Nortel Communication Server 1000

Nortel Communication Server 1000 Release 4.5

Communication Server 1000S
Upgrade Procedures

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Revision history

August 2005

Standard 3.00. This document is up-issued for Communication Server 1000 Release 4.5.

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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: *Upgrades* (553-3023-258)

Contents

List of procedures

About this document

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

Subject

This document explains how to upgrade a Communication Server 1000S (CS 1000S) system to Nortel Communication Server Release 4.5 software.

This document does not explain how to add equipment, such as additional Voice Gateway Media Cards. If the upgrade involves adding equipment, complete the upgrade as described in this guide and then refer to *Communication Server 1000S: Installation and Configuration* (553-3031-210) to add equipment.

Note on legacy products and releases

This NTP contains information about systems, components, and features that are compatible with Nortel Communication Server 1000 Release 4.5 software. For more information on legacy products and releases, click the **Technical Documentation** link under **Support** on the Nortel home page:

www.nortel.com/

Applicable systems

This document applies to the Communication Server 1000S (CS 1000S) system.

> *Note:* When upgrading software, memory upgrades may be required on the Signaling Server, the Call Server, or both.

Intended audience

This guide is intended for system installers and administrators with a strong understanding of CS 1000S equipment and operation. Contact Nortel Training Centers for information on installation courses.

Conventions

In this document, the CS 1000S system is referred to generically as "system."

Related information

This section lists information sources that relate to this document.

NTPs

The following NTPs are referenced in this document:

- *Converging the Data Network with VoIP* (553-3001-160)

- *Signaling Server: Installation and Configuration* (553-3001-212)

- *IP Peer Networking: Installation and Configuration* (553-3001-213)

- *Branch Office: Installation and Configuration* (553-3001-214)

- *Optivity Telephony Manager: Installation and Configuration* (553-3001-230)

- *Optivity Telephony Manager: System Administration* (553-3001-330)

- *Element Manager: System Administration* (553-3001-332)

- *IP Line: Description, Installation, and Operation* (553-3001-365)

- *IP Phones: Description, Installation, and Operation* (553-3001-368)

- *Communication Server 1000S: Overview* (553-3031-010)

- *Communication Server 1000S: Planning and Engineering* (553-3031-120)

- *Communication Server 1000S: Installation and Configuration* (553-3031-210)

Online

To access Nortel documentation online, click the **Technical Documentation**
link under **Support** on the Nortel home page:

www.nortel.com/

CD-ROM

To obtain Nortel documentation on CD-ROM, contact your Nortel customer
representative.

Technical support

For technical support contact information, see "Technical Assistance service"
on page 117.

Overview

Contents

This section contains information on the following topics:

References

To plan the network, refer to *Communication Server 1000S: Planning and Engineering* (553-3031-120) and *Converging the Data Network with VoIP* (553-3001-160).

To read about installing, configuring, and managing Voice Gateway Media Cards and IP Phones, refer to *IP Line: Description, Installation, and Operation* (553-3001-365) and *IP Phones: Description, Installation, and Operation* (553-3001-368).

For detailed information about installing and configuring new components, refer to *Communication Server 1000S: Installation and Configuration* (553-3031-210).

To read about virtual trunking, the H.323 Gatekeeper, and the Network Routing Service, refer to *IP Peer Networking: Installation and Configuration* (553-3001-213).

Hardware and software specifications

Table 1 lists the hardware software components required to upgrade to CS 1000 Release 4.5.

Note: The information in Table 1 was valid as of date of publication. However, before you begin the upgrade, check the latest General Release Bulletin, Product Bulletins, and the Nortel Software Download web site to confirm that you have the latest versions. In particular, if your upgrade package was shipped some weeks before you begin to perform the upgrade, check the Nortel Software Download web site, in case there has been a maintenance up-issue in the interim.

Table 1
CS 1000 Release 4.5 (Part 1 of 2)

Item	Version
Call Server	X21 Release 4.50
Signaling Server (see note below)	FW shipped with CS 1000 Release 4.5
IP Line application (see note below)	IPL 4.00
IP Trunk application	IPT 3.01
Optivity Telephony Manager	OTM 2.2
Media Card firmware (8051XA Controller)	FW shipped with CS 1000 Release 4.5
IP Phone 2210	FW shipped with CS 1000 Release 4.5
IP Phone 2001	FW shipped with CS 1000 Release 4.5
IP Phone 2002	FW shipped with CS 1000 Release 4.5

Table 1
CS 1000 Release 4.5 (Part 2 of 2)

Item	Version
IP Phone 2004	FW shipped with CS 1000 Release 4.5
IP Softphone 2050	FW shipped with CS 1000 Release 4.5
Web browser	Microsoft Internet Explorer v.6.0.2600 or later
	Other web browsers (such as Netscape Navigator) are *not supported*.
Note: The Signaling Server IP Line Terminal Proxy Server (LTPS), Gatekeeper, H.323 Gateway, SIP Gateway, Element Manager, IP Line loadware, and IP Phone firmware are contained on the Signaling Server CD-ROM.	

IP Peer Networking overview

Communication Server 1000 Release 4.5 supports IP Peer Networking.
IP Peer Networking enables the customer to distribute the functionality of the
CS 1000 systems over a Wide Area Network (WAN), using either standard
H.323 Gateways, Session Initiation Protocol (SIP) Gateways, or Nortel IP
Gateways (Nortel Signaling Server).

Key advantages of IP Peer Networking are as follows:

- Provides global coverage of line and trunk interfaces.

- Enables the networking of multiple systems across an IP network.

- Enables the customer to provision IP Phones anywhere on the connected
  network (LAN/MAN/WAN) and also enables them to provide
  LAN-connected modules (such as a router, Layer 2 switch, Layer 3
  switch, bridge, or hub).

- Enables the CS 1000 systems to provide an industry-leading PBX feature
  set on an IP PBX that can be distributed throughout a customer's IP
  network.

- Consolidates voice and data traffic on a single Quality of Service (QoS)-managed network. Network-wide feature transparency is provided using the Nortel Meridian Customer Defined Network (MCDN) protocol.

- Enables Call Servers to work together in a network, over IP facilities, without using circuit switching.

  IP Peer Networking uses direct IP media paths for connections that involve two IP devices. Media streams route directly between the IP Phones and Gateways over the IP network, using Virtual Trunks. This minimizes voice quality issues caused by delay and transcoding between circuit-switched voice and IP packets.

IP Peer Networking uses an H.323 Gatekeeper or SIP Redirect Server to simplify the configuration of IP component addressing. The H.323 Gatekeeper or SIP Redirect Server (optionally redundant) manages a centralized numbering plan for the network.

A existing system must be upgraded with the CS 1000 Release 4.5 for IP Peer Networking, and a Signaling Server must also be installed and configured to provide the H.323 and SIP signaling for Virtual Trunks.

The Signaling Server is an industry-standard, PC-based server that provides a central processor to drive H.323 and SIP signaling for IP Phones and IP Peer Networking. For more information about the Signaling Server, see *Signaling Server: Installation and Configuration* (553-3001-212).

CS 1000 Release 4.5 supports Session Initiation Protocol (SIP) and the modified IP Peer Networking feature to achieve a direct SIP interface used to interwork with other SIP-enable Nortel products such as Multimedia Communication Server (MCS) 5100.

For more detailed IP Peer Networking information, see *IP Peer Networking: Installation and Configuration* (553-3001-213).

Upgrading the Signaling Server

To upgrade the Signaling Server to Communication Server 1000 Release 4.5, see *Signaling Server: Installation and Configuration* (553-3001-212).

H.323 Gatekeeper database migration

To migrate an H.323 Gatekeeper database to a Communication Server 1000 (CS 1000) Release 4.5 Network Routing Service (NRS) database, see *Signaling Server: Installation and Configuration* (553-3001-212).

Optivity Telephony Manager 2.2 (OTM 2.2)

The OTM 2.2 application can be used to manage a network-wide view of all telephony equipment. Network management tools allow network-level views and navigation of elements within the network. A Media Gateway 1000S (MG 1000S) and a Media Gateway 1000B (MG 1000B) can be added to a network through OTM's **System Properties Network** tab. For more information about OTM, refer to *Optivity Telephony Manager: System Administration* (553-3001-330).

Web-based management tools

CS 1000S simplifies overall network management through the following web-based management enhancements:

- Support for element-level configuration and maintenance.

- Support for network-wide functions.

- Support for web-based station administration.

- Better integration with Nortel Messaging Server 500 management.

Network-level tools

Network-level tools in the CS 1000S simplify the process of moving users within the network. They also consolidate billing and directory information for network calls.

For more information, see *Optivity Telephony Manager: Installation and Configuration* (553-3001-230) or *Communication Server 1000S: Overview* (553-3031-010). For more information about retrieving Call Detail Recording records, see *Communication Server 1000S: Installation and Configuration* (553-3031-210).

Passwords

Two login passwords are key to the upgrade process:

1   PWD1

2   Limited Access Password (LAPW).

PWD1

PWD1 is the central login defined at the CS 1000S Call Server. If the system is fully functional (that is, the connection is active) between the Call Server, Signaling Server, MG 1000S, and Voice Gateway Media Cards, the PWD1 login grants access to all Command Line Interfaces (CLIs) and Element Manager. If the link is not active, the specific login configured for each component must be used.

LAPW

Limited Access Password (LAPW) login can be configured on the Call Server to provide limited access to specified overlays. LAPWs can be used to log into the Call Server or to Element Manager. For more information, see *System Management* (553-3001-300).

Components involved in upgrades

The following components are included in any upgrade:

•   Call Server and MG 1000S software

•   Signaling Server

•   Voice Gateway Media Card loadware

•   Voice Gateway Media Card firmware

•   IP Phone firmware

Note: The IP daughterboard software and BootROM are automatically upgraded with the Call Server or MG 1000S system software.

Estimating installation time

When all equipment and software is available, Nortel recommends planning a two to four hour period in which to perform the upgrade. Service interruptions occur during this period.

System expansions and additional installations require additional time. See *Communication Server 1000S: Installation and Configuration* (553-3031-210) for details.

Implementing IP Peer Networking also requires additional time beyond that of an upgrade. It can be performed after completing a standalone configuration upgrade. It does not require the interruption of call processing. See *IP Peer Networking: Installation and Configuration* (553-3001-213) for details.

After upgrading the Call Server and MG 1000S and running a few basic system tests (such as performing calls on the IP Phones), optionally split the system deployment team in two: one group can concentrate on deploying new IP Phones in the organization, while the other group can perform IP telephony upgrade configuration. This method results in a more efficient system installation or upgrade.

Upgrade and installation times depend on the following criteria:

- number and availability of technicians

- familiarity with CS 1000S

- physical location of hardware components

- interoperability products (Nortel Messaging Server 500, Symposium, OTM, Meridian 1)

- unit testing and system testing

- unforeseen issues

Upgrade a CS 1000S system to CS 1000 Release 4.5 software

This section summarizes the steps required to upgrade a CS 1000S system to CS 1000 Release 4.5 software.

WARNING

Do not format the Software Delivery card through Windows 2000. The file allocation size does not match that of the Voice Gateway Media Card. Use a different version of DOS or another platform to format the Software Delivery card.

The following steps are required to upgrade a CS 1000S system to CS 1000 Release 4.5:

1   If the necessary upgrade software has not yet been obtained, refer to "Obtain software" on page 101.

2   Complete the "First steps" on page 25.

3   Upgrade the Signaling Server software using the Install Tool. See "Things to know" on page 31.

4   Upgrade the Voice Gateway Media Cards. See "Upgrading Voice Gateway Media Card loadware" on page 43.

5   Upgrade the IP Phones. See "Distributing IP Phone firmware" on page 52.

6   Upgrade the Call Server and MG 1000S.

  a   Perform a data dump and back up the existing customer database to a Software Delivery card. This backs up the IP telephony node. (See "Archive the database" on page 84)

  b   Upgrade the Call Server ("Upgrade the Call Server software" on page 61.) Note the pertinent information in "Centralized Software Upgrade" on page 93 about automatic upgrade and BootROM.

  c   Upgrade the MG 1000S using "Upgrade the MG 1000S" on page 75 or "Centralized Software Upgrade" on page 93.

  d   Perform a data dump to save the upgraded system database on the Call Server to the MG 1000S.

  e   At this stage, perform "Test the upgrade" on page 78.

First steps

Contents

This section contains information on the following topics:

Introduction

This section summarizes the steps to prepare for and initiate an upgrade of the CS 1000 Release 4.5 software.

Note: Data backup and restore is discussed in "Archive the database" on page 84 and "Restore a database" on page 87 respectively, in case there are difficulties with the upgrade and you need to revert to the old configuration.

To install new hardware in a system expansion, refer to *Communication Server 1000S: Installation and Configuration* (553-3031-210).

As a general rule, follow the order of the chapters.

Procedure 1
First steps

1   Read the safety instructions.

2   Review the "Data checklist" on page 28.

3   Complete the "Readiness checklist" on page 29.

4   Verify compliance with system and site requirements.

5   Verify compliance with network requirements for system expansions (adding a MG 1000S, IP Phones, new sites). Refer to *Converging the Data Network with VoIP* (553-3001-160).

6   Connect a three-port SDI cable to the DB-9 male SDI port on the back of the Call Server (see Figure 1 on page 26). In the case of a MG 1000S upgrade, connect the three-port SDI cable to DB-9 port on the back of the MG 1000S (Figure 2 on page 27). Connect the serial cable to connector 0.

Figure 1
Back of Call Server
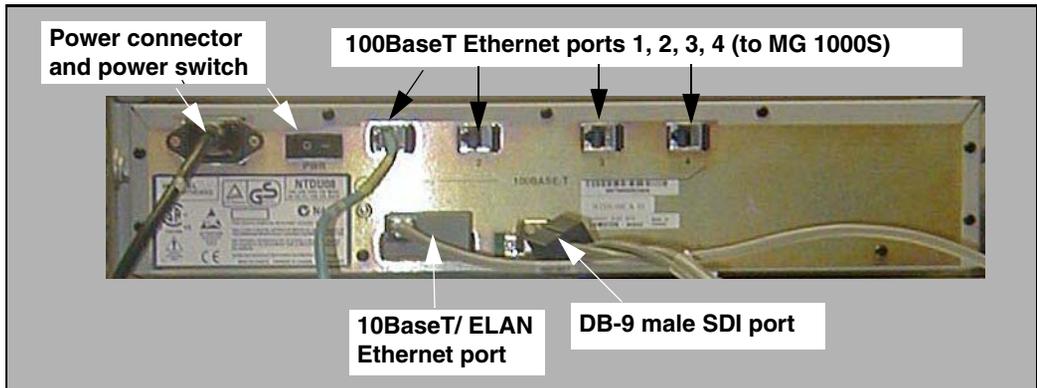
WARNING

On the MG 1000S, do not connect a serial port to the AUX connector. It can damage the port.

Figure 2
Back of MG 1000S
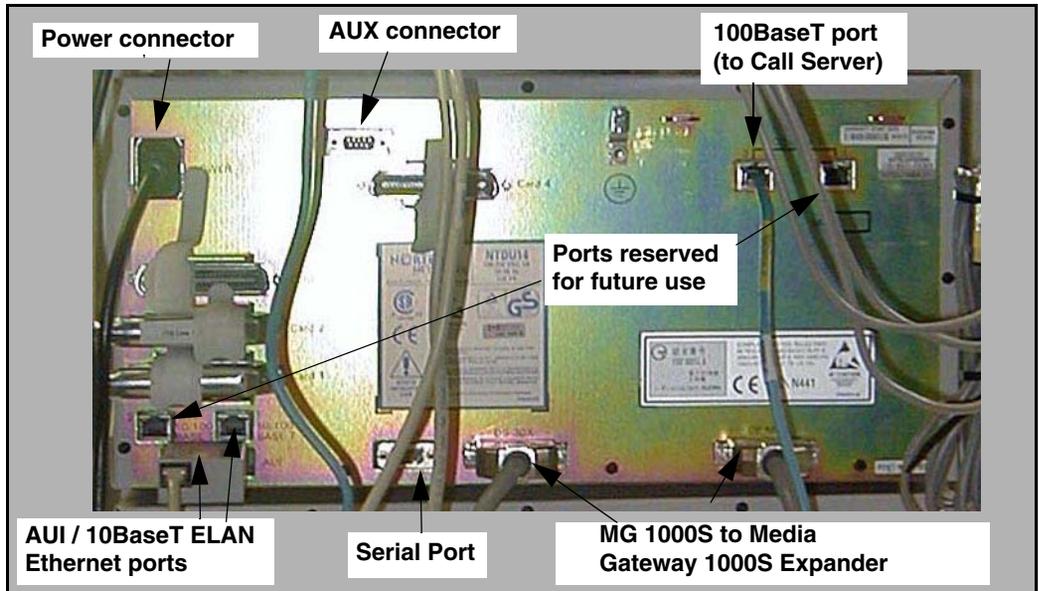
7 Perform a data dump.

> **WARNING**
>
> Both before and after an upgrade, perform a data dump on the Call Server. See Procedure 11 "Performing a data dump on the Call Server" on page 62.

8 Archive the system on the Call Server and save it to a Software Delivery card. Refer to Procedure 18 "Archiving the database" on page 84. MG 1000S do not require this step as a data dump synchronizes the Call Server database to the MG 1000S.

——————————— **End of Procedure** ———————————

Keycodes

During an installation or upgrade, valid keycodes are required. A security keycode protects the installation of software, feature set (packages), License parameters, and the system ID. A security device validates the keycodes. The installation does not continue unless the correct keycodes are entered.

If the entered keycode does not validate, take one of the following actions:

- Check the keycodes and make sure the correct keycodes have been entered.

- Check the software and make sure that it is the correct version for this site.

- Check the feature set and make sure the correct data has been entered.

- Check the License parameters and make sure the correct data has been entered.

- End the installation and contact your Nortel service team.

The system limits the validation of keycodes to three consecutive attempts. After the third unsuccessful attempt, the Software Installation Program returns to the main menu. Any data entered during the session is lost.

