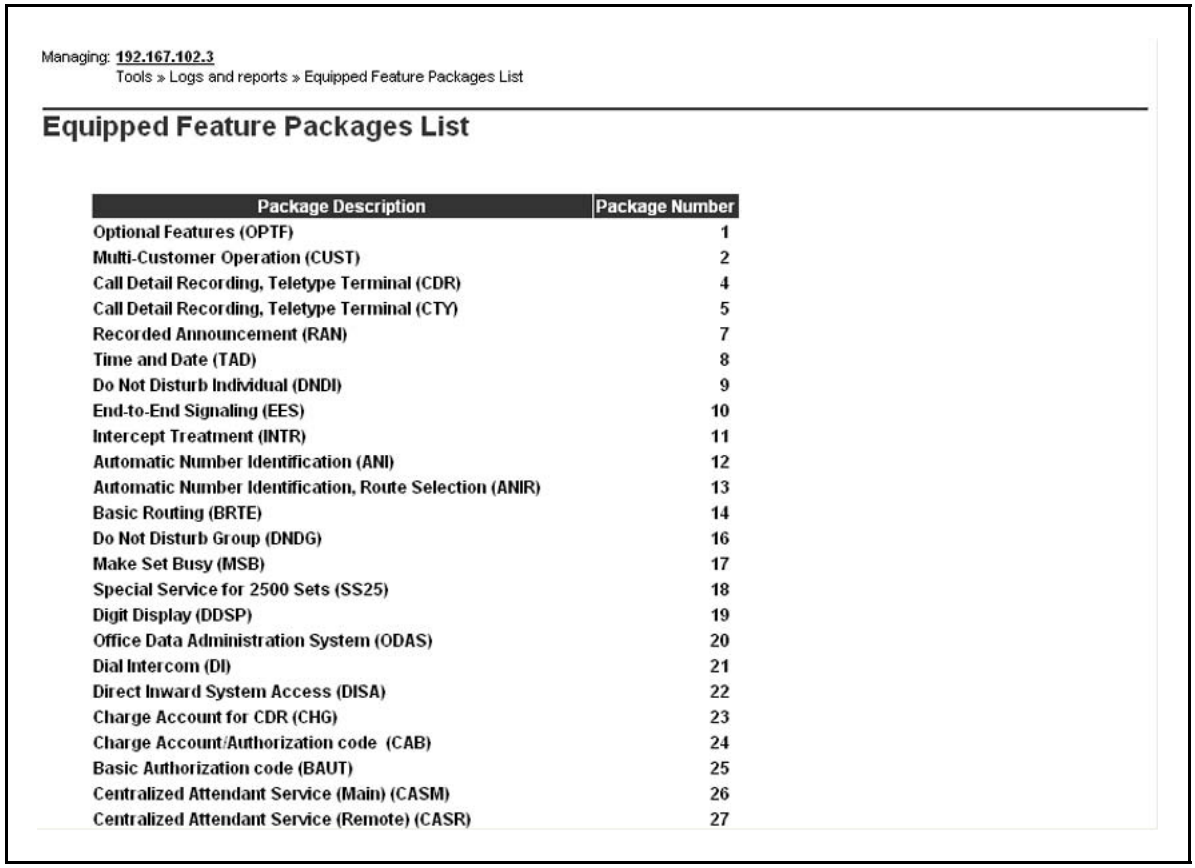
Figure 208
Equipped Feature Packages List Web page



Managing: 192.167.102.3
Tools » Logs and reports » Equipped Feature Packages List

Equipped Feature Packages List

Package Description	Package Number
Optional Features (OPTF)	1
Multi-Customer Operation (CUST)	2
Call Detail Recording, Teletype Terminal (CDR)	4
Call Detail Recording, Teletype Terminal (CTY)	5
Recorded Announcement (RAN)	7
Time and Date (TAD)	8
Do Not Disturb Individual (DNDI)	9
End-to-End Signaling (EES)	10
Intercept Treatment (INTR)	11
Automatic Number Identification (ANI)	12
Automatic Number Identification, Route Selection (ANIR)	13
Basic Routing (BRTE)	14
Do Not Disturb Group (DNDG)	16
Make Set Busy (MSB)	17
Special Service for 2500 Sets (SS25)	18
Digit Display (DDSP)	19
Office Data Administration System (ODAS)	20
Dial Intercom (DI)	21
Direct Inward System Access (DISA)	22
Charge Account for CDR (CHG)	23
Charge Account/Authorization code (CAB)	24
Basic Authorization code (BAUT)	25
Centralized Attendant Service (Main) (CASM)	26
Centralized Attendant Service (Remote) (CASR)	27

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 209 "Peripheral Software Version Data Web page" (page 322).

