Nortel Communication Server 1000
Nortel Communication Server 1000 Release 5.0

Communication Server 1000E Upgrade

Communication Server 1000S to Communication Server 1000E

Document Number: NN43041-470
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Revision history

May 2007

Standard 01.02. This document is up-issued to support Communication Server 1000 Release 5.0.

May 2007

Standard 01.01. This document is issued to support Communication Server 1000 Release 5.0. This document contains information previously contained in the following legacy document, now retired: Communication Server 1000M and Meridian 1 Small System Upgrade Procedures (553-3011-258).

August 2005

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

September 2004

Standard 2.00. This document is up-issued to support 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, which resulted in the merging of multiple legacy NTPs. This new document consolidates

information previously contained in the following legacy documents, now retired:

- *Option 11C Mini: Expansion using Fiber-optic and IP Connectivity Guide* (553-3021-208)
  (Content from *Option 11C Mini: Expansion using Fiber-optic and IP Connectivity Guide* (553-3021-208) also appears in *Communication Server 1000M and Meridian 1: Small System Overview* (NN43011-110) and *Communication Server 1000M and Meridian 1: Small System Planning and Engineering* (NN43011-220).)
- *Option 11C and 11C Mini: Upgrade Procedures Guide* (553-3021-250)
  (Content from *Option 11C and 11C Mini: Upgrade Procedures Guide* (553-3021-250) also appears in *Communication Server 1000M and Meridian 1: Small System Maintenance* (NN43011-700).)

Contents

List of procedures

About this document

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

Subject

Communication Server 1000S to Communication Server 1000E Upgrade Procedures (NN43041-470) describes the process required to upgrade an existing CS 1000S to the CS 1000E system.

This guide does not describe how to add equipment (such as additional chassis' or line cards) to the system. Refer to *Communication Server 1000M and Meridian 1: Small System Installation and Configuration* (NN43011-310) when the upgrade requires installing equipment (such as another chassis expander at a remote site). Also refer to the site and system planning information in *Communication Server 1000M and Meridian 1: Small System Planning and Engineering* (NN43011-220).

Note on legacy products and releases

This NTP contains information about systems, components, and features that are compatible with Nortel Communication Server 1000 Release 5.0 software. For more information on legacy products and releases, click the **Technical Documentation** link under **Support & Training** on the Nortel home page:

www.nortel.com

Applicable systems

This document applies to the CS 1000S system.

Note: When upgrading software, memory upgrades may be required on the Call Server.

Intended audience

This document is intended for individuals responsible for upgrading and expanding existing Small Systems.

Conventions

Terminology

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

- Communication Server 1000M (CS 1000M)

The following systems are referred to generically as "Small System":

- Communication Server 1000M Chassis (CS 1000M Chassis)
- Communication Server 1000M Cabinet (CS 1000M Cabinet)

The following systems are referred to generically as "Chassis system":

- Communication Server 1000M Chassis (CS 1000M Chassis)

The following systems are referred to generically as "Cabinet system":

- Communication Server 1000M Cabinet (CS 1000M Cabinet)

Related information

This section lists information sources that relate to this document.

NTPs

The following NTPs are referenced in this document:

- *Features and Services* (NN43001-106)
- *Converging the Data Network with VoIP* (NN43001-260)
- *Circuit Card: Description and Installation* (NN43001-311)
- *Signaling Server: Installation and Commissioning* (NN43001-312)
- *IP Peer Networking: Installation and Commissioning* (NN43001-313)
- *Element Manager: System Administration* (NN43001-332)
- *IP Line: Description, Installation, and Operation* (NN43001-500)
- *Software Input/Output: Administration* (NN43001-611)
- *Element Manager: System Administration* (NN43001-632)
- *Software Input/Output: Maintenance* (NN43001-711)
- *Communication Server 1000M and Meridian 1 Large System Planning and Engineering* (NN43021-220)
- *Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310)
- *Communication Server 1000E: Planning and Engineering* (NN43041-220)
- *Communication Server 1000E: Installation and Commissioning* (NN43041-310)
- *IP Line: Description, Installation, and Operation* (NN43100-500)

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How to get Help

Getting Help from the Nortel Web site

The best source of support for Nortel products is the Nortel Support Web site:

www.nortel.com/support

This site enables customers to:

- download software and related tools
- download technical documents, release notes, and product bulletins
- sign up for automatic notification of new software and documentation
- search the Support Web site and Nortel Knowledge Base
- open and manage technical support cases

Getting Help over the phone from a Nortel Solutions Center

If you have a Nortel support contract and cannot find the information you require on the Nortel Support Web site, you can get help over the phone from a Nortel Solutions Center.

In North America, call 1-800-4NORTEL (1-800-466-7865).

Outside North America, go to the Web site below and look up the phone number that applies in your region:

www.nortel.com/callus

When you speak to the phone agent, you can reference an Express Routing Code (ERC) to more quickly route your call to the appropriate support specialist. To locate the ERC for your product or service, go to:

www.nortel.com/erc

Getting Help through a Nortel distributor or reseller

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

Overview

Contents

This section contains information on the following topics:

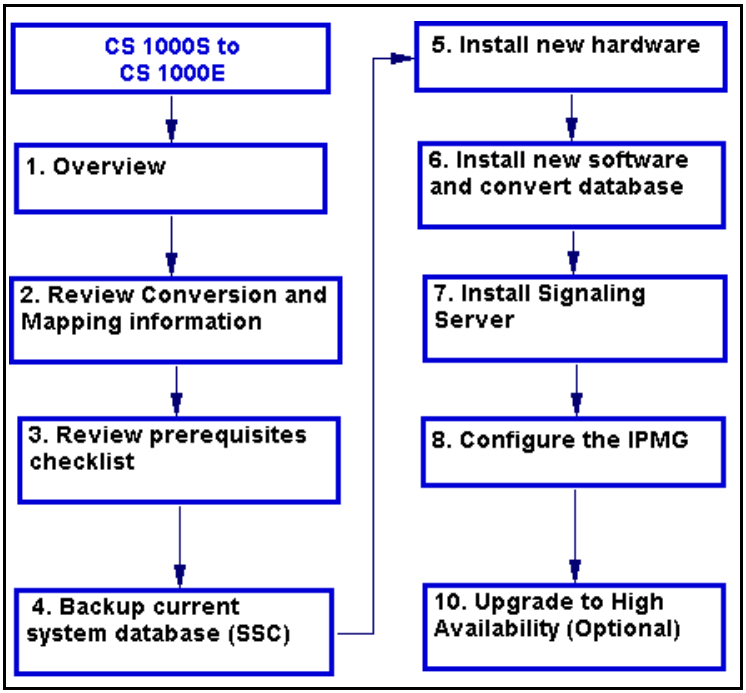
Introduction

This guide describes how to upgrade from an existing CS 1000S system to the Release 5.0 CS 1000E.

> ***Note:*** This document covers the upgrades to both Standard Availability and High Availability CS 1000E systems.

Figure 1 on page 18 shows the task flow for this upgrade.

Figure 1
CS 1000S to CS 1000E upgrade task flow



References in preparation for an upgrade

To plan the network, refer to *Communication Server 1000E: Planning and Engineering* (NN43041-220) and *Converging the Data Network with VoIP* (NN43001-260).

To read about installing, configuring, and managing Voice Gateway Media Cards and IP Phones, refer to *IP Line: Description, Installation, and Operation* (NN43100-500) and *IP Phones: Description, Installation, and Operation* (NN43001-368).

For detailed information about installing and configuring components, refer to *Communication Server 1000E: Installation and Commissioning* (NN43041-310). To read about virtual trunking and the Network Routing Service (NRS), refer to *IP Peer Networking: Installation and Commissioning* (NN43001-313) and *Communication Server 1000E: Overview* (NN43041-110).

CS 1000 Release 5.0 hardware

CS 1000 Release 5.0 introduces the following hardware for the CS 1000E system.

Common Processor Pentium Mobile (CP PM) Call Server

The CS 1000 Release 5.0 CS 1000E system features dual CS 1000E NTDW61AA CP PM Core Call Servers (0 and 1). The CP PM call server hardware includes the following components and features:

- Intel Pentium M 738 1.4 GHz processor
- Two compact flash sockets: (1) a 1GB fixed media disk on the card and (2) a hot swappable removable media disk accessible on the faceplate
- DDR RAM expandable up to 2 GB
- Support for up to 50 Media Gateways
- Three Ethernet ports
- Two serial data interface ports (NTAK19ECE6)
- One USB port.

- Security device

  Note: When populated with different memory and disk drive options, the CP PM hardware can be used as a platform for the CS 1000 Signaling Server.

CP PM Signaling Server

The CP PM hardware can be used as a platform for the CS 1000 Signaling Server. For more information see *Signaling Server: Installation and Commissioning* (NN43001-312).

Note: The CS 1000E system supports CP PM, IBM X306m, HP DL320-G4 and Nortel ISP1100 Signaling Servers running on the same system. The total number of Signaling Servers required depends on capacity and survivability levels.

Media Gateway Controller Card (MGC)

Note: Depending on the upgrade, the NTDW60BA MGC can replace the Small System Controller (SSC) in the CPU card position (card 0) of the MG 1000E.

The CS 1000 Release 5.0 MGC features include:

- Signaling and switching
- Conference and Tones
- Three remote SDI ports (NTDK48K)
- Compact Flash (CF) card slot
- Six external ethernet switch ports
- MGC 100BT Adapter (NTDW63AAE5)—Cabinets only

DSP Daughterboards (optional)

Two optional DSP Daughterboards are introduced for the MGC, the NTDW62AA 32-port DSP daughterboard and the NTDW64AA 96-port DSP daughterboard. These daughterboards provide DSP resources for connecting

IP and TDM devices, eliminating the need for installing Voice Gateway Media Cards on the CS 1000E Media Gateways. However, Voice Gateway Media Cards are still supported in CS 1000E.

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 can occur during this period.

System expansions and additional installations require additional time. See *Communication Server 1000E: Installation and Commissioning* (NN43041-310) for details.

Making IP Peer Networking modifications 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 Commissioning* (NN43001-313) for details.

Upgrade and installation times depend on the following criteria:

- number and availability of technicians
- familiarity with CS 1000E
- physical location of hardware components
- interoperability products (Nortel Messaging Server 500, Symposium, OTM)
- unit testing and system testing
- unforeseen issues

Administration tools

Element Manager

Each Signaling Server hosts a web server that enables access to a user-friendly graphical user interface. This management framework, which is

called Element Manager, can be accessed directly through a web browser or the Telephony Manager 3.1 navigator. The Telephony Manager 3.1 navigator includes integrated links to each system's Element Manager in a network.

Element Manager increases the speed and efficiency of system management by organizing parameters in logical groups, where single web pages provide access to information that was traditionally spread across multiple overlays. The ability of Element Manager to "hide or show information" helps the user focus on specific information, avoiding the distraction of multiple parameters.

Element Manager reduces configuration errors by providing a full text description of each parameter and acronym. It also reduces errors by simplifying parameter value selection through the use of pre-selected default values and drop-down lists.

> ***Note:*** The CS 1000E system and MG 1000T platform are managed separately from their own Signaling Servers, which in turn run Element Manager web servers.

The following management tasks can be performed using Element Manager:

- **System Status**
  Enables users to perform maintenance actions on Call Server components (D-channel, MSDL, TMDI, Digital Trunk, Clock Controller, Network and Peripheral, Trunk diagnostic) and IP Telephony.
- **Configuration**
  Enables users to configure customer data, trunks and routes (traditionally done in LD 14, 15, and 16), D-channel and Common Equipment data (LD 17), digital trunk interface (LD 73), Flexible Code Restriction and Incoming Digit conversion (LD 49), and the IP telephony node.
- **Network Numbering Plan**
  Enables users to configure the Network Routing Service, and ESN data blocks for the Call Server (LD 86).
- **Software Upgrade**
  Enables users to obtain Call Server software version, License parameters, and packages list. Users can also upgrade Voice Gateway Media Card loadware and IP Phone firmware.

- **Patching**
  Enables users to download, activate and deactivate patches for the Call Server and IP Telephony components.
- **System Utilities**
  Enables users to backup and restore databases, set time and date, and upload software files and patches to a directory on the Signaling Server.

Configuration procedures for these tasks are in *Communication Server 1000E: Installation and Commissioning* (NN43041-310), and *System Management* (NN43001-600).

Telephony Manager 3.1 (TM 3.1)

The TM 3.1 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. MG 1000T Expansions and MG 1000B platforms can be added to a network through TMs **System Properties Network** tab. For more information about TM, refer to *Telephony Manager 3.1 System Administration* (NN43050-601).

Web-based management tools

CS 1000E 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.

Network-level tools

Network-level tools in the CS 1000E consolidate billing and directory information for network calls.

For more information, see *Telephony Manager 3.1 Installation and Commissioning* (NN43050-300) or *Communication Server 1000E: Overview* (NN43041-110). For more information about retrieving Call Detail Recording records, see *Communication Server 1000E: Installation and Commissioning* (NN43041-310).

Upgrading the Signaling Server

To upgrade the Signaling Server to Communication Server 1000 Release 5.0, see “Upgrading and configuring the Signaling Server” on page 103.

Recorded Announcement and Music

IMPORTANT!

Currently, the CS 1000E only supports Recorded Announcement Broadcast and Music Broadcast.

H.323 Gatekeeper database migration

To migrate an H.323 Gatekeeper database to a Communication Server 1000 (CS 1000) Release 5.0 Network Routing Service (NRS) database, see *Signaling Server: Installation and Commissioning* (NN43001-312).

MRV Terminal Server

Main role

Note: For CS 1000 Release 4.5 and earlier, the MRV Terminal Server was a necessary system component. This is no longer the case for CS 1000 Release 5.0, as serial ports are supported and the MRV Terminal Server is optional.

The MRV IR-8020M IP-based Terminal Server provides the Call Server with standard serial ports for applications and maintenance.

Hardware components

The MRV Terminal Server provides 20 console ports for modular RJ-45 connectors. It is also equipped with one RJ-45 10BaseT connection for network interface to the ELAN subnet and an internal modem to provide remote access.

Operating parameters

Traditionally, serial ports are used to connect terminals and modems to a system for system maintenance. As well, many third-party applications require serial port interfaces to connect to a PBX. Because the Call Server provides only two local serial ports for maintenance purposes, an IP-based Terminal Server is required to provide the necessary serial ports.

The Terminal Server provides standard serial ports for applications. These applications include billing systems that analyze Call Detail Recording (CDR) records, Site Event Buffers (SEB) that track fault conditions, and various legacy applications such as Property Management System (PMS) Interface and Intercept Computer applications. In addition, serial ports are used to connect system terminals for maintenance, modems for support staff, and printers for system output.

The Terminal Server is configured to automatically log in to the active Call Server at startup. For this reason, each Call Server pair requires only one Terminal Server. Customers can configure up to 16 TTY ports for each Call Server pair.

The Terminal Server can be located anywhere on the ELAN subnet. However, if the Terminal Server is used to provide local connections to a Com port on the Call Server, it must be collocated with the system.

The Terminal Server can also be used as a central point to access and manage several devices through their serial ports.

IMPORTANT!

Currently, the CS 1000E only supports the MRV IR-8020M commercial Terminal Server.

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 Call Server. If the system is fully functional (that is, the connection is active) between the Call Server, Signaling Server, MG 1000E Expansions, 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* (NN43001-600).

Conversion and mapping information

The following information is required for the database conversion that must be performed as part of the Release 5.0 software installation.

CS 1000S Chassis to IPMG mapping

The following pages detail how the Small System TNs are mapped to Large System TNs. The SIPE cabinets are converted to IPMGs as shown in Table 1.

Table 1
SIPE chassis to IPMG conversion

Chassis	IPMG
Call Server (“pizza box”)	000 0
Media Gateway 1	000 1
Media Gateway 2	004 0
Media Gateway 3	004 1
Media Gateway 4	008 0

CS 1000S system conversion

For CS 1000S-type systems, the conversion process creates IPMGs for each existing Media Gateway, as well as one IPMG for the CS 1000S Call Server chassis. The CS 1000S Call Server (“pizza box”) chassis is automatically assigned IPMG number 000 0 (Superloop 000 shelf 0). The first Media Gateway on the source system is assigned IPMG number 000 1 (Superloop 000 shelf 1). As there are no physical Peripheral Equipment resources (for example: DLC, ALC, or TMDI) assigned in the Call Sever chassis, IPMG 000 0 has nothing assigned to it following the software conversion process. IPMG 000 0 can be used as an IPMG once hardware is added to the system and the applicable database configurations are complete.

Minimum software release

The conversion process can be applied to the database of existing small systems provided that the small system has a minimum software version of 23.10.

TN mapping

The following tables map the small system TNs to the CS 1000E TNs (large system TNs). The conversion feature maps the SIPE TNs to CS1000E TNs on the IPMGs.

IP phone TN mapping

When converting from small systems (Option 11C, MG1000B, CS 1000M or CS 1000S) to a CS 1000E CP PM system, the slot and unit number is mapped to the loop, shelf, card, and unit number as shown in Table 2. Because these

TNs map from a “small system” TN format to a “large system” TN format, the IP sets do NOT require reprogramming with a new TN.

Table 2
IP phone TN mapping

CS 1000S/M		CS 1000E CP PM			
Slot	**Unit**	**Loop**	**Shelf**	**Card**	**Unit**
61-64	0-31	96	0	1-4	0-31
65-68	0-31	100	0	1-4	0-31
69-72	0-31	104	0	1-4	0-31
73-76	0-31	108	0	1-4	0-31
77-80	0-31	112	0	1-4	0-31
81-84	0-31	96	1	1-4	0-31
85-88	0-31	100	1	1-4	0-31
89-92	0-31	104	1	1-4	0-31
93-96	0-31	108	1	1-4	0-31
97-99	0-31	112	1	1-3	0-31

ALC, DLC, analog trunk and regular IPE pack TN mapping

Table 3 provides TN mapping information for analog line cards, digital line cards, analog trunk cards, and xdtrs (digital trunk cards or IP phones are not addressed in this table). Not all slots are present on all small systems.

Table 3
ALC, DLC, analog trunk and regular IPE pack TN mapping (Part 1 of 3)

CS 1000S/M		CS 1000E CP PM			
Slot	**Unit**	**Superloop**	**Shelf**	**Card**	**Unit**
1	0-31	0	0	1	0-31
2	0-31	0	0	2	0-31
3	0-31	0	0	3	0-31
4	0-31	0	0	4	0-31
5	0-31	0	0	5	0-31
6	0-31	0	0	6	0-31
7	0-31	0	0	7	0-31
8	0-31	0	0	8	0-31
9	0-31	0	0	9	0-31
10	0-31	0	0	10	0-31
11	0-31	0	1	1	0-31
12	0-31	0	1	2	0-31
13	0-31	0	1	3	0-31
14	0-31	0	1	4	0-31
15	0-31	0	1	5	0-31
16	0-31	0	1	6	0-31
17	0-31	0	1	7	0-31
18	0-31	0	1	8	0-31

Table 3
ALC, DLC, analog trunk and regular IPE pack TN mapping (Part 2 of 3)

CS 1000S/M		CS 1000E CP PM			
Slot	**Unit**	**Superloop**	**Shelf**	**Card**	**Unit**
19	0-31	0	1	9	0-31
20	0-31	0	1	10	0-31
21	0-31	4	0	1	0-31
22	0-31	4	0	2	0-31
23	0-31	4	0	3	0-31
24	0-31	4	0	4	0-31
25	0-31	4	0	5	0-31
26	0-31	4	0	6	0-31
27	0-31	4	0	7	0-31
28	0-31	4	0	8	0-31
29	0-31	4	0	9	0-31
30	0-31	4	0	10	0-31
31	0-31	4	1	1	0-31
32	0-31	4	1	2	0-31
33	0-31	4	1	3	0-31
34	0-31	4	1	4	0-31
35	0-31	4	1	5	0-31
36	0-31	4	1	6	0-31
37	0-31	4	1	7	0-31
38	0-31	4	1	8	0-31
39	0-31	4	1	9	0-31

Table 3
ALC, DLC, analog trunk and regular IPE pack TN mapping (Part 3 of 3)

CS 1000S/M		CS 1000E CP PM			
Slot	**Unit**	**Superloop**	**Shelf**	**Card**	**Unit**
40	0-31	4	1	10	0-31
41	0-31	8	0	1	0-31
42	0-31	8	0	2	0-31
43	0-31	8	0	3	0-31
44	0-31	8	0	4	0-31
45	0-31	8	0	5	0-31
46	0-31	8	0	6	0-31
47	0-31	8	0	7	0-31
48	0-31	8	0	8	0-31
49	0-31	8	0	9	0-31
50	0-31	8	0	10	0-31

Digital trunk mapping

This mapping (shown in Table 4) applies to DTI, DTI2, PRI, PRI2, MISP, DPNSS and other circuit packs.

Table 4
Digital trunk mapping (Part 1 of 4)

CS 1000S/M		CS 1000E CP PM				
Slot	**Channel**	**Digital Loop**	**Channel**	**Superloop**	**Shelf**	**Card**
1	0 - 31	20	0 - 31	0	0	1
2	0 - 31	21	0 - 31	0	0	2

Table 4
Digital trunk mapping (Part 2 of 4)

CS 1000S/M		CS 1000E CP PM				
Slot	**Channel**	**Digital Loop**	**Channel**	**Superloop**	**Shelf**	**Card**
3	0 - 31	22	0 - 31	0	0	3
4	0 - 31	23	0 - 31	0	0	4
5	0 - 31	24	0 - 31	0	0	5
6	0 - 31	25	0 - 31	0	0	6
7	0 - 31	26	0 - 31	0	0	7
8	0 - 31	27	0 - 31	0	0	8
9	0 - 31	28	0 - 31	0	0	9
11	0 - 31	52	0 - 31	0	1	1
12	0 - 31	53	0 - 31	0	1	2
13	0 - 31	54	0 - 31	0	1	3
14	0 - 31	55	0 - 31	0	1	4
15	0 - 31	56	0 - 31	0	1	5
16	0 - 31	57	0 - 31	0	1	6
17	0 - 31	58	0 - 31	0	1	7
18	0 - 31	59	0 - 31	0	1	8
19	0 - 31	60	0 - 31	0	1	9
21	0 - 31	76	0 - 31	4	0	1
22	0 - 31	77	0 - 31	4	0	2
23	0 - 31	78	0 - 31	4	0	3
24	0 - 31	79	0 - 31	4	0	4

Table 4
Digital trunk mapping (Part 3 of 4)

CS 1000S/M		CS 1000E CP PM				
Slot	**Channel**	**Digital Loop**	**Channel**	**Superloop**	**Shelf**	**Card**
25	0 - 31	80	0 - 31	4	0	5
26	0 - 31	81	0 - 31	4	0	6
27	0 - 31	82	0 - 31	4	0	7
28	0-31	83	0-31	4	0	8
29	0-31	84	0-31	4	0	9
31	0-31	85	0-31	4	1	1
32	0-31	86	0-31	4	1	2
33	0-31	87	0-31	4	1	3
34	0-31	88	0-31	4	1	4
35	0-31	89	0-31	4	1	5
36	0-31	90	0-31	4	1	6
37	0-31	91	0-31	4	1	7
38	0-31	92	0-31	4	1	8
39	0-31	93	0-31	4	1	9
41	0-31	116	0-31	8	0	1
42	0-31	117	0-31	8	0	2
43	0-31	118	0-31	8	0	3
44	0-31	119	0-31	8	0	4
45	0-31	120	0-31	8	0	5
46	0-31	121	0-31	8	0	6

Table 4
Digital trunk mapping (Part 4 of 4)

CS 1000S/M		CS 1000E CP PM				
Slot	**Channel**	**Digital Loop**	**Channel**	**Superloop**	**Shelf**	**Card**
47	0-31	122	0-31	8	0	7
48	0-31	123	0-31	8	0	8
49	0-31	124	0-31	8	0	9

XNET and XPEC conversion

Although XNETs and XPECs are not configured by CS 1000 small systems, they are utilized internally by the system and appear in the database. The contents of the XNET blocks must be converted to virtual XNET blocks.

