Nortel Communication Server 1000

Nortel Communication Server 1000 Release 5.0

Communication Server 1000E Upgrade
Option 11C Cabinet to Communication Server 1000E

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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

Option 11C Cabinet (TDM) to Communication Server 1000E Upgrade Procedures (NN43041-464) describes the process required to upgrade an existing Option 11C Cabinet to the CS 1000E system.

This guide does not describe how to add equipment (such as additional cabinets 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 cabinet 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 Option 11C Cabinet 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)

- *Telephony Manager 3.1 Installation and Commissioning* (NN43050-300)

- *Telephony Manager 3.1 System Administration* (NN43050-601)

- *IP Line: Description, Installation, and Operation* (NN43100-500)

Online

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

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 Option 11C Cabinet 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 shows the task flow for this upgrade.

Figure 1
Option 11C Cabinet to CS 1000E upgrade task flow
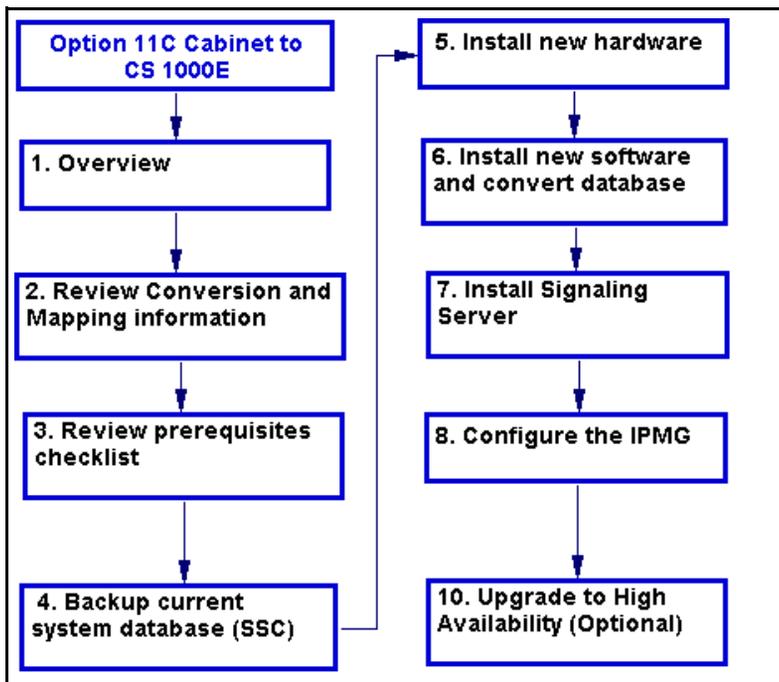
References in preparation for an upgrade

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, TM)

- 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.

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.

- Better integration with Nortel Messaging Server 500 management.

Network-level tools

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

For more information, see *Telephony Manager 3.1 Installation and Commissioning* (NN43050-300) or *Communication Server 1000S: Overview* (NN43031-110). For more information about retrieving Call Detail

Recording records, see *Communication Server 1000E: Installation and Commissioning* (NN43041-310).

Installing the Signaling Server

To upgrade the Signaling Server to Communication Server 1000 Release 5.0, see "Installing a Signaling Server" on .

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.

Option 11C Cabinet or 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 cabinet/chassis to IPMG conversion

Cabinet/Chassis	IPMG
Main	000 0
Expansion Cabinet/Chassis 1	000 1

Table 1
SIPE cabinet/chassis to IPMG conversion

Cabinet/Chassis	IPMG
Expansion Cabinet/Chassis 2	004 0
Expansion Cabinet/Chassis 3	004 1
Expansion Cabinet/Chassis 4	008 0

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

Table 2
IP phone TN mapping

CS 1000S/M		CS 1000E CP PM			
Slot	Unit	Loop	Shelf	Card	Unit
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 4)

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

Table 3
ALC, DLC, analog trunk and regular IPE pack TN mapping (Part 2 of 4)

CS 1000S/M		CS 1000E CP PM			
Slot	**Unit**	**Superloop**	**Shelf**	**Card**	**Unit**
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
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

Table 3
ALC, DLC, analog trunk and regular IPE pack TN mapping (Part 3 of 4)

CS 1000S/M		CS 1000E CP PM			
Slot	Unit	Superloop	Shelf	Card	Unit
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
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

Table 3
ALC, DLC, analog trunk and regular IPE pack TN mapping (Part 4 of 4)

CS 1000S/M		CS 1000E CP PM			
Slot	Unit	Superloop	Shelf	Card	Unit
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 3)

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
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

Table 4
Digital trunk mapping (Part 2 of 3)

CS 1000S/M		CS 1000E CP PM				
Slot	Channel	Digital Loop	Channel	Superloop	Shelf	Card
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
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

Table 4
Digital trunk mapping (Part 3 of 3)

CS 1000S/M		CS 1000E CP PM				
Slot	Channel	Digital Loop	Channel	Superloop	Shelf	Card
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
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

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
Expansion 1	0	MGC	000 4	0
	1	MGC	000 4	1
	2	MGC	000 4	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).

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.

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 are 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 does 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 .