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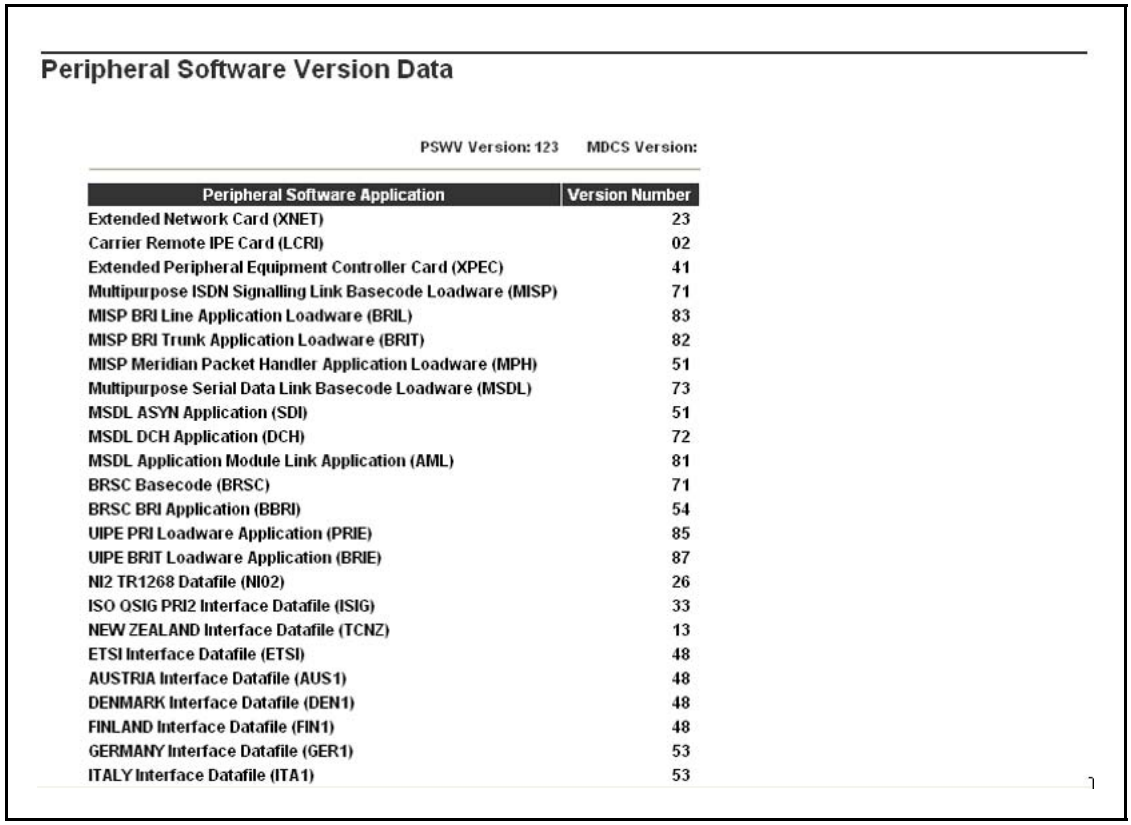
Figure 209
Peripheral Software Version Data Web page



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

To view a list of System Licence Parameters, click the **Logs and Reports > System Licence Parameters** link in the **Tools** branch of the Element Manager navigator. The **System Licence Parameters** Web page opens as shown in Figure 210 "System Licence Parameters Web page" (page 323).

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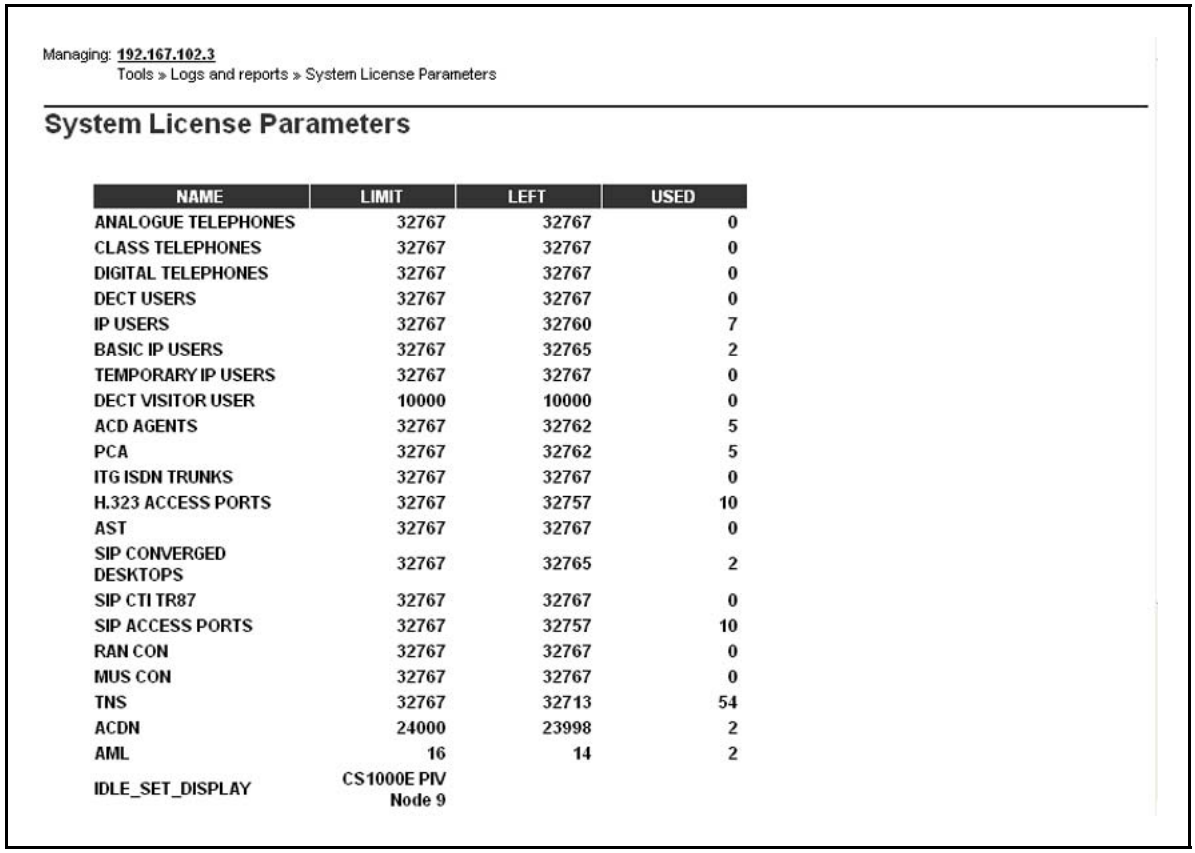
Figure 210
System Licence Parameters Web page