TTY conversion

Any TTYs programmed in the call server chassis must be moved to an equipped Media Gateway. The TTYs from small systems are converted as shown in Table 5.

Table 5
TTY conversion

TTY Port Before Conversion		TTY Port After Conversion		
Cabinet/ Chassis	**Port†**	**Card**	**IPMG**	**Port**
Main	0	CP PM	N/A	0
	1	MGC	000 1	1
	2	MGC	000 1	2

Table 5
TTY conversion

TTY Port Before Conversion		TTY Port After Conversion		
Cabinet/ Chassis	**Port†**	**Card**	**IPMG**	**Port**
Expansion 1	0	MGC	004 0	0
	1	MGC	004 0	1
	2	MGC	004 0	2
Expansion 2	0	MGC	004 1	0
	1	MGC	004 1	1
	2	MGC	004 1	2
Expansion 3	0	MGC	008 0	0
	1	MGC	008 0	1
	2	MGC	008 0	2
Expansion 4	0	MGC	008 1	0
	1	MGC	008 1	1
	2	MGC	008 1	2

Ports on the SSC card (†)

Only the TTY ports from the SSC cards in the small system are converted while the other TTY ports (for example, TTYs from the SDI card) are deleted.

Tone Receiver Conversion

Tone receivers are converted using the same algorithm as that used for IPE shelf conversion. The tone receivers map to cards 14 and 15 for each of the five IPMGs (see Table 6 on page 36).

If units 8-11 in the SSCs have MFC, MFE, MFK units provisioned, then these units are provisioned in units 0-3. If these units (8-15) were provisioned as DTRs in the SSC, then these units are provisioned as DTRs in units 0-7.

Note: On CS1000S systems, any DTRs converted to Media Gateway 00 0, will need to be removed unless appropriate hardware is added. Additional DTRs will need to be programmed in the configured Media Gateways.

Table 6
Tone receiver conversion

CS 1000S/M		CS 1000E CP PM			
Slot	**Unit**	**Superloop**	**Shelf**	**Card**	**Unit**
0	0-7	0	0	14	0-7
0	8-11 or 8-15	0	0	15	0-3 or 0-7
If these cabinets are populated with MGCs, then these units must be configured. Unit types and unit numbers in each MG will be matched to the configuration that exists in slot 0.		0	1	14	0-7
		0	1	15	0-3 or 0-7
		4	0	14	0-7
		4	0	15	0-3 or 0-7
		4	1	14	0-7
		4	1	15	0-3 or 0-7
		8	0	14	0-7
		8	0	15	0-3 or 0-7

Conference and Tone Generator conversion

All existing Tone and Conference loops are removed and two loops (one for tone and one for conference) are allotted for each IPMG as shown in Table 7.

Table 7
Conference and Tone Generator conversion

IPMG	MG TDS	MG CONF
000 1	124	125
004 0	126	127
004 1	128	129
008 0	130	131
008 1	132	133

IPMG Configuration

The IP address for each of the IPMG must be entered in overlay 97. Note that the SIPE IP addresses cannot not be used in this case since the SIPE IP connections are point to point and may not be in the same subnet as the ELAN IP address. As part of conversion the IPMG Type is set to MGC.

Media Card TN Configuration

The small system to large system conversion process will not propagate the card TN information to the media card. This TN value is stored in the bootp.tab file of the media card.

After the conversion process, the card TN value must be entered using Element Manager and transferred to the media card.

DSP Resources for IPMGs

New hardware must be added to media gateways that do not have a media card present to provide the DSP resources required for inter-gateway calls or TDM to IP calls. Note that a media gateway does not require DSP resources for calls within the same media gateway (IP to IP calls). The DSP resources

are required for TDM to IP calls. These DSP resources are only available to the media gateway in which the DSP is located.

Once conversion is complete, the DSP resources that were previously configured are now available to the gateway where the media card is located. DSP resources are required in all gateways in order to support inter-gateway calls and TDM to IP calls. The DSP resources can be provided by the MGC DSP daughterboard or the media card. The configuration required for the new DSP resources must be performed manually, as it is not part of the conversion process.

Deleted information

The following information is removed during the conversion process:

- SIPE IP addresses (deleted from the database)
- TDS and Conference configuration
- Survivable SSC IP address
- Redundant serial port information
- Meridian Mail LSL, AML and other TNs.

Any deleted items are printed out during the conversion process.

> ***Note:*** Although the above items are removed during the conversion process, the data in the compact flash remains intact with the small system database.

Campus Redundancy (High Availability) Package Support

The CP PM Call Server project introduces a package (410) for enabling and disabling the Campus Redundancy or High Availability (HA) feature. For more information, refer to “Appendix A: Upgrading to a High Availability system” on page 147.

Software determines if the HA package is present in the keycode. If the package is present, the CP PM call server behaves in the same manner as the Release 4.5 CP PII or CP PIV (for example, it uses the High Speed Pipe (HSP) to detect the presence of the other core). If the other core is detected,

then both the cores negotiate to determine which core is active and which core is the standby.

If the CP PM call server is unable to detect the other core, then it comes up as a single core system. If the HA package is not present in the keycode, then the existing call server software is modified to block the HSP connection so that the CP PM call server does not attempt to detect the presence of the core. In the absence of the HA package, the CP PM call server runs as a single core system—even in a system with two cores where the HSP ports on both cores are connected.

Database Media Converter Tool

The CP PM call server utilizes the same database media converter tool developed for the CP PIV in Release 4.5.

This is a Windows application that runs on a PC and is a tool used to copy database files from floppy disks onto compact flash cards. This CP PM call server application only supports databases converted from CP PII.

> ***Note:*** This tool is not required if a database saved from a CP PIV call server is to be used for a CP PM call server system. This is because the database file from a CP PIV is already on a compact flash card, and this card can be directly inserted into the CP PM call server faceplate during software installation.

Review Prerequisites Checklist

Contents

This section contains information on the following topics:

Planning the upgrade

Planning for an upgrade involves the following tasks:

- Conduct a site inspection to determine proper power and grounding.
- Determine if additional Cabinets/Chassis' need to be mounted or bolted to the wall.
- Identify all applications that are currently installed on the source platform.
- Identify and correct outstanding service problems.
- Verify the site log is updated with current trunking, call routing, application notes, and site contact information.

- Review all product bulletins and Nortel Alerts that impact the site.
- Prepare a contingency plan for backing out of the upgrade.

DANGER OF ELECTRIC SHOCK

In a DC-powered system, power to the column can remain on during the following procedures. In an AC-powered system, however, power to the entire column *must* be shut down throughout the procedures.

Preparing for the upgrade

Preparing for an upgrade involves the following tasks:

- Identify and become familiar with all procedures.
- Verify that all installed applications meet the minimum software requirements for the target platform.
- Determine and note current patch or Dep lists installed at the source platform.
- Determine required patch or Dep lists at the target platform for all system-patchable components (Call Servers, Voice Gateway Media Cards, Media Gateway Controllers, Signaling Servers and so on).
- Determine the required patches or DEP lists installed on all applications.
- Determine and communicate the required maintenance window, contingency plan and the impact to the customer to complete the procedure.
- Perform an inventory on required software and hardware.

Things to know

CS 1000 Release 5.0 software compatibility

Consult Table 8 for CS 1000 Release 5.0 software compatibility.

Table 8
CS 1000 Release 5.0 CS 1000E compatibility (Part 1 of 4)

Application	CS 1000E
PC Attendant Console	Supported
Meridian Attendant PC software	Supported
M2250 Attendant Console	Supported
M2016S Secure Set (NA Only)	Supported
M39xx	Supported
Telephony Manager (TM)	3.1
Element Manager	EM 5.0
CallPilot	3.0, 4.0
HMS 400	Supported
CallPilot Mini	Not supported
Meridian Mail Modular Option EC	Not supported directly
Meridian Mail Enhanced Card Option	Not supported directly
Meridian Mail reporter R2.x	NA
Companion - Manufacture Discontinued new system packages, January 2003	Not supported
Meridian DECT (DMC4/DMC8 version)	Supported
VoIP – 802.11 Wireless IP Gateway with Symbol	Not supported
IP Phone 2210 / 2211	Supported
IP Phone 2001	Supported
IP Phone 2002	Supported
IP Phone 2004	Supported

Table 8
CS 1000 Release 5.0 CS 1000E compatibility (Part 2 of 4)

Application	CS 1000E
IP Softphone 2050	Supported
IP Softphone 2050 V2	Supported
Mobile Voice Client 2050	Supported
IP Phone 2033	Supported
IP Phone ACD Set	Supported
IP Phone 2007	Supported
IP Phones 1120E,1140,1140E, 1150E	Supported
Remote Gateway 9150	Supported
Remote Gateway 9115/ IP Adaptor	Supported
Meridian Home Office MHO-II	Not supported
Mini Carrier Remote	Not supported
Carrier Remote	Not supported
Fiber I	Not supported
Fiber II	Not supported
RPE (Remote Intelligent Peripheral Equipment)	Not supported
Meridian MAX [any platform]	Not supported
Network Administration Center [NAC]	Not supported
Meridian Customer Controlled Routing [MCCR]	Not supported
Meridian Link [Mlink]	Not supported.
Symposium Link	Not supported
Symposium Desktop TAPI Service Provider for MCA (Meridian Communicator Adapter)	Not supported
Meridian Link & MCCR Co-residency	Not supported
Symposium TAPI Service Provider	3.0
Symposium Agent	2.3

Table 8
CS 1000 Release 5.0 CS 1000E compatibility (Part 3 of 4)

Application	CS 1000E
Symposium Agent Greeting	2.0
Nortel Remote Agent Observe	1.0
Meridian Link Services [MLS]	4.2, 5
Symposium Express Call Center [SECC]	4.2
Symposium Call Center Server [SCCS] incl. Symposium Web Client	4.2, 5
Symposium Web Centre Portal [SWCP]	4.0
CTI.next (Nortel Communications Control Toolkit)	5.0
Nortel IVR (VPS/is)	5.4.2
Multimedia Processing Server (MPS) 100	1.0
Multimedia Processing Server (MPS) MPS 500 and MPS 1000	2.1, 3.0
Business Communications Manager	3.7, 4.0
Integrated Call Assistant (MICA)	1.5
Nortel Integrated Conference Bridge (NNICB)	2.1, 3.0x, 4.0
Integrated Recorded Announcement (MIRAN)	2.0.16 and above
Nortel Integrated Personal Call Director	1.0.3 and above, 2.0
Integrated Voice Services (MIVS)	1.17
MCS 5100	3, 3.5
CS 2000	SN09, SN10, SN11
CS 2100	SE08, SE09, SE10
PC Attendant Console	Supported

Table 8
CS 1000 Release 5.0 CS 1000E compatibility (Part 4 of 4)

Application	CS 1000E
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* (NN43001-256). ***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 5.0. This allows customers to add a single additional MG 1000B for CS 1000 Release 5.0 without having to upgrade their entire network of MG 1000Bs. ***Note 3:*** Mixed software configuration between a CS 1000 Release 5.0 Main Office and a CS 1000 Release 3.0 MG 1000B must be temporary. ***Note 4:*** Mixed software configuration between a CS 1000 Release 5.0 Main Office and a CS 1000 Release 4.0/4.5 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.	

Hardware requirements

This section describes the *minimum* hardware and software required for a Small System upgrade. Additional equipment can also be installed during the upgrade. Verify that *all* hardware has been received.

Before the upgrade, check that items on the order form are also on the packing slip. Check that all items been received. If any items are missing, contact your supplier for replacements before you begin the upgrade.

WARNING

Service Interruption

DO NOT proceed with the upgrade if any of the required items are missing. All items must be received to complete the upgrade.

Check required hardware

Table 9 lists the hardware required for the upgrade.

Table 9
Hardware requirements

Order number	Description	Quantity per IPMG
NTDW61	Common Processor Pentium Mobile (CP PM) Call Server (Figure 2 on page 49)	Depends on configuration
NTDW60BAE5	Media Gateway Controller (Figure 3 on page 50)	1
NTDW62AAE5 (32 Port) NTDW64AAE5 (96 Port)	DSP Daughterboard (Figure 4 on page 51)	Depends on configuration
CAT5 cable	For ELAN and TLAN connections	3
NTAK19EC	2-port SDI cable	1

Table 9
Hardware requirements

Order number	Description	Quantity per IPMG
NTBK48AA	3-port SDI cable	1
Note: A TLAN IP address is needed for each DSP Daughterboard.		

Figure 2
NTDW61 CP PM card

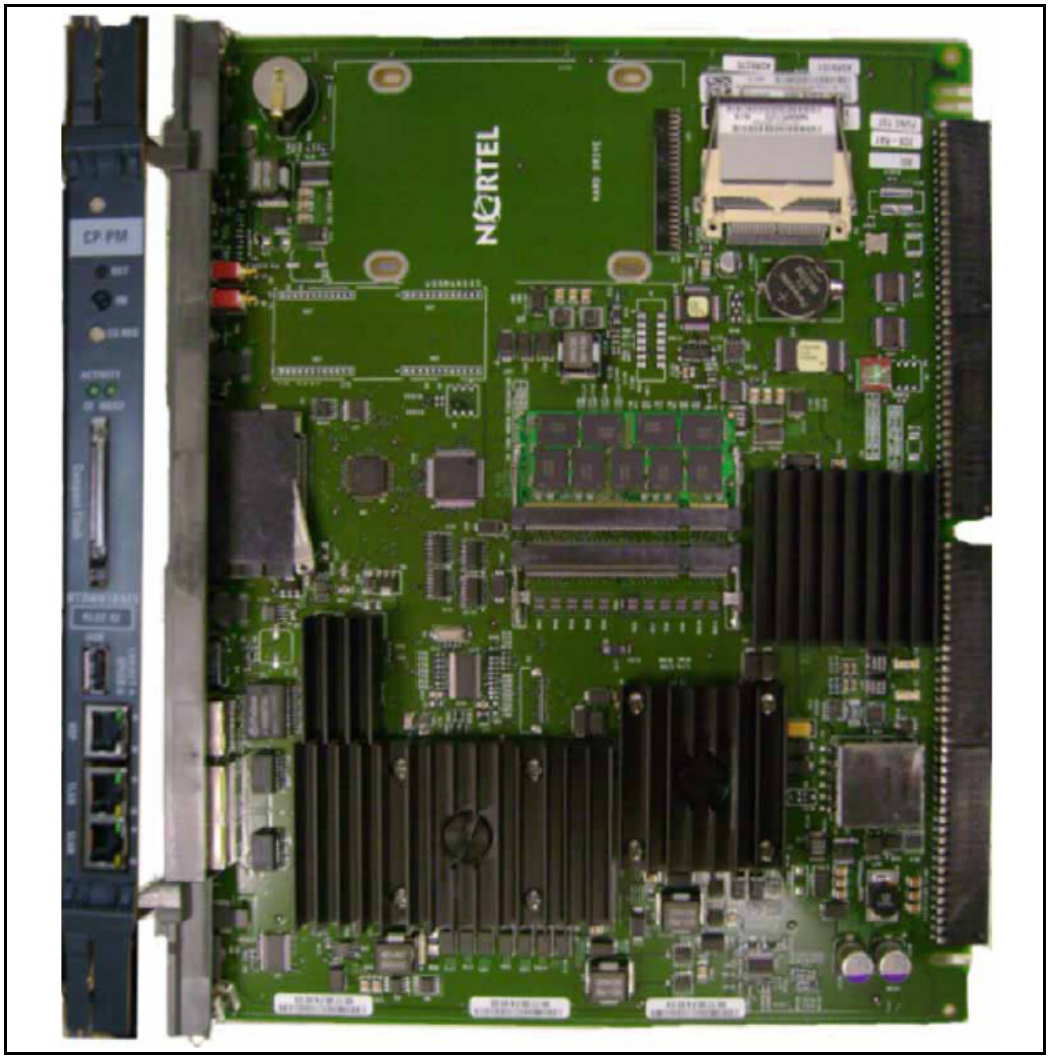


Figure 3
NTDW60BAE5 MGC card

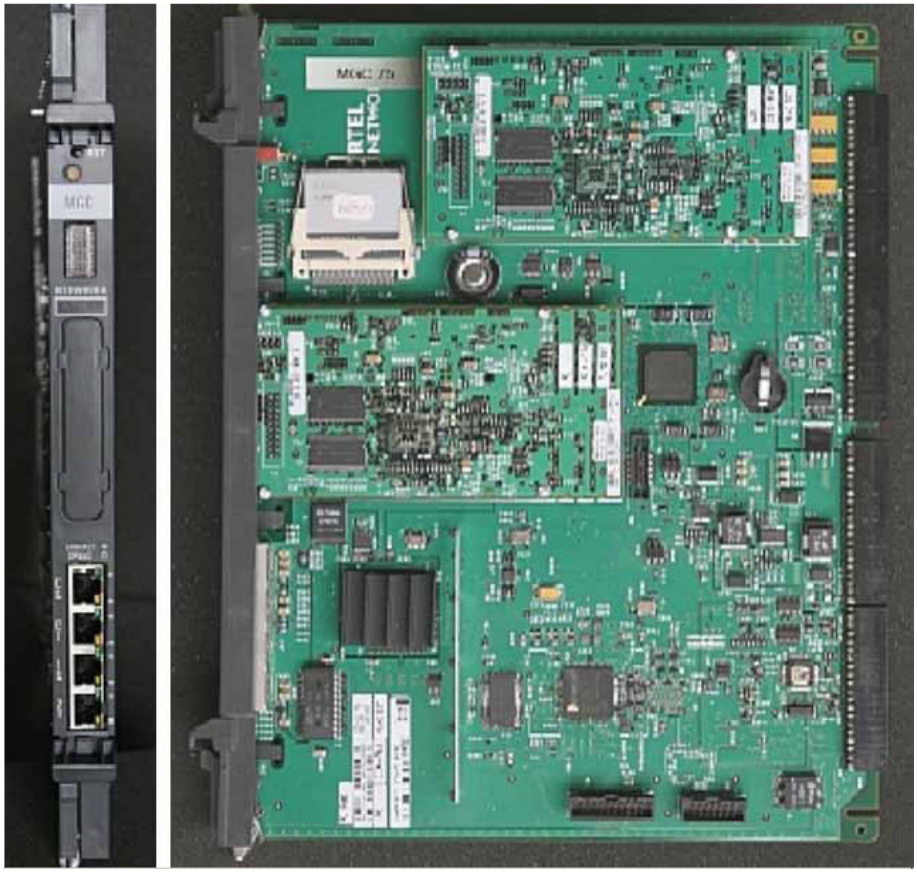
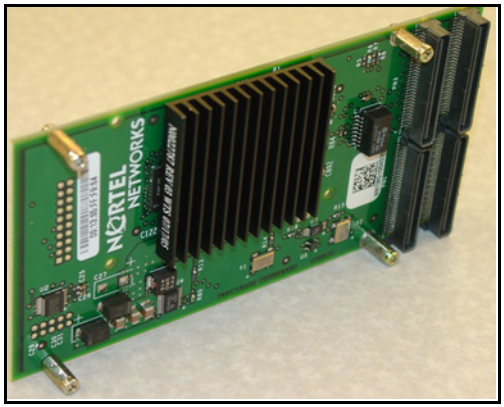


Figure 4
DSP daughterboard



Software requirements

Table 10 lists the minimum software requirements for CS 1000 Release 5.0 software.

Table 10
Software requirements

Item	Version
Call Server	5.0
Signaling Server	5.0
Web browser	Microsoft Internet Explorer v.6.02 Netscape is not supported

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.

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

- Check to ensure that 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.

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.

What to have ready

This section contains the following topics:

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* (NN43001-260) and *IP Peer Networking: Installation and Commissioning* (NN43001-313).

The following data is required:

- **IP addresses for system components**.
  Refer to *Communication Server 1000E: Installation and Commissioning* (NN43041-310) 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* (NN43100-500) 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 Commissioning* (NN43001-313) 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 11
Upgrade readiness checklist (Part 1 of 3)

Action	✓
Received equipment: • Received hardware • Received software • Received keycodes • Received Dongle • Download any current patches • Tools	
Available Card slots: • Are there sufficient card slots (for example, for CPPM card)?	
Cables: • CAT5 cable (for ELAN and TLAN connections) • NTAK19EC 2-port SDI cable • NTBK48AA 3-port SDI cable	

Table 11
Upgrade readiness checklist (Part 2 of 3)

Action	✓
Make sure that all the software that was ordered has been received.: • New version and patches / DEP lists • Current version • Compatibility and Planning • Ensure you can perform a direct upgrade, otherwise plot the intervening path required or have Nortel do the database conversion • If there are any external applications that have CS1000 with a Small System TN format (Card - Unit) configured as part of their interop with the CS1000 or M1 solutions, the existing TNs will map to new Large System based TNs that are in the format of SUPL- Shelf-Card-Unit. These applications may need to be changed in order to interop with the new TN that is generated as part of the conversion process.	
Compact Flash and PCMCIA adapter	

Table 11
Upgrade readiness checklist (Part 3 of 3)

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 subnet or TLAN subnet. 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 52 and in: • *Converging the Data Network with VoIP* (NN43001-260) • *IP Peer Networking: Installation and Commissioning* (NN43001-313) • *Communication Server 1000E: Installation and Commissioning* (NN43041-310)	

Backing up the SSC database to an external drive

Contents

This section contains information on the following topics:

Backing up the Call Server

The CP PM call server supports converting the databases saved on the CS 1000 small system through the following methods:

- LD 43 EDD
- LD 143 archive database option (invoked from upgrade menus)

Note: The CCBR method of database backup is not supported for small system to large system database conversion.