Note: If an invalid keycode is entered, the software and databases on the present system are not affected.

When the keycode validation passes, the software is installed on the system.

Data checklist

Data network planning is crucial to obtain good voice quality. For important information regarding the data and IP telephony network configuration needs, consult *Converging the Data Network with VoIP* (553-3001-160) and *IP Peer Networking: Installation and Configuration* (553-3001-213).

The following data is required:

- **IP addresses for system components**.
  Refer to *Converging the Data Network with VoIP* (553-3001-160) and
  Communication Server 1000S: Installation and Configuration
  (553-3031-210) for more information.

- **IP addresses for the IP Phones**.
  DHCP can be used to distribute IP addresses and network information to
  the IP Phones. Refer to *IP Line: Description, Installation, and Operation*
  (553-3001-365) for more detail.

- **Trunk, routing, and network zone data** (numbering plan, standard and
  IP trunks, Network Routing Service data).
  Refer to *IP Peer Networking: Installation and Configuration*
  (553-3001-213) for more detail.

- **System, telephony and voice data** (customer configuration, virtual loop
  and TN assignments, feature data).

Readiness checklist

As part of the upgrade process, complete the Upgrade readiness checklist.

Table 2
Upgrade readiness checklist (Part 1 of 2)

Action	✓
Make sure that all the software that was ordered has been received.	
Provide a PC or workstation that serves as a maintenance terminal to be used with the Call Server, MG 1000S, Signaling Server, and Voice Gateway Media Cards. The terminal must provide VT100 emulation at 9600 and 19200 bps. A null modem cable (DTE–DTE) with appropriate serial connectors is also required.	

Table 2
Upgrade readiness checklist (Part 2 of 2)

Action	✓
Provide a PC or workstation that runs the web browser for Element Manager. The web browser can access the Element Manager web server on either the ELAN Network or TLAN network. Use Microsoft Internet Explorer 6.x or higher. Make sure that the cache settings are enabled to check for new pages every time, and to empty the cache when browser is closed.	
Prepare the network data, such as new IP addresses, as suggested in "Data checklist" on page 28 and in: • *Converging the Data Network with VoIP* (553-3001-160) • *IP Peer Networking: Installation and Configuration* (553-3001-213) • *Communication Server 1000S: Installation and Configuration* (553-3031-210)	
Obtain the correct keycodes for the software.	

Upgrading Voice Gateway Media Card and IP Phone loadware and firmware

Contents

This section contains information on the following topics:

Things to know

During the Signaling Server upgrade, the Install Tool copied Voice Gateway Media Card loadware files and IP Phone firmware files to the Signaling Server. Element Manager uses these files to upgrade the Voice Gateway Media Cards and to distribute the IP Phone firmware files to the other components in the IP telephony nodes. This allows administrators to then upgrade the firmware on the IP Phones.

For more information about telephone operation during firmware download, see *IP Line: Description, Installation, and Operation* (553-3001-365) or *Branch Office: Installation and Configuration* (553-3001-214).

To upgrade loadware and software, be sure to have the Signaling Server CD-ROM from the Upgrades kit on hand.

If an Upgrade kit was not purchased, refer to *Signaling Server: Installation and Configuration* (553-3001-212) for information on how to create a Signaling Server CD-ROM.

Alternatively, download the software from the Nortel web site and upload new loadware and firmware from the management workstation to Element Manager. Refer to "Obtain and upload loadware and firmware files" on .

Task summary

To upgrade loadware and software, perform the following tasks:

1   Verify the Voice Gateway Media Card loadware and IP Phone firmware versions.

2   Upgrade the software on all of the Voice Gateway Media Cards from IP Line 3.x to IP Line 4.0.

3   Distribute the IP Phone firmware to all components (Signaling Server and Voice Gateway Media Cards) in an IP telephony node.

Verify current loadware and firmware versions

Write down the loadware and firmware version for each Voice Gateway Media Card. Compare the loadware and firmware version with the latest recommended software release on the Nortel web site.

If the card's software and firmware are not up-to-date, upgrade the Voice Gateway Media Card with the latest software and firmware files.

Verify Voice Gateway Media Card loadware version

To check the version of loadware on the Voice Gateway Media Card, follow the steps in Procedure 2, Procedure 3, or Procedure 4 on .

Procedure 2
Verifying loadware version during boot

1 Attach a serial cable from the workstation to the maintenance port of the Voice Gateway Media Card.

2 Reset the card.

3 Observe the boot sequence and look for a software version message similar to the following example:

```
Software Version:
SSE-3.60.10_IPL-3.10.70_08_23_2003.2099
```

In this case, the software version is IP Line 3.10.70.

———————————— **End of Procedure** ————————————

Procedure 3
Verifying the loadware version through Element Manager

1 Click **Software Upgrade** from the Element Manager Navigation Tree.

2 Click **Voice Gateway Media Card (LW)** from the expanded Software Upgrade menu. The **Voice Gateway Media Card (LW) Upgrade** page appears. See Figure 3 on .

Figure 3
Voice Gateway Media Card (LW) Upgrade
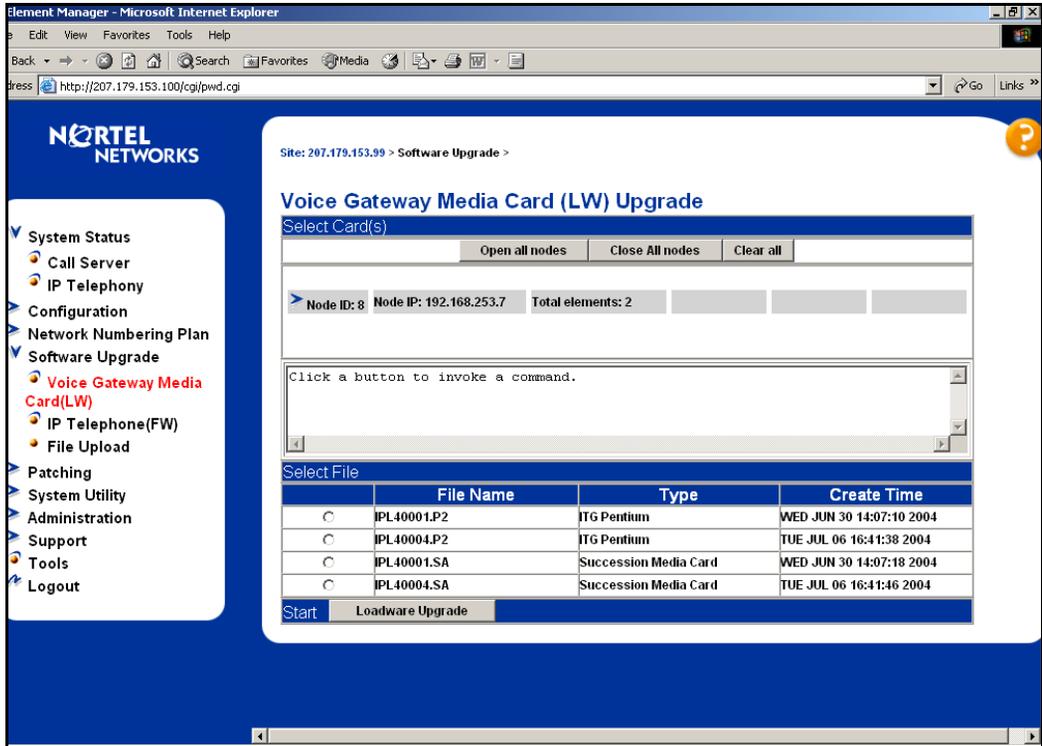
3   Expand a node and select a card in the node. See Figure 4.

Figure 4
LW Version
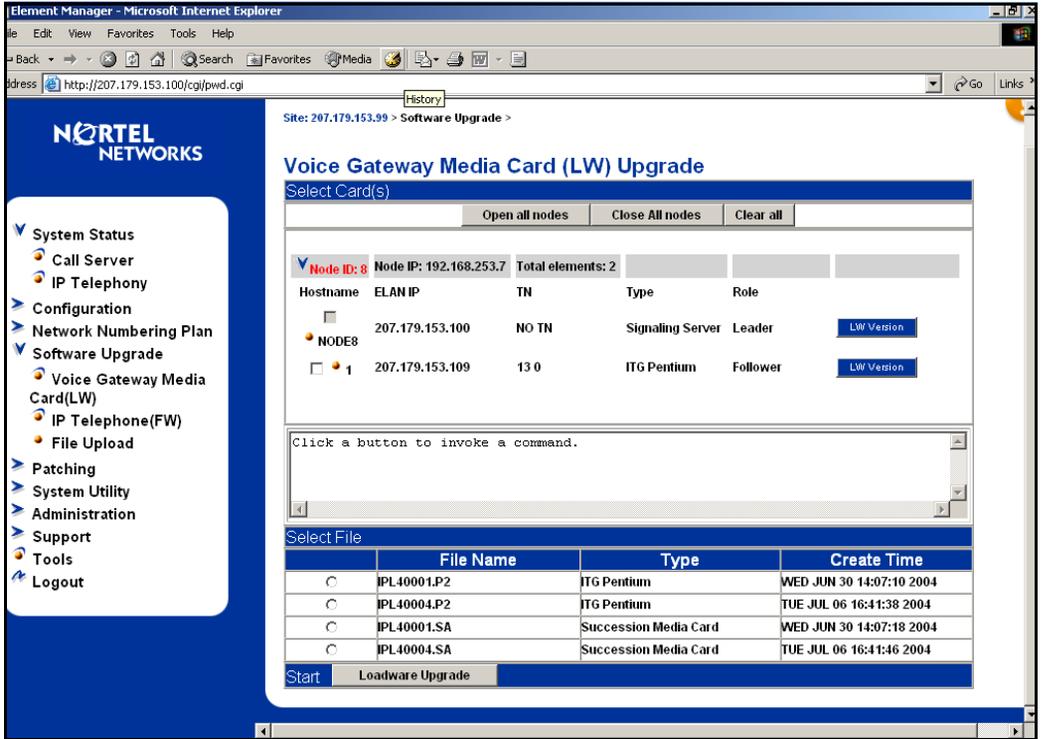
4   Click the **LWVersion** button located to the right of the card information.

The loadware version running on the card is displayed in the pane in the center of the Voice Gateway Media Card (LW) page, as shown in Figure 5 on .

Figure 5
Loadware version displayed
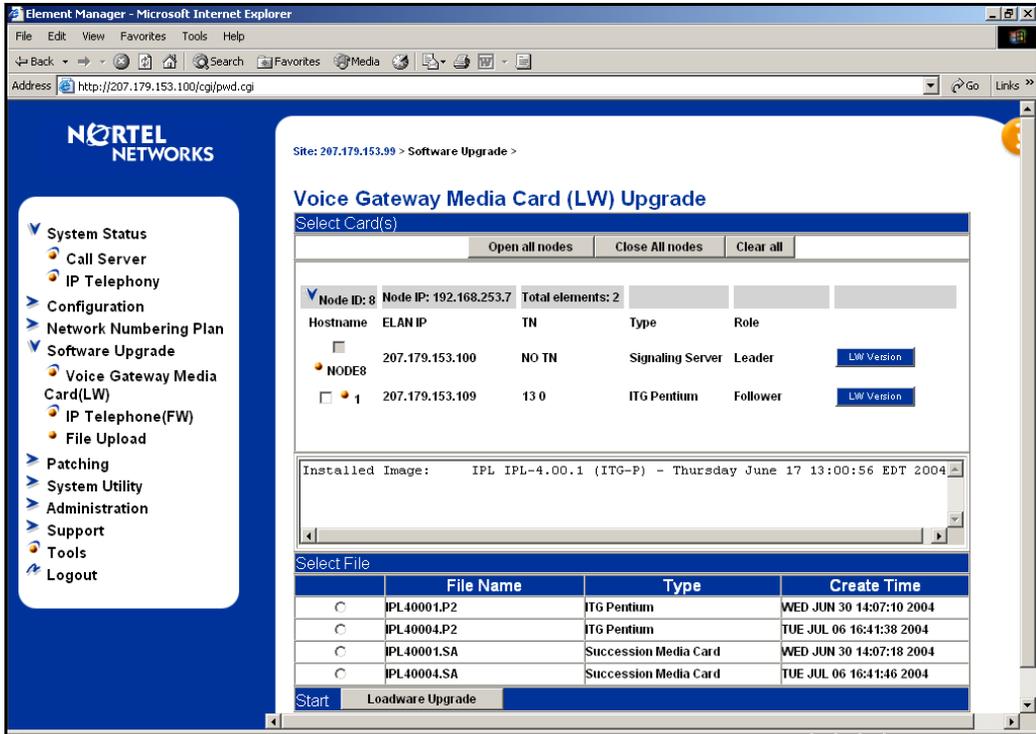
5 Note the loadware version for the card.

———————————— **End of Procedure** ————————————

Procedure 4
Verifying the loadware version through the CLI

Detailed procedures can be found in *IP Line: Description, Installation, and Operation* (553-3001-365).

1 Telnet to a Voice Gateway Media Card.

2 Log in with a user name and password.

3 View the login banner, and look for a software version message similar to the following example:

```
Software Version:
SSE-3.60.10_IPL-3.10.10_08_23_2003.2099
```

In this case, the software version is IP Line 3.10.70.

4 Alternatively, view the syslog and look for a software version message.

Note: The Voice Gateway Media Card syslog is also available for viewing from Element Manager.

———————— **End of Procedure** ————————

Verify the IP Phone firmware version

To determine the version of the IP Phone firmware that is stored on the Voice Gateway Media Card, follow the steps in Procedure 5. To view the firmware version currently running on the IP Phones, use Procedure 6 on .

Procedure 5
Verifying the IP Phone firmware version on a Voice Gateway Media Card

1 Click **Software Upgrade** from the Element Manager Navigation Tree.

2 Click **IP Telephone (FW)** from the expanded Software Version menu. The **IP Telephone (FW) Upgrade** page appears. See Figure 6 on . At the top of the screen, there are two radio buttons:

   a. Distribute to Node - disables all components which are not Leaders. Distribute to Node is the default since IP Line is responsible for distributing from the Leader to all Followers in a node.

   b. Distribute to Elements - enables all the components in case it is necessary to distribute the firmware to some components which have failed.

Figure 6
IP Telephone (FW)
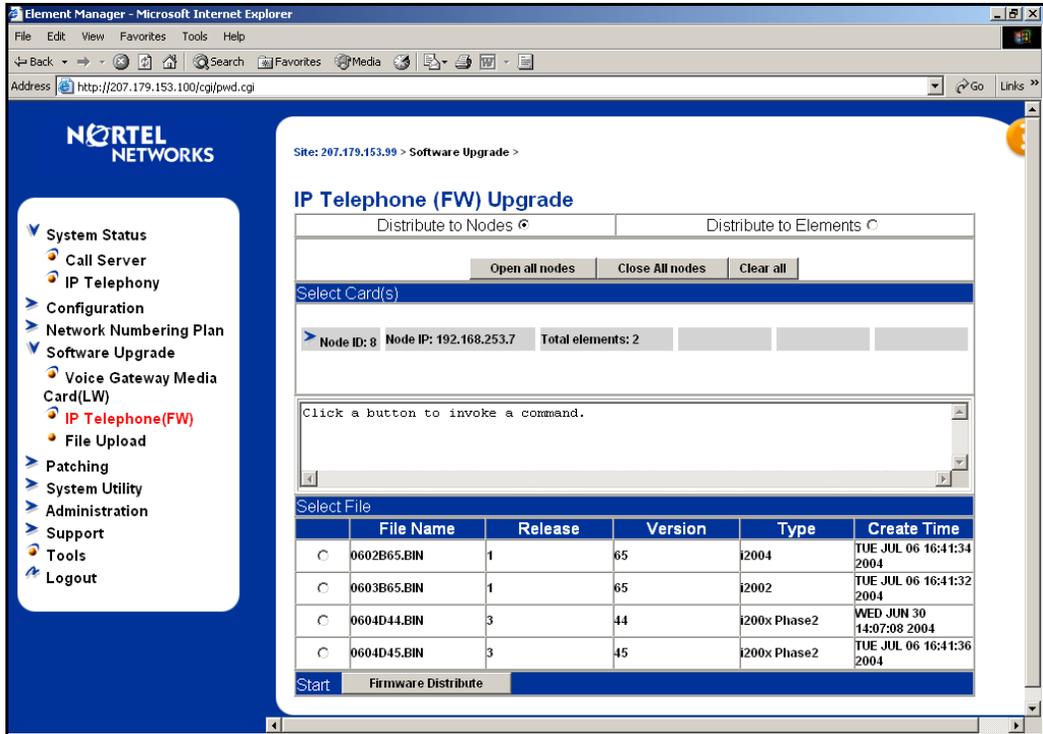
3   Expand a node and select a card. See Figure 7.