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 211 "Operational Measurements Web page" (page 324).

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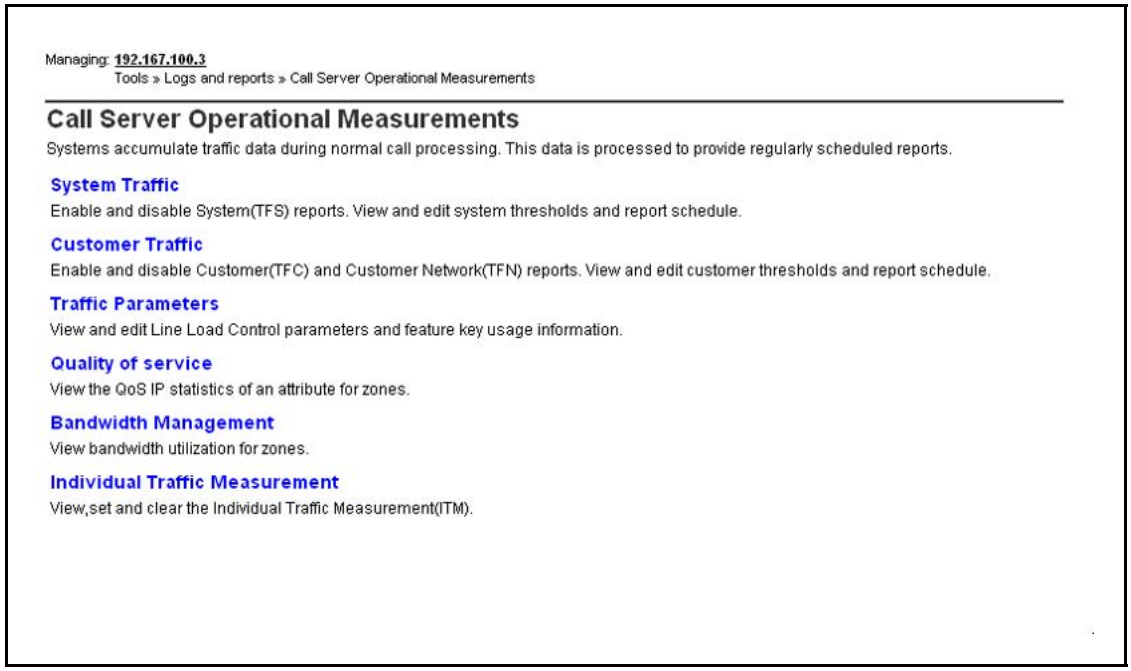
Figure 211
Operational Measurements Web page



System Traffic

To display details of the system's Traffic reports, click **System Traffic**. The **System Traffic** Web page opens, as shown in Figure 212 "System Traffic Web page" (page 325).

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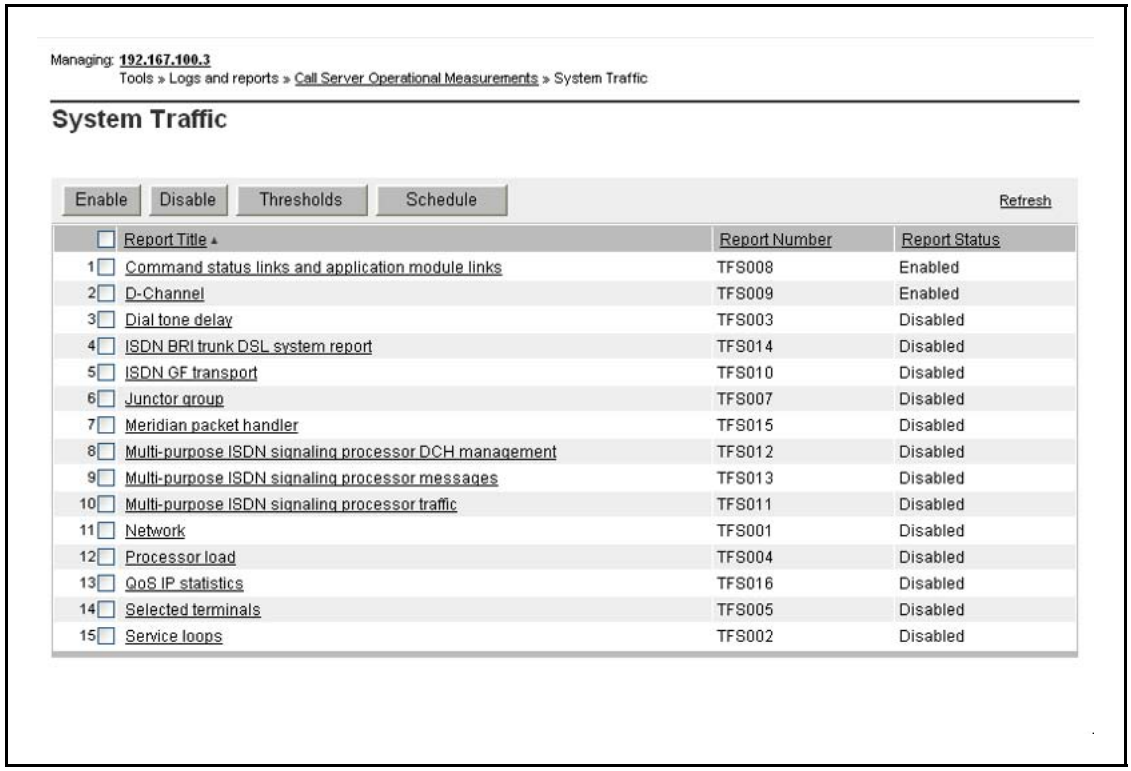
Figure 212
System Traffic Web page