By combining the EDD and archive methods, the database files are saved onto a compact flash card (with a PCMCIA card adapter when plugged into the SSC card) so that it can be inserted into the CP PM call server during software installation to perform the database conversion. LD 43 EDD updates the database on the internal drive (to ensure that the latest memory contents are backed up) and LD 143 backs up the database to the RMD. Failure to perform a recent LD 43 (EDD) may result in the loss of any recent changes to the database.

Note: An alternative to the Archive command in LD 143 is the BKO command in LD 43. However; the Archive in LD 143 is the recommended method, as it provides one compressed zip file that contains everything necessary to update the MGC, and it allows for multiple databases to be copied to the CF card. Another advantage to using LD 143 Archive is that it names the database while LD 43 BKO simply copies it drive B. As a result, there is less risk of overwriting existing files using LD 143 to archive the database.

There is a fundamental difference between the small system, running an SSC, and a CS 1000E running a CP PM call server. This difference is represented in how the format of the TN (Terminal Number) is displayed.

The small system TN is displayed to the administrator using a two-field format, or slot-unit. In a CS 1000E CP PM system, the TN is displayed using a four-field format, or loop-shelf-card-unit. This four-field TN format is the same as those used in current large systems (for example, CP PII, CP PIV).

The end result is that when a small system database is converted to a large system database, the TNs are re-mapped. The result is that the displayed TN changes during the conversion process. The administrator must be aware of the TN mapping. For example, a small system with an IP phone configured in TN 61-0 now has that same IP phone show up in 96-0-1-0 after the conversion process.

LD 43 using EDD command

Procedure 1
Backing up the database using LD 43

1 To back up the customer database to the internal drive (to ensure the most recent database is copied to the RMD in LD 143), enter **LD 43** at the command prompt.

2 Enter **EDD**. The following output is generated.

```
>LD 43
EDD

EDD000
Backing up reten.bkp
Internal backup complete
All files are backed up!
DATADUMP COMPLETE
.

EDD000
```

3 The internal backup is complete.

End of Procedure

LD 143 using the UPGRADE command

The second step involved in backing up the database involves moving the database from the hard drive to the RMD. This step is performed through the Utilities menu in LD 143.

Procedure 2
Archiving the database in LD 143

1 Insert the PCMCIA card in the card slot A. Enter **LD 143** at the command prompt, then enter **UPGRADE**. The following screen appears.

```
SOFTWARE INSTALLATION PROGRAM
**********************************
Verify
Security ID: XXXXXX
**********************************
```

2 The following menu appears. Enter **2** to select Call Server/Main Cabinet/ Chassis.

```
Technology Software Installation Main Menu:
1. Media Gateway/IPExpansion Cabinet
2. Call Server/Main Cabinet
[q]uit, [h]elp or [?], <cr> - redisplay
Enter Selection : 2
```

3 The Call Server/Main Cabinet/Chassis Software Installation Main Menu appears. Enter **3** to select Utilities.

```
Call Server/Main Cabinet 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]elp or [?], <cr> -
redisplay
Enter Selection : 3
```

4 The Utilities menu appears. Enter **2** to select Archive Database Utilities.

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

[q]uit, [p]revious, [m]ain menu, [h]elp or [?], <cr> -
redisplay
Enter Selection : 2
```

5 At the Customer Database Archives menu, enter **3** to select Archive a customer database.

```
Customer Database Archives:
1. List customer databases.
2. Remove customer database.
3. Archive a customer database.

[q]uit, [p]revious, [m]ain menu, [h]elp or [?], <cr> -
redisplay
Enter Selection : 3
```

6 At this point, you are prompted for a Customer name for your archived database. In this example, the name **CS1000SU** is entered as the Customer name.

```
Enter a Customer name for your customized data :
CS1000SU
Customer database created: CS1000SU
Copying database from primary drive to  CS1000SU
Archive copy completed.
```

7 The archive copy has been saved as CS1000SU. The Customer Database Archives menu appears. Enter **1** to select List customer databases.

```
Customer Database Archives:
1. List customer databases.
2. Remove customer database.
3. Archive a customer database.

[q]uit, [p]revious, [m]ain menu, [h]elp or [?], <cr> -
redisplay
Enter Selection : 1
```

The following list is generated:

```
Customer Database Archives available:
1. 450WBASE
2. 450W_CP
3. CS1000SU
```

8 Enter **q** to quit LD 143, and then **y** to confirm your selection.

```
Customer Database Archives:
1. List customer databases.
2. Remove customer database.
3. Archive a customer database.

[q]uit, [p]revious, [m]ain menu, [h]elp or [?], <cr> -
redisplay
Enter Selection : Q
Are you sure? (y/n/[a]bort) : Y
```

End of Procedure

Once you have completed the backup and archive of the customer database, shut down the system and remove the PCMCIA card from slot. You are now ready to install the hardware.

Installing CS 1000E hardware

Contents

This section contains information on the following topics:

Choosing the chassis and slot locations

An MG 1000E performs functions under the control of the CS 1000E Core call server. Traditionally, this core call server was a CP PII or CP PIV in its own call server chassis; however, the CP PM call server sits in one of the MG 1000E Chassis slots.

The CP PM Call Server drives the IPMG through the MGC using the ELAN interface, and therefore does not require backplane connectivity (other than power and slot ID). The following rules apply to the preferential placement of the CP PM call server in the MG 1000E:

- The CP PM Call Server cannot be placed in slot 0 of any MG 1000E. Slot 0 is reserved for the MGC.

- To allow for ease of cabling, the CP PM call server may be placed in slots 1 through 4 of the chassis. The CP PM Signaling Server may be placed in slots 1 through 4 (see Figure 6 on page 65) or in another chassis if necessary.
- If utilizing the Campus Redundancy High Availability Call Server option, place the two CP PM call servers in separate CS 1000M chassis to allow for increased survivability.

Figure 5 shows an existing CS 1000S call server with the SSC card. Once the upgrade is complete, a typical SA Chassis system will resemble Figure 6 on page 65 with an MGC in slot 0, and a CP PM call server and signaling server in the main chassis. The additional media gateways would then contain MGC cards only for an SA configuration.

Figure 5
CS 1000S (NTDU30) call server

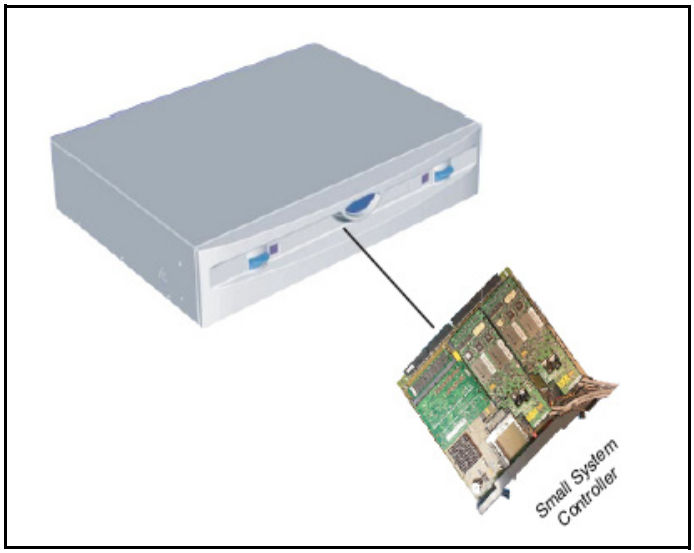
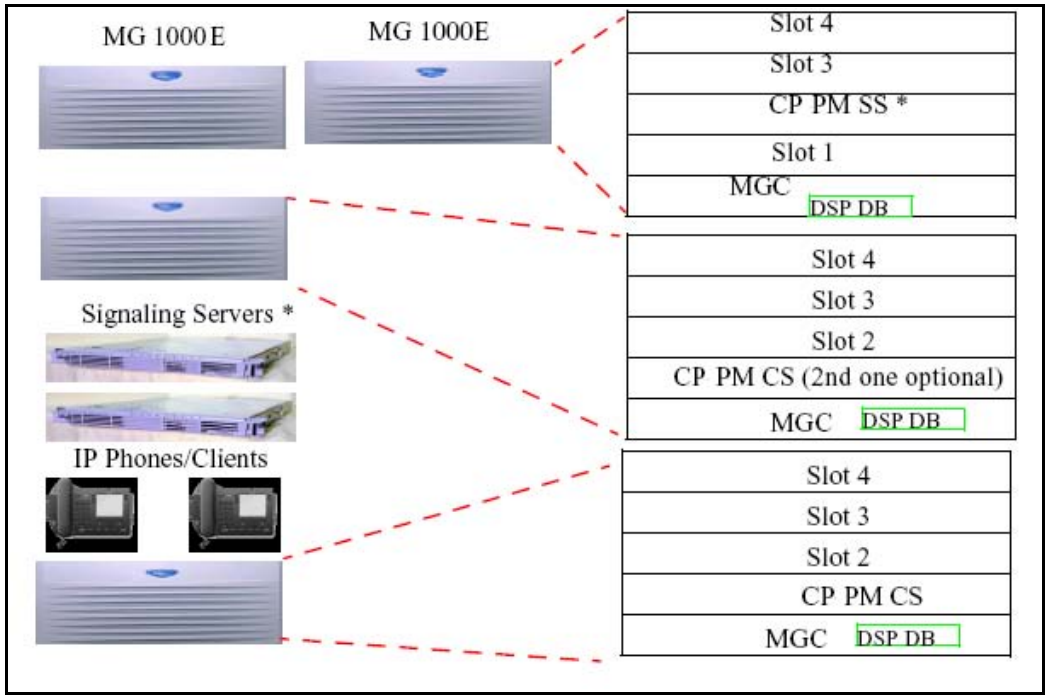


Figure 6
Typical SA Chassis system



*—Signaling Server may be one of the following:

- CP PM Signaling Server;
- ISP 1100 Signaling Server;
- HP DL320 G4 Commercial off-the-shelf (COTS) Signaling Server; or
- IBM x306m COTS Signaling Server

Note: A High Speed Pipe package (410) must be activated in order to install any type of redundancy option. For more information, refer to Appendix : “Appendix A: Upgrading to a High Availability system” on page 147.)

Task overview

To upgrade the hardware for an CS 1000S, perform the following steps:

1. Power down the CS 1000S.
2. Remove the CS 1000S Call Server Chassis.
3. Remove the SSC card as described in Procedure 3 on page 67.
4. Destroy or return the SSC security device to your local Nortel Repairs/ Returns center.
5. Install the DSP Daughterboard on the MGC card as described in Procedure 4 on page 68.
6. Install the MGC card as described in Procedure 5 on page 69.
7. Install the CP PM as described in Procedure 6 on page 70.
8. Cable the cards as shown in “Cabling the cards” on page 71.
9. Power up the MG 1000E.
10. Enter the ‘mgcsetup’ menu and configure the IP parameters, then reboot the MGC.

If the Centralized Software Upgrade (CSU) feature is enabled on the Call Server, the firmware for the MGC is downloaded automatically (or if the internal Compact Flash is blank), otherwise initiate the firmware download using Overlay 143 commands.

Installing the cards

The following sections describe the process required to install the MGC and CP PM cards.

Removing the SSC card

Procedure 3
Removing the SSC Card

1 Unlatch the SSC card.

2 Remove the SSC card from its slot.

IMPORTANT!

The SSC card should be preserved for a minimum of five days.

It is illegal to continue to run the system software on the existing SSC card. Please DESTROY or RETURN the SSC dongle to your local Nortel Repairs/Returns centre. No further orders will be accepted for the serial number since it will be decommissioned and tracked in Nortel's database.

End of Procedure

Installing a DSP Daughterboard

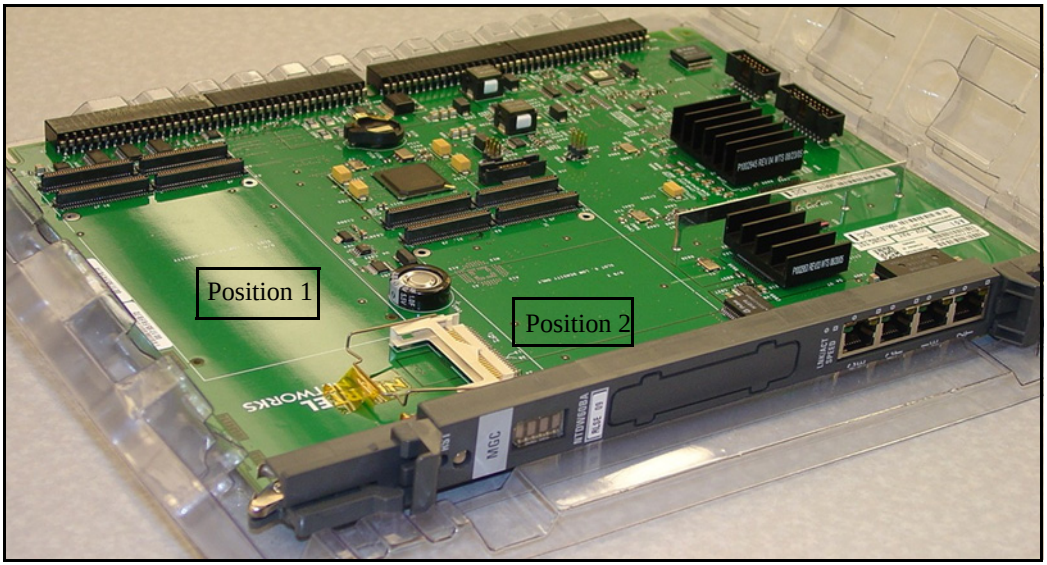
Table 12 lists the configuration options for Position 1 and 2.

Table 12
DSP Daughterboard configurations

Position 1	Position 2
DB32 (card slot 11)	None
None	DB32 (card slot 0)
DB32 (card slot 11)	DB32 (card slot 0)
DB96 (card slot 11, 12 &13)	None
DB96 (card slot 11, 12 &13)	DB32 (card slot 0)

The following procedure describes how to install a DSP Daughterboard on an MGC card. See Figure 7.

Figure 7
DSP Daughterboard



Procedure 4
Installing a DSP Daughterboard

1 Place the MGC on a safe ESD surface.

2 Place the DSP DB in either DB position 1 (for DSP DB-96) or DB position 2 (for DSP DB-32), depending on how the DB will be configured from a TN perspective.

3 Ensure the DSP DB is securely attached to the MGC. (using supplied screws).

End of Procedure

Installing the MGC card

MGC serial port capabilities

Table 13
MGC Serial Port Capabilities

Port	Modem Support?	Used for initial Configuration?
SD10	Yes (requires null modem to connect to a TTY)	Yes
SD11	No (No hardware flow control)	Yes
SD12	No (No hardware flow control)	No (Only available after FPGA is enabled. Not available during initial configuration menu display)

Procedure 5
Installing the MGC card

In Release 5.0, the MGC card replaces the existing SSC used in the CS 1000S chassis.

1 Insert the MGC into Slot 0 of the Chassis. The existing 3-port SDI cable (NTBK48AA) is reused. It connects to the SDI port on the Chassis.

IMPORTANT!

You must ensure that all dongles (for both MGC and CP PM cards) are correctly identified.

Please DESTROY or RETURN the SSC dongle to your local Nortel Repairs/Returns center.

For the CP PM call server you must use the dongle provided with the software kit. Chassis Expander dongles may be disposed of, as they are no longer needed.

End of Procedure

Installing the CP PM card

The following procedure describes how to install the CP PM card in a Chassis.

Note: Ensure that all DIP switches are set correctly. DIP switches determine whether the CP PM boots from a hard drive or compact flash.

Procedure 6
Installing the CP PM card

1. Ensure that the security dongle (the one that comes as part of the software kit) is inserted on the CP PM call processor.
2. Slide the CP PM call processor into Slot 1 (or higher) of the Chassis.
3. Lock the card into the faceplate latches.
4. Attach the SDI cable. The 50-pin Amphinol connects to the back of the CP PM call server.

Figure 8
2-port SDI cable (NTAK19EC) cable

End of Procedure

The preceding steps enable users to upgrade the system one MG 1000E at a time. For each additional IPMG, repeat Procedure 3 on page 67 to Procedure 5 on page 69.

Cabling the cards

The following sections describe the process required to cable the MGC and CP PM cards.

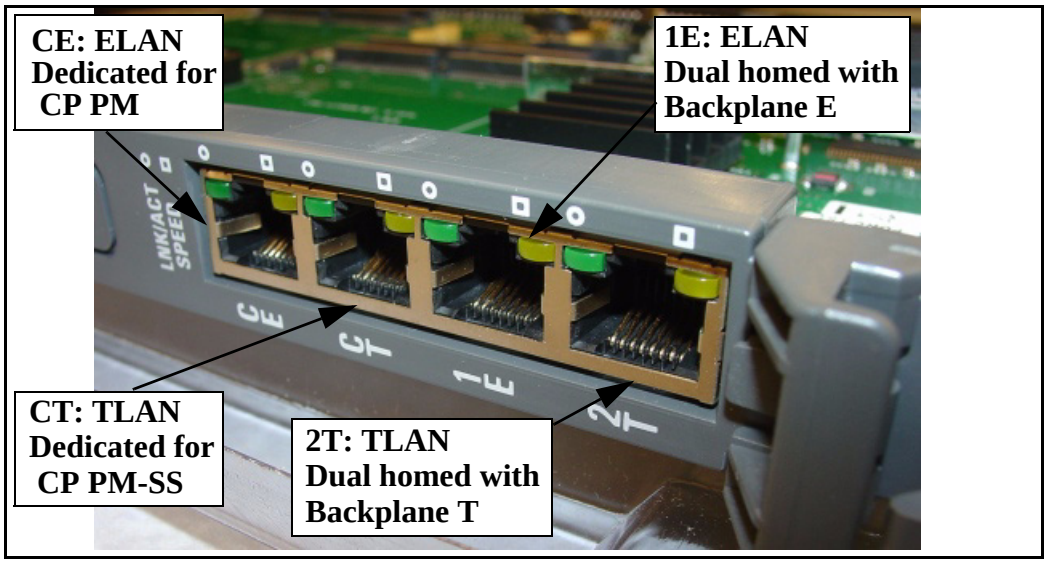
Cabling the MGC

The existing 3-port SDI cable (NTBK48AA) is reused. It connects to the SDI port on the Chassis. Figure 9 on page 72 shows front of MGC. The CE and CT ports are reserved for the CP PM card only. The CE connects to the ELAN port of the call server, while the CT connects to the TLAN port of the call server. The 1E and 2T ports must be attached to the layer 2 switch.

MGC Ethernet Capabilities

An MGC features six Ethernet interfaces set to auto-negotiate by default: four on the faceplate (see Figure 9 on page 72), and two on the back. Figure 10 on page 73, Figure 11 on page 74, and Figure 12 on page 75 illustrate the various ethernet connections.

Figure 9
MGC faceplate



Cabling the CP PM call server

In a typical configuration, the com (SDI) port of the CP PM call server is routed through the backplane of the shelf to the 50-pin Amphinol connector

on the back of the shelf. A special cable is shipped with the CP PM call server that adapts the 50-pin Amphinol to a 25-pin DB connector (NTAK19EC). Port 0 is used for maintenance access, and Port 1 is for an external modem connection.

Connect the ELAN of CP PM to the CE port of the MGC card or to the VLAN of the external layer 2 switch that is dedicated to ELAN traffic for the system.

The following diagrams illustrate the different ways to connect the CP PM Call Server, MGC, and CP PM Signaling Server cards.

Figure 10
Elan connection (CP PM Call Server)

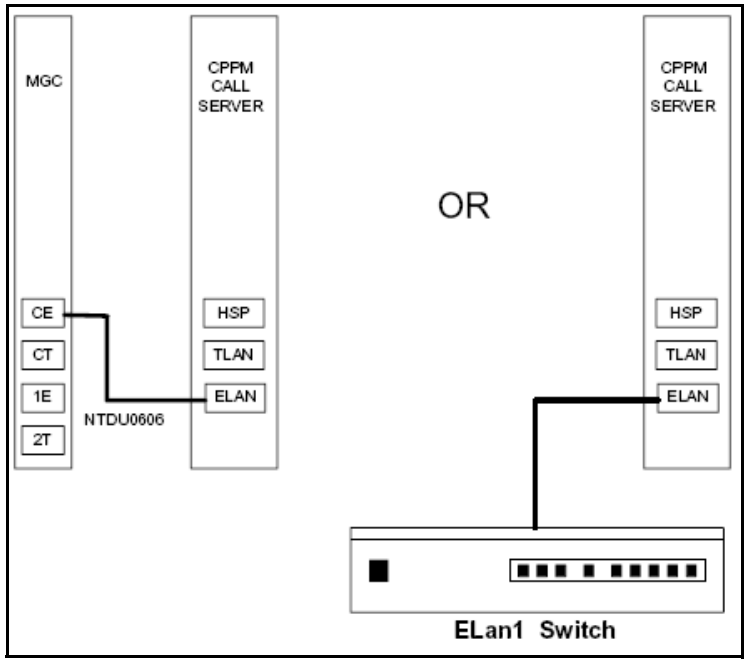


Figure 11
Elan connections (MGC)

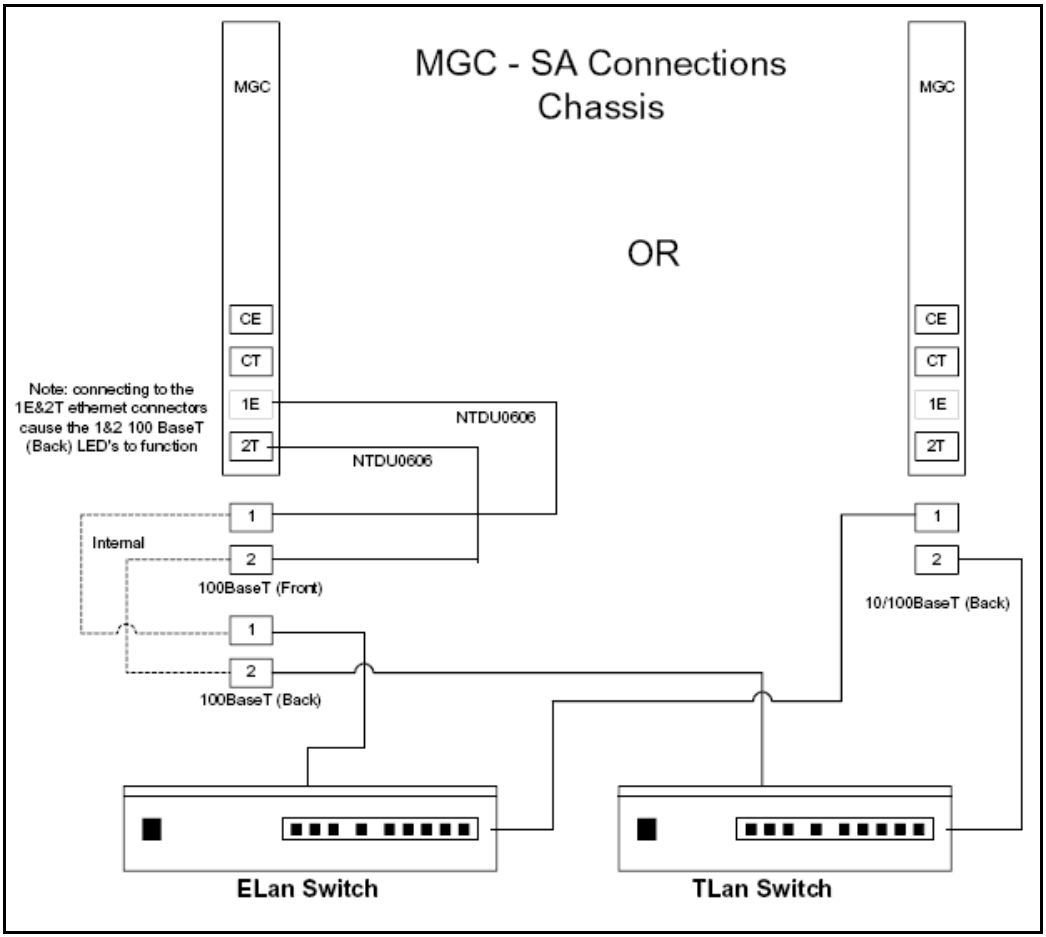
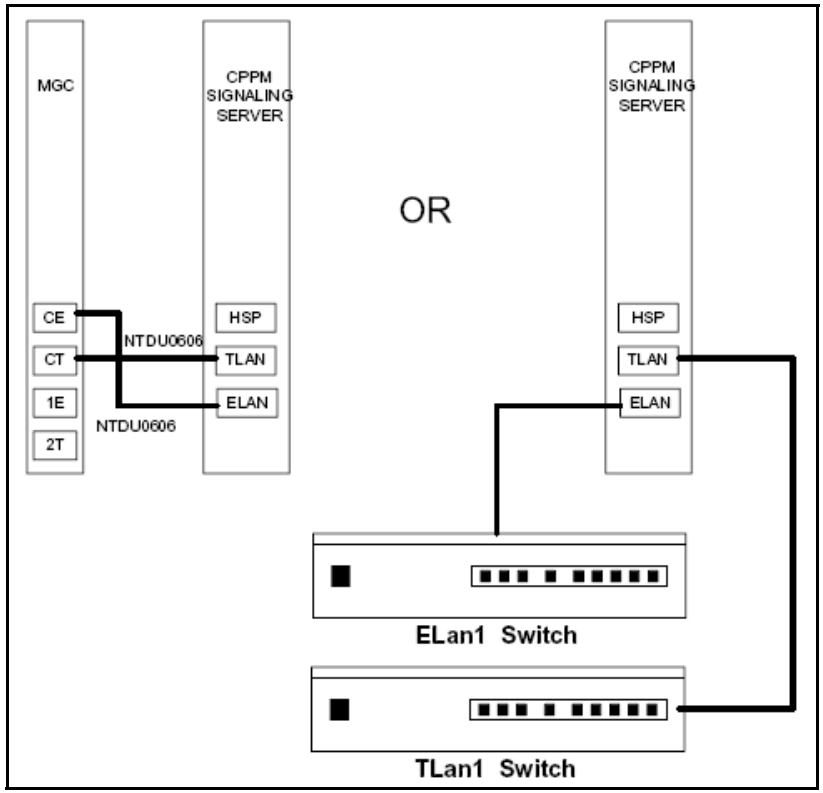


Figure 12
Ethernet connections for CP PM Signaling Server



Installing the software

Contents

This section contains information on the following topics:

Installing CP PM software

Keycodes

Ensure that the correct keycode is in the keycode directory on the software installation compact flash (CF) card prior to performing the install. The process required to install a keycode is described in the next section.

Installing a new keycode

Adding features and/or modifying License limits requires the installation of a new keycode. Keycodes are delivered by a portable media appropriate for the processor type (floppy diskette for CPT and CP PII, Compact Flash [CF] for

CP IV and CP PM) or electronic file transfer. They are installed using the keycode management commands in LD 143 or the Software Installation Tool.

IMPORTANT!

To ensure proper formatting of a CF card, you must use the PC utility (mkbootrmd.exe) found in the utilities folder of the downloaded software image. See Procedure 7 on page 79.

Note: For a CP PM RMD, the new keycode must be in a directory called 'keycode'.

For more information on installing keycodes, refer to *Communication Server 1000E (CP PII) to Communication Server 1000E (CP PIV) Upgrade Procedures* (NN43041-460).

Superloop/Shelf determination

Cards are identified by their IPMG location. This information is an important part of the software installation process (for example, the IPMG location is required in Overlay 117). Entering the IPMG location of your cards ensures that all card slots are accounted for, and helps identify where cards may be added (if you need to expand or upgrade at a later date).

An IPMG is made up of superloop and shelf. All references to an IPMG are based on the superloop/shelf location. For example, the location of the Main Chassis is 00, which translates into superloop 0, shelf 0, and the chassis expander is 01.

Translations from a numeric IPMG number to the associated superloop shelf no longer exist. All system messages, displays, and user interface communications with the administrator are in the form of LOOP Shelf when referencing an IPMG.

Converting an existing SSC (NTDK20)-based cabinet or chassis to an IPMG

The CS 1000 software conversion process automatically creates an IPMG for each existing cabinet and chassis on the source system. For example, on a CS 1000M cabinet solution with three cabinets configured, the conversion process creates three IPMGs in Overlay 97 and the default IPMG numbers are as follows:

1 Superloop 000 Shelf 0;

2 Superloop 000 shelf 1, and;

3 Superloop 004 shelf 0.

Refer to Table 1 on page 26 for SIPE cabinet/chassis to IPMG conversion information.

CS 1000S systems

For CS 1000S-type systems, the conversion process creates IPMGs for each existing Media Gateway, as well as one IPMG for the CS 1000S Call Server chassis. The CS 1000S Call Server (“pizza box”) chassis is automatically assigned IPMG number 000 0 (Superloop 000 shelf 0). The first Media Gateway on the source system is assigned IPMG number 000 1 (Superloop 000 shelf 1). As there are no physical Peripheral Equipment resources (for example: DLC, ALC, or TMDI) assigned in the Call Sever chassis, IPMG 000 0 has nothing assigned to it following the software conversion process. IPMG 000 0 can be used as an IPMG once hardware is added to the system and the applicable database configurations are complete.

Preparing the compact flash card

Procedure 7
Preparing the compact flash card for software delivery to CP PM call server

1 Select the correct software load zip file for your platform type (CP PIV or CP PM) from the software download site.

2 Download the software load zip file.

3 Extract all the files to a temporary folder. The following six folders are listed under the root directory:

temp/
- /backup
- /install
- /keycode
- /licenses
- /swload
- /utilities

4 Navigate to the Utilities directory and double-click the **mkbootrmd.bat file** to make the RMD bootable.

5 Once the script execution is complete, copy all the folders in the temporary folder and paste them to the Compact Flash RMD.

End of Procedure

Installing the software and restoring the database

The following procedure describes the process of installing the CP PM software and customer database.

Note: For a new install, the FMD must be partitioned (followed by a reboot).

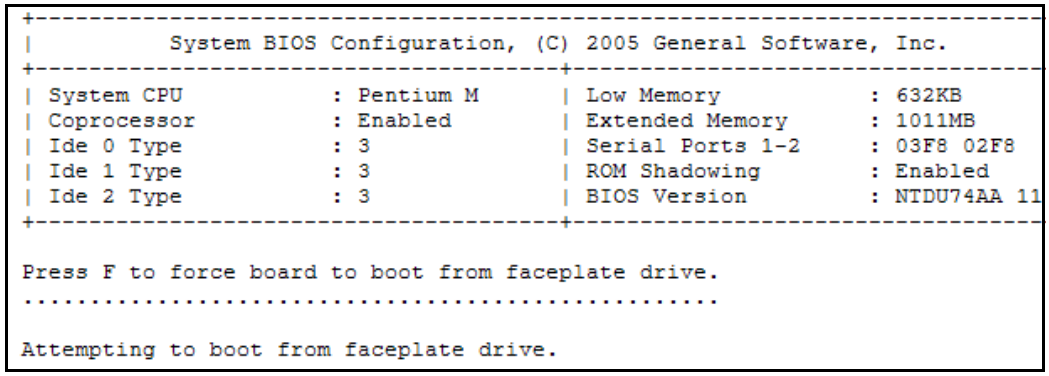
Procedure 8
CP PM Software installation

1 Connect the terminal to port 0 with the NTAK19EC cable.

2 Insert the CF card into the Call Server faceplate.

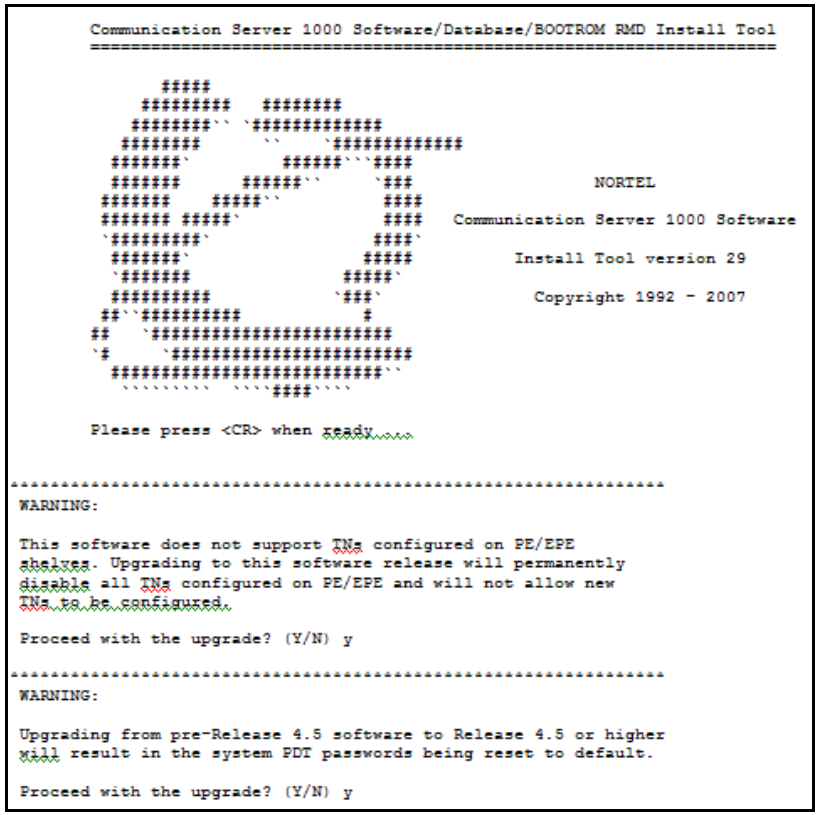
3 Reboot the card. When prompted (see Figure 13), enter **F** to “force board to boot from faceplate drive” (prompt may appear twice).

Figure 13
Upgrade boot sequence



The VxWorks banner screen appears (see Figure 14 on page 82):

Figure 14
VxWorks banner



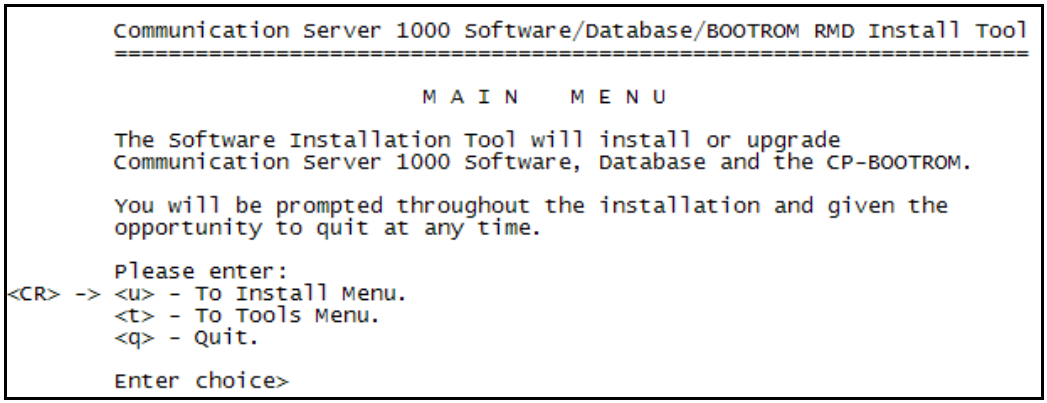
4 Enter **y** for both software warnings to proceed with the upgrade.

Note: PE/EPE is not applicable for this upgrade as it only applies to large systems.

5 The Software Installation Tool Main Menu appears (see Figure 15 on page 83).

Note: If the keycode files reside on a separate CF card, remove the software CF card and insert the CF card containing the keycode files.

Figure 15
Software Installation Tool Main Menu



6 Enter **<CR>** or **u** to access the Install Menu. The following screen appears (see Figure 16).

Figure 16
Keycode files