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
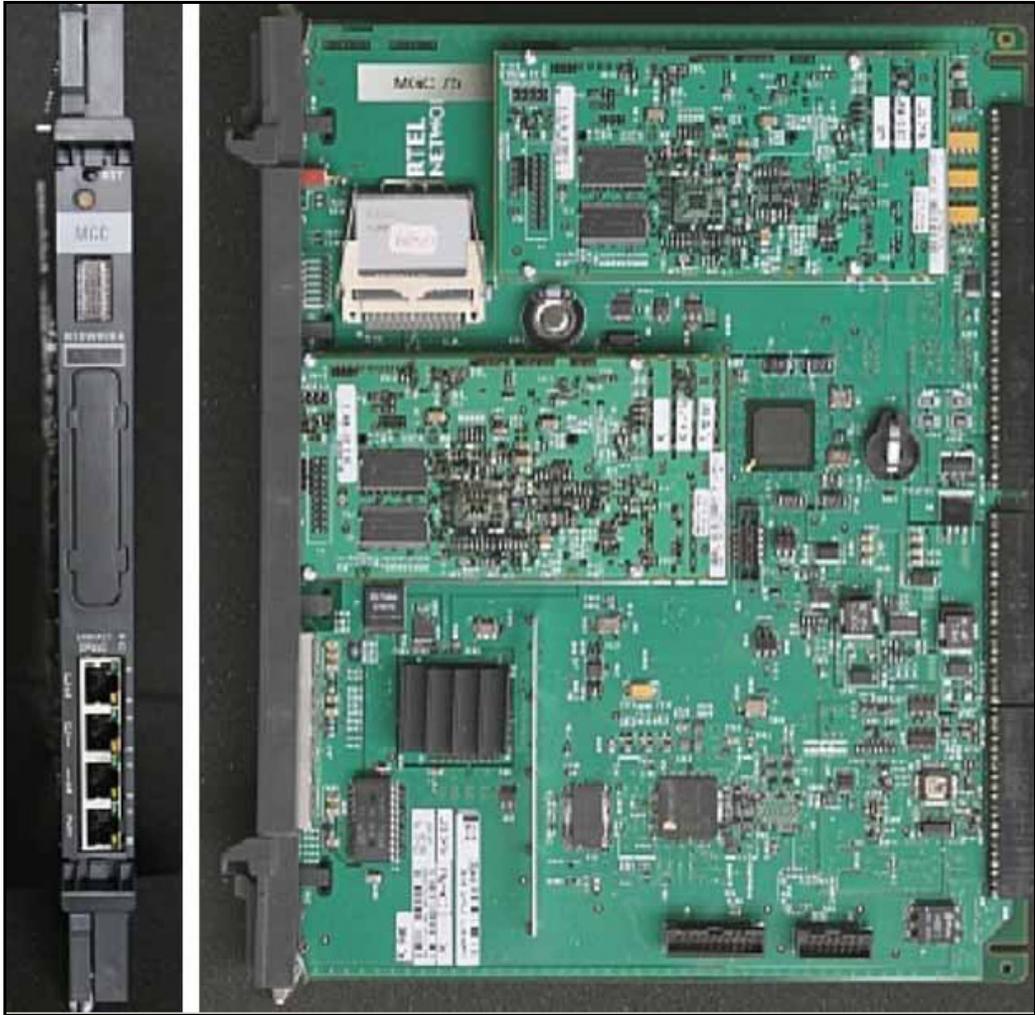
Figure 4
DSP daughterboard
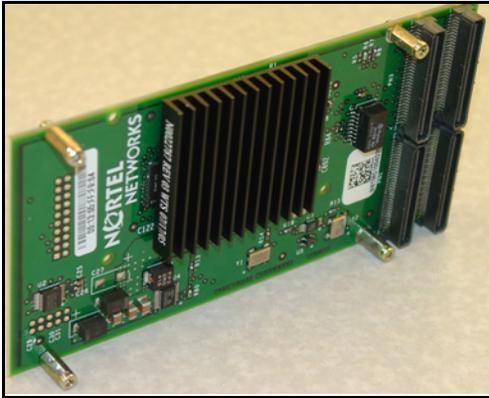
Software requirements

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" on

- "Readiness checklist" on

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 map to the 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 the database up 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, a prompt appears requesting a Customer name for the
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 the 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 the backup and archive of the customer database is complete, shut down the system and remove the PCMCIA card from the slot.

Installing CS 1000E hardware

Contents

This section contains information on the following topics:

Choosing the cabinet 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 II or CP IV in its own call server cabinet; however, the CP PM call server sits in one of the MG 1000E Cabinet 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 10 (see Figure 5). The CP PM Signaling Server may be placed in slots 1 through 10 (see Figure 6 on) or in another cabinet if necessary.

- If utilizing the Campus Redundancy High Availability Call Server option, place the two CP PM call servers in separate CS 1000M cabinets to allow for increased survivability.

Figure 5
NTAK11 Cabinet with SSC card
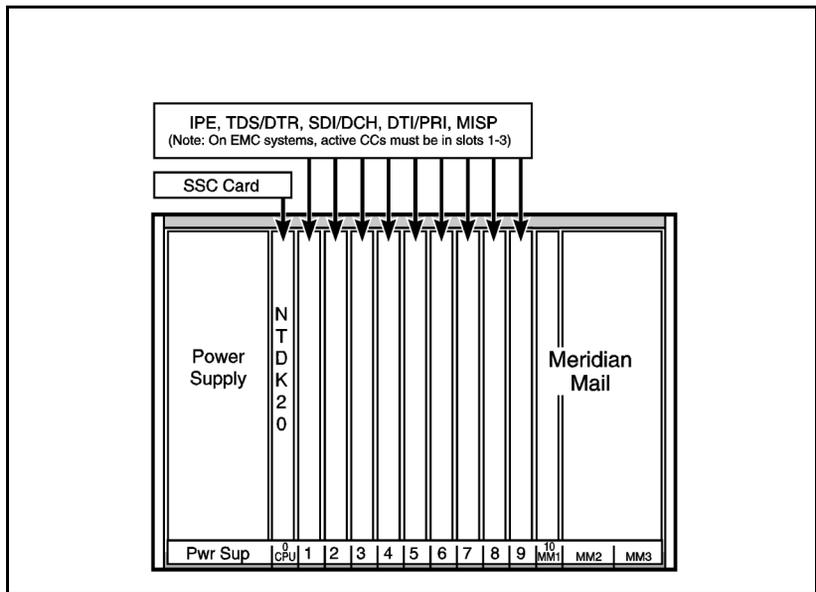
Once the upgrade is complete, a typical SA three cabinet system resembles Figure 6 on with an MGC in slot 0, and a CP PM call server and signaling server in the main cabinet. The additional media gateways would then contain MGC cards only for an SA configuration.