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 213 "Customer Traffic Web page" (page 326).

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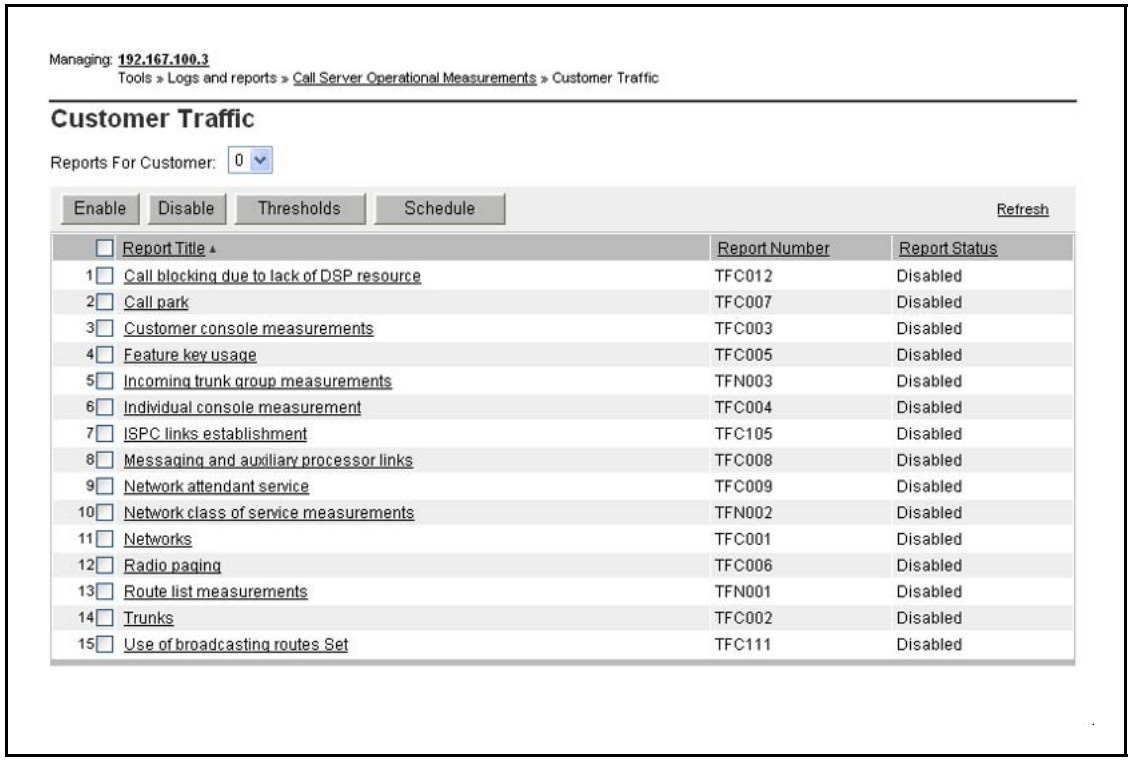
Figure 213
Customer Traffic Web page



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 214 "Edit Traffic Parameters Web page" (page 327).