Figure 7
FWVersionShow
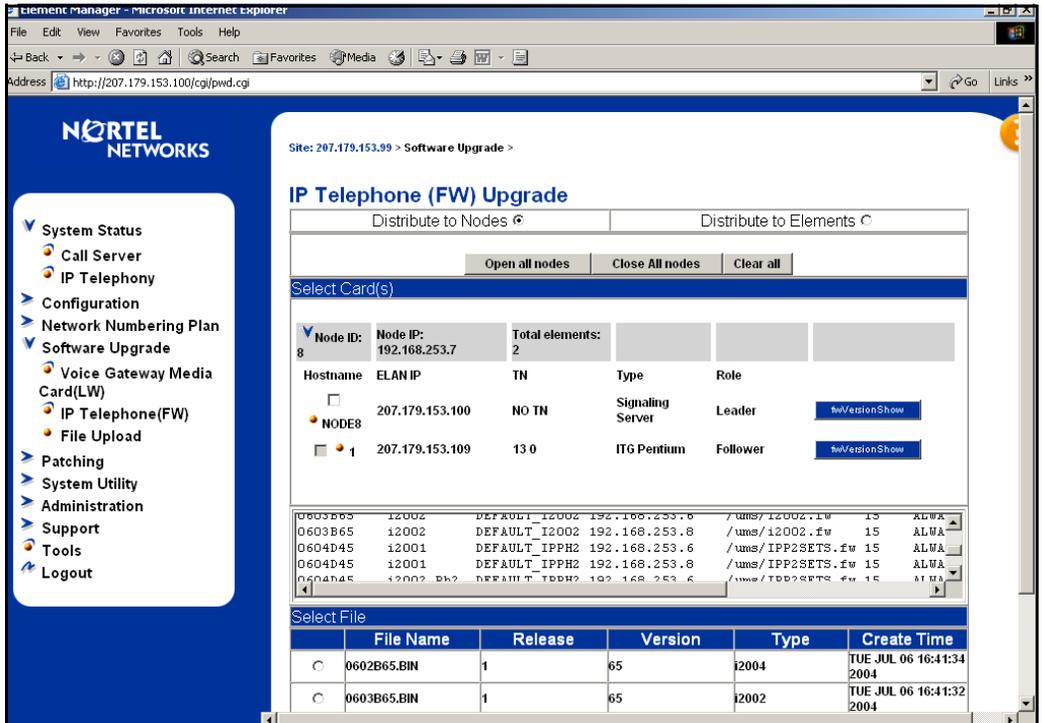
4   Click the **fmVersionShow** button located to the right of the card information. The firmware version running on the card is displayed in the pane in the center of the IP Telephone (FW) page.

5   Note the firmware version for the card.

———————————— **End of Procedure** ————————————

Procedure 6
Verifying firmware version on an IP Phone

An alternative method to verify IP Phone firmware is through the keypad and display interface.

1   Press the configuration key on the IP Phone (it looks like a small globe with arrows).

2   Press the down arrow key until the "Set Info" menu is reached. Press the Select key.

3   Press the down arrow key until the "FW Version" is displayed.

4   Press the Cancel key to exit each menu.

———————— **End of Procedure** ————————

Obtain and upload loadware and firmware files

This information is provided in the event that a Signaling Server Software CD-ROM is not available. It provides information on how to download the necessary files from the Nortel Software Download web site to a management workstation, and how to upload the Voice Gateway Media Card loadware and IP Phone upgrade firmware from the management workstation to the Signaling Server.

Refer to *Communication Server 1000E: Upgrade Procedures* (553-3041-258) for information on how to download the software to a management workstation.

Procedure 7 on describes how to upload the Voice Gateway Media Card loadware and IP Phone firmware from the management workstation to the Signaling Server. Firmware and loadware upgrade files come with the Signaling Server Software CD-ROM included in the Upgrade kit, or from the Nortel Software Download web site.

If the latest Voice Gateway Media Card loadware and IP Phone firmware files were copied from the CD to the Signaling Server hard drive during the Signaling Server installation, there is no need to follow Procedure 7. The files appear in the Element Manager **Software Version | Voice Gateway Media Card LW** and **Software Version | IP Telephone FW** pages. If the latest versions of the loadware and firmware are already installed on the Signaling

Server, then go to Procedure 8 "Upgrading Voice Gateway Media Card loadware" on .

Procedure 7
Obtaining and uploading loadware and firmware

To complete this procedure, use a management PC that is on the same network as the Signaling Server for Element Manager.

1   Obtain the latest software installation files for the Voice Gateway Media Card loadware and IP Phone firmware. Download the files from the Nortel Electronic Software Download site to the management PC, as described in *Communication Server 1000E: Upgrade Procedures* (553-3041-258).

2   Locate the saved files and double-click the *.zip file. The zipped file opens in a compression utility program and the decompressed files are listed.

    For Phase 1 IP Phone 2004, the IP Phone firmware files have the format '**0602BNN.BIN**'.

    For Phase 1 IP Phone 2002, the IP Phone firmware files have the format '**0603BNN.BIN**'.

    For Phase 2 IP Phones 2001, 2002 and 2004, the IP Phone firmware files have the format '**0604DNN.BIN**'.

    where:

        06 is the design site location code

        02 or 03 is the IP Phone type:

        B is the release: {B = 1, C = 2, D = 3 ...}

        xx is the firmware version

    The Voice Gateway Media Card loadware files have the format '**IPL310xx.p2**' and '**IPL310xx.sa**'.

3   Log into Element Manager.

4   Using **Software Upgrade | File upload** (see Figure 8 on), browse to the software files on the workstation and upload them to the Signaling Server.

    Initially, the Voice Gateway Media Card loadware and IP Phone firmware files are stored in the Signaling Server's `/u/fw` directory.

Figure 8
Upload firmware, software, and loadware
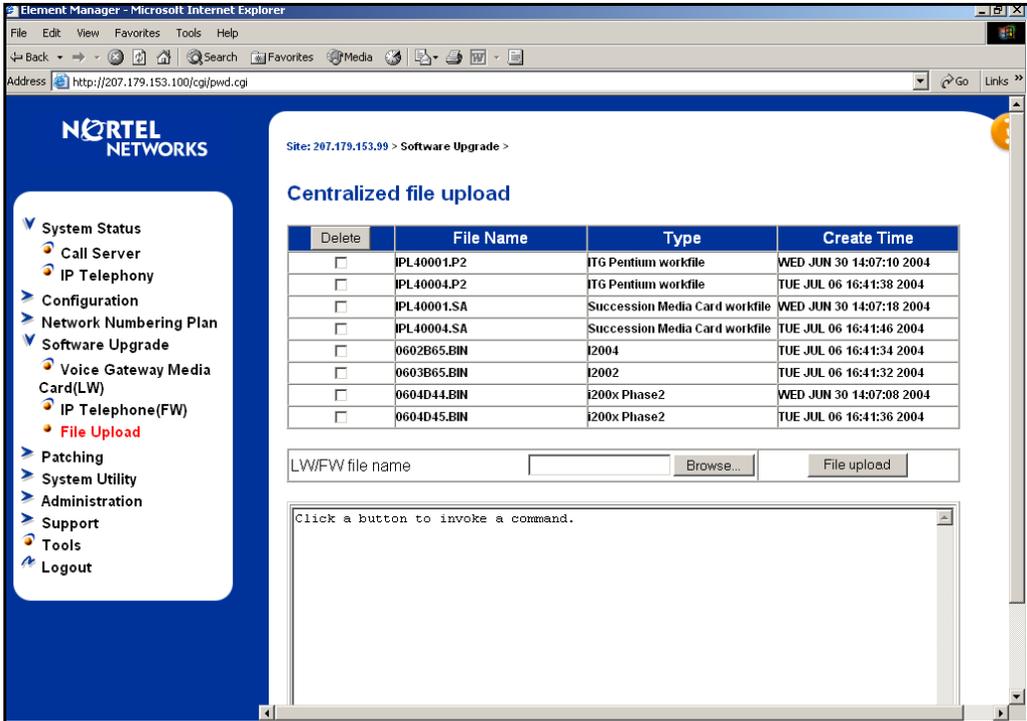
Note 1: After uploading the file to Element Manager, the file remains on this Signaling Server.

Note 2: If there is more than one Signaling Server, the software files uploaded to a specific Signaling Server are not copied to another Signaling Server. It is unnecessary to copy files to other node components, as having a Leader Signaling Server enables central management.

———————————— **End of Procedure** ————————————

Upgrade the Voice Gateway Media Card loadware

This section describes how to upgrade Voice Gateway Media Card loadware from 3.x to a higher version using Element Manager. The cards obtain their loadware from the Signaling Server.

Procedure 8
Upgrading Voice Gateway Media Card loadware

This procedure assumes the Voice Gateway Media Card upgrade loadware has already been uploaded to the Signaling Server. (See "Obtain and upload loadware and firmware files" on page 40.) Follow these steps to update the Voice Gateway Media Card loadware:

1   Log into Element Manager.

2   For the remote Voice Gateway Media Card upgrade, choose **Software Upgrade >Voice Gateway Media Card (LW)**. The application page appears as shown in Figure 9 on page 44.

Figure 9
Voice Gateway Media Card (LW) upgrade
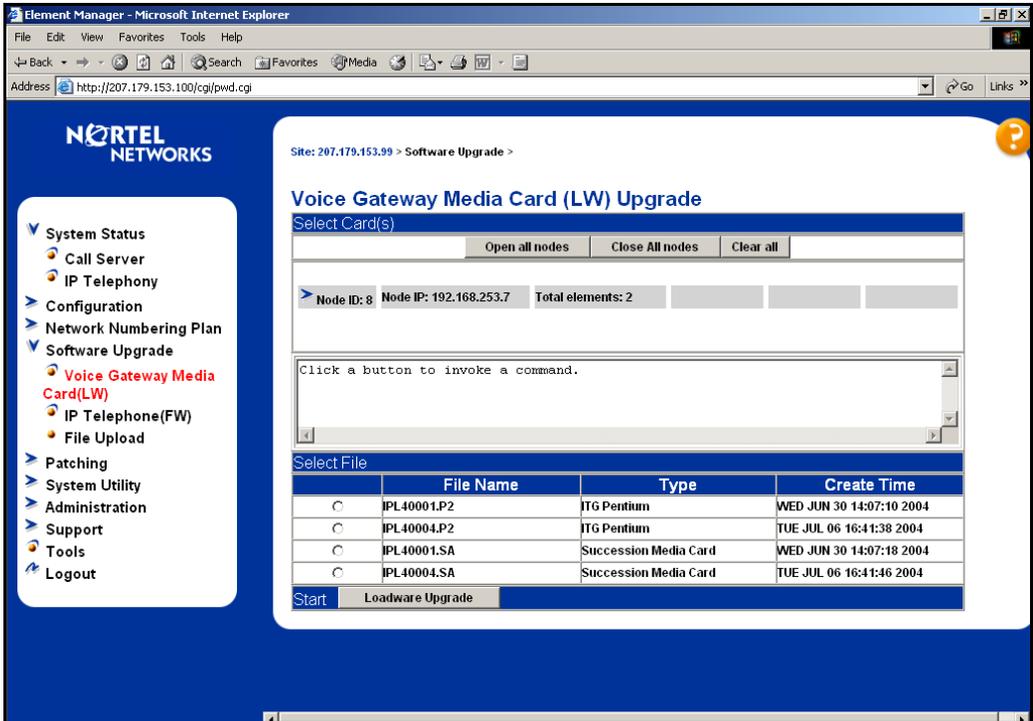
> *Note:* Since components can run different versions of loadware, click the
> **LW Version** button for a given element to obtain the current loadware
> version.

3 Select the loadware file of the Voice Gateway Media Card for upgrade.
The filename begins with "**IPL40**". A sample list of files available is shown
in Figure 9.

4 Open the node and select the Voice Gateway Media Cards to be
upgraded. Select the same type of Voice Gateway Media Card as the
loadware file. For instance:

    a.   If the loadware file has the extension ".p2", only select ITG-P cards to upgrade.

    b.   If the loadware file has the extension ".sa", only select Media Cards to upgrade.

Note: The maximum number of Voice Gateway Media Cards or other components that can be upgraded at a time is four, as all files are simultaneously transferred by FTP.

5   Click the "Loadware Upgrade" button on the bottom of the Voice Gateway Media Card (LW) Upgrade page. Click **OK** for the confirmation messages as shown in Figure 10.

A Loadware Upgrade Progress page is displayed, as shown in Figure 11 on page 46. When the loadware upgrade is complete, a completion message appears as shown in Figure 12 on page 46. Generally, it takes three minutes for each ITG-P 24-port card to upgrade, and one minute for each Media Card.

Figure 10
Work file
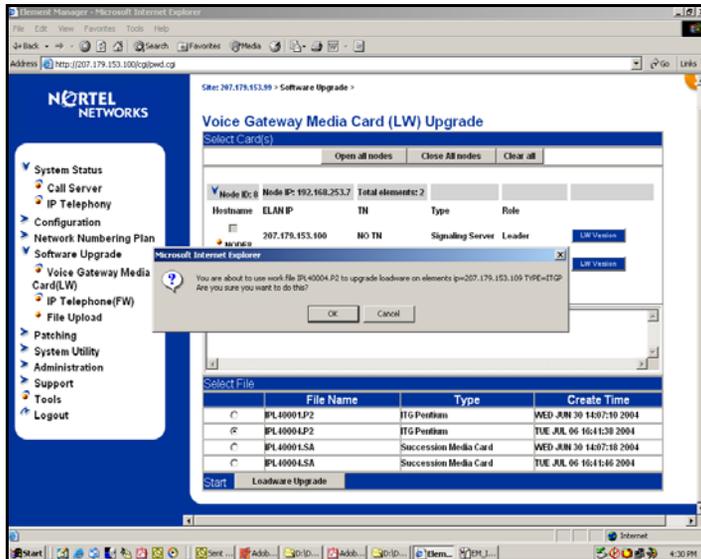
Figure 11
Loadware upgrade progress
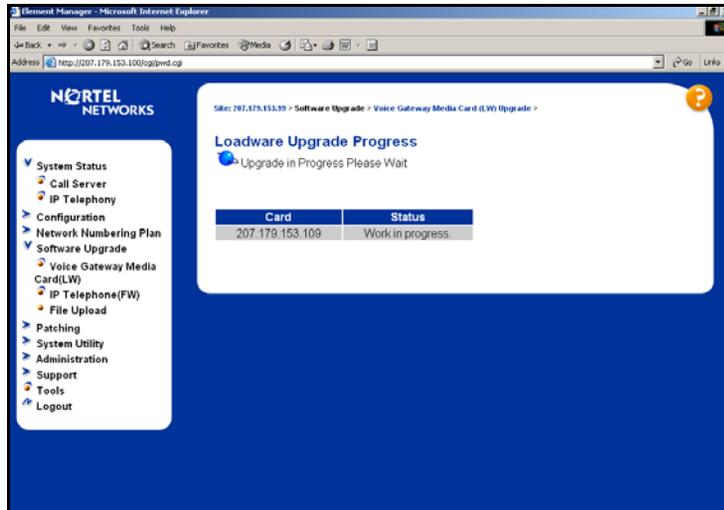
Figure 12
Loadware upgrade ended
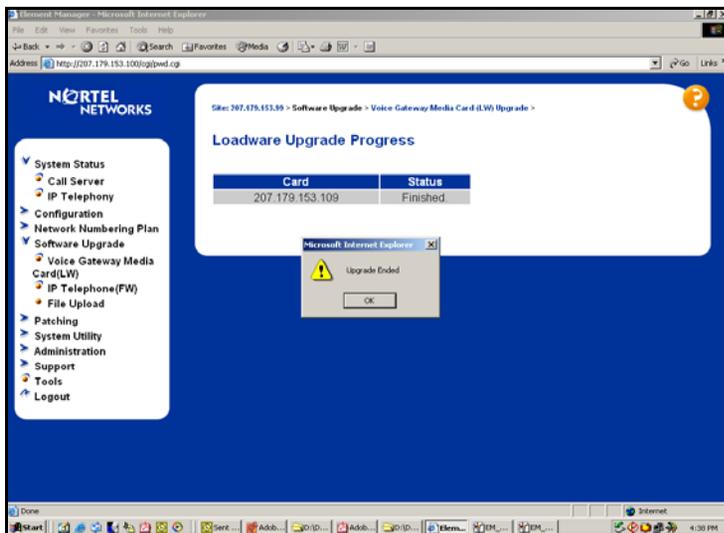
6   If the card did not successfully receive the loadware, return to step 2 on page 43. If the upgrade was successful, proceed to step 7.

7   Click **System Status | IP Telephony** and go to the IP Telephony Information page. See Figure 13. Click the node to expand it.

Figure 13
IP Telephony information
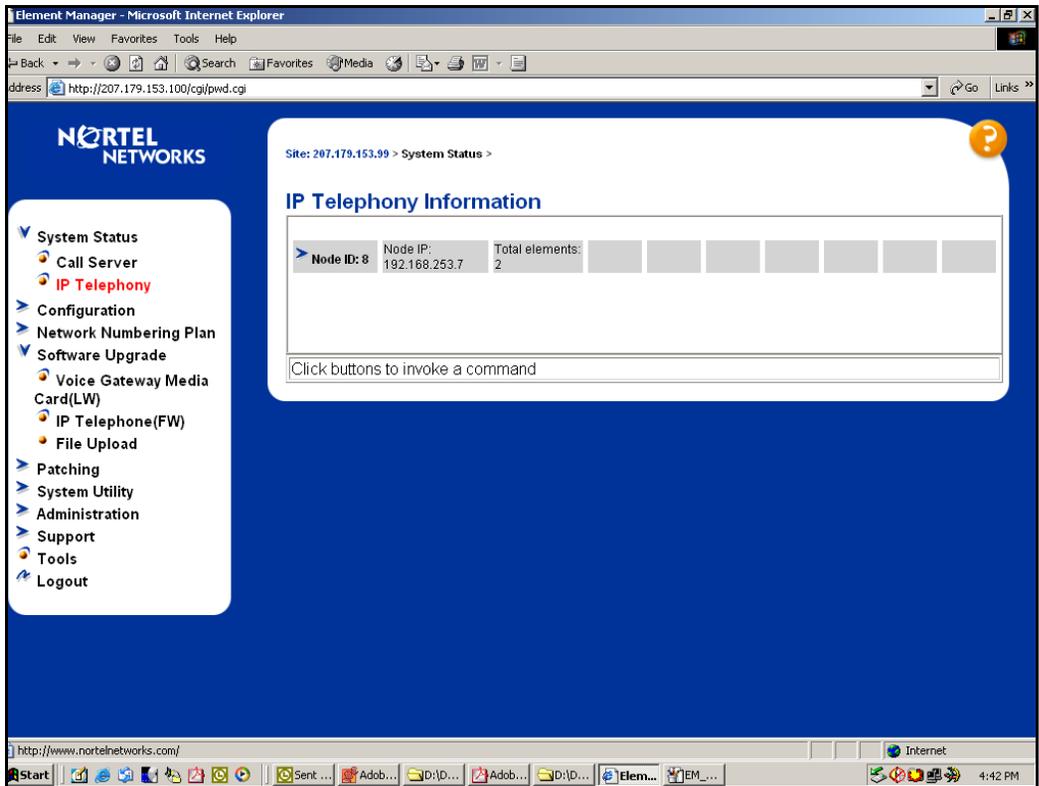
8   Click the **Status** button of the Voice Gateway Media Card to be rebooted. Make sure that the display in the window pane (result box) says:

xx.xxx.xxx.xxx: Disabled.