Figure 6
Typical three cabinet SA system
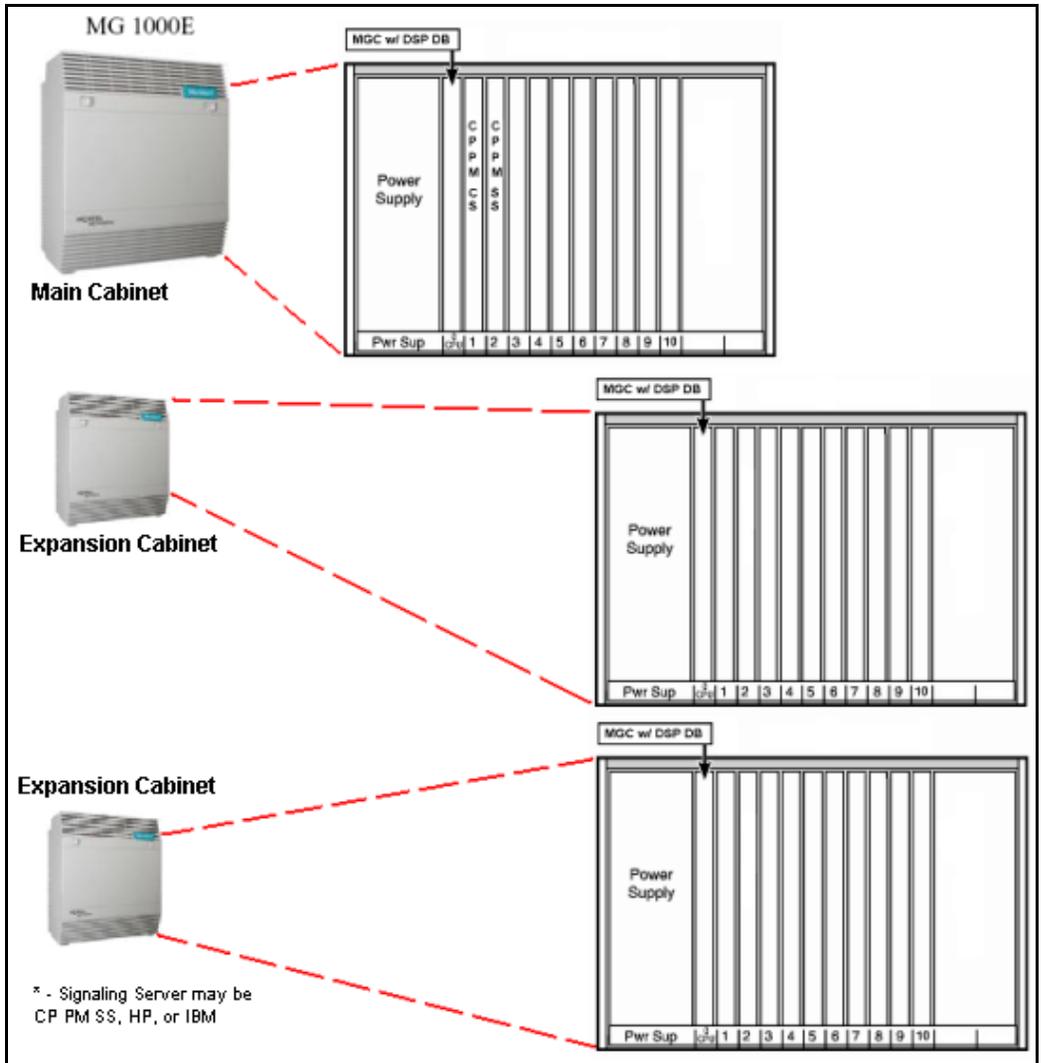
> *Note:* A High Speed Pipe package (410) must be activated in order to install any type of redundancy option. For more information, refer to Appendix : "Appendix A: Upgrading to a High Availability system" on page 203.)

Task overview

To install the hardware for an Option 11C Cabinet upgrade, perform the following steps:

1 Power down the Main Cabinet.

2 Remove the SSC card as described in Procedure 3 on page 67.

3 Destroy or return the SSC security device to your local Nortel Repairs/ Returns center.

4 Install the DSP Daughterboard on the MGC card as described in Procedure 4 on page 68.

5 Install the MGC card as described in Procedure 5 on page 70.

6 Install the CP PM as described in Procedure 6 on page 70.

7 Cable the cards as shown in "Cabling the cards" on page 72.

8 Power up the MG 1000E.

9 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
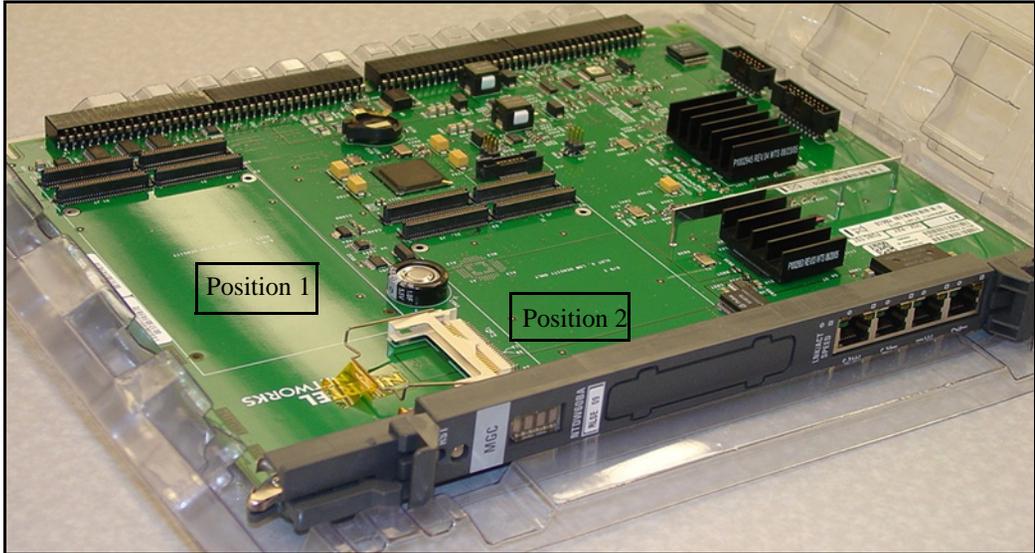
Procedure 4
Installing a DSP Daughterboard

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 is 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 Option 11C Cabinet.

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

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 MGC card and 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.

---

2   This cabinet, the main cabinet in the system, is now known as IPMG 00.

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

Installing the CP PM card

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

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 Cabinet.

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 to Procedure 5 on

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 Cabinet. Figure 9 on shows the front of the 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 autonegotiate by default: four on the faceplate (see Figure 9 on), and two on the back. Figure 10 on , Figure 11 on , and Figure 12 on illustrate the various ethernet connections.