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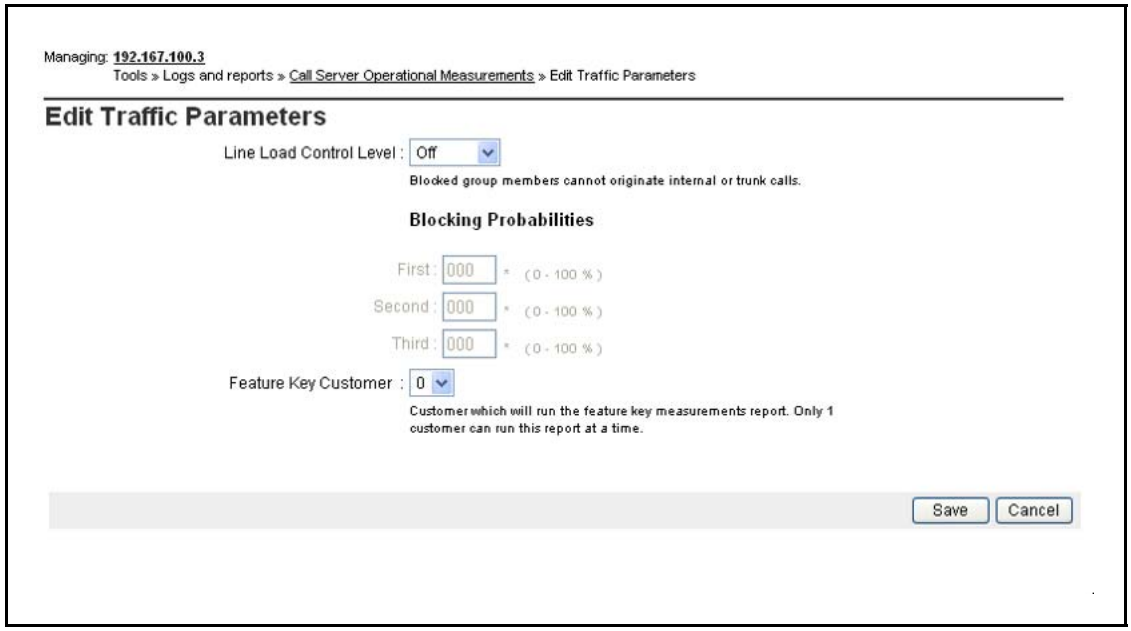
Figure 214
Edit Traffic Parameters Web page



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 85)

Bandwidth Management

Click **Bandwidth Management** to open the **Maintenance Commands for Zones** Web page. For more information, see "Zone Diagnostics" (page 114)

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 215 "Individual Traffic Measurement Web page" (page 328).

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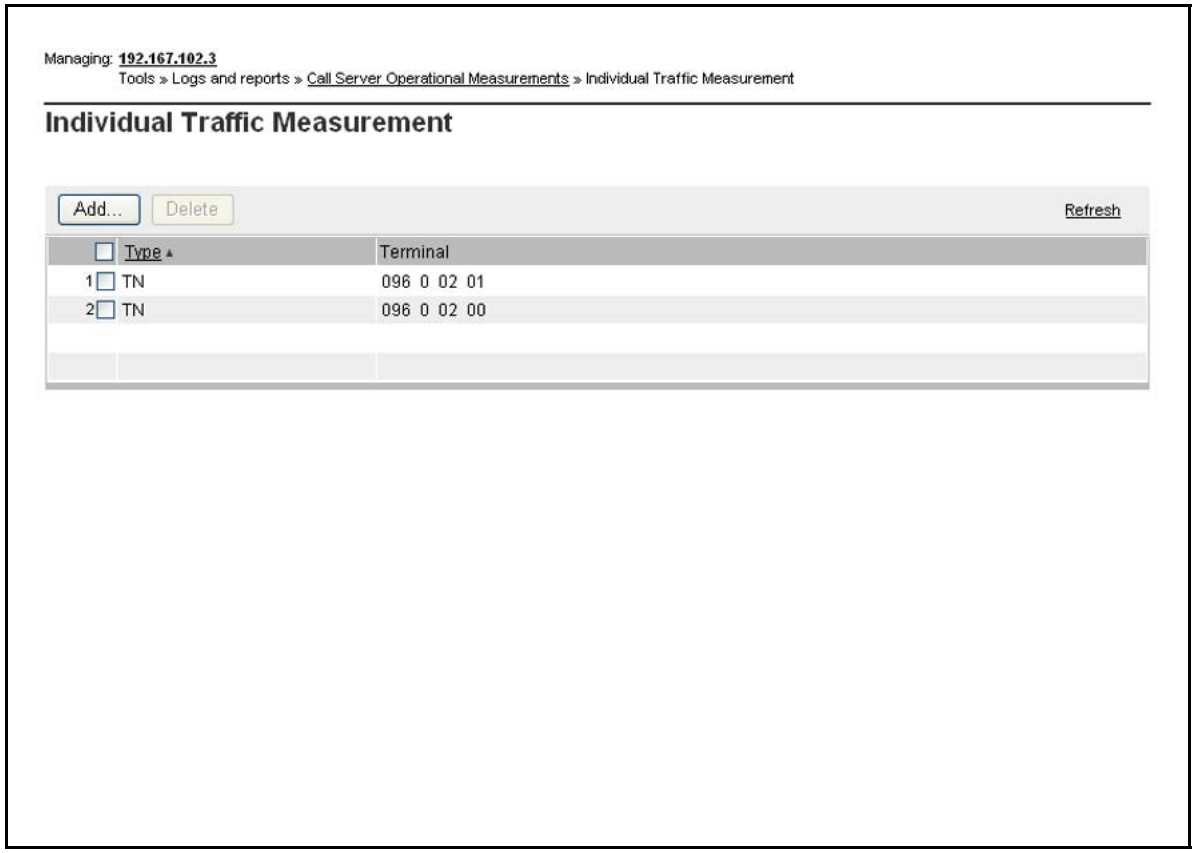
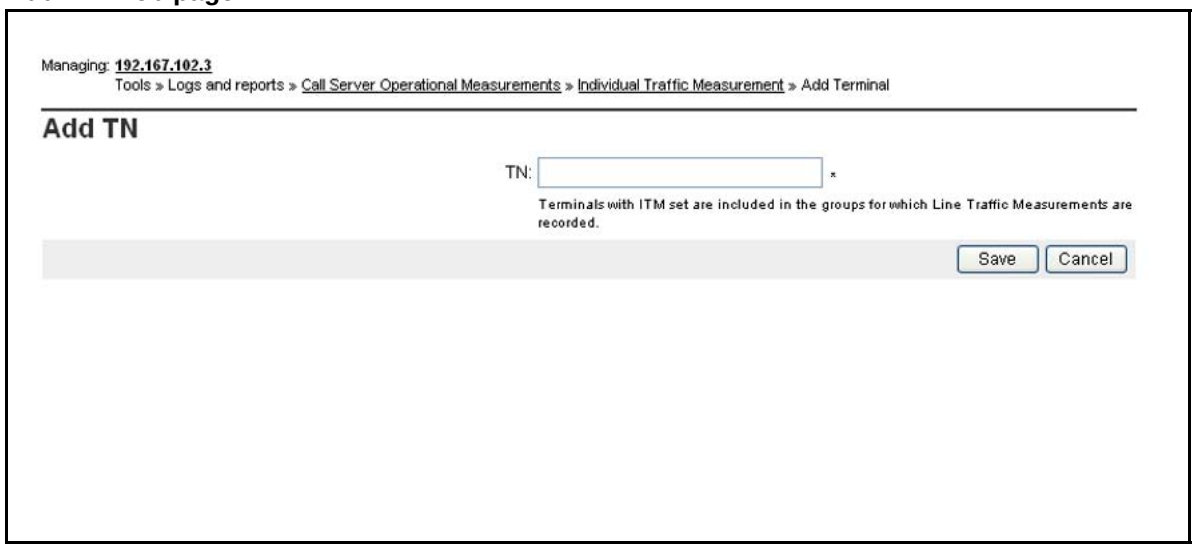
Figure 215
Individual Traffic Measurement Web page