If this is not displayed, disable the Voice Gateway Media Card. Refer to *IP Line: Description, Installation, and Operation* (553-3001-365). Repeat step 6 again.

9   Reboot the card by clicking the **Reset** button for the Voice Gateway Media Card from the IP Telephony Information page (**System Status | IP Telephony**). See Figure 13 on page 47.

10   Look at the faceplate display to determine when the card is finished booting.

11   Click the **Status** button for the Voice Gateway Media Card on the IP Telephony Information page. The message in the window pane (result box) should say:

     xx.xxx.xxx.xxx : Disabled.

12   Enable the Voice Gateway Media Card. Refer to *IP Line: Description, Installation, and Operation* (553-3001-365).

13   Click the **Status** button for the Voice Gateway Media Card on the IP Telephony Information page and make sure that the message in the window pane (result box) says:

     xx.xxx.xxx.xxx: Enabled.

14   Repeat from step 7 on page 47 to step 13 for each Voice Gateway Media Card that received the loadware upgrade. After the card reboots, transfer IP Telephony node information using Element Manager. Refer to *IP Line: Description, Installation, and Operation* (553-3001-365).

——————————— **End of Procedure** ———————————

Upgrade loadware using a Software Delivery card

An alternative procedure to using Element Manager for the Voice Gateway Media Card loadware upgrade is using the advanced Command Line Interface (CLI) procedure to upload the files from a Software Delivery Card. For more detailed information, refer to *IP Line: Description, Installation, and Operation* (553-3001-365).

Follow the steps in Procedure 9 on page 49 to upgrade the loadware using a Software Delivery Card.

Procedure 9
Upgrading loadware using a Software Delivery card

This procedure assumes that the loadware was verified from the CLI as outlined in Procedure 2 on page 33, where a serial cable connects the Voice Gateway Media Card to a workstation.

1 Download the loadware, as described in *Communication Server 1000E: Upgrade Procedures* (553-3041-258). For a first-time Voice Gateway Media Card upgrade after a system upgrade, use the files that are present on the Signaling Server Software CD-ROM.

2 Format a Software Delivery card and save the relevant loadware files to the card. The Voice Gateway Media Card loadware files have the format '**IPL-----.p2**' for the double-slot ITG-P 24-port card and '**IPL-----.sa**' for the single-slot Media Card.

IMPORTANT!

Do not format the Software Delivery card using Windows 2000. The file allocation size does not match that of the Voice Gateway Media Card. Use a different version of DOS or another platform to format the Software Delivery card.

---

3 Reset the card.

4 Observe the boot sequence and enter **jkl** when prompted. Be alert as this prompt times out within a few seconds.

5 Insert the Software Delivery card into the Voice Gateway Media Card slot.

6 Enter the command:

```
copy "/A:/<filename>","/C:/exec"
```

where <filename> is the name of the file saved to the Software Delivery card in step 2.

7 Remove the Software Delivery card from the slot of the Voice Gateway Media Card.

8 Reset the card.

9   Watch the boot messages to confirm the loadware version. Check the release notes to confirm it is the initial version or later.

———————————————— **End of Procedure** ————————————————

Once the Voice Gateway Media Card loadware has been upgraded, verify whether or not the IP Phone firmware also requires an upgrade. Check the loadware release notes to determine which IP Phone firmware versions are compatible with the Voice Gateway Media Cards. If an upgrade is required, proceed to "Upgrade the IP Phone firmware".

Upgrade the IP Phone firmware

This section describes how to distribute IP Phone firmware to the Signaling Server(s) and Voice Gateway Media Cards through Element Manager. However, performing this procedure does not upgrade the IP Phones directly.

To receive the firmware that is distributed to the Signaling Server(s) and Voice Gateway Media Cards, the IP Phones must be reset. Once reset, they register with the TPS and obtain the latest firmware upgrade.

The IP Phones can be reset manually or using the **umsUpgradeAll** command through the CLI on the Signaling Server. The **UmsUpgradeAll** command updates the firmware on all phones registered to the TPS. It also redirects the Virtual Office IP Phones to their home TPS and the MG 1000B IP Phones to their MG 1000B TPS to obtain the firmware upgrade.

Note: When a firmware upgrade is required for a MG 1000B system, install the firmware to the MG 1000B TPS before the Main Office TPS. Refer to *Branch Office: Installation and Configuration* (553-3001-214) for more information.

UFTP

Previously, IP Phones on Communication Server (CS) 1000 and Meridian 1 systems had their firmware downloaded using Trivial File Transfer Protocol (TFTP). Firewalls often have their well-known TFTP port (port 69) disabled to maintain security. When port 69 is blocked, IP Phones cannot obtain firmware downloads. This situation prevents the IP Phone from registering and coming into service.

In order to eliminate the file transfer problem with the firewalls and TFTP, CS 1000 Release 4.5 implements a Unistim File Transfer Protocol (UFTP) download solution. UFTP shares the existing Unistim signaling port (5000) at the IP Phone and RUDP stream; it is a separate protocol on top of the RUDP layer.

UFTP enhances security, because it is a proprietary protocol, as opposed to TFTP which is an open protocol. It enables customers to improve their firewall security by closing port 69 to block TFPT in their firewall and policy-based switches and routers.

For the UFTP IP Phone firmware download to work, it is necessary to explicitly open port 5100 (Unistim signaling) and port 5105 (UFTP signaling).

UFTP uses the same IP Phone UDP signaling port (port 5000) as the Unistim messages currently use for the IP Phone messages. UFTP uses port 5105 as the UFTP server port to communicate between the IP Phone and the UFTP server. Both of these ports can be safety enabled by firewalls. See Table 3.

Table 3
Source/destination port usage on either side of the connection

Port	IP Phone signaling	IP Phone UFTP	UFTP Server
Source port	5000 (see note)	5000 (see note)	5105
Destination port	5100	5105	5000 (see note)

If the IP Phone is behind a Network Address Translation (NAT) device, then a different public signaling port is used. The public signaling port is assigned dynamically. See Figure 14 on .

Figure 14
Using NAT with UFTP
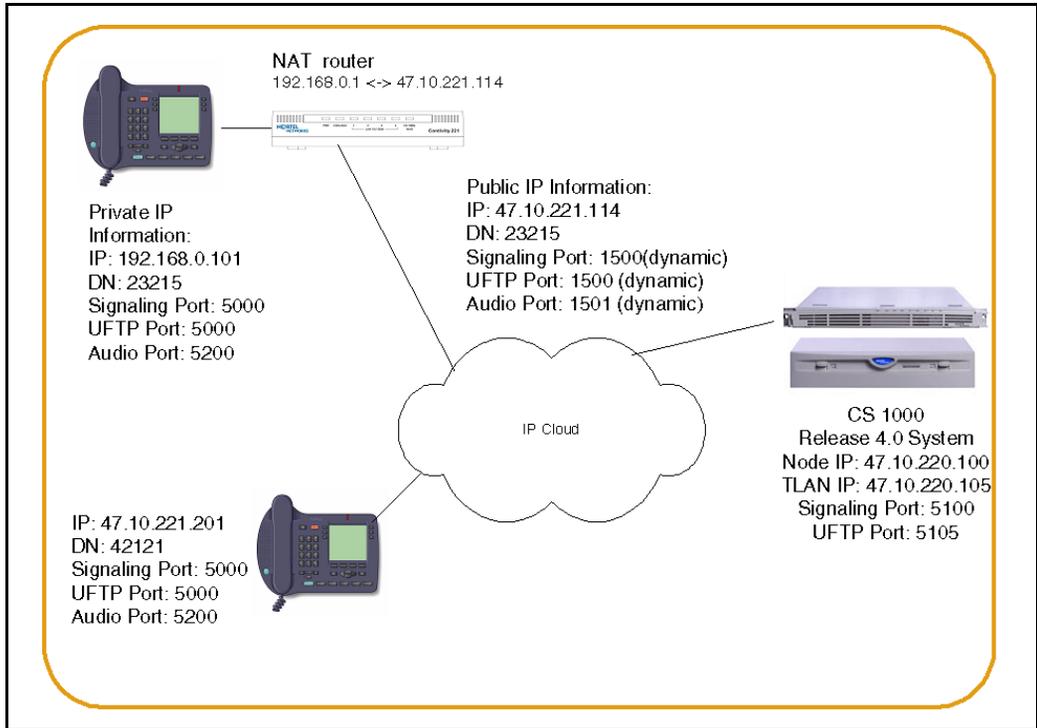
Follow the steps in Procedure 10 to distribute IP Phone firmware.

Procedure 10
Distributing IP Phone firmware

1   Log into Element Manager.

2   Choose **Software Upgrade > IP Telephone (FW)**. The IP Telephone
     (FW) Upgrade window opens. See Figure 15.

Figure 15
Firmware upgrade
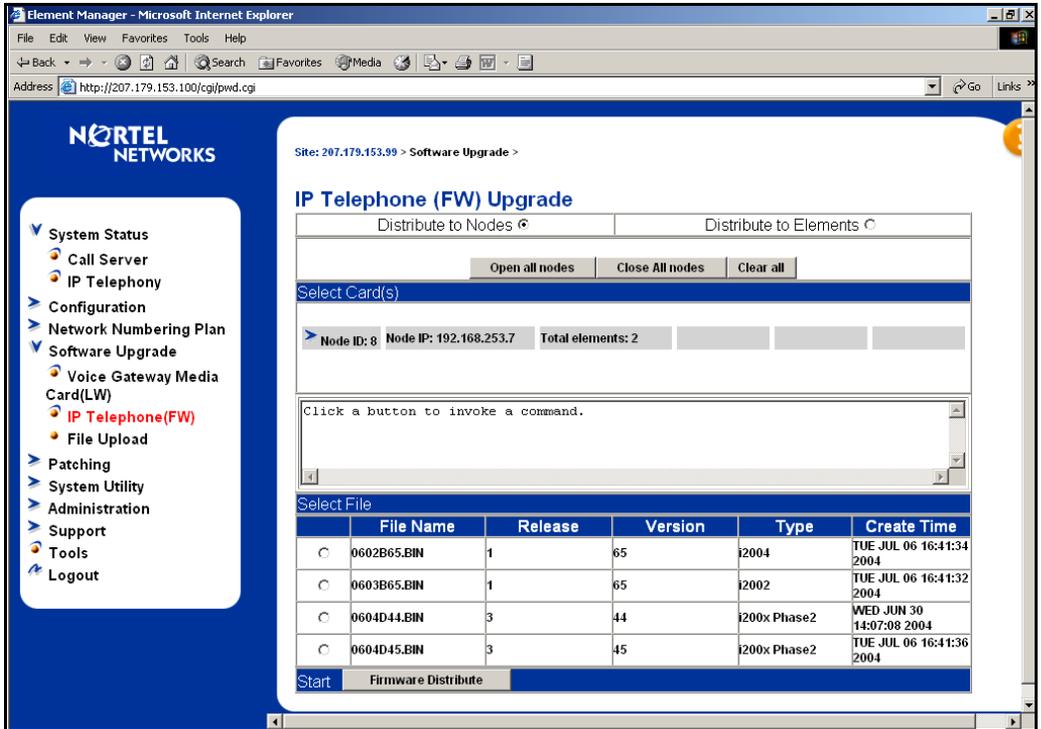
3   Select the firmware file of the IP Phone model to be upgraded.

4   Open the node and select the Signaling Server(s) or Voice Gateway Media Cards to be upgraded.

Note: The maximum number of Voice Gateway Media Cards or other components that can be upgraded at one time is four, as all files are simultaneously transferred by FTP.

5   Click the **Firmware Distribute** button. This distributes the firmware to all the Voice Gateway Media Cards according to the IP Phone firmware version specified. Generally, it takes half a minute to upload the firmware to each individual element.

6   Click the "fwVersionShow" button beside each element to see the firmware version of that element.

Note: This procedure only distributes IP Phone firmware on the Signaling Server or Voice Gateway Media Card. It does not upgrade the IP Phone firmware directly until the IP Phones are reset or the **umsUpgradeAll** command is issued on the Signaling Server.

─────────────── **End of Procedure** ───────────────

Upgrade software on the Call Server and MG 1000S

Contents

This section contains information on the following topics:

Introduction

This chapter describes how to upgrade a CS 1000S system to CS 1000 Release 4.5 software on both the Call Server and MG 1000S. While they both use the same software upgrade files and delivery media, there are differences in software prompts and responses in the installation programs for each component.

The upgrade must be completed on the Call Server and all MG 1000S in the system. To upgrade the Call Server, see "Upgrade the Call Server software" on . To upgrade a MG 1000S, see "Upgrade the MG 1000S" on .

To perform an upgrade to the system software using a pre-programmed software daughterboard, see Procedure 12 "Replacing an existing software daughterboard with a pre-programmed software daughterboard" on . To perform an upgrade to the system using a Software Delivery card, see Procedure 13 "Upgrading the Call Server software" on .

The Nortel Software Downloads site contains instructions on how to copy a downloaded Call Server software file to a Software Delivery card.

IMPORTANT!

- The Call Server and IP Line nodes within a single system must be upgraded simultaneously to CS 1000 Release 4.5.

- CS 1000 Release 4.5 software is not backwards compatible with Meridian 1 X11 Release 25.40 and IP Line 3.0 within a single system.

- CS 1000 Release 4.5 software is backwards compatible with base features of Succession 1000 Release 2.0 and Meridian 1 X11 Release 25.40 at the network level.

> ### IMPORTANT!
>
> Upgrade the Call Server software before the MG 1000S. Ensure that the Call Server upgrade is complete and the Call Server is up and running before loading the MG 1000S. Note that MG 1000S can be installed in any order.

Things to know

Software installation program

The Software Installation Program provides a menu-driven method of selecting from the different options of installing, modifying, or upgrading the following:

- Software
- Feature set (packages)
- License parameters

The Software Installation Program does not check the prerequisites and interactions of added packages.

The Software Installation Program also provides utilities to:

- upgrade IP daughterboard software
- upgrade boot ROM
- archive, restore or install a database
- review installation data
- back up data
- undo an installation in progress

The Software Installation Program has the following additional options:

- **Set system time and date:** The system time and date is usually set before installation. This makes sure that all flash drive files have the correct creation date.

- **Confirm Upgrade Information:** This option allows you to review the selected installation options. Use the "Confirm Upgrade Information" after the system validates the keycodes, but before the installation is complete.

- **Clear Upgrade Information:** If the installation terminates after entering the keycodes, but before the installation is complete, abort the installation with the "Clear Upgrade Information" option.

For detailed procedures and information on system utilities available through the Installation and Upgrade options, see "System upgrade utilities" on .

BootROM

BootROM on the existing NTDK34FA or NTDK34GA Small System Controller (SSC) card must be version r09 or later on the Call Server. The BootROM on the MG 1000S SSC must be version r08 or later.

The standard software installation automatically updates the BootROM. To manually update the BootROM, follow Procedure 17 "Upgrade boot ROM on the SSC card" on .

Alternate Call Server and survivability

To learn more about survivability, database synchronization, and protection commands, read the chapters on the Alternate Call Server and survivability in *Communication Server 1000S: Planning and Engineering* (553-3031-120) and *Communication Server 1000S: Installation and Configuration* (553-3031-210).

Survivability configuration for MG 1000S in CS 1000 Release 4.5 maintains the same functionality as Succession 3.0 software for defining the system settings, switchover time, and automatic switchback. Consult *Communication Server 1000S: Installation and Configuration* (553-3031-210) for more information.

Customer database

Make sure the most recent system backup or archive is available before starting the upgrade procedure. A backup can be required depending on the upgrade procedure. For example, a backup is mandatory when installing from a pre-programmed software daughterboard.

The Software Installation Program and its Utilities menu allows the installation of a customer database from one of the following sources:

- Pre-configured database

- Archived database

- Remote restored database

- Backed up Database

Pre-configured database

The Software Delivery card can include several pre-configured databases and their associated feature sets, such as for the MG 1000B installation. In addition, a minimal database is provided that contains basic system configuration information with no customer data.

To use a pre-configured database, define the database in an off-site lab environment and save (archive) it to a Software Delivery card until needed. Then load it to the system using the Software Delivery card.

Archived database

The Software Installation program enables users to archive various databases for later use at CS 1000S sites. It allows multiple databases to be configured off-site for ready-to-use installation at customer sites.

To archive a database on the Software Delivery card, define the database and perform a data dump on the SSC card.

Note: Off-site programming of databases is subject to all security keycode restrictions. The off-site system must either use the Security Device installed in the CS 1000S at the customer site, or must have its own keycodes for the feature set used.

For archive procedures, see "System upgrade utilities" on .

Remote restored database

If information is corrupt on the database, revert to the database on the backup flash drive. Alternatively, revert to a previous version of the database contained in the Customer Configuration Backup and Restore (CCBR) file, or revert or port over a database from the Software Delivery card.

A database can be remotely restored using the LD 143 (Customer Configuration Backup and Restore) remote restore command. The command sequence required in LD 143 is prompted as follows:

> **>LD 143**
> **XRT**

For more information on restoring databases, see "Restore a database" on .

Backed up Database

The Backed up Database option enables administrators to install the copy on the backup flash drive. It is provided to:

- recover a database if the database on the primary flash drive becomes corrupted

- restore the database after a system software update

See "System upgrade utilities" on .

IP Telephony node files

With a CS 1000 Release 4.5 software upgrade, there are new IP Telephony node database files on the Call Server. These node files are backed up during a system data dump using the EDD command in LD 43. For more information about these files, refer to *IP Line: Description, Installation, and Operation* (553-3001-365).