Figure 9
MGC faceplate

CE: ELAN Dedicated for CP PM

1E: ELAN Dual homed with Backplane E

CT: TLAN Dedicated for CP PM-SS

2T: TLAN Dual homed with Backplane T
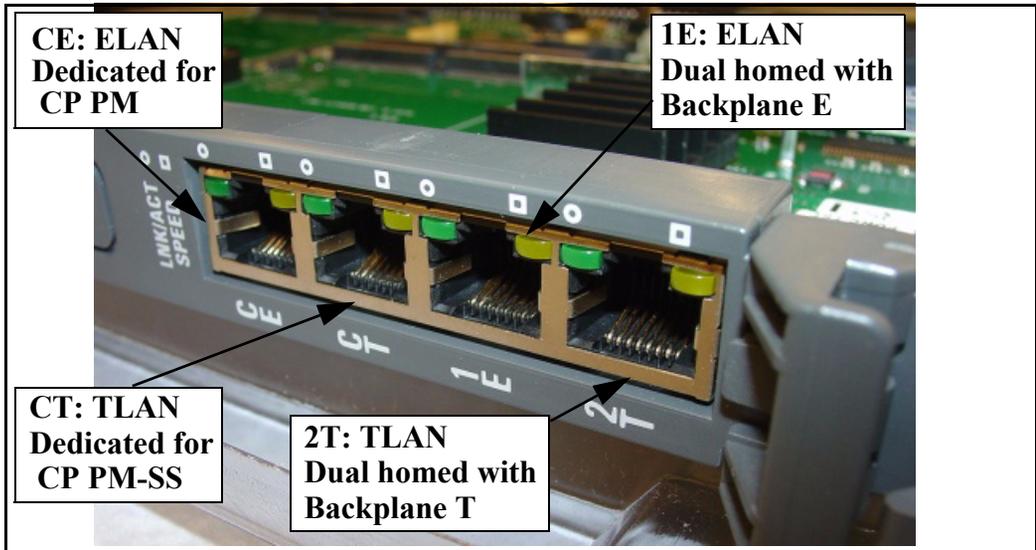
Cabling the CP PM call server

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)
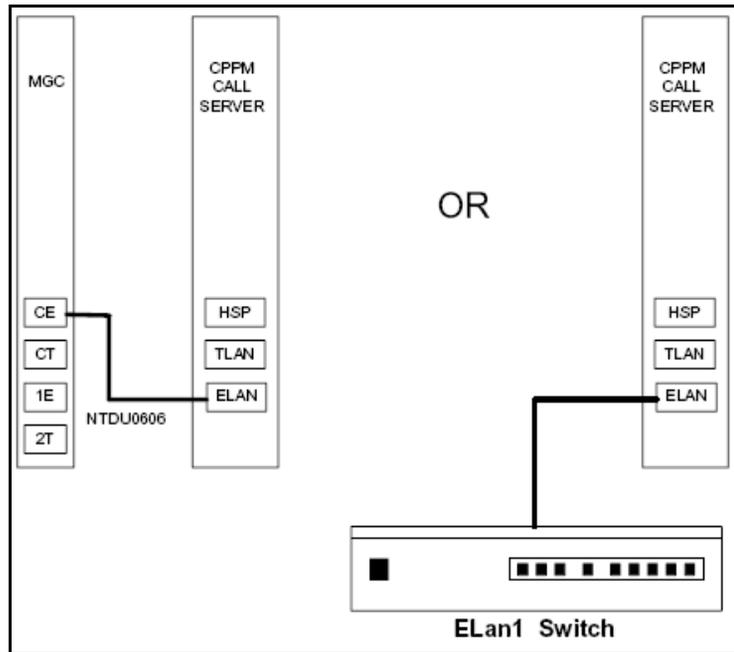
Figure 11
Elan connections (MGC)
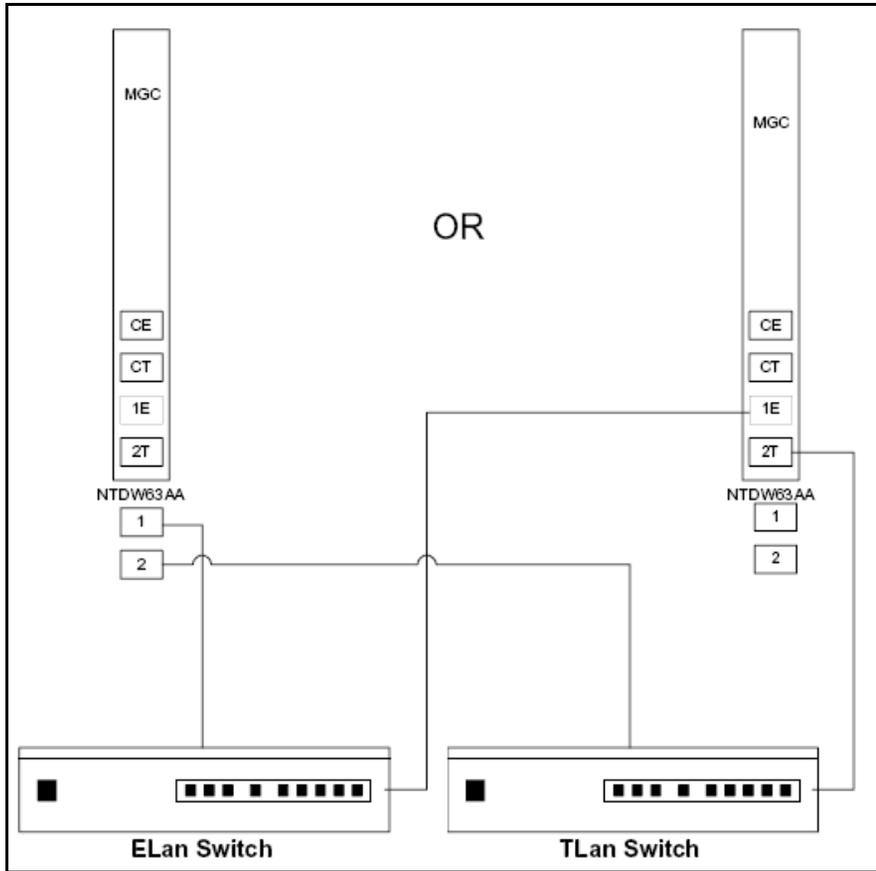
Figure 12
Ethernet connections for CP PM Signaling Server
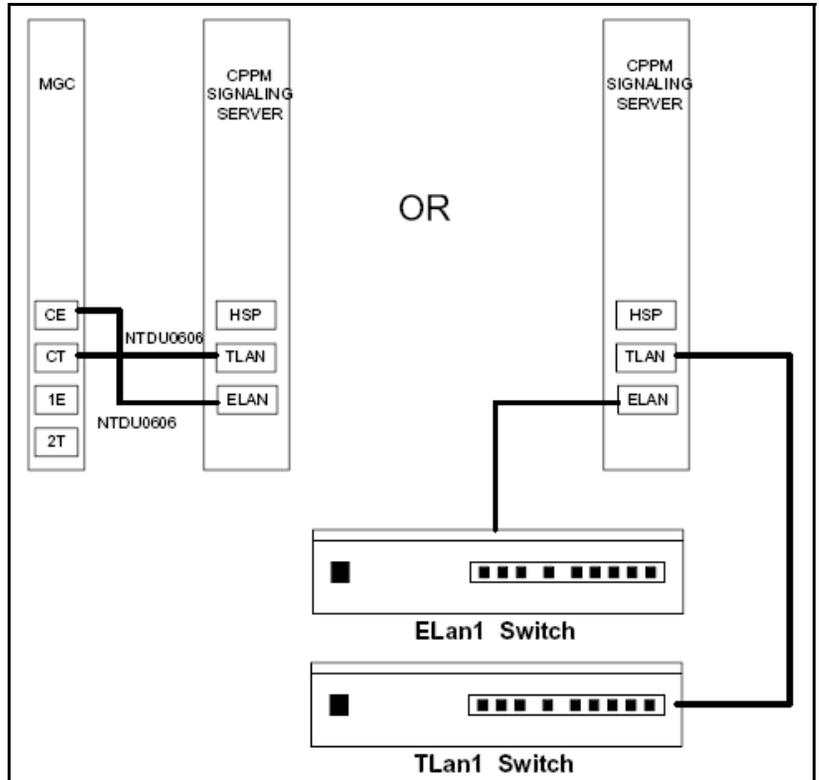
Installing the software