```
 The following keycode files are available on the removable media:

                  Name                      Size       Date         Time
                ---------------------      ------    -----------  -------
 <CR> -> <1> - keycode.kcd                  1114     Jan-17-2007   12:14
         <q> - Quit

         Enter choice>


>Validating keycode ...
>Copying "/cf2/keycode/495H_CPPM.kcd" to "/u/keycode" -

>The provided keycode authorizes the install
>of X210495 software (all subissues)
>for machine type 4021 (CPPM processor on CS 1000E).
```

7 The keycode file appears in the list. Select the appropriate keycode file for this system and install the keycode.

Note: If the CF card was exchanged, insert the CF card containing CS 1000 Release 5.0.

8 Enter **<CR>** or **y** to confirm that the keycode matches the system software on the RMD (see Figure 17 on page 84).

Figure 17
Keycode confirmation

```
        Communication Server 1000 Software/Database/BOOTROM RMD Install Tool
        ====================================================================

        Please confirm that this keycode matches the System S/W on the RMD.

        Please enter:
<CR> -> <y> - Yes, the keycode matches. Go on to Install Menu.
        <n> - No, the keycode does not match. Try another keycode.

        Enter choice>
>Obtaining database file names ...
```

9 The Install Menu appears (see Figure 18 on page 85). Enter **b** to install the software, database, and CP-BOOTROM.

Figure 18
Install Menu

```
        Communication Server 1000 Software/Database/BOOTROM RMD Install Tool
        ====================================================================

                          I N S T A L L    M E N U

        The Software Installation Tool will install or upgrade
        Communication Server 1000 Software, Database and the CP-BOOTROM.

        You will be prompted throughout the installation and given the
        opportunity to quit at any time.

        Please enter:
<CR> -> <a> - To install Software, CP-BOOTROM.
        <b> - To install Software, Database, CP-BOOTROM.
        <c> - To install Database only.
        <d> - To install CP-BOOTROM only.
        <t> - To go to the Tools Menu.
        <k> - To install Keycode only.
              For Feature Expansion, use OVL143.
        <p> - To install 3900 Set Languages.
        <q> - Quit.

        Enter choice> b
```

The following screen appears (see Figure 19 on page 85):

10 Enter **<CR>** or **y** to confirm that the call processor is set to side 0.

Figure 19
Side information

```
        Communication Server 1000 Software/Database/BOOTROM RMD Install Tool
        ====================================================================

        This CS 1000 Call Processor is set to side 0

        Please confirm that the side information is correct.


        Please enter:
<CR> -> <y> - Yes, the side information is correct.
        <n> - No, the side information is incorrect. Go on to Side Setting Me

        Enter choice>
```

11 The location information screen appears (see Figure 20), indicating that the call processor is located in loop 0 and shelf 0 of the IPMG. Enter **<CR>** or **y** to confirm their location.

Figure 20
Call processor location

```
        Communication Server 1000 Software/Database/BOOTROM RMD Install Tool
        ====================================================================

        This CS 1000 Call Processor is currently located in the IPMG
        configured as:

        loop   0
        shelf  0

        Please confirm that the IPMG loop and shelf information is correct.

        Note: If the IPMG has not been configured yet, the IPMG loop and
              shelf information can be left as the current value. To update
              the loop and the shelf information later, use OVL117.


        Please enter:
<CR> -> <y> - Yes, the IPMG loop and shelf information is correct.
        <n> - No, the IPMG loop and shelf information is incorrect.
               Go on to Loop/Shelf Setting Menu.

        Enter choice>
```

12 If not already present in the CF drive, insert the CF card containing CS 1000 Release 5.0 (see Figure 21).

Figure 21
Insert RMD

```
        Communication Server 1000 Software/Database/BOOTROM RMD Install Tool
        ====================================================================

        Please insert the Removable Media Device into the drive on Core 0.


        Please enter:
<CR> -> <a> - RMD is now in drive. Continue with s/w checking.
        <q> - Quit.

        Enter choice>
```

13 Enter **<CR>** or **y** to confirm that you have the correct software version (see Figure 22 on page 87).

Figure 22
Confirm software version

```
        Communication Server 1000 Software/Database/BOOTROM RMD Install Tool
        ====================================================================

        The RMD contains System S/W version X2105XX_X.


        Please enter:
<CR> -> <y> - Yes, this is the correct version. Continue.
        <n> - No, this is not the correct version. Try another RMD
              or a different keycode.

        Enter choice>
```

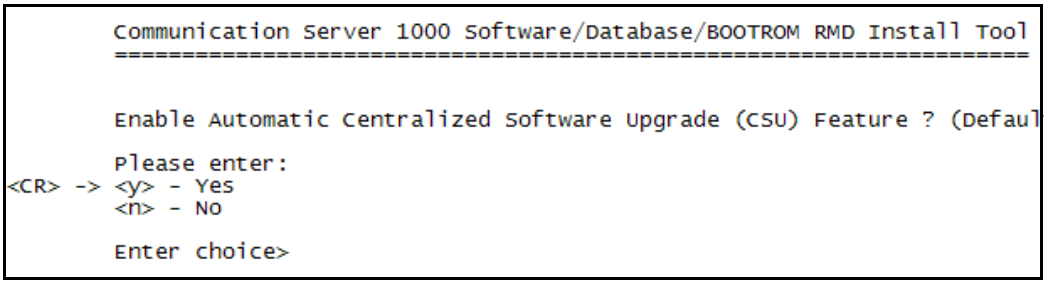
14 Enter **<CR>** or **y** to install dependency lists and continue with the upgrade (see Figure 23 on page 87).

Figure 23
Install Dependency Lists

```
        Communication Server 1000 Software/Database/BOOTROM RMD Install Tool
        ====================================================================

        Do you want to install Dependency Lists?.


        Please enter:
<CR> -> <y> - Yes, Do the Dependency Lists installation
        <n> - No, Continue without Dependency Lists installation

        Enter choice>
```

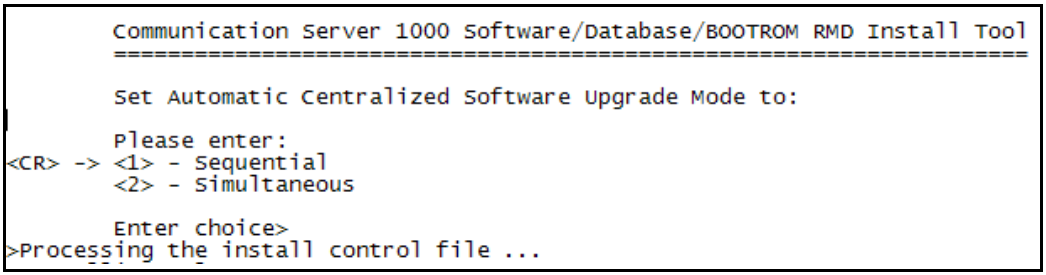
15 Enter **<CR>** or **y** (the default) to enable the Automatic Centralized Software Upgrade (CSU) feature (see Figure 24 on page 88).

Figure 24
Centralized Software Upgrade



16 Set the CSU feature to Sequential by entering either **<CR>** or **y** (see Figure 25).

Figure 25
Automatic Centralized Software Upgrade Mode



The Installation Status Summary screen appears (see Figure 26 on page 89).

Figure 26
Installation Status Summary

```
>Installing release 05XXX

                ------------------------------------------------
                            INSTALLATION STATUS SUMMARY
                ------------------------------------------------

        +=================+========+========+============================+
        |     Option      | Choice | Status |           Comment          |
        +=================+========+========+============================+
        | SW: RMD to FMD  |  yes   |        | install for rel 0495H      |
        +-----------------+--------+--------+----------------------------+
        | Dependency Lists|  yes   |        |                            |
        +-----------------+--------+--------+----------------------------+
        | AUTO-CSU Feature|  SEQ   |        | SEQ-CSU Enabled            |
        +-----------------+--------+--------+----------------------------+
        | IPMG Software:  |  yes   |        | install for rel 0495H      |
        +-----------------+--------+--------+----------------------------+
        | Database        |  yes   |        |                            |
        +-----------------+--------+--------+----------------------------+
        | CP-BOOTROM      |  yes   |        |                            |
        +-----------------+--------+--------+----------------------------+

        Please enter:
<CR> -> <y> - Yes, start installation.
        <n> - No, stop installation. Return to the Main Menu.

        Enter choice>
>Checking system configuration
```

17 Enter **<CR>** or **y** to begin the installation (see Figure 27).

Figure 27
Install Tool

```
        Communication Server 1000 Software/Database/BOOTROM RMD Install Tool
        ====================================================================

        You selected to install Software release: 05XXX on the new system.

        This will  create  all  necessary  directories and  pre-allocate
        files on the hard disk.

        You  may continue  with software  install or quit  now and leave
        your software unchanged.

        Please enter:
<CR> -> <a> - Continue with new system install.
        <q> - Quit.