Upgrade the Call Server software

Task summary

The following list reviews the steps needed to upgrade from one software release to another for the Call Server:

1   Install the Software Delivery card and start the Software Installation Program.

2   Verify the feature set and packages.

3   Select a database.

4   Verify or change the License parameters.

5   Validate the keycodes; the software then installs.

6   Reboot the system.

Things to know

The Software Installation Program must run from maintenance terminal port 0 on card 0. Make sure the terminal or workstation is connected to this port.

WARNING

Before and after an upgrade, perform a data dump on the Call Server.

Perform a data dump on the Call Server

Complete Procedure 11 to back up the existing database. This is a routine operation.

Procedure 11
Performing a data dump on the Call Server

1   Enter LD 43 in a CLI window.

2   Enter command **EDD**.

──────────────   **End of Procedure**   ──────────────

Replace the software daughterboard

If an NTM400/NTM410 pre-programmed software daughterboard is already installed, go to Procedure 13 on .

To complete Procedure 12 on , use the Keycode Data Sheet. Keycodes are required for each new installation and for existing system upgrades. The Keycode Data Sheet is supplied with the software and security device. There is a different keycode assigned to each site for a particular combination of items, such as software release, feature set, and License parameters. Contact a Nortel representative if the Keycode Data Sheet is missing.

Make sure the customer database has been archived to a Software Delivery card (Procedure 18 "Archiving the database" on) before proceeding.

Procedure 12
Replacing an existing software daughterboard with a pre-programmed software daughterboard

1   Attach an antistatic wrist strap.

CAUTION WITH ESDS DEVICES

Static electricity can damage circuit cards. Wear an antistatic wrist strap when handling circuit cards or any of their components. When handling the SSC card, be careful not to damage any of its components.

---

2   Power down the system. To locate the switch, see Figure 1 on page 26.

3   Remove the Call Server front cover (or MG 1000S front cover, if applicable). Refer to *Communication Server 1000S: Installation and Configuration* (553-3031-210) for help with this step.

4   Remove the SSC card and set it on a clean surface.

WARNING
Damage to Equipment
Before removing the SSC card, remove the cables attached to the bulkhead. Gently push the cable in by squeezing the locking tab. Gently pull the cable out. When the cables are reassembled, make sure that the number on the cable matches the number on the connector.

---

5   Remove the existing software daughterboard from the SSC card and replace it with the NTM400 pre-programmed software daughterboard.

6   Press firmly on the standoffs to ensure that the software daughterboard is secured to the SSC card.

7   Replace the SSC, close the cover, and connect to maintenance terminal port 0.

8   Power up the system. The software program starts automatically.

9   Continue with the Installation menu selections as described in
Procedure 13, step 4 on .

──────────── **End of Procedure** ────────────

Upgrade the Call Server software

Note: If you were directed to this procedure from Procedure 12, "Using
a Software Daughterboard", proceed to step 4 on page 65 to bypass the
Software Delivery card commands and steps.

This procedure assumes that the system is running and a maintenance
terminal is connected. The Link LEDs on the IP daughterboards should be lit
and green.

IMPORTANT!

Both before and after an upgrade, perform a data dump on the Call
Server (Procedure 11 on page 62). Also perform a database archive
(Procedure 18 on page 84) to back up the database.

Procedure 13
Upgrading the Call Server software

1   Disable all D-channels (DCH) in LD 96.

2   Disable any AML links in LD 48.

3   Install the Software Delivery card in the faceplate socket of the SSC card
on the Call Server.

   a. Insert the card in slot A in the Software Delivery card socket of the
SSC card.

   b. Carefully press on the Software Delivery card until it seats tightly.
Refer to Figure 16 on page 65 for the correct position of the Software
Delivery card.

Figure 16
Software Delivery card slot location

Software Delivery card in Slot A
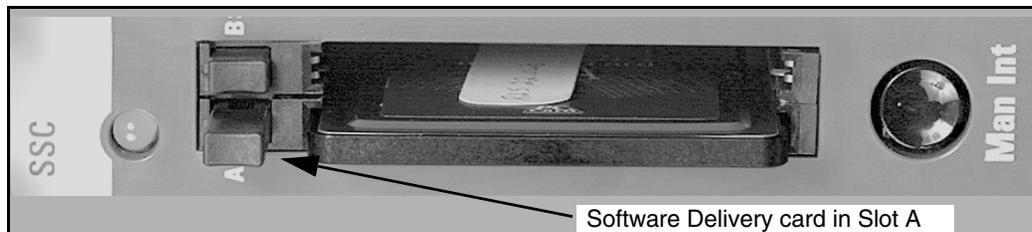
4   Start the Software Installation Program.

    a.   Reboot the MG 1000T Core (reseat the SSC card or power off/on the MG 1000T Core power).

    b.   Choose one of the following:

        i.   Press **Ctrl+l** at the prompt to invoke the Installation program, or

        ii.   Enter the following command in LD 143:

```
>LD 143
UPGRADE
```

The system displays the Software Installation Main Menu.

```
Call Server Software Installation Main Menu:
1. New Install or Upgrade from Option 11/11E - From
Software Daughterboard
2. System Upgrade
3. Utilities
4. New System Installation - From Software Delivery
card
[q]uit, [p]revious, [m]ain menu,[h] help or [?],
<cr> - redisplay
```

5   Choose one of the following:

    a.   When upgrading with a Software Delivery card, select item 2, "**System Upgrade**". Proceed to Step 6.

    b.   When upgrading with a pre-programmed software daughterboard, select item 1, "**New Install or Upgrade - From Software Daughterboard**". Treat the upgrade as a new install.

The New Install - From Software Daughterboard menu displays this response:

```
CS 1000 Enterprise Software Rls 4.x will be
installed.
```

Proceed to step 8 on .

6   Make a selection in the Upgrade menu, which appears as follows:

```
Select type of upgrade to be performed:
1. Option 11/11E Upgrade
2. New Software Upgrade
3. Feature/Parameter Upgrade
[q]uit, [p]revious, [m]ain menu,[h]elp or [?], <cr> -
redisplay
```

    a.   To upgrade the system software, select item 2.

    b.   To upgrade only the feature set and License parameters (see "Upgrade the feature set and License parameters" on) select item 3.

7   The system displays:

```
*** LAST SYSTEM DATABASE BACKUP DATE: WED FEB 25
17:32:40 2004 ***
```

```
If you wish to backup system database please abort
now and go to LD43 to perform EDD.
```

```
Do you wish to archive the database? (y/n/[a]bort):
```

    a.   Select **a** to abort and perform the system database backup in LD 43.

    a.   Select **y** to archive the database.

    b.   Select **n** to not archive the database and proceed to the next step.

The system displays:

```
*** NOTE: The following questions require
information on the Keycode Data Sheet. Please have
it available. ***
```

```
CS 1000 Enterprise Software Rls 4.x will be
installed.
```

8   Select the feature set to enable.

Note: The feature set selected must match the ones provided with key codes on the keycode data sheet. The Feature Set names shown below are examples only.

The system displays:

```
Select Feature Set You Wish to Enable:
1. S1000 N. America Business Services-L1 (ntm400cd)
2. S1000 N. America Enhanced Business Services-L2
(ntm400dd)
3. S1000 N. America Adv. Call Centre Services-L3A
(ntm400ed)
4. S1000 N. America Adv. Networking Services-L3B
(ntm400fd)
5. S1000 N. America Premium Network Services-L4
(ntm400gd))
6. S1000 CALA Business Services-L1 (ntm400hd)
7. S1000 CALA Enhanced Business Services-L2
(ntm400id))
8. S1000 CALA Adv. Call Centre Services-L3A (ntm400jd)
9. S1000 CALA Adv. Networking Services-L3B (ntm400kd))
10. S1000 CALA Premium Network Services-L4 (ntm400ld))
[q]uit, [p]revious, [m]ain menu, [h]elp or [?], <cr> -
redisplay

Enter selection:
```

Select the Feature Set to enable.

Note: The feature set selected must match that provided with the keycodes.

9   The system displays:

```
Do you wish to install Dependency Lists? (y/n/
[a]bort) :

Enter choice>
```

Enter **n** to skip Dependency Lists and continue with the installation.

10   The system displays the Add Packages menu.

```
Do you wish to add packages? (y/n/[a]bort):
```

Indicate if there are packages to add.

   a. Select **y** to add packages.

   b. Select **n** to not add packages and proceed to the next step.

```
Summary of packages selected (example only):
0-2 4-5 7-14-23-29 32-64 67 70-77 79-81 83
86-93.....

Enter additional packages: <cr> to continue
```

Note 1: The additional packages must have matching keycodes.

11 Confirm the feature set and packages.The following is an example.

```
Your Feature Set Selection is:S1000 N. America Adv.
Call Centre-L3A

Additional Packages selected: 215-235

Summary of Packages selected is:

0-2 4-5 7-14 16-25 28-29 32-64 67 70-77 79-83 86-93 95
100-104 107-111 113-116 118-120 122-125 127-129
131-133 135 137-141 167

...

...

215-235

Is this selection correct?
n <cr> (no)
y <cr> (yes)
a <cr> (abort, return to main menu)
```

If the response was **n**, return to step 8 on .

If the response was **y**, continue.

12 Select Database to Install:

```
1. Pre-Configured database - S1000 N. America Adv. Call
Centre-L3A
2. Basic Configuration
3. Archived database
4. Quick Config for Demo only

[q]uit, [p]revious, [m]ain menu, [h]elp or [?], <cr>
redisplay
```

    a. To install from a pre-programmed software daughterboard, select item 2, "**Basic Configuration**". This installs the system with a basic database, allowing you to then restore the backed up database at the end of the installation.

IMPORTANT

When installing from a pre-programmed daughterboard, "Basic Configuration" must be selected at this point. If this is not done, the system starts a data dump (EDD) after loading the new software, and overwrites the customer data stored on the CPU.

---

    b. To import an archived database from a Software Delivery card, select item 3, "**Archived database**".

13 Review and make changes to the License parameters, if required.

The MG 1000T Core displays the current License parameters as follows (example only):

```
License Parameters will be set to:
TNS                 ( 2500)
ACDN                (  300)
AST                 (    1)
LTID                (    0)
RAN CON             (    0)
RAN RTE             (  500)
MUS CON             ( 0)
BRAND               (    2)
ACD AGENTS          (   10)
ANALOGUE TELEPHONES (    0)
ATTENDANT CONSOLES  ( 2500)
BRI DSL             (  150)
CLASS TELEPHONES    (    0)
```

```
DATA PORTS          ( 2500)
DIGITAL TELEPHONES  (    0)
IP USERS            (    0)
BASIC IP USERS      (    0)
PHANTOM PORTS       ( 2500)
DECT USERS          (    0)
DECT VISITOR USERS  (    0)
ITG ISDN TRUNKS     (    0)
TRADITIONAL TRUNKS  ( 2500)
TMDI D-CHANNELS       (   64)

SURVIVABILITY       (    1)
PCA                 (    0)
H.323 ACCESS PORTS  (    0)
SIP ACCESS PORTS      (    0)

Do you wish to change any License parameter? (y/n/
[a]bort):
```

a. Select **n** to accept License parameter(s).

b. Select **y** to change License parameter(s).

Note: If the feature set is not changed, the parameters displayed remain as the current License parameters. The License parameters selected must match those provided with the keycodes.

14 Verify the AUX ID.

The default AUX ID is the security ID provided with the system.

```
Security ID: xxxxxxxx
Current AUX ID: xxxxxxxx
Do you wish to change the AUX ID? (y/n/[a]bort):
```

Select the AUX ID option as provided with the keycodes.

15 Select the M3900 Language Set.

The system displays the Select M3900 Language Set menu.

```
Select M3900 Language Set:
1. Global 10 languages
2. Western Europe 10 languages
3. Eastern Europe 10 languages
4. North America 6 languages
5. Spare Group A
6. Spare Group B
7. Packaged Languages
[q]uit, [p]revious, [m]ain menu,[h] help or [?], <cr>
- redisplay

Enter Selection:
```

Enter the item number that applies to the system.

16 Review and confirm the upgrade summary displayed. To access this information at any time, use Procedure 21 "Using the Current Installation Summary utility" on . The following is an example of an upgrade summary.

```
Software Upgrade Summary:

Security ID            : xxxxxxxx
Aux ID                 : xxxxxxxx
Cabinet Type           : Call Server/MAIN
Feature Set            : S1000 N. America Adv. Call
Centre Services-L3A (ntm400ed)
Additional Pkgs        : none
Database               : Basic Configuration

S/W Release :      CS 1000 x.x
License Parameters
TNS                ( 2500)
ACDN               (  300)
AST                (    1)
LTID               (    0)
RAN CON            (    0)
RAN RTE            (  500)
MUS CON            ( 0)
BRAND              (    2)
ACD AGENTS         (   10)
ANALOGUE TELEPHONES (    0)
ATTENDANT CONSOLES ( 2500)
BRI DSL            (  150)
CLASS TELEPHONES   (    0)
```

```
DATA PORTS          ( 2500)
DIGITAL TELEPHONES  (    0)
IP USERS            (    0)
BASIC IP USERS      (    0)
PHANTOM PORTS       ( 2500)
DECT USERS          (    0)
DECT VISITOR USERS  (    0)
ITG ISDN TRUNKS     (    0)
TRADITIONAL TRUNKS  ( 2500)
TMDI D-CHANNELS     (   64)

SURVIVABILITY       (    1)
PCA                 (    0)
H.323 ACCESS PORTS  (    0)
SIP ACCESS PORTS    (    0)

M3900 Language Set    : 1. Global 10 languages

Is this correct? (y/n/[a]bort) : y
```

17 Enable or Disable Automatic Centralized Software Upgrade.

```
Enable Automatic Centralized Software Upgrade? (y/n/
[a]bort)
```

If choosing **y**, go to Procedure 23 "Enabling Centralized Software Upgrade" on .

Note: This option enables Automatic Centralized Software Upgrade for upgrades to CS 1000 Release 4.5.

18 Enter the keycodes.

   a. Enter keycodes when prompted.

```
Enter new Keycodes:
Key 1:xxxxxxxx
Key 2:xxxxxxxx
Key 3:xxxxxxxx
```

   b. Look for the keycode validation message.

   After entering the last keycode, the system displays a message indicating if the keycodes are successful or not. See the following message examples.

   Example successful screen message:

```
Keycode validation successful
```

```
***WARNING*** A system restart will be invoked as
part of the software installation process".
```

Example unsuccessful screen message:

```
Keycode validation unsuccessful.
```

c.   Choose one of the following:

i.   If the **successful** message appears, go to step 19.

ii.   If the **unsuccessful** message appears, repeat step 18.

After three unsuccessful keycode validation attempts, the following message appears:

```
Keycode validation unsuccessful.

Installation aborted...returning to main menu.

Contact your technical support group.
```

19   Complete the software upgrade.

Sample screen display:

```
*** WARNING *** A system restart will be invoked
as part of the software upgrade process

Are you sure you wish to perform the upgrade? (y/n/
[a]bort)
```

Enter **y <CR>**. The Software Installation Program finishes in approximately 15 minutes.

Note: If the only upgrade change was the feature set and License parameters, refer to "Upgrade the feature set and License parameters" on for the end of the software installation.

20   Observe the screen after the installation program has been completed.

Sample Screen display:

```
Upgrade completed successfully.

Rebooting ...
```

The system reboots.

Example screen display:

```
TTY 00 SCH MTC BUG      17:50
OVL111 000 IDLE
```

If Automatic Centralized Software Upgrade was enabled, the MG 1000T Expansions now undergo the upgrade process.

21 If this procedure was performed using a pre-programmed software daughterboard, restore the customer's backup configuration files that were overwritten by Basic Configuration. See "Restore a database" on page 87.

——————————————   **End of Procedure**   ——————————————

Upgrade the feature set and License parameters

The Software Installation Program allows the addition of individual packages from the feature set and the changing of License parameters without upgrading or altering the software version. Since additions and changes are keycode-controlled, packages and License parameters must match those corresponding to the site's keycodes.

To perform the upgrade, initiate the upgrade Software Installation Menu from LD 143. Follow the steps in Procedure 13 "Upgrading the Call Server software" on page 64. The pertinent steps for upgrading the feature set are outlined in the procedure.

At the end of the installation, the system prints out:

        Upgrade was completed successfully.

If the only change is to the License parameter values, a screen message states that the system does not need a SYSLOAD, or reboot. The system has put into operation the changes to the License values.

If the feature set is upgraded, the system must reboot (SYSLOAD). The message states:

        Initiate a SYSLOAD to activate the upgrade.

The reboot does not need to occur immediately. The Call Server stores the information until the reboot. Because a restart interrupts service on the system, Nortel recommends performing a restart later when a service interruption is more convenient.

The software installation program then returns to LD 143 without affecting the system operation.

Upgrade the MG 1000S

Things to know

The MG 1000S always receive a new software installation, even in the case of upgrades. This is because the master copy of the database is stored on the Call Server and is upgraded during the Call Server upgrade. The database is subsequently synchronized to the MG 1000S.

IMPORTANT!

Install or upgrade the Call Server software prior to the MG 1000S. Ensure the Call Server installation or upgrade is complete and the Call Server is up and running prior to loading the MG 1000S. The MG 1000S can be installed in any order.

To configure a MG 1000S for survivability, see *Communication Server 1000S: Planning and Engineering* (553-3031-120) and *Communication Server 1000S: Installation and Configuration* (553-3031-210).

This section contains instructions for manually upgrading the MG 1000S. For information on performing centralized upgrade of MG 1000S, see Appendix B on page 93.

There are two ways to install or upgrade the MG 1000S software:

1 a Software Delivery card

2 a pre-programmed daughterboard

To install or upgrade using the pre-programmed daughterboard, refer to Procedure 12 on page 63.

Note: This procedure is performed from a maintenance terminal connected to port 0 on the MG 1000S.

Upgrade or reinstall MG 1000S software

You can upgrade the MG 1000S in either of the following ways:

- all at one time, which requires multiple Software Delivery cards

- in sequential order, which takes longer, but takes only one MG 1000S out of service at a time

Steps 1 and 11 of the following procedure are included to minimize service disruption on an active system.