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 (in the event that expansion or upgrading becomes necessary 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 Cabinet is 00, which translates into superloop 0, shelf 0, and the expansion cabinet 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 for SIPE cabinet/chassis to IPMG conversion information.

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.

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

```
+-------------------------------------------------------------------------
|          System BIOS Configuration, (C) 2005 General Software, Inc.
+-----------------------------------+-------------------------------------
| System CPU          : Pentium M   | Low Memory          : 632KB
| Coprocessor         : Enabled     | Extended Memory     : 1011MB
| Ide 0 Type          : 3           | Serial Ports 1-2    : 03F8 02F8
| Ide 1 Type          : 3           | ROM Shadowing       : Enabled
| Ide 2 Type          : 3           | BIOS Version        : NTDU74AA 11
+-----------------------------------+-------------------------------------

Press F to force board to boot from faceplate drive.
.....................................................
Attempting to boot from faceplate drive.
```

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

Figure 14
VxWorks banner

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

            #####
          #########   ########
          #########``  `#############
          #######      ``    `#############
         #######`          ######```####
         #######    ######``     `###              NORTEL
         ######  #####``          ####
         ####### #####`            ####     Communication Server 1000 Software
         `#########`               ####`
          #######`                #####     Install Tool version 29
          `#######                #####`
         ##########               `###`     Copyright 1992 - 2007
         ##``##########             #
        ##   `#########################
        `#      `#########################
          #############################``
           ````````` ````####````


         Please press <CR> when ready.

  ****
  WARNING:

  This software does not support TNs configured on PE/EPE
  shelves. Upgrading to this software release will permanently
  disable all TNs configured on PE/EPE and will not allow new
  TNs to be configured.

  Proceed with the upgrade? (Y/N) y

  ****
  WARNING:

  Upgrading from pre-Release 4.5 software to Release 4.5 or higher
  will result in the system PDT passwords being reset to default.

  Proceed with the upgrade? (Y/N) y
```

**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
> ).
>
> *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**

```
      Communication Server 1000 Software/Database/BOOTROM RMD Install Tool
      =====================================================================
                          M A I N    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> -> <u> - To Install Menu.
        <t> - To Tools Menu.
        <q> - Quit.

      Enter choice>
```

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).

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 84). 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 84):

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 the correct software version (see Figure 22 on page 86).

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 86).

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 87).

Figure 24
Centralized Software Upgrade

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

        Enable Automatic Centralized Software Upgrade (CSU) Feature ? (Defaul

        Please enter:
<CR> -> <y> - Yes
        <n> - No

        Enter choice>
```

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

Figure 25
Automatic Centralized Software Upgrade Mode

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

        Set Automatic Centralized Software Upgrade Mode to:

        Please enter:
<CR> -> <1> - Sequential
        <2> - Simultaneous

        Enter choice>
>Processing the install control file ...
```

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

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 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, 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

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

        Small System Archived Database /cf2/arch_db/CS1000SU| from release 450
        created on Dec-12-2006 22:53 is available on the RMD.

        Please enter:
<CR> -> <a> - Continue with installation.
        <q> - Quit.

        Enter choice>
```

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

```
Database Restore operation completed from SSC to CPPM.

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

        +================+========+========+=========================+
        |     Option     | Choice | Status |         Comment         |
        +================+========+========+=========================+
        | SW: RMD to FMD |  yes   |   ok   | install for rel 0495H   |
        +----------------+--------+--------+-------------------------+
        | Dependency Lists|  yes  |   ok   |      None  Available    |
        |                |        |        |                         |
        +----------------+--------+--------+-------------------------+
        | AUTO-CSU Feature|  SEQ  |        | SEQ-CSU Enabled         |
        +----------------+--------+--------+-------------------------+
        | IPMG Software: |  yes   |   ok   | install for rel 0495H   |
        +----------------+--------+--------+-------------------------+
        | Database       |  yes   |        |                         |
        +----------------+--------+--------+-------------------------+
        | CP-BOOTROM     |  yes   |   ok   |                         |
        +----------------+--------+--------+-------------------------+

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

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

Figure 34
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> q
```

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

Figure 35
Quit Install Tool

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

       You selected to quit. Please confirm.

       Please enter:
<CR> -> <y> - Yes, quit.
        <n> - No, DON'T quit.

       Enter choice>
```

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 .

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 the 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 boots 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 upgrades its
loadware by downloading it from the CS.

Once the MGC has registered, the LED display shows the superloop and shelf
(for example: 4 0) of the IPMG. Otherwise, it shows "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 23 on page 192.

1   Log into Overlay 97 to configure the MGC that registers 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 (see Figure 37 on).

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
```

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** ────────

Installing a Signaling Server

Contents

This section contains information on the following topics:

Introduction

This chapter contains general instructions to install a Nortel CP PM server and detailed instructions to install a legacy Nortel ISP1100 server. This chapter contains no instructions to install an IBM X306m or HP DL320-G4 COTS 1U server. Please see the *IBM xSeries 306m Types 8848 and 8491 User Guide* or the *HP ProLiant DL320 Generation 4 Server User Guide* shipped with the COTS servers for detailed installation instructions. Of particular note, the IBM X306m and HP DL320-G4 servers require four-post

rack mounting, as opposed to two-post rack mounting for the Nortel ISP1100 server.