        Enter choice>
```

18 A prompt appears warning you that old system files will be deleted as a result of the installation. Enter **<CR>** or **y** to continue with the installation.

19 The PSDL Installation Menu appears (see Figure 28). Select the appropriate location based on your geographical location.

Figure 28
The PSDL Installation Menu

```
*********************************************************
 PSDL INSTALLATION MENU
 The PSDL contains the loadware for all downloadable
 cards in the system and loadware for M3900 series sets.
*********************************************************
 Select ONE of the SEVEN PSDL files:
         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, <CR> - default

 By default option 1 will be selected.
 Enter your choice ->1

>Copying new PSDL ...
```

20 Enter **<CR>** to continue.

A message appears indicating that the installation on Core 0 was successful (see Figure 29).

Figure 29
Core 0 software installation complete

```
Communication Server 1000 Software/Database/BOOTROM RMD Install Tool
=====================================================================

Software release 05XXX was installed successfully on Core 0.

All files were copied from RMD to FMD.


Please press <CR> when ready ...
```

21 Enter **<CR>** to continue.

The following screen appears (see Figure 30).

Figure 30
Database installation

```
        Communication Server 1000 Software/Database/BOOTROM RMD Install Tool
        ====================================================================

        You will now perform the database installation.


        Please enter:
<CR> -> <a> - Install CUSTOMER database.
               The Removable Media Device containing the customer database
               must be in the drive.
        <b> - Install DEFAULT database and DEFAULT accounts.
               The System S/W media must be in drive.)
        <d> - Transfer Small System database.
               The RMD containing the database must be in the drive
        <e> - Check the database that exists on the Fix Media Device.
        <q> - Quit.

        Enter choice> d
```

22 Remove the software CF card and insert the CF card containing the archived database.

23 Enter **d** to transfer the database.

As this is an upgrade from a small system to a large system, you must select option “d” (not “a”) at this point to ensure the transfer of the small system database and the proper conversion of the TNs from a two-field format to a four-field format.

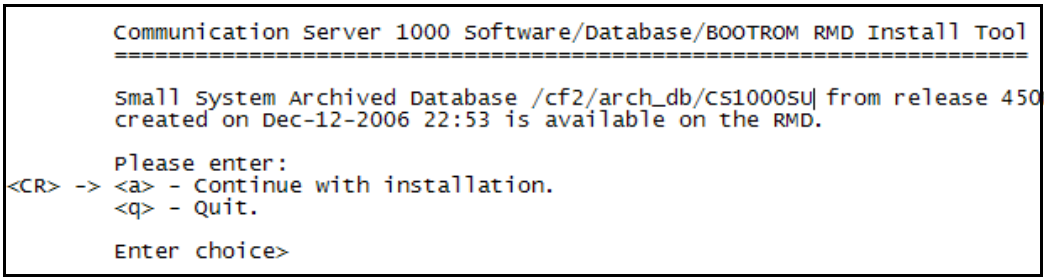
24 Select the desired database from the RMD (see Figure 31).

Figure 31
Select archived database

```
        The following Archive databases are available on the removable media

<CR> -> <1> - 450W_CP
        <2> - 450WBASE
        <3> - CS1000SU
        <q> - Quit

        Enter choice>
```

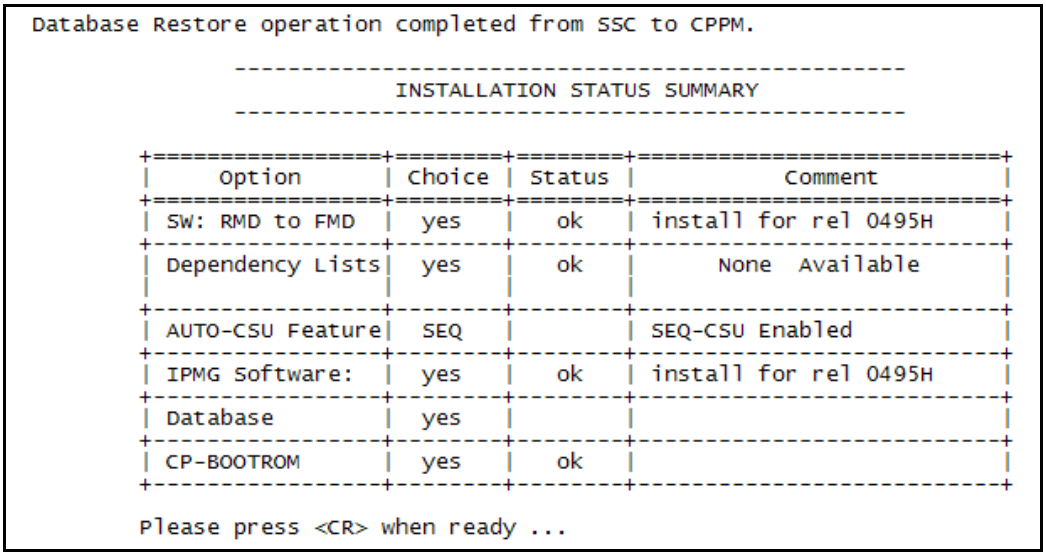
25 The database file name saved to the RMD appears. Enter **<CR>** or **a** to continue with the installation (see Figure 32).

Figure 32
Database file



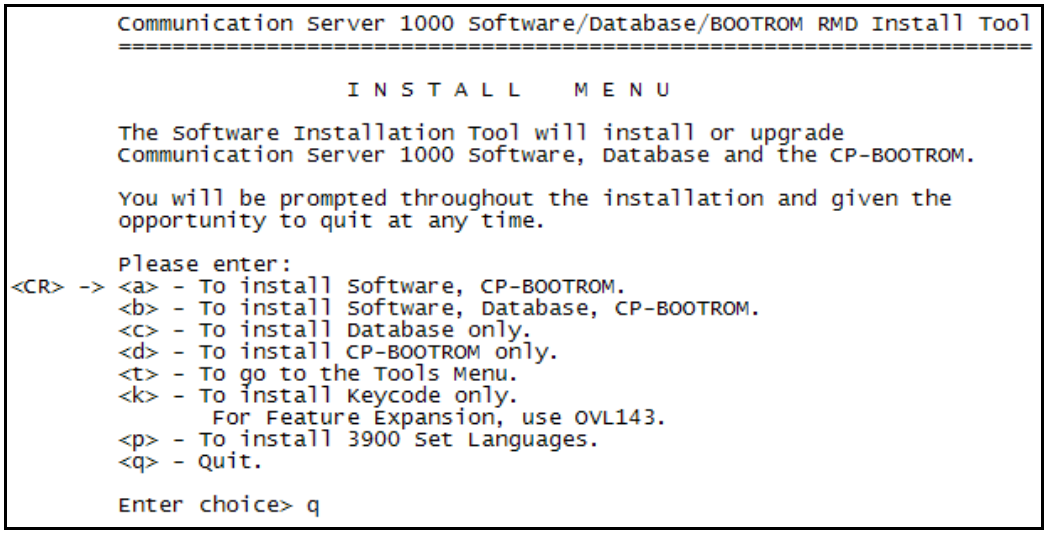
26 The Installation Status Summary screen appears, indicating that the installation was a success (see Figure 33). Enter **<CR>** to continue.

Figure 33
Installation Status Summary



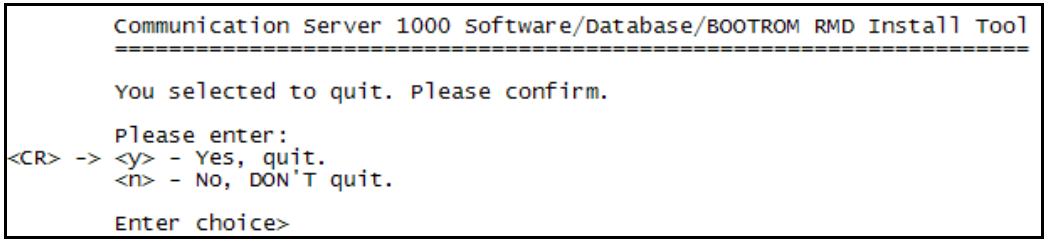
27 The Install Menu appears (see Figure 34 on page 93). Enter **q** to quit the Install Tool.

Figure 34
Install Menu



28 Enter **<CR>** or **y** to confirm your selection (see Figure 35).

Figure 35
Quit Install Tool



29 Enter **<CR>** or **y** to reboot the system (see Figure 36). Once the system has completed its reboot, remove the CF from the faceplate.

Figure 36
System reboot

```
        Communication Server 1000 Software/Database/BOOTROM RMD Install Tool
        ====================================================================

        You selected to quit the Install Tool.
        You may reboot the system or return to the Main Menu.
        -----------------------------------
        DO NOT REBOOT USING RESET BUTTON!!!
        -----------------------------------

        Please enter:
<CR> -> <a> - Reboot the system.
        <m> - Return to the Main Menu.

        Enter choice>


>Rebooting system ...
```

Note: Upon sysload, small system to large system TN conversion occurs. Please refer to Table 2 on page 28.

30 Once the reboot is complete, the final conversion takes place:

```
SYSLOAD HAS TAKEN PLACE CPU 0
SYSDB RLS/ISS: 450W DATE/TIME: 6/11/2006 10:01:16 RECS: 86
SEQNO: 911
DATA CONVERSION
CS 1000 RELEASE 4.50W TO CS 1000 X21 ISSUE 4.91F

  CONFIG:  IDLE_SET_DISPLAY GTE
  DONE

INI000 00000000 02 21 08 00000000 00000000 00000000
00000000 0 ? 00000000
```

31 The following TN Mapping Summary appears:

```
TN MAPPING  SUMMARY
```

```
   THE  FOLLOWING SDI DEVICES ARE DELETED

SDI:8

       LSL

SDL5203
```

End of Procedure

Configuring initial IP configuration data on MGC

Note: Coordinate all Nars/Bars and NRS changes to ensure that your cutover plan is designed for minimum downtime.

The MGC must be given a superloop and shelf reference on the Call Server (see Table 14)**.**

Table 14
MGC superloop configuration

Loop	Shelf	IPMG #
000	0	1
000	1	2
004	0	3
004	1	4
008	0	5
...	...	...
098	0	49
098	1	50

Procedure 9
Configuring the MGC on the Call Server

Note: Initial configuration of the MGC is command line ONLY.

The MGC is shipped with “gold” software in onboard flash memory. If centralized software upgrade is enabled on the Call Server, the MGC is upgraded automatically (or it can be upgraded manually through LD 143).

There are two ways to enter mgcsetup:

- If no IP information exists on the MGC, it will boot directly into the setup menu.
- If IP information does exist, the prompt “To invoke install menu or bypass loadware upgrade enter CONTROL-I” appears.

The MGC Shells can be accessed using the following commands:

- `<CTRL>O<CTRL>A<CTRL>M,` (provide OAM username and password to access OAM shell)
- `<CTRL>L<CTRL>D<CTRL>B,` (provide LDB username and password to access LDB)

1 Enter network IP information at the MGC setup menu:

```
Please define the data networking parameters for this MG
1000E now.

Hostname              :  MGC_N313  (optional)
ELAN IP               : 0.0.0.0 192.168.3.33
ELAN subnet mask      : 0.0.0.0 255.255.255.0
ELAN gateway IP       :  192.168.3.1
TLAN IP               : 0.0.0.0 192.168.19.33
TLAN subnet mask      : 0.0.0.0 255.255.255.0
TLAN gateway IP       :  192.168.19.1
Primary CS Hostname   :  CS1000E_N313 (optional)
Primary CS IP         :  192.168.3.32
Leading Secondary CS Hostname :  <enter>
Leading Secondary CS IP       : 0.0.0.0
Secondary CS Hostname :  <enter>
Secondary CS IP       : 0.0.0.0
```

2 Enter port and security parameters, if required:

```
Change MGC advanced parameters? (y/[n]) : y
TLAN is set to auto negotiate, change? (y/[n]) : y

Note: Turning off auto negotiate on the TLAN
    : will default it to 100Mbps full duplex.

Set TLAN to auto negotiate? ([y]/n) : y
ELAN is set to auto negotiate, change? (y/[n]) : y

Note: Turning off auto negotiate on the ELAN
    : will default it to 100Mbps full duplex.

Set ELAN to auto negotiate? ([y]/n) : y
ELAN security Disabled, change? (y/[n]) : y
Enable ELAN security ? (y/[n]) : y
Enter security level OPTI, FUNC or FULL : opti

Note: Spaces ~ * ` @ [ ] and # are not supported in
passwords.

Please input PSK(16-32 chars): (input is not echoed)
Strength of PSK: Weak
Please reenter PSK(16-32 chars): (input is not echoed)
```

3 Review the network information and enter “y” to confirm.

```
You have entered the following parameters for this MG
1000E:

Hostname              : MGC_N313
ELAN IP               : 192.168.3.33
ELAN subnet mask      : 255.255.255.0
ELAN gateway IP       : 192.168.3.1
TLAN IP               : 192.168.19.33
TLAN subnet mask      : 255.255.255.0
TLAN gateway IP       : 192.168.19.1
Primary CS Hostname   : CS1000E_N313
Primary CS IP         : 192.168.3.32
Alternate CS 1 Hostname :
Alternate CS 1 IP       : 0.0.0.0
Alternate CS 2 Hostname :
Alternate CS 2 IP       : 0.0.0.0
```

```
TLAN set to auto negotiate.
ELAN set to auto negotiate.
ELAN security Enabled, level is Optimized Security

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

4 IP changes require a reboot. Enter “y” at the prompt.

```
Do you want to continue? (y/n/[a]bort) : y
reboot(-1) has been called...
```

Following the reboot, the MGC connects to the CS and downloads the remaining configuration information.

If centralized software upgrade has been enabled, the MGC will upgrade its loadware by downloading it from the CS.

Once the MGC has registered, the LED display will show the superloop and shelf (for example: 4 0) of the IPMG. Otherwise, it will show “UNRG.”

Configuring the IPMG zone and IP address

The next step in the process involves configuring the IPMG zone and IP address in Overlay 97 on the Call Server.

> ***Note:*** This procedure may be performed through Element Manager following the installation of the Signaling Server. To configure an IPMG using Element Manager see Procedure 15 on page 136.

1 Log into Overlay 97 to configure the MGC that will register to the call server:

```
>LD 97

SCSYS000

MEM AVAIL: (U/P): 103979814    USED U P: 230475 59531
TOT: 104269820

REQ  prt
TYPE supl
SUPL

SUPL  SUPT SLOT XPEC0   XPEC1   IPMG   ZONE0/1  IPR0/1
```

```
000   IPMG ---- -- - -  -- - -   001    ---    ------------
                                 002    ---    ------------
004   IPMG ---- -- - - -- - -   003    ---    ------------
                                   004    ---    ----------
008   IPMG ---- -- - - -- - -    005   ---    ------------
                                 006   ---    ------------
096  ----  ---- VIRTUAL -- - -    ---  --- -  ---  ----------
100  ----  ---- VIRTUAL -- - -    ---  --- -  ---  ----------
104  ----  ---- VIRTUAL -- - -    ---  --- -  ---  ----------
112  ----  ---- VIRTUAL -- - -    ---  --- -  ---  ----------

REQ  chg
TYPE supl
SUPL 0
SLOT
SUPT ipmg
IPR0 <IP address for shelf 0>
IPR1 <IP address for shelf 1>
IPMG_TYP0 mgc
ZONE0 1
 **** ALL VWG CHANNELS MUST BE OUTED AND RECONFIGURED AFTER
IPMG ZONE CHANGE
 DES0
 -CE
```

Configuring initial IP addressing

Following a reboot of the MGC, initial IP addressing must be configured along with TLAN information if a DSP DB is attached. Connect a terminal to the SDI port on each MGC card. Once the reboot is complete, the following prompt appears.

Figure 37
Configuring initial IP addressing

```
Please define the data networking parameters for this MG 1000E now
Hostname              :               IPMG0-0

ELAN IP               : 0.0.0.0       10.0.5.5
ELAN subnet mask      : 0.0.0.0       255.255.255.0
ELAN gateway IP       :               10.0.5.1

TLAN IP               : 0.0.0.0       47.17.155.245
TLAN subnet mask      : 0.0.0.0       255.255.255.0
TLAN gateway IP       :               47.15.155.225

Primary CS Hostname   :               CS1000E BL60
Primary CS IP         : 0.0.0.0       10.0.5.1
Alternate CS 1 Hostname :
Alternate CS 1 IP       : 0.0.0.0
Alternate CS 2 Hostname :
Alternate CS 2 IP       : 0.0.0.0

Change MGC advanced parameters? (y/[n]) : n

You have entered the following parameters for this MG 1000E:

Hostname              : IPMG0-0
ELAN IP               : 10.0.5.5
ELAN subnet mask      : 255.255.255.0
ELAN gateway IP       : 10.0.5.1
TLAN IP               : 47.17.155.245
TLAN subnet mask      : 255.255.255.0
TLAN gateway IP       : 47.15.155.225

Primary CS Hostname   : CS1000E BL60
Primary CS IP         : 10.0.5.1
Alternate CS 1 Hostname :
Alternate CS 1 IP       : 0.0.0.0
Alternate CS 2 Hostname :
Alternate CS 2 IP       : 0.0.0.0
TLAN set to auto negotiate.
ELAN set to auto negotiate.
Security is not initialized! Security settings unknown.

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

Rebooting the MGC

The MGC reboots and registers with the Call Server.

```
Found device : INTEL 82365SL

Engcode:NTDW60BA REL 08
ELAN mac address is:00:13:65:ff:ee:ed
TLAN mac address is:00:13:65:ff:ee:ec
RESET reason: Hard Reset.
Daughter board 1:NTDW62AA R02    00:13:65:ff:f8:fd.
Daughter board 2:NOT INS

                              VxWorks System Boot

Copyright 1984-2005  Wind River Systems, Inc.
CPU: Chagall
Version: VxWorks5.5.1
Bootcode version: MGCBAA20

auto-booting...

Loading MSP from CF...1375736
Booting ARM0 (MSP) at 0x00000100 ...
Loading CSP from CF...6643712 + 5849088
Booting ARM1 (CSP) at 0x80010000 ...

Found device : INTEL 82365SL

Loading symbol table from /p/mainos.sym ...done
```

Loadware upgrade

If the MGC loadware is out of date (compared to the loadware on the Call Server), an upgrade of the loadware occurs based on the Centralized Upgrade setting defined during the software install and the values set in overlay 143. The default values are set so that the upgrade starts automatically once registration is achieved with the Call Server.

There are six pieces of loadware that are updated on the MGC. These updates are downloaded from the Call Server.

```
-> Received an upgrade request. Preparing MGC for upgrade.
Auto commit option has been enabled.
Upgrade of CSP loadware initiated.
OMM: IP link is UP between Primary Call Server and MGC 1

Upgrade of MSP loadware initiated.
Upgrade of APP loadware initiated.
Upgrade of FPGA loadware initiated.
Upgrade of DBL1 initiated.

-> 0x86f8bc30 (tMGCInst):

Upgrading FPGA Loadware...