Procedure 14
Upgrading or reinstalling MG 1000S software

1   Force any MG 1000S configured for Survivability to operate in Survival mode.

   a.   Log into the Call Server and access LD 135.

   b.   Type the following command at the prompt:

   SOTS n

   Where n is the MG 1000S number. Any MG 1000S reboots and restarts in Survival mode.

2   Ensure the Software Delivery card is inserted in Slot A on the SSC card of the MG 1000S.

3   Reboot the system and press **CTRL+I**.

4   The MG 1000S Installation Main Menu appears. Select item 1, "MG 1000S Installation - From Software Delivery card".

The system displays the Software Installation Main Menu.

```
SOFTWARE INSTALLATION PROGRAM

************************************
Verify
Security ID: xxxxxxxx
************************************

Media Gateway Software Installation Main Menu:
1. Media Gateway Installation - From Software Delivery
Card
2. Utilities
```

```
[q]uit, [p]revious, [m]ain menu, [h]elp or [?], <cr> -
redisplay
```

```
Enter Selection: 1
```

Note 1: If there is no input for two minutes, the installation program attempts automatic configuration using BOOTP. Press **<cr>** to disable the timer and stay in the menu.

5   Choose **y** or **n** at the prompt for IP configuration. The system displays:

```
Do you wish to do IP configuration? (y/n/[a]bort):
```

6   Enter one of the following commands:

   a.   Enter **y**. Refer to *Communication Server 1000E: Installation and Configuration* (553-3041-210) for the steps required to configure the ELAN link.

   b.   Enter **n**. This maintains the current IP configuration. Go to step 8 on .

7   Select appropriate language set for the region.

   The system displays the M3900 Language Set menu.

```
Select M3900 Language Set:
```

```
1. Global 10 languages
```

```
2. Western Europe 10 languages
```

```
3. Eastern Europe 10 languages
```

```
4. North America 6 languages
```

```
5. Spare Group A
```

```
6. Spare Group B
```

```
[q]uit, [p]revious, [m]ain menu, [h]elp or [?], <cr> -
redisplay
```

```
Enter Selection : 1
```

8   Complete the software installation. (This is similar to the MG 1000T Core installation).

   When finished, the system displays:

```
CS 1000 Rls. x.x will be installed.
```

```
*** WARNING *** A system restart will be invoked
as part of the software installation process

Are you sure you wish to perform the installation? (y/
n/[a]bort):
```

9   Enter **y**. The Software Installation Program finishes in approximately 15 minutes.

10   Observe the screen after the installation program has been completed.

```
Installation completed successfully.

Rebooting ...
```

The system reboots.

Sample screen display:

```
TTY 00 SCH MTC BUG        17:50
OVL111 000 IDLE
```

Note: The MG 1000T Expansion configured for Survivability reboots in Survival mode.

11   Force any MG 1000T Expansion configured for Survivability back into Normal Mode.

   a.   Log in to the MG 1000T Core and access LD 135.

   b.   Type the following at the prompt:

   SBFS n

   The MG 1000T Expansion reboots and restarts in Normal mode.

12   Perform a data dump using LD 43 to synchronize the new customer database on the MG 1000T Core to the MG 1000T Expansions.

—————————————————— **End of Procedure** ——————————————————

Test the upgrade

Whether or not changes are made to the analog and trunk configurations in this upgrade, test the upgrade of the Call Server and MG 1000S at this time by making calls over both IP and circuit-switched components.

Appendix A: System upgrade utilities

Contents

This section contains information on the following topics:

Introduction

This chapter contains utilities that are useful during a system upgrade. To access these utilities, follow Procedure 15 "Accessing the Utilities menu" on .

Access the Utilities menu

This procedure can, where specified, require a Software Delivery card inserted into the slot of the SSC card. Each subsequent procedure contains this procedure in short form.

Procedure 15
Accessing the Utilities menu

1   Start the Software Installation Program.

    a.   If on the MG 1000S, reboot the SSC and enter **Ctrl-I** during the boot sequence to put the MG 1000S into Survivable Mode.

    Note: The BootROM version is displayed on the workstation screen during the bootup process.

    b.   On the Call Server, enter:

```
>LD 143
UPGRADE
```

    Note: Using the CLI enables menu selections to be made while call processing is active. When the selections and changes are completed, the system reboots and installs the software components.

    The installation menu appears.

```
SOFTWARE INSTALLATION PROGRAM

***********************************
Verify
Security ID: xxxxxxxx
***********************************

Software Installation Main Menu

1. New System Installation or Upgrade - From
Software Daughterboard
2. System Upgrade
3. Utilities
4. New System Installation - From Software Delivery
Card

[q]uit, [p]revious, [m]ain menu, [h]elp or [?],
<cr> - redisplay
```

2   From within the Installation menu, choose Utilities (item 3). The screen displays the following:

```
Utilities Menu:
```

```
1. Restore Backed Up Database
2. Archive Database Utilities
3. Install Archived Database
4. Review Upgrade Information
5. Clear Upgrade Information
6. Undo Installation
7. Flash BootROM Utilities
8. Current Installation Summary
9. Change 3900 series set languages
10. IP FPGA Utilities

[q]uit, [p]revious, [m]ain, [h]elp, or [?],
<cr>- redisplay
```

———————— **End of Procedure** ————————

Verify and upgrade BootROM

Although BootROM is upgraded with a standard install, BootROM verification is useful prior to upgrading the MG 1000S. For more information, see "Centralized Software Upgrade" on .

The BootROM version must be verified to use certain features. This procedure is performed from a maintenance terminal connected to the MG 1000S maintenance terminal port 0 (the SSC card).

Note: If the Call Server or MG 1000S is rebooted, the BootROM version is displayed on the workstation screen during the bootup process. Go to .

Procedure 16
Verifying and upgrading boot ROM

1 From the Utilities menu (Procedure 15 on), select the Flash BootROM Utilities (item 7).

The Flash BootROM Utilities menu displays:

```
Flash BootROM Utilities Menu:
1. List Flash Boot ROM
2. Upgrade Flash Boot ROM
3. Restore Flash Boot ROM
[q]uit, [p]revious, [m]ain, [h]elp or [?],
<cr>- redisplay
```

2   Choose List Flash BootROM (item 1). This option displays the BootROM on the Software Delivery card, if one is present.

```
Flash Boot ROM Summary:

Active -- NTDK34FA_r09
Backup -- NTDK34AA_r08
```

Note: The _r number should be the version mentioned in "BootROM" on page 58 (or a higher release number). If the release number is lower than r08, the system cannot be downgraded.

3   Compare the Flash BootROM displayed in step 2 to the base BootROM for the software release to which it is being upgraded (check the product's release notes to determine the base). If the BootROM is current, this procedure is completed.

4   Continue with Procedure 17 on page 83 when upgrading the software on MG 1000S with the Centralized Software Upgrade feature (page 93).

IMPORTANT!

If the release number and BootROM version on the Software Delivery card is greater than the active version shown, perform the upgrade.

If the release number and BootROM version on the Software Delivery card is less than the active version shown, do not perform the upgrade.

──────────   **End of Procedure**   ──────────

Upgrade the BootROM on the SSC card

IMPORTANT!

You must upgrade the BootROM of the SSC to the most current version before starting any upgrade. This will allow the system software to recognize the Software Daughterboard. The bootcode is backwards compatible.

Procedure 17
Upgrade boot ROM on the SSC card

1   Access the Utilities menu (see Procedure 15 on).

2   From the Utilities menu, select the Flash BootROM Utilities (item 7).

The Flash BootROM Utilities menu displays:

```
Flash Boot ROM Utilities Menu:
1. List Flash BootROM
2. Upgrade Flash BootROM
3. Restore Flash BootROM
[q]uit, [p]revious, [m]ain, [h]elp or [?], <cr>-
redisplay
```

3   Select Upgrade Flash BootROM (item 2).

```
Are you sure you wish to perform the Flash BootROM
Upgrade/Restore (y/n/[a]bort): Y
```

4   Select yes to perform the upgrade.

```
Upgrading Active Flash BootROM to NTDK34FA_r09

System Restart required to activate Flash BootROM
Upgrade.
```

5   Restart the system to activate the Flash BootROM upgrade.

End of Procedure

Archive the database

Procedure 18 describes how to use the archive feature to list, add, archive and remove customer databases. This procedure is a routine operation.

Procedure 18
Archiving the database

1   If necessary, install the Software Delivery card in slot A of the Software Delivery card socket in the faceplate of the SSC card.

2   When a customer database is added to the archive, first load it on the SSC card of this system.

   Note: For complete instructions for the installation of the Software Delivery card, refer to Procedure 13 on page 64.

3   Start the Software Installation Program.

```
>LD 143
UPGRADE
```

4   Select Utilities (item 3) from the Main Menu.

5   Select Customer Database Archives (item 2) from the Utilities Menu.

6   Select the archive function.

```
Customer Database Archives:
1. List customer databases
2. Remove customer database
3. Archive a customer database
[q]uit, [p]revious, [m]ain, [h]elp or [?]
<cr> - redisplay

Enter Selection:
```

Choose one of the following:

   a.   Enter **1 <CR>** (List Customer databases), and continue with the next step, step 7 on page 85.

   b.   Enter **2 <CR>** (Remove Customer database), and go to step 8 on page 85.

   c.   Enter **3 <CR>** (Archive a Customer database), and go to step 9 on page 85.

7   Review the displayed list of archived customer databases and the Customer Database Archives menu.

   a.   To remove a database from the archive, continue with the next step, Step 8.

   b.   To add a database to the archive, go to Step 9.

   c.   To end the activity here, enter **q <CR>**.

8   Remove the required customer database from the archive.

The screen displays the archived databases and the following prompt:

```
Remove database
'Name of archived database'
database?
```

Respond to the confirm removal prompt.

9   To add a customer database to the archive, the screen displays the following prompt:

```
Enter a Customer name for your customized data:
```

   a.   Type in the name for this archived database.

   The system displays the name for confirmation.

   b.   Confirm the name.

   The screen displays the following message:

```
Copying database from primary drive to 'Name of
archived database'.
```

――――――――――――――   **End of Procedure**   ――――――――――――

Install an archived database

Follow the steps in Procedure 19 to install an archived database using a Software Delivery card.

Procedure 19
Installing an archived database

> *Note:* This procedure is an advanced installation procedure for pre-programmed software daughterboards. It can also be a rescue operation.

1 Start the Software Installation Program.

   ```
   >LD 143
   UPGRADE
   ```

2 Select Utilities from the Main Menu.

3 Select item 3 (Install Archived Database).

   The system displays the list of archived customer databases.

4 Select the Customer Database.

   Type the name of the database to restore.

   The system prompts to confirm the name of the database.

5 Confirm the database selection.

   If **yes**, continue with the next step.

   If **no**, repeat step 4.

6 Restore the archived database. If the restore is successful, the screen displays the following:

   ```
   Restoring Archived database to Primary drive...

   Restore successful.

   System Restart required to activate database.
   ```

   Note: If the restore is not successful, go back to step 3 on .

————————— **End of Procedure** —————————

Restore a database

Procedure 20 is an advanced installation procedure or a rescue operation.

Procedure 20
Restoring a database

1   Start the Software Installation Program.

```
>LD 143
UPGRADE
```

2   Select Utilities (item 3) from the Main Menu.

3   Select "Restore Backed Up Database" (item 1) from the Utilities Menu.

4   Select source of database.

The selections screen displays:

```
Select Restore Database Source:

1. Backup Flash Drive
2. External Drive
3. Succession 1000 CCBR Restore file
4. Succession 1000 CCBR File
5. Succession 1000 Software Card.
```

   a.   If selecting item 1, continue to the next step.

   b.   If selecting item 2, go to step 6 on page 88.

   c.   If selecting item 3, go to step 7 on page 88.

5   Confirm database restore from the backup flash drive.

The screen displays the date of the backed up database and the following prompt displays:

```
Are you sure you wish to perform the Restore?
```

Do one of the following:

   a.   To return to the main menu, type **a** (for abort) and press **<CR>**.

   b.   To restore the database, type **y** (for yes) and press **<CR>**.

   The system restores the selected database. Go to step 8 on page 89.

   c.   If not restoring the database, type **n** (for no), press **<CR>**, and return to step 3 on page 87.

6   Confirm restore database from the external drive (Software Delivery card).

The following message displays:

```
Restoring primary drive from External Drive.
(Date and time)
```

```
System Restart required to activate restored
database
```

```
Are you sure you wish to perform the Restore?
```

Confirm to continue with the restoration. Go to step 8 on .

7   Restore the database from the Customer Configuration Backup and Restore (CCBR) file.

The screen displays the following message:

```
WARNING: You must have a Succession 1000 CCBR file
backed up.
```

```
WARNING: Your internal backup will be erased.
```

```
Are you sure you wish to Restore?
```

Confirm again to restore.

Note: As the restoration progresses, the following information displays:

```
Entering receive mode for data transfer...
```

```
Escape back to host machine and commence upload...
```

```
Database transfer complete...
```

```
Restoring Primary drive from CCBR file...
```

```
Restore successful.
```

```
System Restart required to activate restored database.
```

8   Choose one of the following:

   a.   If the restoration is successful, continue with step 9.

   b.   If the restoration is not successful, restart this procedure. Determine if the BKP011 message displays.

   ```
   Restore successful but site ID in backup image differs
   from that of the switch.
   ```

   Note: The restored database is of a system with a different site ID. This is why the restore was not successful.

9   Reboot the system:

   •   If the restart is successful, this procedure is complete.

   •   If the restart is not successful, repeat this procedure. Contact the technical support group if necessary.

————   **End of Procedure**   ————

Use the Current Installation Summary utility

Procedure 21 describes how to obtain an installation summary.

Procedure 21
Using the Current Installation Summary utility

   Note: This screen printout shows the old and the new software versions and parameters.

1   Start the Software Installation Program.

2   Select Utilities (item 3) from the Main Menu.

3   Select Current Installation Summary (item 8) from the Utilities menu.

4   The installation summary displays on the screen for review.

```
Software Upgrade Summary:

Security ID            : xxxxxxxx
Aux ID                 : xxxxxxxx
Cabinet Type           : Call Server/MAIN
Feature Set            : S1000 N. America Adv. Call Centre
Services-L3A (ntm400ed)
Additional Pkgs        : none
Database               : Basic Configuration
S/W Release :          CS 1000 4.x
License Parameters
TNS                    ( 2500)
ACDN                   (  300)
AST                    (    1)
LTID                   (    0)
RAN CON                (    0)
RAN RTE                (  500)
MUS CON                ( 0)
BRAND                  (    2)
ACD AGENTS             (   10)
ANALOGUE TELEPHONES (    0)
ATTENDANT CONSOLES ( 2500)
BRI DSL                (  150)
CLASS TELEPHONES    (    0)
DATA PORTS             ( 2500)
DIGITAL TELEPHONES  (    0)
IP USERS               (    0)
BASIC IP USERS         (    0)
PHANTOM PORTS       ( 2500)
DECT USERS             (    0)
DECT VISITOR USERS  (    0)
ITG ISDN TRUNKS        (    0)
TRADITIONAL TRUNKS ( 2500)
TMDI D-CHANNELS       (   64)

SURVIVABILITY          (    1)
PCA                    (    0)
H.323 ACCESS PORTS  (    0)
SIP ACCESS PORTS       (    0)

M3900 Language Set     : 1. Global 10 languages
```

——————————— **End of Procedure** ———————————

Revert to a previous software release

This section describes how to revert to the previous release of software, feature set, customer data, and License Parameters using the Undo Installation option.

A CS 1000S can also be reverted to its previous database. It is necessary to install and use the same Software Delivery card used to upgrade the CS 1000S.

IMPORTANT!

A Software Delivery card cannot be used to upgrade a subsequent CS 1000S system. When a system is upgraded, it backs up the existing database on the Software Delivery card and changes the Security ID. The card therefore only contains the database and Security ID of the last system backup.

Procedure 22 describes how to revert to the previous release of software using the Software Delivery card.

Procedure 22
Reverting to a previous software release

> *Note:* This procedure is a rescue operation.

1 Start the Software Installation Program.

2 Select Utilities (item 3) from the Main Menu.

3 Select Undo Installation (item 6) from the Utilities Menu.

4 Complete the software installation.

5 Screen display:

```
*** WARNING *** A system restart will be invoked as
part of the Undo Installation process.

Are you sure you wish to undo the installation?
```

Choose one of the following:

a.   Enter **y <CR>** (yes). This procedure is at an end.

b.   Enter **n <CR>** (no) and return to the Utilities menu.

c.   Enter **a <CR>** (abort).

End of Procedure

Appendix B: Centralized Software Upgrade

Contents

This section contains information on the following topics:

Introduction

> **WARNING**
> Ensure that there is no Software Delivery card in the MG 1000S during the Centralized Software Upgrade.

The Centralized Software Upgrade feature allows an installer to centrally and automatically upgrade the MG 1000S connected to the Call Server by a 100BaseT link. To manually upgrade the MG 1000S software, see "Upgrade the MG 1000S" on .

Note: Centralized Software Upgrade is available on the Call Server and MG 1000S only.

Automatic upgrade using the Centralized Software Upgrade feature

The BootROM upgrade is automatic in CS 1000S. It occurs when a new software load is introduced to the SSC card by Software Delivery card or a new software daughterboard.

After the Call Server SSC card is upgraded with new Call Server software, use the Centralized Software Upgrade feature to distribute the new BootROM and software to any connected MG 1000S, if they meet the following minimum requirements:

- The first general software release of Succession 1000 has been installed.
- The MG 1000S is in normal mode.

    Note: The requirement for the minimum BootROM version only applies to the Call Server, as the Centralized Software Upgrade feature upgrades the MG 1000S's bootROM version to match the Call Server's BootROM version.

The initial upgrade installation program upgrades the BootROM on the Call Server. BootROM versions only become an issue if the installer downgrades the BootROM to an earlier version in the following circumstances:

- after the installation is complete
- before the Centralized Software Upgrade is started

Verify and manually upgrade this BootROM to enable the Centralized Software Upgrade. To upgrade the BootROM, see Procedure 17 "Upgrade boot ROM on the SSC card" on .