To add a terminal for Individual Traffic Measurement, click **Add**. The **Add TN** Web page opens, as shown in Figure 216 "Add TN Web page" (page 328).

Figure 216
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

For information on Security features available in Element Manager, see *Security Management Fundamentals (NN43001-604)* () .

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Certificate Management

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“Processing a pending certificate response” (page 335)

“Deleting a pending certificate request” (page 335)

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“Assigning an existing certificate” (page 337)

“Importing a certificate and its private key” (page 338)

“Creating a certificate renew request for the current certificate” (page 338)

“Removing the current certificate” (page 339)

“Replacing the current certificate” (page 339)

“Exporting the current self-signed certificate” (page 340)

“Exporting the current certificate and its private key” (page 341)

“SSL/TSL security configuration” (page 341)

Overview

When accessing Element Manager through Enterprise Common Manager, Certificate Management is provided by the framework. For more information, see Enterprise Common Manager Fundamentals (NN43001-116).

This chapter describes Certificate Management in Element Manager when accessed on VxWorks.

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This section contains information on the Element Manager SSL/TLS Service Management Wizard, which guides users through the certificate management and Transportation Layer Security (TLS) configuration process.

Creating a new certificate request

When Element Manager is first deployed, no certificate is installed. The TLS service for the Element Manager is disabled.

Follow the steps in Procedure 106 “Creating a new certificate request” (page 334) to create a new certificate request.

Procedure 106
Creating a new certificate request

Step	Action
1	Log in using the non-secure mode.
2	Click **Configure**.
	The **Server Certificate** Web page appears.
3	Select the **Create a new certificate request to be signed by Certificate Authority** radio button and click **Next**.
	The **Name and Security Settings** Web page appears.
4	Enter a **Friendly Name** for the certificate.
5	Select a bit length from the **Bit length** drop-down list.
6	Click **Next**.
	The **Organization Information** Web page appears.
7	Enter an **Organization** and **Organization Unit** and click **Next**.
	The **Your Server’s Common Name** Web page appears
8	Enter a **Common Name** and click **Next**.
	The **Geographical Information** Web page appears.
9	Enter a **Country/Region**.
10	Enter a **State/Province**.
11	Enter a **City/Locality**.
12	Click **Next**.
	The **Certificate Request Summary** Web page appears.
13	Click **Commit** to download the certificate request to a local file.
	The **X.509 Certificate Request** Web page appears.

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14 Click **Close** to close the wizard.

--End--

Processing a pending certificate response

The certificate request file is submitted to a Certificate Authority. The Certificate Authority sends a response in a text file.

Follow the steps in Procedure 107 “Processing a pending certificate response” (page 335) to process the pending certificate response file.

Procedure 107
Processing a pending certificate response

Step	Action
1	On the **SSL/TLS Service Configuration** Web page, click **Configure**. The **Server Certificate** Web page appears.
2	Select the **Process the pending request and install the certificate** option button and click **Next**. The **Process a Pending Request** Web page appears.
3	Copy the contents of the text file received from the certificate authority.
4	Click **Commit**. The **Certificate Summary** Web page appears.
5	Click **Finish**.

--End--

To verify that the Certificate Authority is trusted by Internet Explorer, choose **Tools > Internet Options > Content > Certificates**. The **Trusted Certificate Authority List** Web page appears.

If the Certificate Authority is not in the trusted Certificate Authority list of Internet Explorer, a **Security Alert** Web page appears when accessing Element Manager using SSL or TLS.

The user must then log in using the secure mode.