IMPORTANT!

Instructions to install an IBM X306m or HP DL320-G4 COTS 1U server are not included in this chapter. Detailed installation instructions can be found in the IBM xSeries 306m Types 8848 and 8491 User Guide or the HP ProLiant DL320 Generation 4 Server User Guide shipped with the server.

Readiness checklist

Before installing a Signaling Server in a CS 1000 system, complete the following checklist.

WARNING
Do not modify or use a supplied AC-power cord if it is not the exact type required in the region where the Signaling Server is installed and used. Be sure to replace the cord with the correct type.

Table 15
Readiness checklist (Part 1 of 2)

Have you:	
Read all safety instructions in *Communication Server 1000E: Installation and Commissioning* (NN43041-310) or *Communication Server 1000M and Meridian 1 Large System Installation and Configuration* (NN43021-310), as appropriate for your CS 1000 system?	
Received all equipment and peripherals? **For a Nortel ISP1100 (NTDU27AA), IBM X306m (NTDU99AAE5), and HP DL320-G4 (NTDU97AA) Signaling Servers:** • installation accessories for rack-mounting the server • AC-power cord • a DTE-DTE null modem cable (supplied) **For a CS 1000E Nortel CP PM Signaling Server (NTDW61BAE5):** • NTDW6102E5 - CP PM Signaling Server Hard Drive kit • N0118766 - CP PM Signaling Server Hard Drive Installation instructions • NTAK19ECE6 - CP PM Signaling Server 2 port SDI Cable assembly kit • NTDU0606E6 - CP PM Signaling Server 25cm RJ45 Ethernet Cable kit • a DTE-DTE null modem cable (supplied) • for a CS 1000M Nortel CP PM Signaling Server (NTDW66AAE5 model) • NTDW6102E5 - CP PM Signaling Server Hard Drive kit • N0118766 - CP PM Signaling Server Hard Drive Installation instructions • NTAK19ECE6 - CP PM Signaling Server 2 port SDI Cable assembly kit • NTDW69AAE5 - CP PM Signaling Server Large System Cabling kit • N0106745 - CP PM Signaling Large System Cabling • a DTE-DTE null modem cable (supplied) *Note:* Save the packaging container and packing materials in case you must ship the product.	

Table 15
Readiness checklist (Part 2 of 2)

Have you:	
Made sure the area meets all environmental requirements?	
Checked for all power requirements?	
Checked for correct grounding facilities?	
Obtained the following: • screwdrivers • an ECOS 1023 POW-R-MATE or similar type of multimeter • appropriate cable terminating tools • a computer (maintenance terminal) to connect directly to the Signaling Server, with: — teletype terminal (ANSI-W emulation, serial port, 9600 bps) — a web browser for Element Manager (configure cache settings to check for new web pages — every time the browser is invoked, and to empty the cache when the browser is closed)	
Prepared the network data as suggested in *Converging the Data Network with VoIP* (NN43001-260), *Communication Server 1000E: Planning and Engineering* (NN43041-220) or *Communication Server 1000M and Meridian 1 Large System Planning and Engineering* (NN43021-220), as appropriate for your CS 1000 system?	
Read all safety instructions in *Communication Server 1000E: Installation and Commissioning* (NN43041-310) or *Communication Server 1000M and Meridian 1 Large System Installation and Configuration* (NN43021-310), as appropriate for your CS 1000 system?	

Installing the CP PM Signaling Server hardware

The Nortel CP PM server is a circuit card, and thus is not mounted in a rack. This section contains instructions for installing a Nortel CP PM Signaling Server in a CS 1000E and a CS 1000M system.

This section contains general instructions for installing the CP PM Signaling Server circuit cards in CS 1000E and CS 1000M systems. For more detailed installation instructions, refer to *Circuit Card: Description and Installation* (NN43001-311) and *Signaling Server: Installation and Commissioning* (NN43001-312).

IMPORTANT!

There are several switches on CP PM circuit cards. All switch settings must be factory defaults except for the switch labelled "S5". Switch S5 must be set to position 2 to support the internal hard drive used on the CP PM Signaling Server circuit cards only.

Installation in a CS 1000E system

The NTDW61BAE5 model of the Nortel CP PM server is designed for use in a CS 1000E system. The first task that must be performed is to install the hard drive shipped with the server. For instructions, see "Install the hard drive on a Nortel CP PM Signaling Server" in *Signaling Server: Installation and Commissioning* (NN43001-312).

You can insert the NTDW61BAE5 model of the Nortel CP PM server into any slot of a CS 1000E Media Gateway (MG 1000E or MG 1000B) or 11C cabinet or chassis, except slot 0. Slot 0 is reserved for a Small System Controller (SSC) card or a Media Gateway Controller (MGC) card. Keying prevents the NTDW61BAE5 model from being inserted into this slot.

CAUTION — Equipment Damage

Do not insert the NTDW61BAE5 model of the Nortel CP PM server into any slot of a CS 1000M Universal Equipment Module (UEM). Doing so can cause electrical shorts on adjacent circuit cards.

Installation in a CS 1000M system

The NTDW66AAE5 model of the Nortel CP PM server is designed for use in a CS 1000M system. The first task that must be performed is to install the hard drive shipped with the server. For instructions, see "Install the hard drive on a Nortel CP PM Signaling Server" in *Signaling Server: Installation and Commissioning* (NN43001-312).

You can insert the NTDW66AAE5 model into any slot of a CS 1000M Universal Equipment Module (UEM) except slot 7. The External Peripheral Equipment Controller (XPEC) is next to slot 7 and prevents the double wide faceplate of the NTDW66AAE5 model from seating into slot 7.

The next task that you must perform is to install ELAN and TLAN Ethernet ports on the back of the CS 1000M UEM. These ports are used to connect your Nortel CP PM Signaling Server to the ELAN and TLAN Ethernet subnets of your CS 1000M system.

Use the following procedure to install ELAN and TLAN Ethernet ports on the back of a CS 1000M UEM.

IMPORTANT!

Installing ELAN and TLAN Ethernet ports on the back of a CS 1000M Universal Equipment Module (UEM) is service-disrupting. Power to the shelf must be turned off during this procedure.

Procedure 10
Installing ELAN and TLAN Ethernet ports on the back of a CS 1000M UEM

1   Obtain the special cabling kit (NTDW69AAE5) shipped with the CS 1000M model of the Nortel CP PM Signaling Server (NTDW66AAE5). The NTDW69AAE5 cabling kit should include the items shown in Figure 38.