After upgrading the BootROM, the feature can be activated in two ways:

1   Accept the automatic upgrade option using the Call Server Software Upgrade program, as shown in step 17 on .

2   Use the LD 143 command ENL **AUTOUPGMG** (see "Automatic feature operation" on for details).

Auto upgrade causes the MG 1000S to begin upgrading when the following conditions are met:

•   the MG 1000S is connected (IP Link Up) to the Call Server

•   the MG 1000S is in normal mode

•   a difference in software version is detected

Centralized upgrade summary of steps

Once the MG 1000S is installed with an SSC in slot 0, upgrade the software automatically by following these steps:

1   First, upgrade the Call Server boot ROM and software using the existing Software Delivery card process — Procedure 13 on .

2   If the Automatic Sequential or Automatic Simultaneous options for Centralized Software Upgrade was not selected during the Call Server Upgrade, use CLI commands as outlined in "Automatic feature operation" on .

3   The software is transferred to the MG 1000S over their 100BaseT Ethernet link. The MG 1000S upgrades automatically if it doesn't match the Call Server software version.

Note: No Software Delivery card is required in the MG 1000S for the upgrade process.

Causes of upgrade failure

The following circumstances can cause the upgrade to fail:

•   modification of the customer database

•   modification of the Problem Determination Tool password after the remote upgrade has started

- Ethernet link outages

- removal of patches from the system or modification to the list of installed patches while the remote upgrade is in progress. This includes loadware patches.

The system cannot guarantee call processing when more than one MG 1000S is performing a software upgrade or boot ROM upgrade.

Loss of service

Expect a temporary loss of service during the upgrade.

Automatic feature operation

Estimated time for simultaneous software upgrade:

Call Server (0.5 hours)	+	4 MG 1000S (0.5 hours)	=	1.0 hours

Note: Upgrade times vary depending on the actual speed of the Call Server to MG 1000S links.

Estimated time for sequential software upgrade:

Call Server (0.5 hours)	+	4 MG 1000S (4 x 0.5 hours each = 2.0 hours)	=	2.5 hours

Refer to Procedure 13 "Upgrading the Call Server software" on . With this feature, the installation menu changes appear only on the Call Server. The new sub-procedure happens after the installer has validated that the new installation summary is correct (step 16), but before the installer has input the keycodes for the installation (step 18).

Procedure 23
Enabling Centralized Software Upgrade

Note: This procedure takes place within the upgrade of a Call Server.
See Procedure 13 "Upgrading the Call Server software" on .

1 After step 16 of Procedure 13 "Upgrading the Call Server software" on
, the following prompt appears:

```
Enable Automatic Centralized Software Upgrade? (y/n/
[a]bort):
```

a. If **n** is selected, automatic Centralized Software Upgrade is set to
"disabled". This procedure is complete.

Note: Automatic Centralized Software Upgrade can be enabled in
LD 143 at a later time.

b. If **y** is selected, the following option is displayed:

```
Select the Automatic Centralized Software Upgrade
mode:

1. Sequential
2. Simultaneous

[q]uit, [p]revious, [m]ain menu, [h]elp or [?], <cr>
- redisplay

Enter Selection :
```

2 Make a selection.

a. If **1** is selected, the Centralized Software Upgrade option is enabled
and software upgrades to the MG 1000S occurs in a sequential
manner. This procedure is at an end.

b. If **2** is selected, the following warning is presented:

```
WARNING: This option may impact call processing. Do
you wish to proceed? (y/n/[a]bort):
```

3 Make a selection.

   a. If '**y** is selected, the Centralized Software Upgrade option is enabled and software upgrades to the MG 1000S occurs in a simultaneous manner.

   b. If **n** is selected, the system returns to the Software Installation Main Menu.

   c. If abort is chosen, the system returns to the Technology Software Installation Main Menu.

   Note: Alternatively, manually upgrade the MG 1000S using a Software Delivery card. See "Upgrade the MG 1000S" on page 75.

4 After the MG 1000S has upgraded, perform a data dump using LD 43 on the Call Server. This synchronizes the customer database to the MG 1000S.

——————————— **End of Procedure** ———————————

Software Upgrade Progress Indicators

The Software Upgrade Progress indicator is displayed on the Call Server to track the MG 1000S's installation progress. This progress is also logged in the report log kept on the Call Server and it is replicated to the MG 1000S. The following messages are displayed:

```
SRPT077 Gateway <x>: Preparing gateway for upgrade.

SRPT077 Gateway <x>: Gateway rebooting to start
upgrade. Please wait...

SRPT077 Gateway <x>: <y>% of Software Upgrade
Complete

SRPT077 Gateway <x>: Remote software upgrade
complete. Rebooting system...
```

Manual upgrade operation

This feature manually initiates Call Server and MG 1000S software upgrades.

LD 143 – Enable or disable Centralized Software Upgrade. (Part 1 of 2)

Command	Description
UPGMG ALL	Immediately initiates a manual upgrade of the version of software installed on the Call Server to all connected MG 1000S that have a different version of software installed.
UPGMG SEQ	Sequential: Upgrade to the MG 1000S is performed sequentially. One MG 1000S upgrades at a time. No other MG 1000S upgrades can be initiated until the current MG 1000S has completed its installation.
UPGMG SIM	Simultaneous: Upgrade to any MG 1000S is performed simultaneously. Any MG 1000S can be upgraded at the same time (WARNING: call processing is not supported on the Call Server when this option is selected.)
UPGMG <1-4>	Immediately initiates a manual upgrade of the version of software installed on the Call Server to the specified MG 1000S, regardless if the version of software on the MG 1000S matches the Call Server's version. (Warning: if this option is initiated, call processing is not supported on the Call Server to another MG 1000S, while the Call Server is currently upgrading a specified MG 1000S.)
UPGMGBOOT <1-4>	Immediately initiates a manual upgrade of the current version of the BootROM that is operating on the Call Server to the selected MG 1000S. (Warning: if this option is initiated, call processing is not supported on the Call Server to another MG 1000S, while the Call Server is currently upgrading a specified MG 1000S.)
ENL AUTOUPGMG SEQ	Enables the automatic software upgrade option.
	Sequential: Upgrade to the MG 1000S is performed sequentially. One MG 1000S upgrades at a time. No other MG 1000S upgrades can be initiated until the current MG 1000S has completed its installation.

LD 143 – Enable or disable Centralized Software Upgrade. (Part 2 of 2)

Command	Description
ENL AUTOUPGMG SIM	Enables the automatic software upgrade option.
	Simultaneous: Upgrade to any MG 1000S is performed simultaneously. Any MG 1000S can be upgraded at the same time (WARNING: call processing is not supported on the Call Server when this option is selected.)
DIS AUTOUPGMG	Disables the automatic software upgrade option.
PRT AUTOUPGMG	Displays the settings for the automatic upgrade option.
ABORT UPGMG	Aborts all the current and pending software upgrades and disables the automatic software upgrade option.

Appendix C: Obtain software

Downloading software from the Nortel website

It is not necessary to acquire software media from Nortel to begin a system upgrade. The software is available from the Nortel Software Download website. Keycodes are required in order for the software installation to work.

Check the Nortel Software Download web site for the latest software and firmware releases.

> *Note:* See the Ordering Rules and Price Book from a Nortel supplier for details on items and packages.

Follow the steps in Procedure 24 to download software from the Nortel Software Download web site

Procedure 24
Downloading software from the Nortel website

1   Connect to the following URL using any PC with Internet access: http://www.nortel.com

2   Select **Support | Software Downloads | Product Family | Succession**.

3   Under **Succession: General Availability,** search for the required software. Under the required software (for example, **IP Line**), Select **Software**. The Software Downloads page refreshes and displays the IP Line products.

The following items applicable to CS 1000 Release 4.5 software are located on this page:

- Call Server software

- Release Bulletin

- Signaling Server Software CD-ROM image – this includes the Signaling Server software as well as the IP Phone firmware and Voice Gateway Media Card loadware.

- XA Controller firmware for the Voice Gateway Media Cards

4   Click the required product (for example, **IP Line Software**).

5   If not already logged into a My Nortel account, enter a User ID and Password on the **Sign In** page and then click **Sign In**.

   Note: If not registered to access this web site, refer to the CS 1000 Release 4.5 product bulletin for directions on how to register.

6   The **Software Downloads: Software Details Information** page appears. Click the link next to **File Download**.

7   In the **Save As** window, choose the desired path to save the file to the local disk on the PC and click **Save**.

———————— **End of Procedure** ————————

Creating a Signaling Server Software CD-ROM

To upgrade to the latest software, Signaling Servers require the latest Signaling Server CD-ROM version. If the latest CD-ROM version is not available, download the CD-ROM image from the Nortel Electronic Software Download site. For more information on navigating the site, refer to "Obtain software" on .

A single ".iso" file is provided on the site to create the Software CD-ROM. This file is a ready-to-burn ISO9660 CD image that creates a bootable CD compliant with the El Torito specification. Use CD writer software that can create a CD from this image. As the CD image is pre-configured, the software automatically creates a bootable CS 1000 Release 4.5 software CD-ROM. See the software's help pages to create a CD from an ISO file. As well, review the associated README file that is associated with the Nortel Signaling

Server Software download. If there are problems creating a CD, refer to the CD writer's software documentation.

Follow the steps in Procedure 25 to create a Signaling Server Software CD-ROM.

Procedure 25
Creating a Signaling Server Software CD-ROM

1   Download Signaling Server Software from Nortel download site (see "Obtain software" on).

2   Use the software option to "burn" or "create" a CD from the CD image. Do not drag-and-drop, as this can result in a file copy and a CR-ROM that does not work. Do not write the ISO file to the CD-ROM.

   Note: Select the disk-at-once write option.

3   Close the session.

4   Label the CD appropriately; for example, "Signaling Server, sse-3.60.xx".

———————————— **End of Procedure** ————————————

Appendix D: Product compatibility for CS 1000 Release 4.5 software

Table 4 lists Nortel product compatibility for CS 1000 Release 4.5 software.

Table 4
CS 1000 Release 4.5 compatibility (Part 1 of 12)

Auxiliary Processors	Meridian 1 Options 51C, 61C, 81, 81C; CS 1000M Chassis / Cabinet, CS 1000M HG, CS 1000M SG, CS 1000M MG	CS 1000S	CS 1000E	CS 1000B	Survivable Remote Gateway SRG1.0/ SRG505
Attendant Console					
PC Attendant Console	Supported	Supported	Supported	Supported	Not supported
Meridian Attendant PC software	Supported	Supported	Supported	Supported	Not supported
M2250 Attendant Console	Supported	Supported	Supported	Supported	Not supported
M2016S Digital Secure Sets					
M2016S Secure Set (NA Only)	Supported	Supported	Supported	Supported	Not supported
M3900 Sets					
M39xx	Supported	Supported	Supported	Supported	Not supported

Table 4
CS 1000 Release 4.5 compatibility (Part 2 of 12)

Auxiliary Processors	Meridian 1 Options 51C, 61C, 81, 81C; CS 1000M Chassis / Cabinet, CS 1000M HG, CS 1000M SG, CS 1000M MG	CS 1000S	CS 1000E	CS 1000B	Survivable Remote Gateway SRG1.0/ SRG505
System Management					
Optivity Telephony Manager (OTM)	OTM 2.2	OTM 2.2	OTM 2.2	OTM 2.2	Required for main office configuration only.
Telephony Manager	TM 3.0 (GA Sept '05)	TM 3.0 (GA Sept '05)	TM 3.0 (GA Sept '05)	TM 3.0 GA Sept '05)	Required for main office configuration only.
Element Manager	EM 4.5	EM 4.5	EM 4.5	EM 4.5	Required for main office configuration only.
Messaging					
CallPilot	1.07 with Service Update 4, 2.0, 2.02, SU03, 3.0	1.07 with Service Update 4, 2.0, 2.02, SU03, 3.0	2.0, 2.02, SU03, 3.0	1.07 with Service Update 4 2.0, 2.02 SU03, 3.0	Support of SRG IP users via main office only. Hardware not supported directly on SRG unit.
HMS 400	Supported	Supported	Supported	Not supported	Not supported
CallPilot Mini	1.5A, 1.5B, 1.5C (not supported on Large Systems)	Not supported	Not supported	1.5A, 1.5B, 1.5C	Support of SRG IP users via main office only. Hardware not supported directly on SRG unit.

Table 4
CS 1000 Release 4.5 compatibility (Part 3 of 12)

Auxiliary Processors	Meridian 1 Options 51C, 61C, 81, 81C; CS 1000M Chassis / Cabinet, CS 1000M HG, CS 1000M SG, CS 1000M MG	CS 1000S	CS 1000E	CS 1000B	Survivable Remote Gateway SRG1.0/ SRG505
Meridian Mail Modular Option EC	12.12-13.14	Not supported directly	Not supported directly	Not supported	Not supported
Meridian Mail Enhanced Card Option	12.12-13.14	Not supported directly	Not supported directly	12.12-13.14	Support of SRG IP users via main office only. Hardware not supported directly on SRG unit.
Meridian Mail reporter R2.x	NA	NA	NA	NA	
Companion					
Companion - Manufacture Discontinued new system packages, January 2003	3.xx -7.xx (7.xx required for Enhanced Capacity) Release 4.0 was the effective latest in EMEA.	Not supported	Not supported	Not supported	Not supported

Table 4
CS 1000 Release 4.5 compatibility (Part 4 of 12)

Auxiliary Processors	Meridian 1 Options 51C, 61C, 81, 81C; CS 1000M Chassis / Cabinet, CS 1000M HG, CS 1000M SG, CS 1000M MG	CS 1000S	CS 1000E	CS 1000B	Survivable Remote Gateway SRG1.0/ SRG505
IP Clients					
Meridian DECT (DMC4/DMC8 version)	451000.xx / 470001.xx – SW embedded on IPE card	451000.xx / 470001.xx – SW embedded on IPE card	Dect Mobility card NOT supported in the IP Media Gateway due to dependencies on E1/BRI interfaces for clocking sync. Can be supported in IP Peer Gateways. Will deliver Wireless capability with i2210.	451000.xx / 470001.xx – SW embedded on IPE card. Introducing Wireless Visitors.	Not supported
VoIP – 802.11 Wireless IP Gateway with Symbol	Application supported on ITG Pentium only 1.19 - Current 1.20 - Maintenance Up-issue (GA - Q2/04)	Application supported on ITG Pentium only.1.19 - Current, 1.20 - Maintenance Up-issue	Not supported	Not supported	Not supported
IP Phone 2210 / 2211	Supported	Supported	Supported	Supported	Supported
IP Phone 2001	Supported	Supported	Supported	Supported	Supported
IP Phone 2002	Supported	Supported	Supported	Supported	Supported
IP Phone 2004	Supported	Supported	Supported	Supported	Supported
Softphone 2050	Supported	Supported	Supported	Supported	Supported
Mobile Voice Client 2050	Supported	Supported	Supported	Supported	Supported

Table 4
CS 1000 Release 4.5 compatibility (Part 5 of 12)

Auxiliary Processors	Meridian 1 Options 51C, 61C, 81, 81C; CS 1000M Chassis / Cabinet, CS 1000M HG, CS 1000M SG, CS 1000M MG	CS 1000S	CS 1000E	CS 1000B	Survivable Remote Gateway SRG1.0/ SRG505
IP Phone 2033	Supported	Supported	Supported	Supported	Not supported
IP Phone ACD Set	Supported	Supported	Supported	Supported	Not supported
IP Phone 2006	GA date TBD	GA date TBD	GA date TBD	GA date TBD	Not supported
IP Phone 2007	GA date TBD	GA date TBD	GA date TBD	GA date TBD	Not supported
Remote Office Portfolio					
Remote Gateway 9150	1.4.1, 1.4.2, 1.5.2	1.4.1, 1.4.2, 1.5.2	Not supported	Not supported	Not supported
Remote Gateway 9110/ 9115/ IP Adaptor	1.4.1, 1.4.2, 1.5.2	1.4.1, 1.4.2, 1.5.2	Not supported	Not supported	Not supported
Meridian Home Office MHO-II	1.18	Not Supported	Not supported	Not supported	Not supported
Mini Carrier Remote	Supported	Not Supported	Not supported	Not supported	Not supported
Carrier Remote	Supported	Not Supported	Not supported	Not supported	Not supported
Fiber I	Supported	Not Supported	Not supported	Not supported	Not supported
Fiber II	Supported	Not Supported	Not supported	Not supported	Not supported
RPE (Remote Intelligent Peripheral Equipment)	Not supported	Not supported	Not supported	Not supported.	Not supported
Retired Call Center Applications					
Meridian MAX [any platform]	Not supported	Not supported	Not supported	Not supported.	Not supported

Table 4
CS 1000 Release 4.5 compatibility (Part 6 of 12)

Auxiliary Processors	Meridian 1 Options 51C, 61C, 81, 81C; CS 1000M Chassis / Cabinet, CS 1000M HG, CS 1000M SG, CS 1000M MG	CS 1000S	CS 1000E	CS 1000B	Survivable Remote Gateway SRG1.0/ SRG505
Network Administration Center [NAC]	Not supported	Not supported	Not supported	Not supported.	Not supported
Meridian Customer Controlled Routing [MCCR]	Not supported	Not supported	Not supported	Not supported.	Not supported
Meridian Link [Mlink]	Not supported	Not supported	Not supported.	Not supported.	Not supported
Symposium Link	Not supported	Not supported	Not supported	Not supported	Not supported
Symposium Desktop TAPI Service Provider for MCA (Meridian Communicator Adapter)	Not supported	Not supported	Not supported	Not supported	Not supported
Meridian Link & MCCR Co-residency	Not supported	Not supported	Not supported	Not supported	Not supported
Symposium Call Center and CTI Applications					
Symposium TAPI Service Provider	3.0	3.0	3.0	Support of SBO IP users via Main Office only (Normal mode). HW not supported directly on SBO unit.	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.