Deleting a pending certificate request

Follow the steps in Procedure 108 “Deleting a pending certificate request” (page 336) to delete a pending certificate request.

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Procedure 108
Deleting a pending certificate request

Step	Action
1	On the **SSL/TLS Service Configuration** Web page, click **Configure**. The **Server Certificate** Web page appears.
2	Select the **Delete the pending request** option button and click **Next**. The **Delete a Pending Request** Web page appears.
3	Click **Finish**.

--End--

Creating a self-signed certificate

Follow the steps in Procedure 109 “Creating a self-signed certificate” (page 336) to create a self-signed certificate.

Procedure 109
Creating a self-signed certificate

Step	Action
1	On the **SSL/TLS Service Configuration** Web page, click **Configure**. The **Server Certificate** Web page appears.
2	Select the **Create a new self-signed certificate** option button and click **Next**. The **New Self-Signed Certificate** Web page appears.
3	Click **Next**. The **Name and Security Settings** Web page appears.
4	Enter a **Friendly Name** for the certificate.
5	Select a bit length from the **Bit length** drop-down list.
6	Click **Next**. The **Organization Information** Web page appears.
7	Enter an **Organization** and **Organization Unit** and click **Next**. The **Your Server’s Common Name** Web page appears.
8	Enter a **Common Name** and click **Next**. The **Geographical Information** Web page appears.

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9	Enter a **Country/Region**.
10	Enter a **State/Province**.
11	Enter a **City/Locality**.
12	Click **Next**. The **Certificate Request Summary** Web page appears.
13	Click **Commit**. The **X.509 Certificate Request** Web page appears.
14	Click **Close** to close the wizard. If the **Security Alert** Web page appears, click **Yes**.

Note: The user can also export the self-signed certificate and distribute it into the trusted Certificate Authority list of Internet Explorer.

--End--

Assigning an existing certificate

To assign an existing certificate to the Element Manager's Web site, follow the steps in Procedure 110 "Assigning an existing certificate" (page 337).

Procedure 110
Assigning an existing certificate

Step	Action
1	On the **SSL/TLS Service Configuration** Web page, click **Configure**. The **Server Certificate** Web page appears.
2	Select the **Assign an existing certificate** option button and click **Next**. The **Available Certificate** Web page appears.
3	Select a certificate from the list of available certificates and click **Next**. The **Certificate Summary** Web page appears.
4	Click **Finish**.

--End--

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Importing a certificate and its private key

Follow the steps in Procedure 111 “Importing a certificate and its private key” (page 338) to import a certificate and its private key.

Procedure 111
Importing a certificate and its private key

Step	Action
1	On the **SSL/TLS Service Configuration** Web page, click **Configure**. The **Server Certificate** Web page appears.
2	Select the **Import a certificate and its private key from a PEM encoded file** option button and click **Next**. The **Import Certificate Password** Web page appears.
3	Enter the password of the certificate file and click **Commit**. The **Import Certificate** Web page appears.
4	Copy the contents of the text file received from the certificate authority.
5	Click **Commit**. The **Certificate Summary** Web page appears.
6	Click **Finish**.

--End--

Creating a certificate renew request for the current certificate

The X.509 certificate has an expiration date. A warning message is shown if the expiration date is less than one month away. To create a certificate renewal request, follow the steps in Procedure 112 “Creating a certificate renew request” (page 338).

Procedure 112
Creating a certificate renew request

Step	Action
1	On the **SSL/TLS Service Configuration** Web page, click **Configure**. The **Server Certificate** Web page appears.
2	Select the **Create a certificate renew request** option button and click **Next**. The **Certificate Request Summary** Web page appears.

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3 Click **Commit** to download the certificate request to a local file.

The **X.509 Certificate Request** Web page appears.

4 Click **Close** to close the wizard.

--End--

Removing the current certificate

To remove a current certificate, follow the steps in Procedure 113 "Removing the current certificate" (page 339).

Procedure 113
Removing the current certificate

Step	Action
1	On the **SSL/TLS Service Configuration** Web page, click **Configure**. The **Server Certificate** Web page appears.
2	Select the **Remove the current certificate** option button and click **Next**. The **Remove a Certificate** Web page appears.
3	Click **Finish**. ***Note:*** All client sessions must be terminated before the removing operation can take effect.

--End--

Replacing the current certificate

To replace the current certificate, follow the steps in Procedure 114 "Replacing the current certificate" (page 339).

Note: The security context of the Web SSL service will change to the new certificate when there is no active HTTPS connection.

Procedure 114
Replacing the current certificate

Step	Action
1	On the **SSL/TLS Service Configuration** Web page, click **Configure**.

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The **Server Certificate Configuration Wizard** Web page appears.

2 Select the **Replace the current certificate** option button and click **Next**.

The **Available Certificate** Web page appears.

3 Select a certificate from the list and click **Next**.

The **Certificate Summary** Web page appears.

4 Click **Close** to close the wizard.

--End--

Exporting the current self-signed certificate

When the current certificate is self-signed, it can be exported. Using SSL and TLS protocol, the certificate file can be used to set up a trust relationship between different parties.

To export the current self-signed certificate, follow the steps in Procedure 115 “Exporting the current self-signed certificate” (page 340).