Figure 38
NTDW69AAE5 Cabling Kit contents

The following is a list of items in the NTDW69AAE5 cabling kit:

- two RJ-45 CAT5 Ethernet patch cables

- two Ethernet port couplers

- one Ethernet port adapter plate

- two screws

- two nuts

- two washers

- two ferrite beads

2   Insert an Ethernet port coupler into the adapter plate. See Figure 39.

Figure 39
One Ethernet port coupler in adapter plate
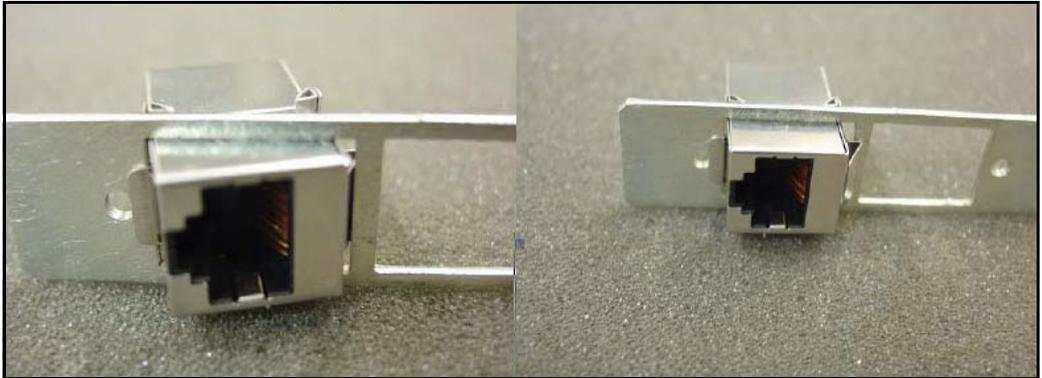
3   Insert the other Ethernet port coupler into the adapter plate. See Figure 40 on page 111.

Figure 40
Two Ethernet port couplers in adapter plate
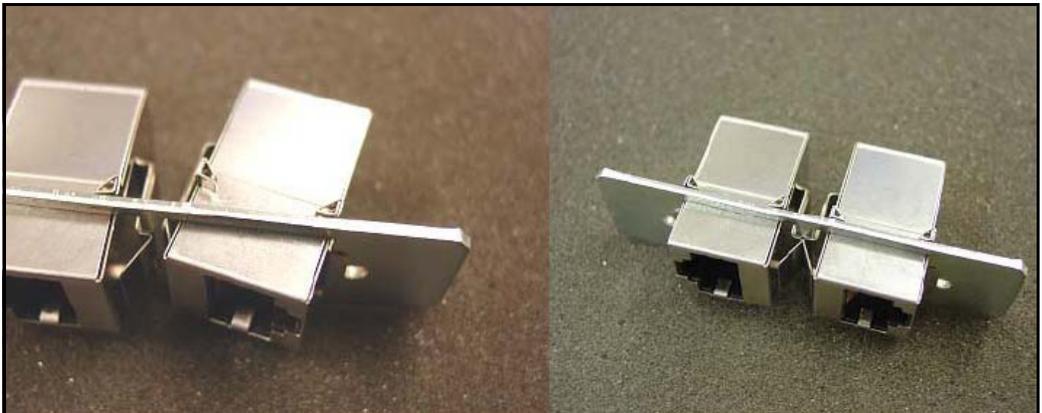
4   Loosely attach screws, washers, and nuts to the Ethernet port adapter plate. See Figure 41.

Figure 41
One Ethernet port coupler in adapter plate
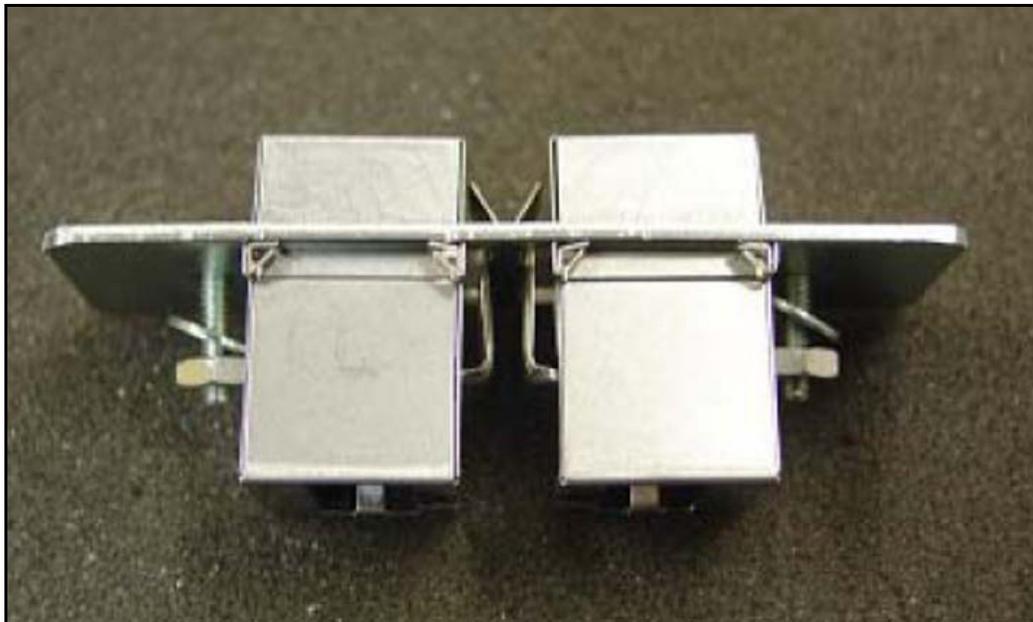
5   Switch off the UEM power supplies. See Figure 42.