Table 4
CS 1000 Release 4.5 compatibility (Part 7 of 12)

Auxiliary Processors	Meridian 1 Options 51C, 61C, 81, 81C; CS 1000M Chassis / Cabinet, CS 1000M HG, CS 1000M SG, CS 1000M MG	CS 1000S	CS 1000E	CS 1000B	Survivable Remote Gateway SRG1.0/ SRG505
Symposium Agent	2.3	2.3	2.3	Support of SBO IP users via Main Office only (Normal mode). HW not supported directly on SBO unit.	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.
Symposium Agent Greeting	2.0	2.0	2.0	Support of SBO IP users via Main Office only (Normal mode). HW not supported directly on SBO unit.	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.
Nortel Remote Agent Observe	1.0	1.0	1.0	Support of SBO IP users via Main Office only (Normal mode). HW not supported directly on SBO unit.	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.
Meridian Link Services [MLS]	4.2, 5	4.2, 5	4.2, 5	Support of SBO IP users via Main Office only (Normal mode). HW not supported directly on SBO unit.	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.

Table 4
CS 1000 Release 4.5 compatibility (Part 8 of 12)

Auxiliary Processors	Meridian 1 Options 51C, 61C, 81, 81C; CS 1000M Chassis / Cabinet, CS 1000M HG, CS 1000M SG, CS 1000M MG	CS 1000S	CS 1000E	CS 1000B	Survivable Remote Gateway SRG1.0/ SRG505
Symposium Express Call Center [SECC]	4.2	4.2	4.2	Support of SBO IP users via Main Office only (Normal mode). HW not supported directly on SBO unit.	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.
Symposium Call Center Server [SCCS] incl. Symposium Web Client	4.2, 5	4.2, 5	4.2, 5	Support of SBO IP users via Main Office only (Normal mode). HW not supported directly on SBO unit.	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.
Symposium Web Centre Portal [SWCP]	4.0	4.0	4.0	Support of SBO IP users via Main Office only (Normal mode). HW not supported directly on SBO unit.	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.
CTI.next (Nortel Communications Control Toolkit)	5.0	5.0	5.0	Support of SBO IP users via Main Office only (Normal mode). HW not supported directly on SBO unit.	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.
Periphonics IVR Applications					

Table 4
CS 1000 Release 4.5 compatibility (Part 9 of 12)

Auxiliary Processors	Meridian 1 Options 51C, 61C, 81, 81C; CS 1000M Chassis / Cabinet, CS 1000M HG, CS 1000M SG, CS 1000M MG	CS 1000S	CS 1000E	CS 1000B	Survivable Remote Gateway SRG1.0/ SRG505
Periphonics IVR (VPS/is)	5.x	5.4.2	5.4.2	Support of SBO IP users via Main Office only (Normal mode). HW not supported directly on SBO unit.	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.
Periphonics Integrated Package for Meridian Link (IPML) – VPS/is and MPS 100	2.0.4, 2.0.5	2.0.4, 2.0.5	2.0.4, 2.0.5	Support of SBO IP users via Main Office only (Normal mode). HW not supported directly on SBO unit.	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.
Periphonics Multimedia Processing Server (MPS) 100	1.0	1.0	1.0	Support of SBO IP users via Main Office only (Normal mode). HW not supported directly on SBO unit.	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.
Periphonics Multimedia Processing Server - MPS 500, MPS 1000	2.1	2.1	2.1	Support of SBO IP users via Main Office only (Normal mode). HW not supported directly on SBO unit.	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.

Table 4
CS 1000 Release 4.5 compatibility (Part 10 of 12)

Auxiliary Processors	Meridian 1 Options 51C, 61C, 81, 81C; CS 1000M Chassis / Cabinet, CS 1000M HG, CS 1000M SG, CS 1000M MG	CS 1000S	CS 1000E	CS 1000B	Survivable Remote Gateway SRG1.0/ SRG505
Periphonics Integrated Package for Meridian Link (IPML) – MPS 500, MPS 1000	2.1	2.1	2.1	Support of SBO IP users via Main Office only (Normal mode). HW not supported directly on SBO unit.	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.
Business Communication Manager					
Business Communications Manager	3.5, 3.6, 3.7	3.5, 3.6, 3.7	3.5, 3.6, 3.7	3.5, 3.6, 3.7, BCM50 R1.0	SRG505
MIXX Portfolio					
Integrated Call Assistant (MICA)	1.5	1.5	1.5	Support of SBO IP users via Main Office only (Normal mode). HW not supported directly on SBO unit.	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.
Nortel Integrated Conference Bridge (NNICB)	2.1, 3.0x, 4.0	2.1, 3.0x, 4.0	2.1, 3.0x, 4.0	2.1, 3.0x, 4.0	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.

Table 4
CS 1000 Release 4.5 compatibility (Part 11 of 12)

Auxiliary Processors	Meridian 1 Options 51C, 61C, 81, 81C; CS 1000M Chassis / Cabinet, CS 1000M HG, CS 1000M SG, CS 1000M MG	CS 1000S	CS 1000E	CS 1000B	Survivable Remote Gateway SRG1.0/ SRG505
Integrated Recorded Announcement (MIRAN)	2.0.16 and above	2.0.16 and above	2.0.16 and above	2.0.16 and above	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.
Nortel Integrated Personal Call Director	1.0.3 and above, 2.0	1.0.3 and above, 2.0)	1.0.3 and above, 2.0)	Support of SBO IP users via Main Office only (Normal mode). HW not supported directly on SBO unit.	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.
Integrated Voice Services (MIVS)	1.17	1.17	1.17	Support of SBO IP users via Main Office only (Normal mode). HW not supported directly on SBO unit.	Support of SRG IP users via Main Office only (Normal mode). HW not supported directly on SRG unit.
MCS					
MCS 5100	2.0, 3.0, 3.5 when GA	2.0, 3.0, 3.5 when GA	3, 3.5 when GA	3, 3.5 when GA	Not applicable
CS 2x00					
CS 2000	SN06.2, SN07, SN08, SN09	SN06.2, SN07, SN08, SN09	SN06.2, SN07, SN08, SN09	SN06.2, SN07, SN08, SN09	Not applicable
CS 2100	SE06.2, SE07, SE08, SE09	SE06.2, SE07, SE08, SE09	SE06.2, SE07, SE08, SE09	SE06.2, SE07, SE08, SE09	Not applicable

Table 4
CS 1000 Release 4.5 compatibility (Part 12 of 12)

Auxiliary Processors	Meridian 1 Options 51C, 61C, 81, 81C; CS 1000M Chassis / Cabinet, CS 1000M HG, CS 1000M SG, CS 1000M MG	CS 1000S	CS 1000E	CS 1000B	Survivable Remote Gateway SRG1.0/ SRG505

Note 1: In addition to the systems and application compatibility chart above, information at a card and shelf level can be found in the Compatibility Section of *Product Compatibility* (553-3001-156).

Note 2: It is possible for a Main Office Call Server and MG 1000B to temporarily run different software releases, provided the Main Office is running CS 1000 Release 4.5. This allows customers to add a single additional MG 1000B for CS 1000 Release 4.5 without having to upgrade their entire network of MG 1000Bs.

Note 3: Mixed software configuration between a CS 1000 Release 4.5 Main Office and a Release 2.0 MG 1000B must be temporary.

Note 4: Mixed software configuration between a CS 1000 Release 4.5 Main Office and a Succession 3.0 MG 1000B can be indefinite.

Note 5: In Normal mode, IP users use the feature set of the Main Office. In Local mode, IP users use the feature set of the MG 1000B. Analog or Digital users always use the feature set of the MG 1000B.

Technical Assistance service

Contents

This section contains information on the following topics:

Nortel Technical Assistance Centers

To help customers obtain maximum benefit, reliability, and satisfaction from their CS 1000E systems, Nortel provides technical assistance in resolving system problems. Table 5 lists the centers that provide this service.

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 for assistance.

If you purchased a Nortel service program, contact one of the following Nortel Technical Solutions Centers.

Table 5
Customer Technical Services (Part 1 of 2)

Location	Contact
Nortel Global Enterprise Technical Support (GETS) PO Box 833858 2370 Performance Drive Richardson, TX 75083 USA	North America Telephone: 1 800 4NORTEL
Nortel Corp. P.O. Box 4000 250 Sydney Street Belleville, Ontario K8N 5B7 Canada	North America Telephone: 1 800 4NORTEL
Nortel Service Center - EMEA	EMEA Telephone: 00 800 8008 9009 or +44 (0)870 907 9009 E-mail: emeahelp@nortel.com
Nortel 1500 Concord Terrace Sunrise, Florida 33323 USA	Brazil Telephone: 5519 3705 7600 E-mail: entcts@nortel.com English Caribbean Telephone: 1 800 4NORTEL Spanish Caribbean Telephone: 1 954 858 7777 Latin America Telephone: 5255 5480 2170

Table 5
Customer Technical Services (Part 2 of 2)

Location	Contact
Network Technical Support (NTS)	Asia Pacific Telephone: +61 28 870 8800
	Australia Telephone:1800NORTEL (1800 667835) or +61 2 8870 8800 E-mail: asia_support@nortel.com
	People's Republic of China Telephone: 800 810 5000 E-mail: chinatsc@nortel.com
	Japan Telephone: 010 6510 7770 E-mail: supportj@nortel.com
	Hong Kong Telephone: 800 96 4199 E-mail: chinatsc@nortel.com
	Taiwan Telephone: 0800 810 500 E-mail: chinatsc@nortelnortel.com
	Indonesia Telephone: 0018 036 1004
	Malaysia Telephone: 1 800 805 380
	New Zealand Telephone: 0 800 449 716
	Philippines Telephone: 1 800 1611 0063 or 632 917 4420
	Singapore Telephone: 800 616 2004
	South Korea Telephone: 0079 8611 2001
	Thailand: Telephone: 001 800 611 3007

Services available

Services available through the Technical Assistance Centers include:

- diagnosing and resolving software problems not covered by support documentation

- diagnosing and resolving hardware problems not covered by support documentation

- assisting in diagnosing and resolving problems caused by local conditions

There are several classes of service available. Emergency requests (Class E1 and E2) receive an immediate response. Service for emergency requests is continuous until normal system operation is restored. Non-emergency requests (Class S1, S2, and NS) are serviced during normal working hours. Tables 6 and 7 describe the service classifications.

Table 6
Technical service emergency classifications

Class	Degree of failure	Symptoms
E1	Major failure causing system degradation or outage	System out-of-service with complete loss of call-processing capability.
		Loss of total attendant console capability.
		Loss of incoming or outgoing call capability.
		Loss of auxiliary Call Detail Reporting (CDR) in resale application.
		Call processing degraded for reasons such as trunk group out-of-service:
		• 10% or more lines out-of-service
		• frequent initializations (seven per day or more)
		• inability to recover from initialization or SYSLOAD
		• consistently slow dial tone (eight seconds or more delay)
E2	Major failure causing potential system degradation or outage	Standby CPU out-of-service.
		Frequent initializations (one per day or more).
		Disk drive failure.
		Two sets of disks inoperative.

Table 7
Technical services non-emergency classifications

Class	Degree of failure	Symptoms
S1	Failure that affects service	Software or hardware trouble directly and continuously affecting user's service or customer's ability to collect revenue.
		Problem that will seriously affect service at in-service or cut-over date.
S2	Intermittent failure that affects service	Software or hardware faults that only intermittently affect service.
		System-related documentation errors that directly result in or lead to impaired service.
NS	Failure that does not affect service	Documentation errors.
		Software inconsistencies that do not affect service.
		Hardware diagnostic failures (not defined above) that cannot be corrected by resident skills.
		Test equipment failures for which a backup or manual alternative can be used.
		Any questions concerning products.

Except as excluded by the provisions of warranty or other agreements with Nortel, a fee for technical assistance may be charged, at rates established by Nortel. Information on rates and conditions for services are available through Nortel sales representatives.

Requesting assistance

Collect the information listed in Table 8 before you call for service.

Table 8
Checklist for service requests

Name of person requesting service	
Company represented	
Telephone number	
System number/identification	
Installed software generic and issue (located on data disk)	
Modem telephone number and password (if applicable)	
Seriousness of request (see Tables 6 and 7)	
Description of assistance required	

List of terms

DSP

Digital Signal Processor. When used as a noun, DSP stands for, a special type of coprocessor designed for performing the mathematics involved in DSP. Most DSPs are programmable, which means that they can be used for manipulating different types of information, including sound, images, and video.

Digital Signal Processing refers to manipulating analog information, such as sound or photographs, that has been converted into a digital form. DSP also implies the use of a data compression technique.

ELAN

Embedded Local Area Network. This isolated section of the LAN connects the Call Server, Signaling Server, MG 1000S SSC, Voice Gateway Media Card, and OTM for system communication purposes.

Boot ROM

The Call Server and MG 1000S BIOS.

Gatekeeper

See NRS.

Gateway

In networking, a combination of hardware or software or both, that links two different types of networks. Gateways between e-mail systems, for example, allow users on different e-mail systems to exchange messages.

H.323

A standard approved by the International Telecommunication Union (ITU) that defines how audiovisual conferencing data is transmitted across networks. In theory, H.323 should enable users to participate in the same conference even though they are using different videoconferencing applications. Although most videoconferencing vendors have announced that their products conform to H.323, it's too early to say whether such adherence actually results in interoperability.

IP

Internet Protocol. Pronounced as two separate letters. IP specifies the format of packets, also called datagrams, and the addressing scheme. Most networks combine IP with a higher-level protocol called Transport Control Protocol (TCP), which establishes a virtual connection between a destination and a source.

IP by itself is something like the postal system. It allows you to address a package and drop it in the system, but there's no direct link between you and the recipient. TCP/IP, on the other hand, establishes a connection between two hosts so that they can send messages back and forth for a period of time.

ITG-P

The ITG-P card has a Pentium processor and 24 Digital Signaling Processor channels. It occupies two slots in a MG 1000S or MG 1000S Expansion. It provides the same functionality as the Voice Gateway Media Card when equipped with the IP Line 3.1 application. See "Voice Gateway Media Card" on .

Layer 2 switching

Packets are forwarded based on the destination's MAC address. The switch automatically determines which switch port must be used to send the packet, based on the destination's MAC address. The MAC address location was determined from incoming packets from that MAC address received on that port.

Layer 3 switching

Packet traffic is grouped based on source and destination addresses. The first packet in a flow is routed by a software-based algorithm. Subsequent packets with the same source and destination addresses are switched based on the destination's MAC address (hardware mechanism). This is similar to multi-layer routing and routers with hardware assist.

Media Card

The Media Card is an IP telephony hardware card. It is available with 8 or 32 Digital Signal Processors (DSPs) for transcoding between circuit-switched and IP voice traffic streams. The hardware can run different software loads, which changes the function of the card. For instance, like the ITG-P card, with the IP Line 3.1 application installed, it acts as a Voice Gateway Media Card. With Nortel Integrated Recorded Announcer software installed, it acts as an Integrated Recorded Announcer line card.

NRS

Network Routing Service. The NRS manages a centralized numbering plan for the network. It combines a SIP Redirect Server and H.323 Gatekeeper into one platform. The NRS software identifies the IP addresses of MG 1000Ts, including CS 1000S and third party systems, based on the network-wide numbering plan. This allows simplified management of the CS 1000S network.

PSTN

Public Switched Telephone Network. Refers to the international telephone system based on copper wires carrying analog voice data. This is in contrast to newer telephone networks base on digital technologies, such as ISDN and FDDI.

Telephone service carried by the PSTN is often called plain old telephone service (POTS).

QoS

Quality of Service. A networking term that specifies a guaranteed throughput level. One of the biggest advantages of ATM over competing technologies such as Frame Relay and Fast Ethernet, is that it supports QoS levels. This allows ATM providers to guarantee to their customers that end-to-end latency does not exceed a specified level.

There are several methods to provide QoS, as follows:

- High bandwidth

- Packet classification

- DiffServ

- IP fragmentation

- Traffic shaping

- Platform queuing mechanisms

routing

The process of selecting the correct path for packets transmitted between IP networks by using software-based algorithms. Each packet is processed by the algorithm to determine its destination.

Signaling Server

The Signaling Server is an industry-standard PC-based server that provides signaling interfaces to the IP network. In a CS 1000S, the Signaling Server performs the following functions: acts as a SIP Redirect Server and H.323 Gatekeeper, runs the MG 1000T (for virtual trunks), acts as a Terminal Proxy Server (TPS), and acts as a web server for Element Manager.

SIP

Session Initiation Protocol. SIP is a layer 7 (application layer) protocol which is used for establishing, modifying, and terminating conference and telephony sessions in IP networks.

TDM

Time Division Multiplexing. A type of multiplexing that combines data streams by assigning each stream a different time slot in a set. TDM repeatedly transmits a fixed sequence of time slots over a single transmission channel.

Within T-Carrier systems, such as T1 and T3, TDM combines Pulse Code Modulated (PCM) streams created for each conversation or data stream.

TLAN

Telephony Local Area Network. This isolated section of the network connects the Voice Gateway Media Cards, the Signaling Server, and the IP Phones for telephony communication purposes.

TPS

Terminal Proxy Server. This server controls the connection of IP Phones. It resides on the Signaling Server with an emergency backup on the Voice Gateway Media Card.

Voice Gateway Media Card

The voice gateway application is used any time an IP and TDM device are connected together. The card is equipped with DSPs to perform media transcoding between IP voice packets and TDM-based devices. The Voice Gateway Media Cards also provide echo cancellation and compression and decompression of voice streams. The voice gateway software can run on an 8-port Media Card, a 32-port Media Card, or the 24-port Pentium-based ITG platform. Within the MG 1000B, all of these cards register the voice channels to the MG 1000B SSC when they are configured.

WAN

Wide Area Network. A computer network that spans a relatively large geographical area. Typically, a WAN consists of two or more local-area networks (LANs).

Computers connected to a WAN are often connected through public networks, such as the telephone system. They can also be connected through leased lines or satellites. The largest WAN in existence is the Internet.

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