logTask: 1 log messages lost.
0x86f8bc30 (tMGCInst): Programming FPGA ...
0x86f8bc30 (tMGCInst): FPGA Upgrade completed.
0x86f8bc30 (tMGCInst): Upgrading Application Loadware ...
0x86f8bc30 (tMGCInst): Gold CSP image upgraded
0x86f8bc30 (tMGCInst): mgcBootLineFix:fixing the bootline
0x86f8bc30 (tMGCInst): Upgrade Application Loadware
completed
0x86f8bc30 (tMGCInst): Rebooting MGC to take the upgrade
in effect.
```

At this point the IPMGs synchronize with the Call Server.

End of Procedure

Upgrading and configuring the Signaling Server

Contents

This section contains information on the following topics:

Upgrading the RAM on a Nortel ISP1100 Signaling Server

CS 1000 Release 5.0 requires a Signaling Server to have at least 1 GB of RAM memory configured. Some Nortel customers may need to upgrade the RAM memory of their legacy Nortel ISP1100 Signaling Server before upgrading the Signaling Server software to CS 1000 Release 5.0.

Introduction

To run CS 1000 Release 5.0 software, a Nortel ISP1100 Signaling Server (NTDU27AA) must be equipped with 1 GB of memory. To enable customers to reconfigure their existing Nortel ISP1100 Signaling Servers for operation in a CS 1000 Release 5.0 environment, a RAM Upgrade Kit (NTDU80CA)is available. A Nortel NTDU80CA Ram Upgrade Kit consists of 2 x 256 Mb DIMM (RAM memory) boards.

The Nortel ISP1100 Signaling Server accommodates up to four DIMM boards. In earlier releases of the CS 1000 system software (Succession 2.0, Succession 3.0), only 256 Mb of RAM was required to support your Signaling Server. This requirement was satisfied with two 128 Mb DIMM boards. In later releases of the CS 1000 system software (CS 1000 Rel. 4.0, CS 1000 Rel. 4.5), a minimum of 512 Mb of RAM was required to support your Signaling Server.

This requirement was satisfied with four 128 Mb DIMM boards, or two 256 Mb DIMM boards. If your CS 1000 Rel. 4.0 or CS 1000 Rel. 4.5 Signaling Server had to support more than 382 virtual trunks, support more than 10,000 IP Phones, or host an IP Phones Application Server (IP Phone Directory services), then 1 Gb of RAM was required to support the associated operational requirement. This requirement was satisfied with four 256 Mb DIMM boards (two Nortel NTDU80CA RAM Upgrade kits. If your Nortel ISP1100 Signaling Server is currently running Succession 2.0 or Succession 3.0 software (256 Mb of RAM configured), you must remove the two 128 Mb DIMM boards, and replace them with four 256 DIMM boards (two Nortel NTDU80CA RAM Upgrade kits) to configure 1 Gb of RAM.

If your Nortel ISP1100 Signaling Server is currently running CS 1000 Rel. 4.0 or CS 1000 Rel. 4.5, your Signaling Server could have 512 Mb of RAM configured using four 128 Mb DIMM boards, or two 256 Mb DIMM boards. If your Signaling Server has 512 Mb of RAM configured using four 128 Mb

DIMM boards, you must remove and replace them with four 256 Mb DIMM boards (two NTDU80CA RAM Upgrade kits) to configure 1 Gb of RAM. If your Signaling Server has 512 Mb of RAM configured using two 256 Mb DIMM boards, you only need to add two more 256 Mb DIMM boards (one Nortel NTDU80CA RAM Upgrade kit) to configure 1 Gb of RAM. If you already have 1 Gb of RAM configured on your Nortel ISP1100 Signaling Server for operational reasons (see above), you do not need to upgrade your RAM.

Depending on your existing RAM configuration, you need either none, one or two Nortel NTDU80CA RAM Upgrade Kits to upgrade your legacy Nortel ISP1100 Signaling Server to 1 Gb of RAM.

This section explains how to upgrade the RAM on a Nortel ISP1100 Signaling Server using the Nortel NTDU80CA RAM Upgrade Kit.

> ***Note:*** If you are in possession of a PCI Riser Board kit (NTDU27AE), you should install it while you have the cover of the Nortel ISP1100 Signaling Server removed, during the RAM upgrade. For more information, refer to *Signaling Server: Installation and Commissioning* (NN43001-312).

Preparing for the upgrade

Read the following warnings carefully before beginning the RAM upgrade process.

DANGER

SYSTEM POWER ON/OFF: The Power button on the front panel of the Nortel ISP1100 Signaling Server DOES NOT remove AC power to the Nortel ISP1100 Signaling Server system. Some circuitry in the Nortel ISP1100 Signaling Server can continue to operate even through the front panel Power button is off. Always disconnect the power cord from the AC power source or wall outlet before performing any of the procedures in this section. Failure to do so can result in personal injury or equipment damage.

DANGER

HAZARDOUS CONDITIONS, POWER SUPPLY: Hazardous voltage, current, and energy levels are present inside the power supply. There are no-user-serviceable parts inside the power supply; servicing must be done by technically qualified personnel.

DANGER

HAZARDOUS CONDITIONS, DEVICES, AND CABLES: Hazardous electrical conditions can be present on power, telephone, and communication cables. Press the Power button to turn off the Signaling Server, and disconnect the power cord from the AC power source, telecommunications systems, networks, and modems attached to the Signaling Server before removing the cover. Failure to do so can result in personal injury or equipment damage.

CAUTION

ELECTROSTATIC DISCHARGE (ESD) AND ESD PROTECTION: Because the Nortel ISP1100 Signaling Server can be extremely sensitive to ESD, perform the procedures in this section only at an ESD workstation. If an ESD station is not available, you can reduce the risk of ESD damage by:

- Wearing the antistatic wrist strap provided and attach it to a metal part of the Nortel ISP1100 Signaling Server.
- Touch the metal on the Nortel ISP1100 Signaling Server before touching the other components.
- Keep part of your body in contact with the metal Nortel ISP1100 Signaling Server to dissipate the static charge while handling the components.
- Avoid moving around unnecessarily.
- Hold the Nortel ISP1100 Signaling Server components (especially boards) only by the edges.
- Place the Nortel ISP1100 Signaling Server components on a grounded, static-free surface. Use a conductive foam pad if available, but NOT the component wrapper.
- Do not slide the components over any surface.

CAUTION

Service interruption

COOLING AND AIRFLOW: For proper cooling and airflow, always install the Nortel ISP1100 Signaling Server access cover before turning on the system. Operating the system without the cover in place can cause overheating and damage to system parts.

Performing the RAM upgrade

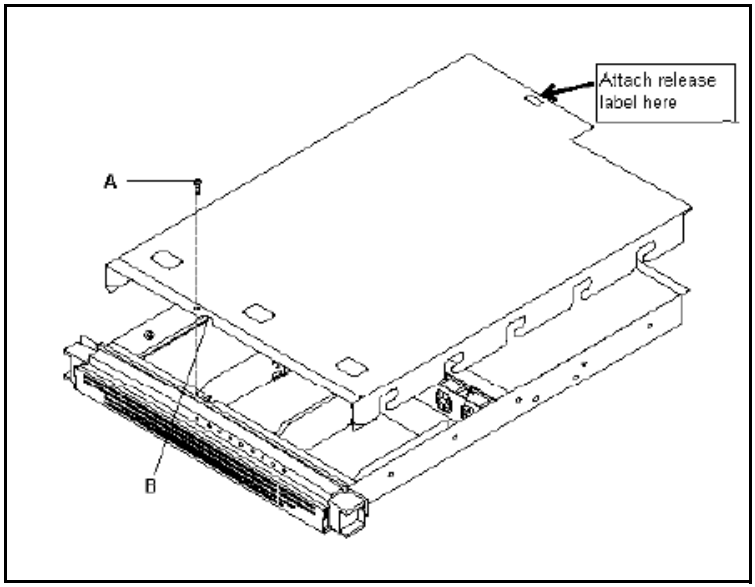
Use the following procedure to upgrade the RAM on a Nortel ISP1100 Signaling Server.

> ***Note:*** These instructions are intended for qualified technical personnel with experience installing and configuring servers.

Procedure 10
Upgrading the RAM of a Nortel ISP1100 server

1 Remove the cover from the Nortel ISP1100 Signaling Server.

Figure 38
Removing/replacing the cover



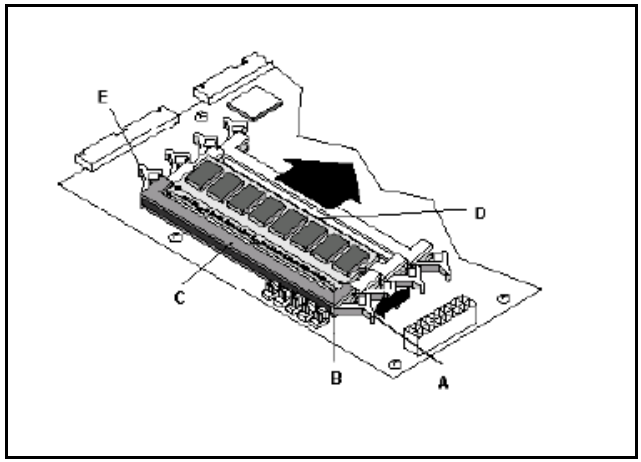
a. Use a Phillips screwdriver to remove the screw (A) from the front edge of the cover.

b. Grasp the back edge of the cover. Simultaneously, pull from the back edge and push near the front edge until the cover slides out from under the edge of the Nortel ISP1100 Signaling Server front panel.

c. Grasp the notch (B) in the front center of the cover and lift up to remove the cover.

2 Remove the existing 128 Mb DIMM boards (if necessary).

Figure 39
Remove DIMM board



a. Grasp the ejector lever (A) on one end of the DIMM board and push down on the lever until the edge of the board connector (B) just lifts out of the socket (C).

CAUTION

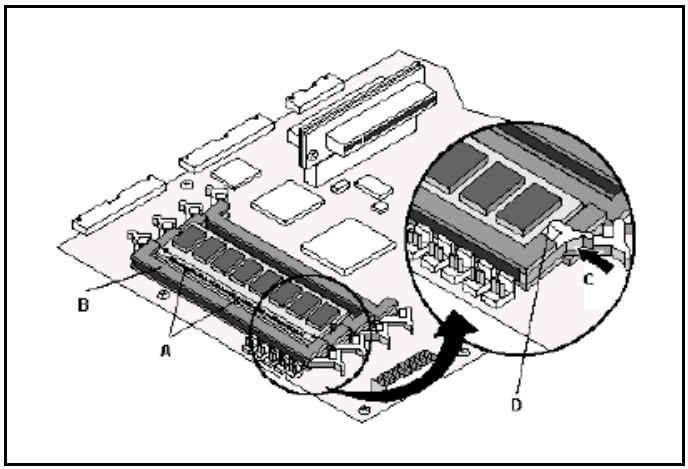
Hold the tips of your fingers lightly on the back edge (D) of the DIMM board to prevent the board from suddenly ejecting from the socket (C). The DIMM board or other components on the Nortel ISP1100 Signaling Server board can be damaged if the DIMM board is allowed to suddenly eject from the socket.

b. Grasp the ejector lever (E) on the other end of the DIMM board and carefully push down on the lever until the DIMM board is loose from the socket.

3 Install the new 256 Mb DIMM boards (two or four, as required).

Note: Use only DIMM boards contained in the NTDU80CA Nortel ISP1100 Signaling Server RAM Upgrade Kit. Nortel does not recommend the use of other memory modules.

Figure 40
Install DIMM board



a. Align the key slots (A) in the edge of the DIMM board with the corresponding slots in the mating board socket (B).

The connectors are keyed to mate in one direction only.

CAUTION

Use extreme care when installing a DIMM board. Applying too much pressure or mis-aligning the board in the socket can damage the sockets or DIMM board edge connectors. DIMM board edge connectors are keyed and can be inserted only one way.

To reduce the risk of damaging a connector, install the DIMM boards starting with the back socket on the Nortel ISP1100 Signaling Server board and move toward the front of the board.

b. Firmly press the DIMM board straight down and all the way into the Signaling Server board socket.

c. Ensure the DIMM board is locked in by pressing the levers (C) on each end of the Signaling Server board socket into the mating notches (D) on each edge of the DIMM board.

4 Replace the cover on the Nortel ISP1100 Signaling Server. Refer to Figure 38 on page 108.

a. Position the cover on the Nortel ISP1100 Signaling Server with the notched edge (B) facing the front and the slotted sides of the cover inside the frame.

b. Grasp the back edge of the cover. Simultaneously, push from the back and top until the cover slides all the way under the edge of the Nortel ISP1100 Signaling Server front panel.

c. Use a Phillips screwdriver and the screw (A) removed in step 1 to securely attach the cover to the Nortel ISP1100 Signaling Server.

d. Attach the memory label (reading "1 GB" or "1024 MB") to the back edge of the cover.

End of Procedure

Verifying the RAM upgrade

Use the following procedure to ensure that the RAM upgrade was successful.

Procedure 11
Verifying the RAM upgrade on a Nortel ISP1100 server

Note: When upgrading to 1 GByte, the system responses indicate "1 GB" instead of "512 MB".

1. Connect the Signaling Server cable to the maintenance terminal and to the serial port on the back (not the front) of the Nortel ISP1100 Signaling Server.
2. Using a terminal software program, such as Microsoft Windows HyperTerminal, configure the terminal type of the maintenance terminal serial port to "auto detect" terminal type.
3. Connect the power cable to the Nortel ISP1100 Signaling Server.
4. Press the power switch, the left-most button on the front of the Nortel ISP1100 Signaling Server.

   The following system messages appear on the maintenance terminal screen:

   ```
   AMIBIOS (C)2001 American Megatrends Inc.
   Copyright 1996-2001 Intel Corporation
   TR440BXA.86B.0042.P15.0107200951
   Intel(R) Pentium(R)III processor, 700MHz
   1 GB OK
   Hit <F2> if you want to run SETUP
   ```

5. **<Optional>** To perform a more detailed RAM test:

   a. Press the F2 button.

   b. Navigate to the "Boot" menu.

   c. Disable the Quickstart option.

   d. Exit, saving the changes.

   Do not change any other settings. The Nortel ISP1100 Signaling Server reboots and performs a more detailed RAM test at boot time.

If "1 GB OK" appears on the screen, the RAM upgrade was successful. If not, the RAM upgrade failed.

End of Procedure

Upgrading and reconfiguring the software

CS 1000 Release 5.0 introduces three Signaling Servers:

- Nortel CP PM Signaling Server
- IBM X306m Signaling Server
- HP DL320-G4 Signaling Server

These Signaling Servers do not support any Signaling Server software prior to CS 1000 Release 5.0 and therefore, are not subject to software upgrades in CS 1000 Release 5.0.

This chapter contains instructions for upgrading the Signaling Server software on a legacy Nortel ISP1100 Signaling Server (NTDU27AA 01, 02, or 03) from CS 1000 Release 4.0 or CS 1000 Release 4.5 to CS 1000 Release 5.0. In addition, it explains how to install the previous release of Signaling Server software on a legacy Nortel ISP1100 Signaling Server. All Signaling Servers can be re-configured once installed and connected to the system. This chapter also contains the instructions for re-configuring a Signaling Server.

Overview

The upgrade process recognizes the existence of IP configuration data and application databases on the Signaling Server and does not impact on them during the upgrade. However, Nortel recommends that you back up the application databases prior to the upgrade as a precautionary measure. The application databases consist of the IP Phone database and the NRS database.

If you do not know whether the Signaling Server being upgraded has an NRS, use Procedure 12, “Verifying the presence of an NRS,” on page 115 to make this determination.

If you have an NRS database on the Signaling Server and wish to back it up prior to the upgrade, you must use the back up tool in NRS Manager. It is recommended that you download the backup file to your local PC after the back up. After the Signaling Server is upgraded, NRS Manager is used to restore the NRS database (from your local PC) and activate it for use by the NRS. For instructions on backing up and restoring an NRS database, refer to *Signaling Server: Installation and Commissioning* (NN43001-312).

For instructions on backing up and restoring the IP Phone database, refer to *IP Line Fundamentals* (NN43001-500).

Procedure 12
Verifying the presence of an NRS

1 Open Internet Explorer.

2 Enter the ELAN or TLAN network interface IP Address of the primary Signaling Server as the URL.

Note: Note: Do not assign the same IP address for the Node ID and the TLAN network interface IP address. This must be verified manually. The Node IP address must be on the same subnet as the TLAN network interface IP addresses of the Media Cards. In addition, the TLAN and ELAN network interfaces of the Media Card must reside on separate logical subnets.

If additional configuration parameters were entered during installation, the node IP address can also be used as the URL.

The Element Manager logon web page appears.

Figure 41
Element Manager logon page

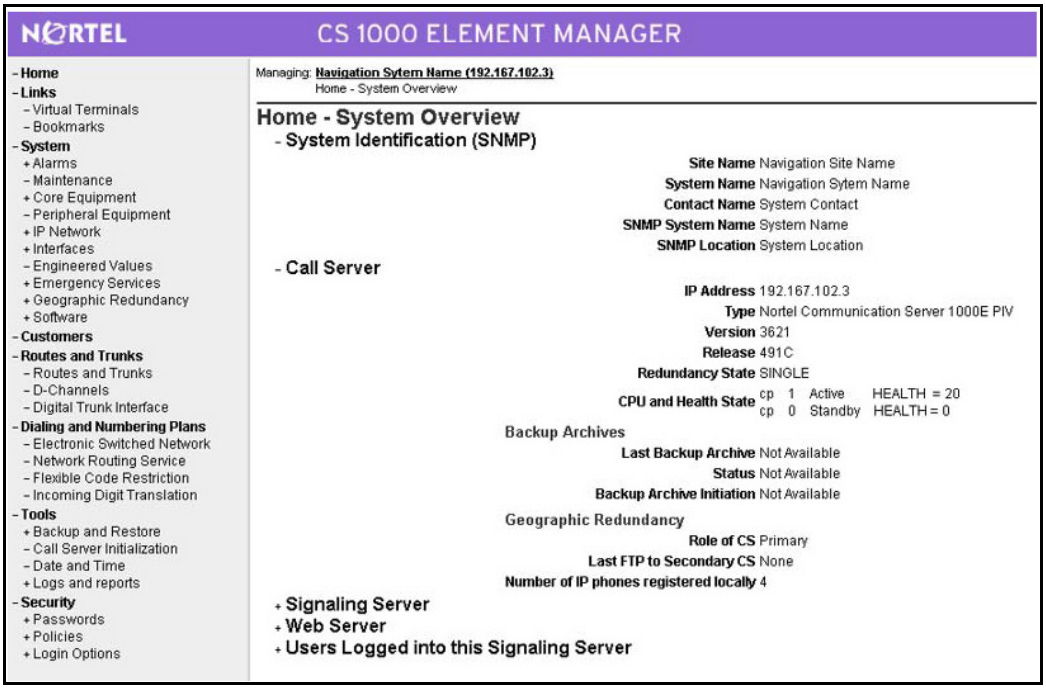
Initially, you can be prompted to enter the Call Server IP address, because the Call Server is used for web logon authorization. The Call Server IP address is a requirement, because unless you entered additional configuration parameters during the Signaling Server installation, the node configuration data file containing the Call Server IP address does not yet exist.

3 Enter a Level 1 or Level 2 user ID and password. If configured, you can also use a Limited Access Password (LAPW) user ID and password.

If this is the first time the Call Server is accessed, the default Level 1 or Level 2 user ID and password must be used.

If the logon is successful, the Element Manager "Home - System Overview" screen appears (see Figure 42 on page 116).

Figure 42
Element manager: Home - System Overview

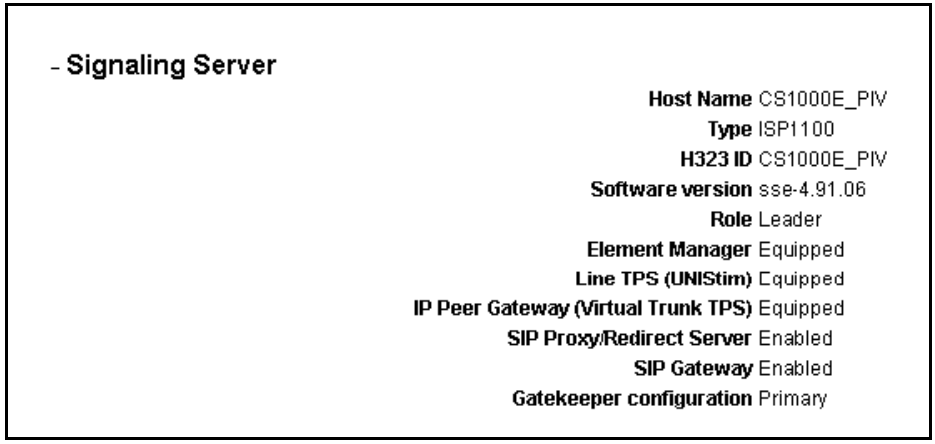


This screen identifies the components of your CS 1000 system.

4 Click the “+” symbol in front of the Signaling Server component.

The Signaling Server component expands to display the properties of the Signaling Server (see Figure 43 on page 117).

Figure 43
Signaling Server properties



5 View the contents of the "Gatekeeper configuration" property.

If the Gatekeeper configuration property indicates Primary (as is the case here), Alternate or Failsafe, the Signaling Server hosts an NRS. If the property indicates nothing, the Signaling Server does not host an NRS.

End of Procedure

Before you begin

Before upgrading the software, you must do the following:

- Connect the Signaling Server — see *Signaling Server: Installation and Commissioning* (NN43001-312)
- Take a precautionary backup of the IP Phones application database.
- Take a precautionary backup of the NRS database.

- Obtain the CS 1000 Release 5.0 version of the Signaling Server Software Install CD-ROM— see *Signaling Server: Installation and Commissioning* (NN43001-312)
- Ensure that there is 1 GB of RAM configured on your legacy Nortel ISP1100 server

Upgrading from previous software releases

Upgrading from Succession Release 3.0

If you are upgrading from Succession Release 3.0, you must migrate your H.323 Gatekeeper to the NRS as part of the upgrade.

IMPORTANT!

If you are upgrading from Succession Release 3.0, do not use the procedures in this section unless directed to do so by the process described in the “H.323 Gatekeeper database migration” chapter of *Signaling Server: Installation and Commissioning* (NN43001-312).

Upgrading from CS 1000 Release 4.0 or higher with NRS

If you are upgrading from CS 1000 Release 4.0 or higher and the Signaling Server hosts an NRS, you must back up the NRS database using the backup tool in NRS Manager. Then you must download and save the backup file to your local PC. For instructions, see *IP Peer Networking: Installation and Commissioning* (NN43001-313).

IMPORTANT!

If upgrading from Signaling Server 4.0 or earlier, the hard drive will be re-partitioned and initialized before installation can begin.

IMPORTANT!

You must back up the NRS database to your local PC for the database migration to be successful.

After you have upgraded and reconfigured the Signaling Server, you must restore the backed up NRS database from your local PC to the upgraded Signaling Server. Use NRS Manager to restore the database, then cut-over and commit the database. For instructions, see *IP Peer Networking: Installation and Commissioning* (NN43001-313).

Upgrading the CS 1000 Release 4.0 or CS 1000 Release 4.5 Signaling Server

IMPORTANT!

The Signaling Server is out-of-service during software upgrades.

Use the following procedure to upgrade the Signaling Server software on a legacy Nortel ISP1100 server.

Procedure 13
Upgrading the Signaling Server software

1 Insert the Signaling Server Software CD into the CD drive, and press the **RST** button on the front panel to cold boot the Signaling Server.

The VxWorksTM system boot screen appears (see Figure 44 on page 120).

Figure 44
VxWorks system boot

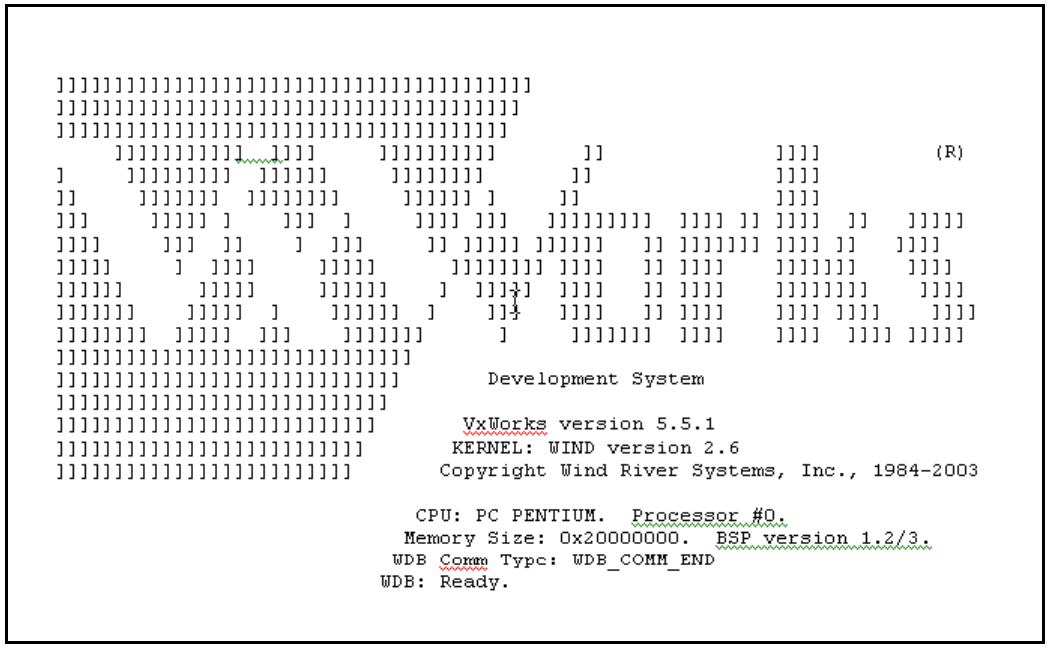
```
       VxWorks System Boot
Copyright 1984-2004 Wind River Systems, Inc.