Procedure 115
Exporting the current self-signed certificate

Step	Action
1	On the **SSL/TLS Service Configuration** Web page, click **Configure**. The **Server Certificate Configuration Wizard** Web page appears.
2	Select the **Export the current self-signed certificate** option button and click **Next**. The **Export Self-signed Certificate Summary** Web page appears.
3	Click **Download**. The **Certificate Content** Web page appears. Copy the contents of the text box and save it as a plain text file. When exporting the self-signed certificate, name the file with extension .cer. The file can then be installed in the trusted certificate list of the client.
4	Click **Close** to close the wizard.

--End--

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Exporting the current certificate and its private key

The current certificate and its private key can be exported. A password is required to encrypt the file. Use the same password that was used to import the file.

Follow the steps in Procedure 116 “Exporting the current certificate” (page 341) to export the current certificate and its private key.

Procedure 116
Exporting the current certificate

Step	Action
1	On the **SSL/TLS Service Configuration** Web page, click **Configure**. The **Server Certificate Configuration Wizard** Web page appears.
2	Select the **Export the current certificate and its private key** option button and click **Next**. The **Export Certificate Password** Web page appears.
3	Enter the password and click **Next**. The **Export Current Certificate and Private Key Summary** Web page appears.
4	Click **Download**. The **Certificate Content** Web page appears. When exporting the certificate and private key, import the file to another server.
5	Click **Close** to close the wizard.

--End--

SSL/TSL security configuration

When a certificate is installed on Element Manager, the SSL/TLS usage rule is set to "Always" by default.

If "Always" is selected, all user traffic must use SSL/TLS. If "UserChoice" is selected, users can choose between secure and non-secure sessions when they log in.

The user can configure the TCP port used by the SSL and TLS service by entering a value in the **SSL/TLS** field. The default value is 443.

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Login banner support

The Login banner feature displays a security warning banner in the login page of Element Manager on VxWorks. When a user logs into the ECM framework to access EM, they see a similar security warning banner.

Element Manager on VxWorks has a provision to modify the banner. This modification gets reflected on the Call Sever where the master copy is maintained.

Procedure 117
Edit banner information

Step	Action
1	Login to Element Manager on VxWorks with Level 2 and PDT 1 or higher access privileges.
2	Select **Login Options > Access Warning** from the left navigation pane.
3	On the **Access Warning** Web page, click **Edit**.
4	Change the banner information present in the text area.
5	To save the new information, click **Save**.
6	Click **OK**. The configuration is saved on the Call Server.
7	Logout of Element Manager and the EM login page is displayed with the updated banner information.

--End--

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Support

Contents

This section contains information on the following topics:

“Introduction” (page 345)

“Help” (page 345)

“Release Notes” (page 346)

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 217 "Help Web page" (page 346) opens.

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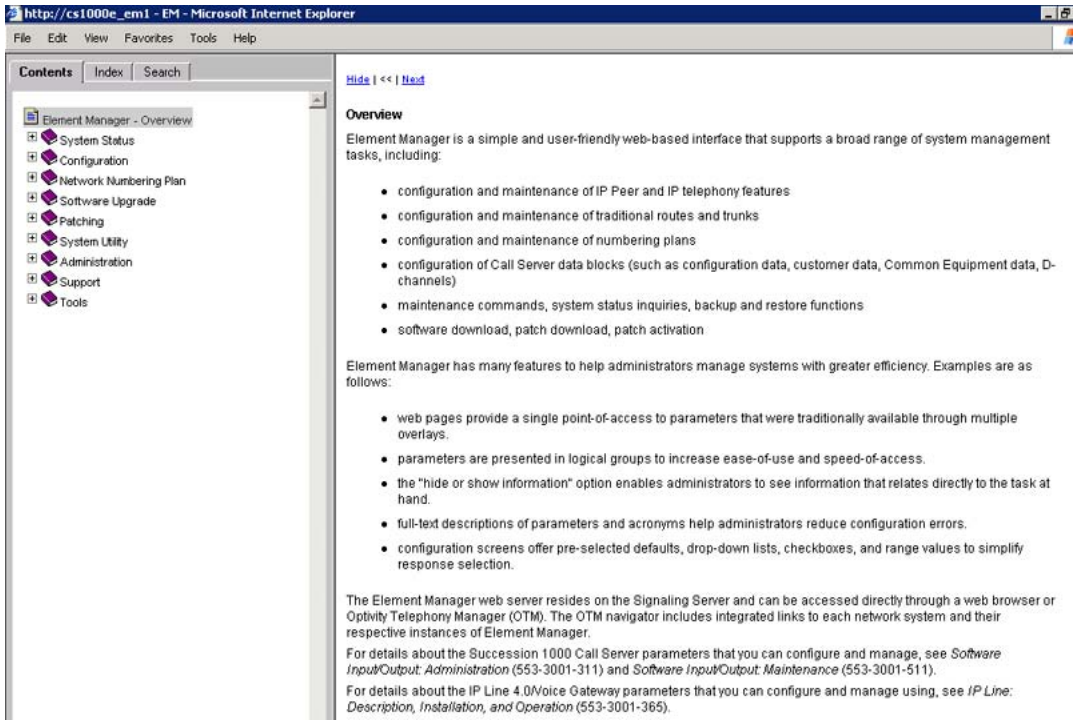
Figure 217
Help Web page



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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Nortel Communication Server 1000

Element Manager System Reference — Administration

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