CPU: PC PENTIUM
Version: VxWorks5.5.1
BSP version: 1.2/3
Creation date: Oct 6 2006, 15:44:38

Mounting /cd0
Found /cd0/nvram.sys
Mounting /boot
Found /boot/nvram.sys

Selecting nvram file from 2 sources

Read boot parameters from:

C: CDROM Drive
H: Hard Disk
10 [H] c
```

2 Enter c at the prompt to force the Signaling Server to boot from the Signaling Server Software CD.

Note: Enter c within ten seconds to ensure that the Signaling Server boots from the CD drive.

The VxWorksTM banner screen appears.

Figure 45
VxWorks banner

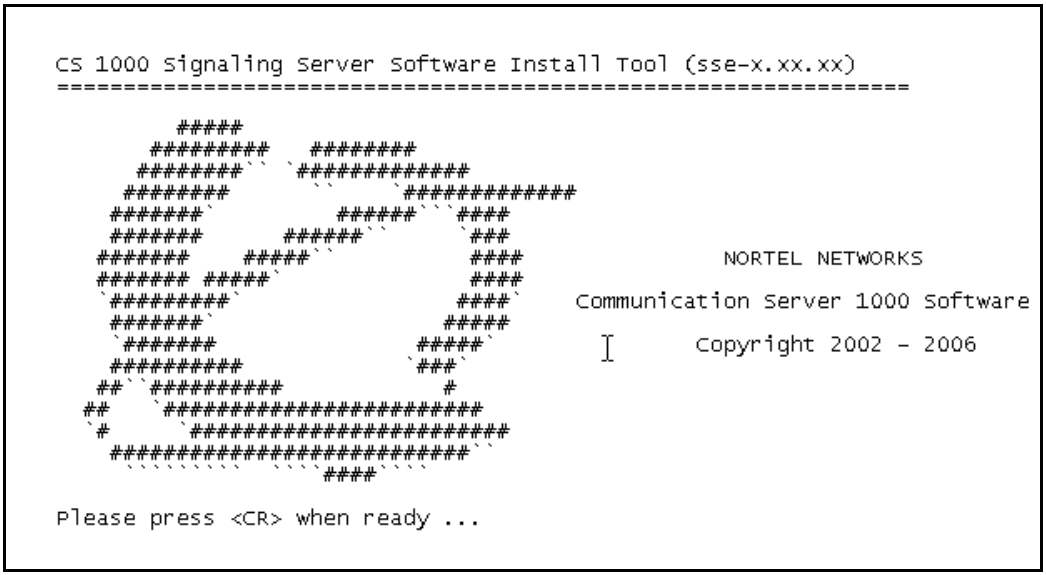


The following message appears:

```
/boot/ - Volume is OK
/p/ - Volume is OK
/u/ - Volume is OK
/e/ - Volume is OK
Loading /cd0/load/inst.out
```

The Signaling Server Software Installation Tool banner screen appears.

Figure 46
Installation Tool banner



3 Press <CR> to perform system checks and begin software installation.

The system verifies the file systems.

The following messages appears:

```
Verifying filesystems ...
Filesystems verification succeeded.

Copying "/cd0/disk.sys" to "/u/disk.sys".
```

The System Information screen appears (see Figure 47: “System Information” on page 123):

Figure 47
System Information

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
============================================================

      ---------------------------------------
                SYSTEM INFORMATION
       ---------------------------------------

============================================================
Hostname: CS1000S_CP        S/W Ver: 4.50.88
Location: N/A
Found /boot/nvram.sys

   Role: Leader                 Set TPS: Enabled
Node ID: 5                     Vtrk TPS: Enabled
Node IP: 192.167.101.3         NRS Config: Primary GK + SIP
H.323 ID: CS1000M Chassis        CS IP: 192.167.100.3

ELAN IP: 192.167.100.4        TLAN IP: 192.167.101.2
ELAN SM: 255.255.255.0         TLAN SM: 255.255.255.0
ELAN GW: 192.167.100.1        TLAN GW: 192.167.101.1
ELAN MAC: 00:02:b3:e8:d0:ea    TLAN MAC: 00:02:b3:e8:d0:ea
============================================================

       Please enter:
<CR> -> <a> - Continue with Install Tool
        <q> - Quit

       Enter Choice>
```

4 Do one of the following:

- If you want to quit the upgrade and restore the previous release of software, enter **q** at the prompt. The Installation Tool Main Menu appears.

  Go to step 9 on page 131.

- If you want to continue the upgrade, press **CR** or enter **a** at the prompt.

Regardless of what option is chosen, the Install Tool Main Menu appears:

Figure 48
Install Tool Main Menu

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
============================================================

                     MAIN MENU

The Install Tool will install Signaling Server software and related
files. You will be prompted throughout the installation.

        Please enter:
<CR> - > <a> - To perform a complete installation/upgrade (Signaling
                Server s/w, Internet Telephone f/w, Voice Gateway
                Media Card l/w, basic Signaling Server configuration
         <b> - To install/upgrade Signaling Server software only.
         <c> - To copy Internet Telephone firmware only.
          <d> - To copy Voice Gateway Media Card loadware only.
         <e> - To perform basic Signaling Server configuration only.
         <f> - To selectively change intial system parameters.
          <g> - To change board location information (CPPM only).
          <h> - To go to the Tools Menu.

          Enter Choice>
```

5 Do one of the following:

- Enter **a** to upgrade the Signaling Server software, IP Phone firmware, and Voice Gateway Media Card loadware.

Note: The upgrade process does not include Signaling Server configuration steps. If the Signaling Server is being upgraded, IP configuration data already exists on the server.

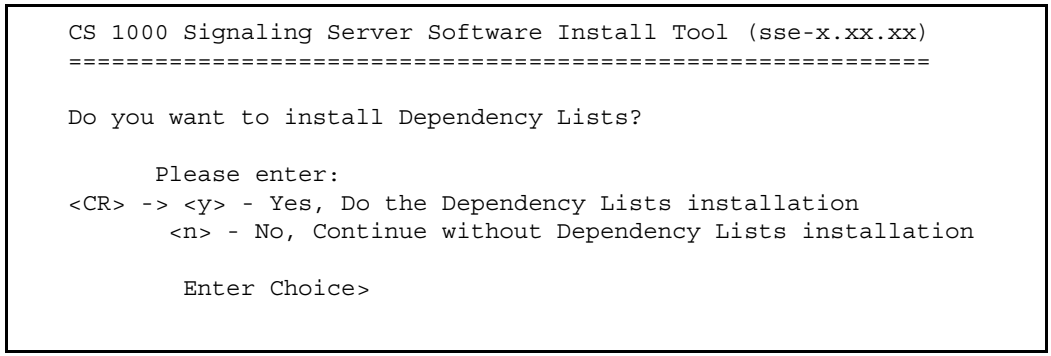
- Enter **b** to upgrade only the Signaling Server software.

The following sample lines appear:

```
Copying "/cd0/ssexxxxx.p/disk.sys" to
"/u/disk.sys".
"/cd0/sse30047.p3/install.dat" parsed.

Processing the install control file ...
"/cd0/ssexxxxx.p/install.dat" parsed.
```

Regardless of the option chosen, the Dependency list installation screen appears.

Figure 49
Dependency list



6 Do one of the following:

- Press **CR** or enter **y** to install dependency lists and continue with the upgrade.
- Enter **n** to continue the upgrade without installing the dependency lists.

Regardless of the option chosen, the Installation Status Summary screen appears:

Figure 50
Installation Status Summary

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================================

        ------------------------------------------------
                    INSTALLATION STATUS SUMMARY
        ------------------------------------------------

+==================+========+========+================================+
|     Option       | Choice | Status |           Comment              |
+==================+========+========+================================+
| software         |  yes   |        | upgrade x.xx.xx to x.xx.xx     |
+------------------+--------+--------+--------------------------------+
| Dependency Lists |  yes   |        | copy ALL                       |
+------------------+--------+--------+--------------------------------+
| firmware         |  yes   |        | copy ALL                       |
+------------------+--------+--------+--------------------------------+
| loadware         |  yes   |        | copy ALL                       |
+------------------+--------+--------+--------------------------------+
| configuration    |  no    |        |                                |
+------------------+--------+--------+--------------------------------

      Please enter:
<CR> -> <y> - Yes, start complete installation.
        <n> - No, cancel complete installation and return to the Main
              Menu.

       Enter Choice>
```

7 Press **<CR>** or enter **y** to start the upgrade.

The following screens and messages appear in succession (beginning with Figure 51: “Software upgrade start” on page 127)

Figure 51
Software upgrade start

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================================

You have selected to upgrade the system from version x.xx.xx to
version x.xx.xx. THIS WILL ERASE ALL OLD SYSTEM FILES. Data files
will be preserved.

Starting upgrade from version x.xx.xx to version x.xx.xx.

Backed up "/boot/nvram.sys".

Initializing protected partition ...
Retrieved old volume params with %95 confidence:
Volume Parameters: FAT type: FAT32, sectors per cluster 8
  2 FAT copies, 0 clusters, 4096 sectors per FAT
  Sectors reserved 32, hidden 0, FAT sectors 8192
  Root dir entries 0, sysId (null), serial number 9166bc15
  Label:"
Disk with 4194304 sectors of 512 bytes will be formatted with:
Volume Parameters: FAT type: FAT32, sectors per cluster 8
  2 FAT copies, 523260 clusters, 4096 sectors per FAT
  Sectors reserved 32, hidden 0, FAT sectors 8192
  Root dir entries 0, sysId VX5DOS32, serial number 9166bc15
  Label:"
"/p" initialized
/p/ - Volume is OK
Creating directory "/p/data".
Attempting to install bootstrap on primary sector of device /dev/hdal
Found cbio device /dev/hda1 [0x1a001ddc] with sector size 512
Installing bootstrap on device /dev/hda1
Installing image /p/load/bootrom.bin on /boot
Found cbio device 0x1a001ddc with sector size 512
Copying /p/load/bootrom.bin to /boot/bootrom.sys
Boot ROM "/p/load/bootrom.bin" installed.

Erasing /u/patch/reten/reten.pch.
Erasing /u/patch/reten/mdp.ini.
Erasing /u/patch/reten/p22473_1.ss1.
```

Figure 52
Software upgrade success

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
=============================================================================

Software version x.xx.xx was installed successfully.

All files were copied to the hard disk.

/p/ - Volume is OK
```

Figure 53
IP Phone firmware upgrade

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
=============================================================================

The installation source contains multiple Internet Telephone firmware
files.

Delete previous registered F/W files:
Deleting F/W file - /u/fw/x00.fw...
Deleting F/W file - /u/fw/x01.fw...
Deleting F/W file - /u/fw/x02.fw...
Deleting F/W file - /u/fw/x21.fw...
Deleting F/W file - /u/fw/x24.fw...
Deleting F/W file - /u/fw/x25.fw...
Copying "/cd0/0603B76.bin" to "/u/fw/0603B76.bin
Copying "/cd0/0602B76.bin" to "/u/fw/0602B76.bin
Copying "/cd0/0604B76.bin" to "/u/fw/0604B76.bin
Copying "/cd0/0621C44.bin" to "/u/fw/0621C44.bin
Copying "/cd0/0624C44.bin" to "/u/fw/0624C44.bin
Copying "/cd0/0625C44.bin" to "/u/fw/0625C44.bin
Copying "/cd0/0627C44.bin" to "/u/fw/0627C44.bin
```

Figure 54
Voice Gateway Media Card loadware upgrade

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
=============================================================================

The installation source contains multiple Voice Gateway Media Card
loadware files.

Copying "/cd0/IPLxxxxx.p2" to "/u/fw/IPLxxxxx.p2".
Copying "/cd0/IPLxxxxx.sa" to "/u/fw/IPLxxxxx.sa".
Copying "/cd0/IPLxxxxx.mc32s" to "/u/fw/IPLxxxxx.mc32s".
```

Figure 55
Retain existing IP configuration

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
============================================================

Since this is a system upgrade, the existing configuration files will
be retained.

If you need to re-configure this Signaling Server, then please
select the basic configuration option from the Main Menu.
```

Figure 56
Installation Status Summary

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================================

        ------------------------------------------------
                    INSTALLATION STATUS SUMMARY
        ------------------------------------------------

+==================+========+======+================================+
|     Option       | Choice | Status|           Comment              |
+==================+========+======+================================+
| software         |  yes   |  ok   | upgrade x.xx.xx to x.xx.xx
+------------------+--------+------+--------------------------------+
| Dependency Lists |  yes   |ignore | copy NONE
+------------------+--------+------+--------------------------------+
| firmware         |  yes   |  ok   | copy i2002 version 1.76        |
| firmware         |  yes   |  ok   | copy i2002 version 1.76        |
| firmware         |  yes   |  ok   | copy PhaseII IP Firmware v. 3.B6
| firmware         |  yes   |  ok   | copy i2007 IP Firmware v. 2.44 |
| firmware         |  yes   |  ok   | copy 1120E IP Firmware v. 2.44 |
| firmware         |  yes   |  ok   | copy 1140E IP Firmware v. 2.44 |
| firmware         |  yes   |  ok   | copy 1150E IP Firmware v. 2.44 |
+------------------+--------+------+--------------------------------+
| loadware         | yes    |  ok   | copy IP Line x.xx.xx for P2    |
| loadware         | yes    |  ok   | copy IP Line x.xx.xx for SA    |
| loadware         | yes    |  ok   | copy IP Line x.xx.xx for MC32S |
+------------------+--------+------+--------------------------------+
| configuration    |  no    |ignore|                                |
+------------------+--------+------+--------------------------------+

Please press <CR> when ready ...
```

8 Press **<CR>** and the Install Tool Main Menu screen appears:

Figure 57
Install Tool Main Menu

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================================

                          M A I N    M E N U

The Install Tool will install Signaling Server software and related
files. You will be prompted throughout the installation.

        Please enter:
<CR> -> <a> - To perform a complete installation/upgrade (Signaling
             Server s/w, Internet Telephone f/w, Voice Gateway Media
             Card l/w, basic Signaling Server configuration).
        <b> - To install/upgrade Signaling Server software only.
        <c> - To copy Internet Telephone firmware only.
        <d> - To copy Voice Gateway Media Card loadware only.
        <e> - To perform basic Signaling Server configuration only.
         <f> - To go to the Tools Menu.
        <q> - Quit.

        Enter Choice>
```

9 Enter q to quit the Install Tool.

The Install Tool quit confirmation screen appears (see Figure 58 on page 132).

Figure 58
Install Tool quit confirmation

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
=============================================================================

You have selected to quit the Install Tool.

Before quitting and rebooting the system, remove all disks (floppy,
CDROM) from the drives.

        Please enter:
<CR> -> <m> - Return to previous menu.
       <q> - Quit and reboot the system.

        Enter Choice>

Removing temporary file "/u/disk.sys".

Rebooting system
```

10 Remove the Signaling Server Software CD from the CD drive and enter q to quit the Installation Tool and reboot the system.

The following system messages appear:

```
Removing temporary file "/u/disk.sys".

Rebooting system ...
```

End of Procedure

If you are upgrading from Succession 3.0, you must reconfigure the Signaling Server to obtain and configure the NRS. If you do not reconfigure the Signaling Server, you cannot use a SIP Redirect Server. Refer to *Signaling Server: Installation and Commissioning* (NN43001-312) for instructions on reconfiguring a Signaling Server.

Re-installing the previous software release

This section is only relevant to a Nortel ISP1100 Signaling Server. The Nortel CP PM, IBM X306m and HP DL320-G4 Signaling Servers only run CS 1000

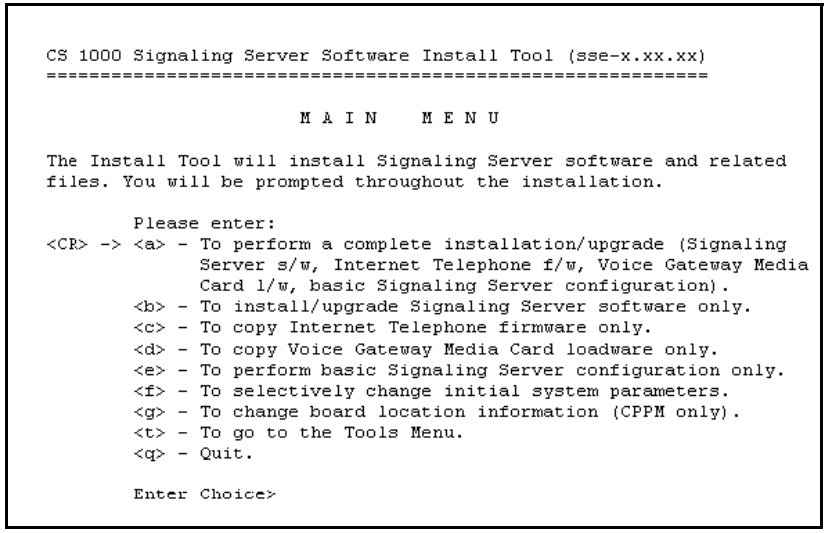
Release 5.0 Signaling Server software. Earlier releases of the Signaling Server software cannot be installed on these Signaling Servers.

Use the following procedure to reinstall the previous release of software on a Nortel ISP1100 Signaling Server.

Procedure 14
Re-installing the previous software release

1 Enter **t** at the Installation Tool Main Menu screen.

Figure 59
Installation Tool Main Menu



The Tools Menu appears.

Figure 60
Tools Menu

2 Enter g to Clear the boot sector to allow the re-installation of the previous release.

After the boot sector is cleared, the following system messages appear:

```
The boot sector is cleared.

Insert the installation CD and restart the system.
```

3 Insert the Signaling Server Software CD for the previous release, and install the software accordingly.

End of Procedure

For more information on upgrading or installing Signaling Servers, refer to *Signaling Server: Installation and Commissioning* (NN43001-312).

Configuring the IPMG

Contents

This section contains information on the following topics:

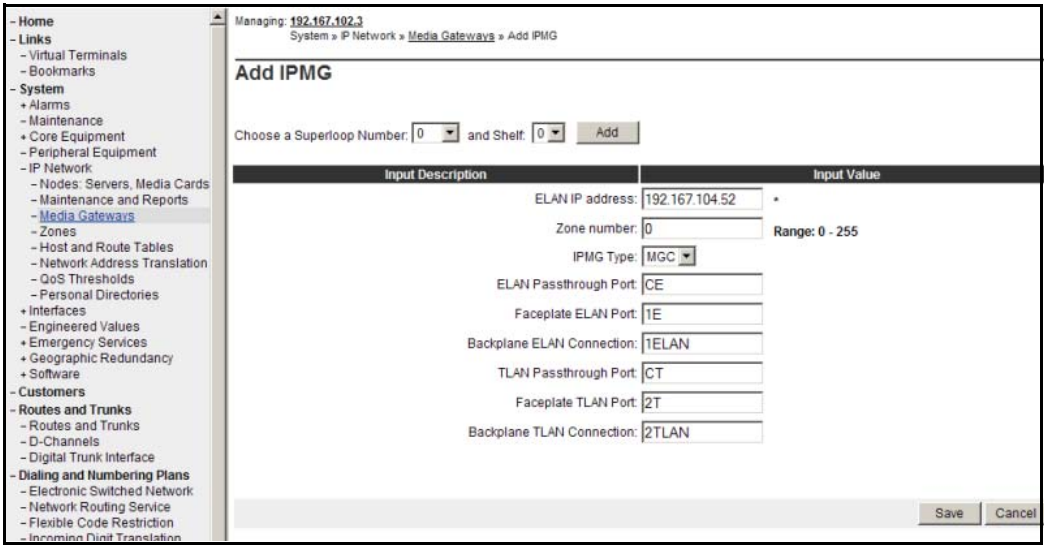
Configuring the IPMG in Element Manager

Procedure 15 on page 136 describes how to configure the IPMG in Element Manager (for instructions on logging in to Element Manager, refer to steps 1 - 3 in Procedure 12 on page 115).

Procedure 15
Configuring the IPMG (Element Manager)

1 In Element Manager, select **IP Network** > **Media Gateways**. Select the appropriate Superloop Number and Shelf. Click **Add**.

Figure 61
Add IPMG



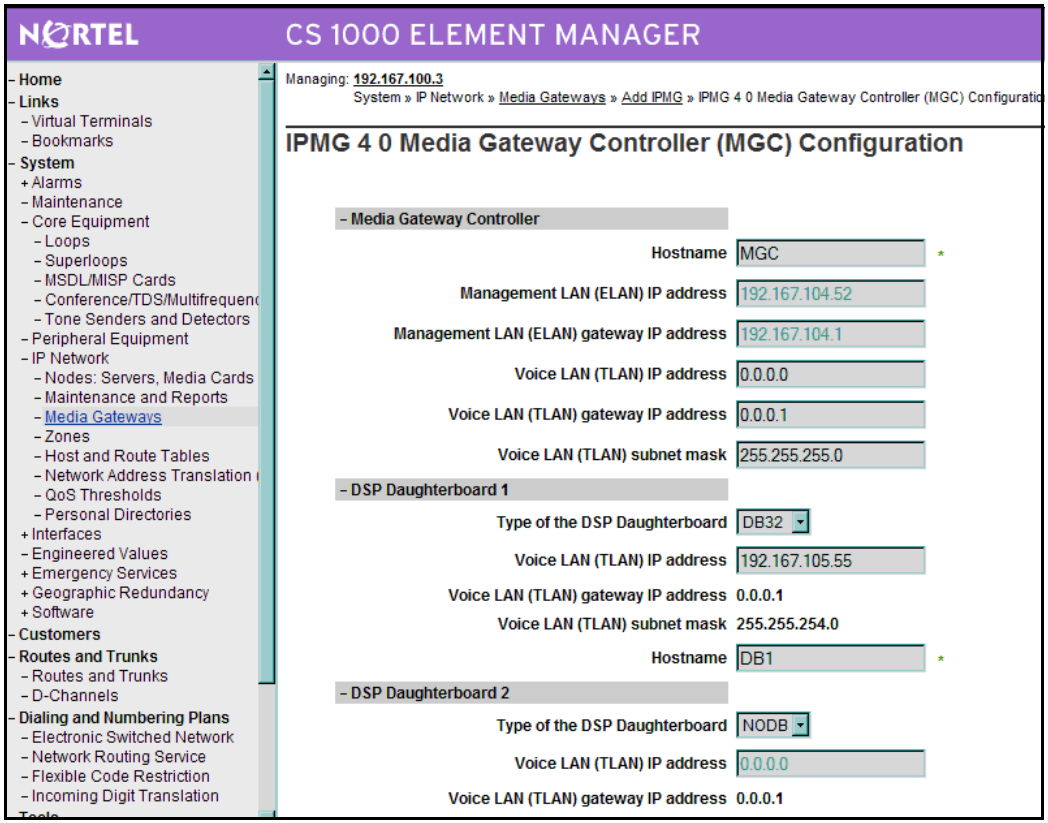
2 The preceding screen appears (see Figure 61). Enter the IP address, zone number, and the Media Gateway type (in this case, a Media Gateway Controller). Selecting “MGC” automatically fills in the remaining fields (“CE”, “E1”, “E”, “CT”, “T2”, and “T”). Click **Submit**.

Note: The IP address entered here is the same IP address as the one configured on the MGC in an earlier procedure.

The following screen appears (Figure 62 on page 137):

3 Enter the Gateway IP addresses and Voice LAN IP addresses. If the MGC has DSP daughterboards connected, select the type and enter the IP addresses.

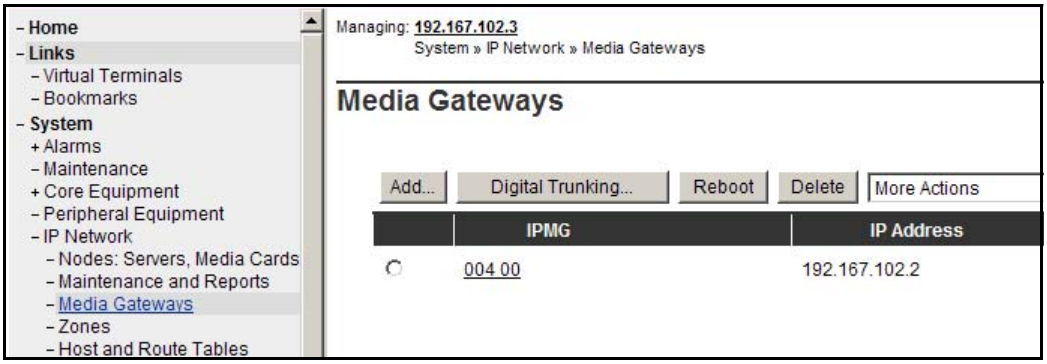
Figure 62
IPMG MGC configuration



4 Once configuration of the MGC is complete, click **Add**. The following screen appears (see Figure 63 on page 138):

5 The Media Gateways screen lists the superloop and shelf numbers, IP address, zone, and type of the recently configured MGC. Click the radio-button next to the superloop. From the drop-down list select **Add VGW channels**.

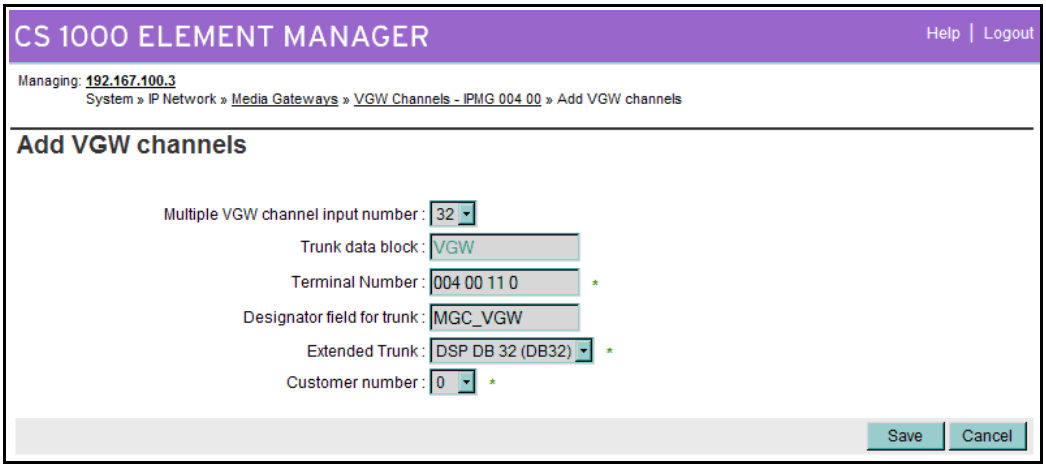
Figure 63
Media Gateways



The following screen appears (see Figure 64):

6 In this screen, select the number of required channels, the Terminal Number (the superloop and shelf numbers of the MGC, the card number, and the unit). Provide a name and the daughterboard and customer type. Click **Save**.

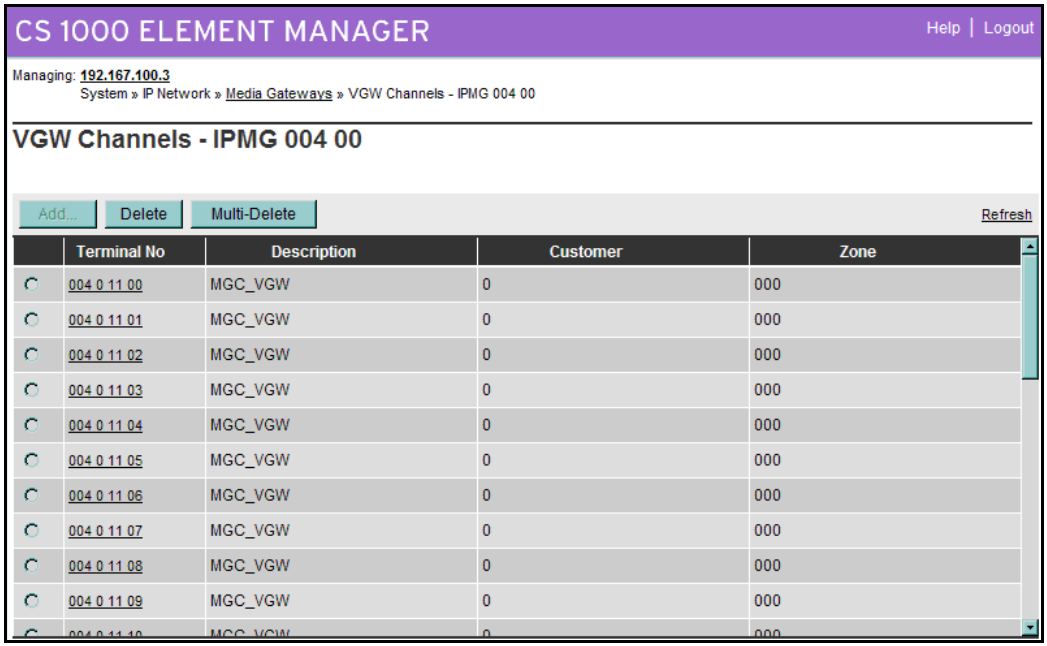
Figure 64
Add VGW channels



The following screen appears (Figure 65):

The MGC has been added to the list.

Figure 65
VGW Channels - IPMG



End of Procedure

Configuring conference TDS

Procedure 16 on page 140 describes how to configure conference TDS for an IPMG using the CLI. To configure conference TDS for IPMG using Element Manager see Procedure 17 on page 141.

Procedure 16
Configure conference TDS (CLI)

1 Enter LD 17.

```
>LD 17
 CFN000
 MEM AVAIL: (U/P): 99278047    USED U P: 4965412 26361
TOT: 104269820
 DISK SPACE NEEDED: 20 KBYTES
DCH                AVAIL:   255    USED:     0    TOT:   255
AML                AVAIL:    16    USED:     0    TOT:    16
 REQ  chg
TYPE cequ
MPED
TERM
REMO
TERD
REMD
TERQ
REMQ
DDCS
DTCS
XCT
MGTDS 126
IPMG x x
MGTDS
MGCONF 127
IPMG 0 0
MGCONF
MFSD
DTDT
DLOP
PRI2
APVL
DTI2
EXT0
EXT1
SYNM
MEM AVAIL: (U/P): 99277361    USED U P: 4966043 26416
TOT: 104269820
DISK SPACE NEEDED: 20 KBYTES
```

End of Procedure

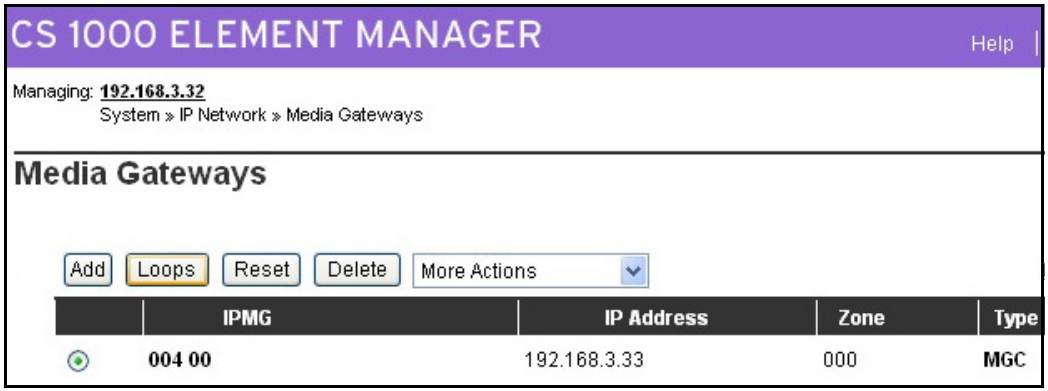
Procedure 17 describes how to configure conference TDS for IPMG using Element Manager.

Procedure 17
Configuring conference TDS (Element Manager)

1 In the Element Manager screen, select **IP Network** > **Nodes: Media Gateways**. The Media Gateway Configuration page appears.

2 Select the **IPMG superloop** (see Figure 66). Click the **Loops** button.

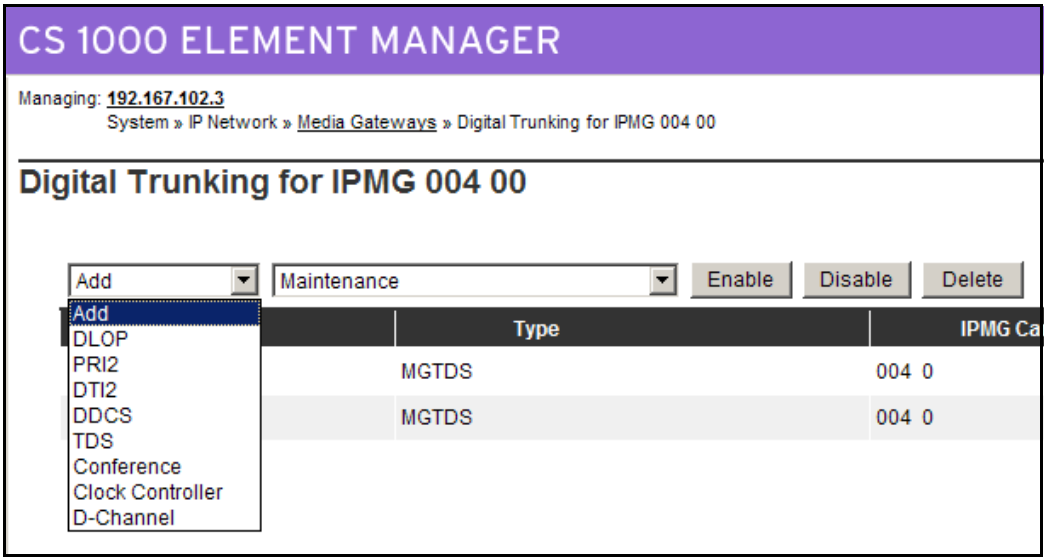
Figure 66
Media Gateway configuration



The loop configuration page appears.

3 From the drop down menu (see Figure 67 on page 142), select **TDS** to add a TDS loop.

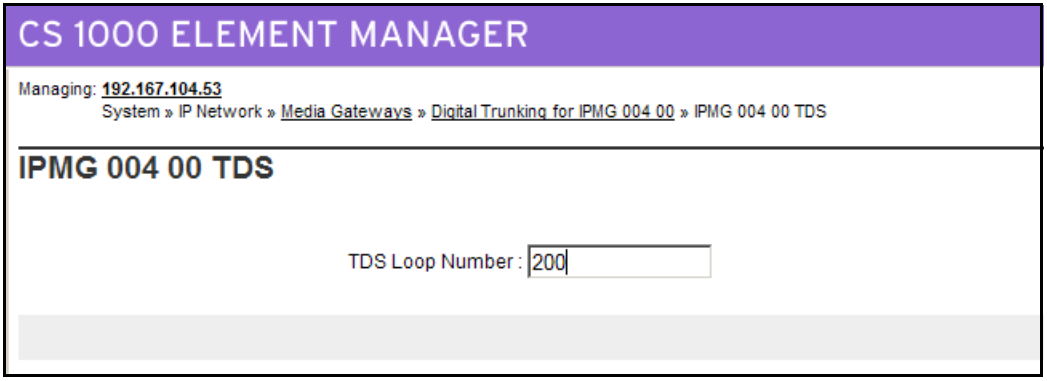
Figure 67
Loop configuration



The TDS loop configuration page appears (see Figure 68).

4 Enter the TDS loop number (0 – 255).

Figure 68
TDS Loop configuration



5 Click **Save**. It does not become available until a loop number has been entered and TAB has been used to move the cursor.

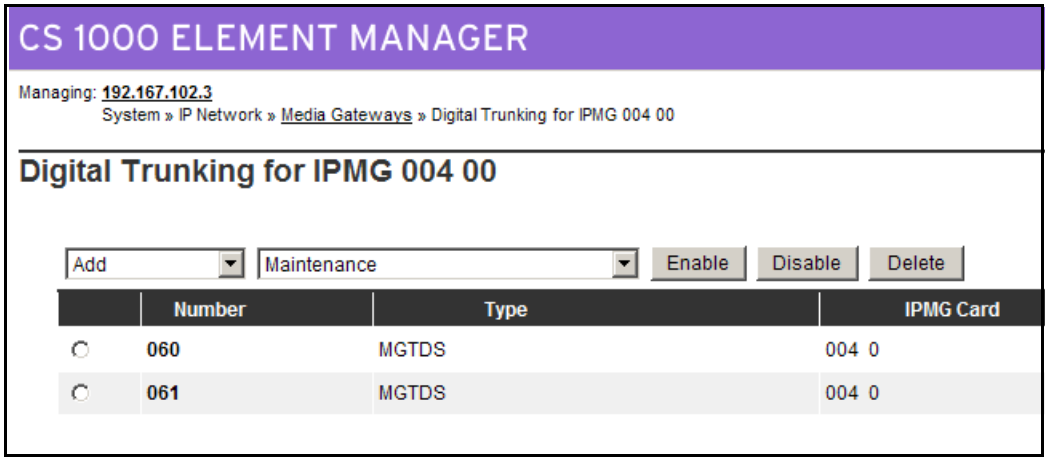
The following message box appears:

Figure 69
Confirmation

6 Click **OK** to complete the configuration.

The updated loop configuration page appears (see Figure 70). The new Conference loop is displayed.

Figure 70
Loop configuration (updated)



End of Procedure

Configuring DSP Daughterboard Voice gateway channels

Procedure 18 describes how to configure DSP Daughterboard Voice gateway channels using the CLI. To configure DSP Daughterboard Voice gateway channels using Element Manager see Procedure 17 on page 141.

Procedure 18
Configure DSP Daughterboard Voice gateway channels (CLI)

1 Enter LD 14

```
>LD 14
REQ  new 32
TYPE vgw
TN  4 0 0 0
DES  db32
XTRK db32
CUST 0


NEW TRK    TN  004 0 00 00     RT  0     MB  0

MEM AVAIL: (U/P): 15721651    USED U P: 6241131 26590
TOT: 21989372
DISK SPACE NEEDED: 24 KBYTES
2MB BACKUP DISKETTE(S) NEEDED: 1  (PROJECTED LD43 - BKO)
TNS               AVAIL: 32751   USED:   16   TOT: 32767

...
>LD 20
REQ: prt
TYPE: vgw
TN   <enter>
CDEN <enter>
CUST <enter>
XTRK <enter>
DATE <enter>
PAGE <enter>
DES  DB32
TN   004 0 00 00  VIRTUAL
TYPE VGW
CUST 0
XTRK DB32
```

```
ZONE 004
...
```

End of Procedure

Appendix A: Upgrading to a High Availability system

Contents

Campus Redundancy (High Availability) Package Support

The CP PM CS project introduces a package for enabling and disabling the Campus Redundancy or High Availability (HA) feature. Software performs a check to determine whether the HA package is present in the keycode. If the package is present, then the CP PM call server will behave in the same way as the Release 4.5 CP PII or CP PIV (for example, it will use the HSP to try to detect the presence of the other core). If the other core is detected, then both the cores will negotiate to determine which core is the active core and which core is the standby core.

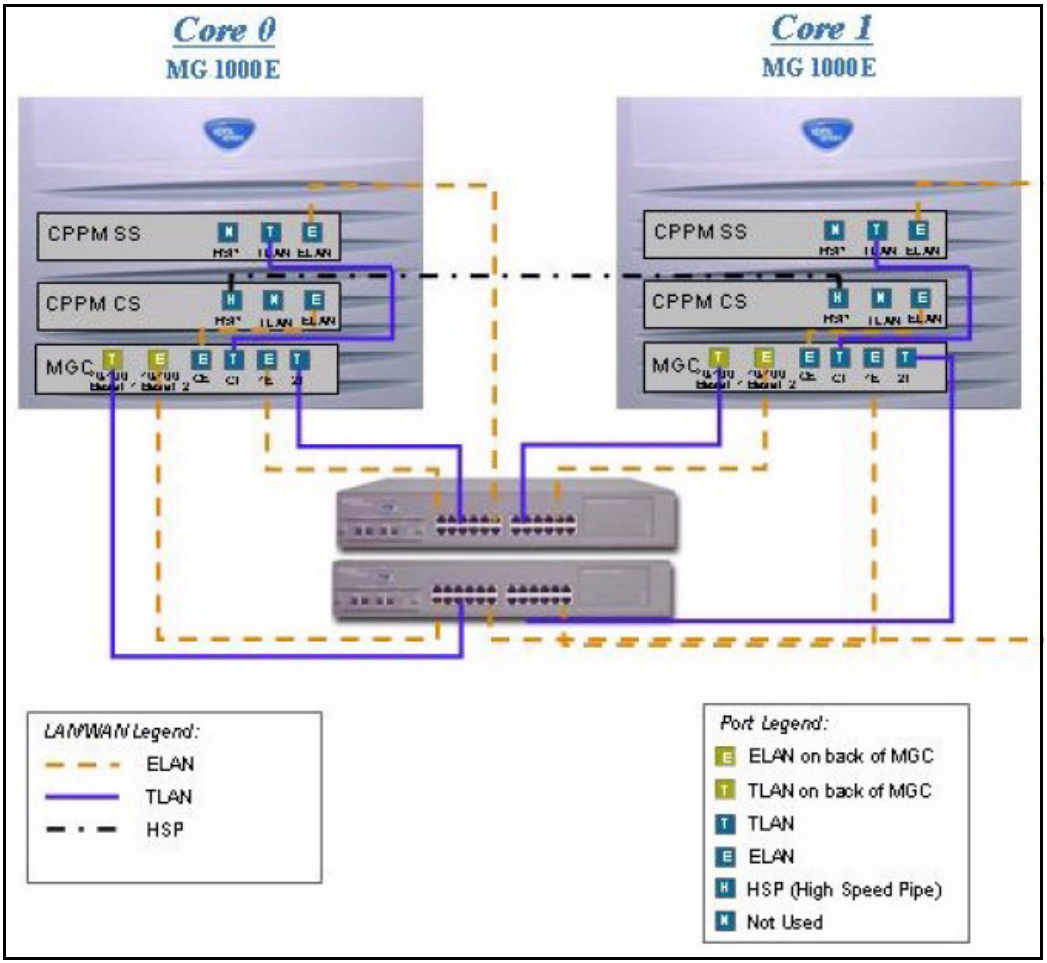
If the CP PM call server is not able to detect the other core, then it will come up as a single core system. If the HA package is not present in the keycode, then the existing call server software is modified to block the HSP connection so that the CP PM call server will not attempt to detect the presence of the core. In the absence of the HA package, the CP PM call server will run as a single core system even in a system with two cores and the HSP ports on both cores are connected.

Campus Redundancy with co-located Call Servers

Figure 71 on page 148 depicts the configuration of the CS 1000E CP PM system with co-located call servers. Utilizing the dual homing feature of the MGC, the ELAN of the CP PM call server/MGC and the TLAN of the Signaling Server/MGC is dual homed to the Baystack switches. If one of the

LAN links to the switches fails, or the switch is out of service then the dual homing feature allows the CS 1000E CP PM system to continue to function normally. The HSP is connected directly from one CP PM call server to the other CP PM call server and allows for redundancy between call servers.

Figure 71
Campus Redundancy with CP PM call servers co-located



As the main chassis has already been built in previous chapters, the steps required to upgrade to an HA system are:

1. Pick an empty card slot and insert CP PM card into that slot
2. Set the ID of the new call server to core 1
3. Install software (as performed in "Installing the software" on page 77)
4. Run LD 137 on the active call server
5. Perform HSP tests and connect the two call servers.

For more information on upgrading to High Availability, refer to the following NTPs:

- *Communication Server 1000E: Overview* (NN43041-110)
- *Communication Server 1000E: Planning and Engineering* (NN43041-220)
- *Communication Server 1000E: Installation and Commissioning* (NN43041-310)
- *Communication Server 1000E Upgrades* (NN43041-458)

Network check

Checking the status of the HSP ports

Use the LD 137 STAT HSP command to check the status of the HSP. The following is a sample output of the STAT HSP command.

```
LD 137

.stat hsp

HSP LINK CARRIER: OK

Auto Negotiation: Enabled

Auto Negotiation Completed: YES
```

Actual Line Speed: 1000 Mbps

Actual Duplex Mode: Full Duplex

LCS HSP STATE is UP

Ethernet (gei unit number 1):

Internet address: 127.2.0.2

Broadcast address: 127.255.255.255

Ethernet address: 00:c0:8b:07:a5:9f

Netmask: 0xff000000; Subnetmask: 0xff000000

39698 packets received; 80156 packets sent

0 input errors; 0 output errors

0 collisions

Appendix B: 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 15 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. *Signaling Server: Installation and Commissioning* (NN43001-312)

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

Table 15
Customer Technical Services (Part 1 of 2)

Location	Contact
Nortel Global EnterpriseTechnical 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 15
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@nortel.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 16 and 17 describe the service classifications.

Table 16
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 17
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 18 before you call for service.

Table 18
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 16 and 17)	
Description of assistance required	

Appendix C: Obtaining 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 19 to download software from the Nortel Software Download web site

Procedure 19
Downloading software from the Nortel website

1. Connect to the following URL using any PC with Internet access: http://www.nortel.com
2. Under the **Support and Training** menu, select **Software Downloads > Product Family > Enterprise Communication Servers > Software**.
3. Search for the required software.
4. Click the required product.
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** window opens. 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

Nortel Communication Server 1000

Communication Server 1000E Upgrade

Communication Server 1000S to Communication Server 1000E

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