Figure 42
Shut down UEM power supplies
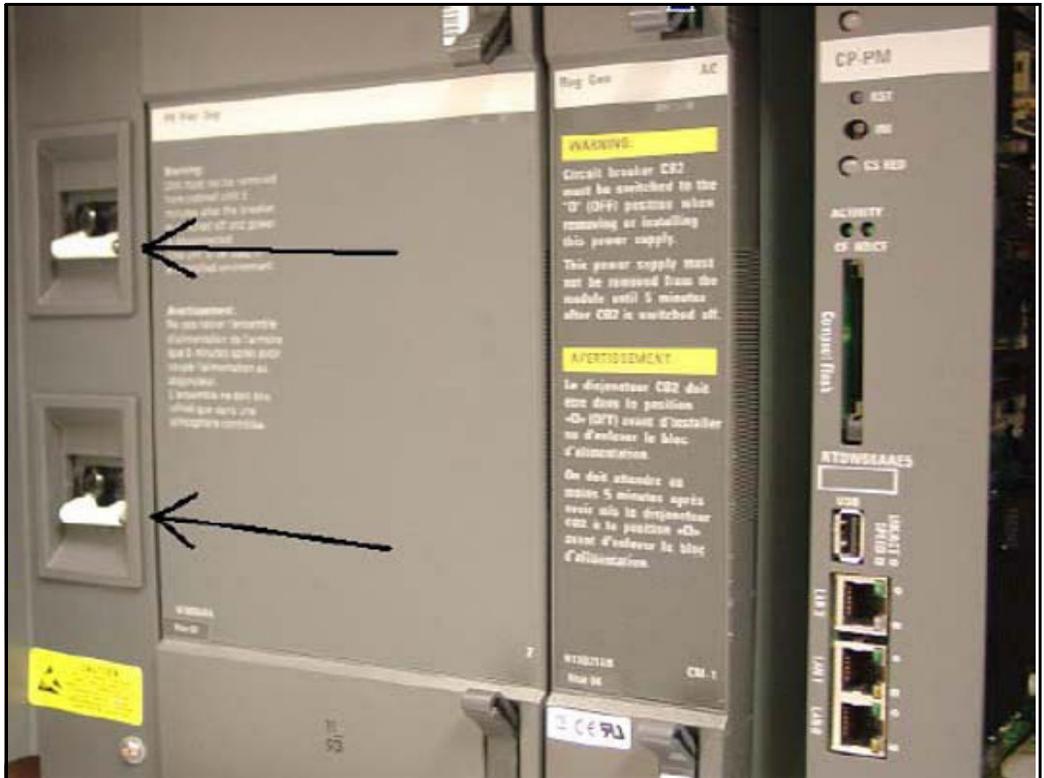
6   Select one of the J2-J5 knock-out plates on the back of the UEM. See
Figure 43.

Figure 43
J2-J5 plates on back panel of UEM
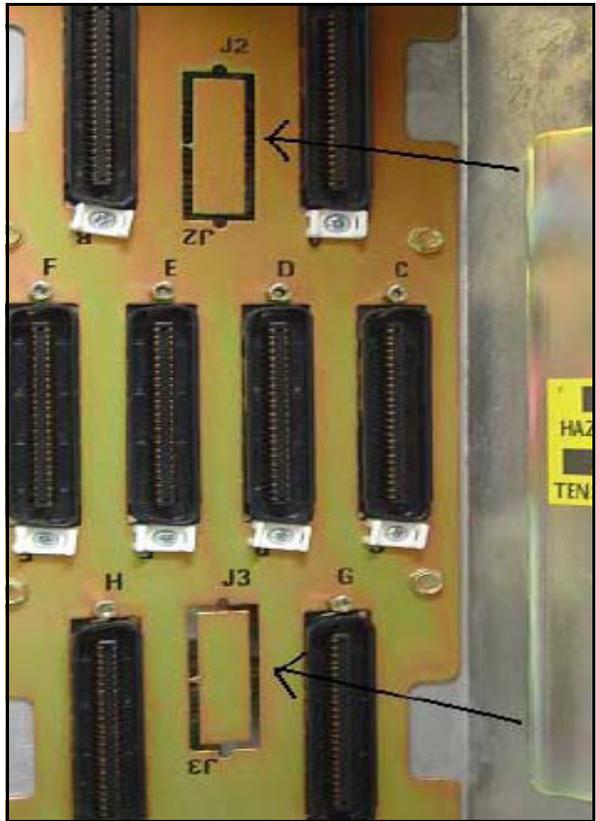
7 Knock out the metal plate from selected J2-J5 location. This provides a hole through which the Ethernet patch cables are routed, and to which the Ethernet port adapter plate is attached.See Figure 44.

Figure 44
Selected J2-J5 plate on back panel of UEM
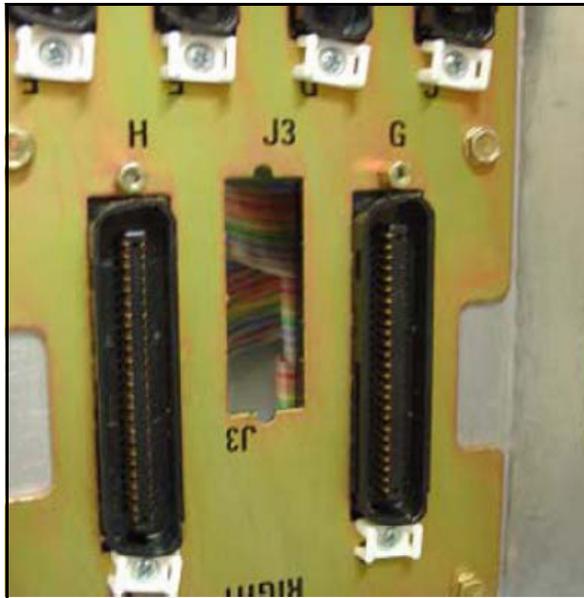
8 Establish an ELAN port on the back panel of the UEM.

    a. Insert the end of one of the RJ-45 CAT5 Ethernet patch cables (supplied) into the ELAN network interface (ELAN port) on the faceplate of the server.

    b. Route the Ethernet patch cable through the hole you made in the back panel of the UEM.

    c. Plug the other end of the Ethernet patch cable into one of the Ethernet port couplers mounted in the Ethernet port adapter plate.

    d. Label the Ethernet port coupler as ELAN.

See Figure 45 and Figure 46.

Figure 45
ELAN connection on faceplate

Figure 46
ELAN connection on Ethernet port coupler

9 Connect the server to the TLAN subnet.

a. Insert one end of the remaining RJ-45 CAT5 Ethernet patch cable (supplied) into the TLAN network interface (TLAN port) on the faceplate of the server.

b. Route the Ethernet patch cable through the hole you made in the back panel of the UEM.

c. Plug the other end of the Ethernet patch cable into the remaining Ethernet port coupler mounted in the Ethernet port adapter plate.

d. Label the Ethernet port coupler as TLAN.

See Figure 47 and Figure 48.

Figure 47
TLAN connection on faceplate

Figure 48
TLAN connection on Ethernet port coupler

10 Fit the Ethernet port adapter plate into the hole on the back of the UEM and tighten the screws. See Figure 49.

Figure 49
Installed Ethernet port adapter plate

11 Attach the ferrite beads to the Ethernet patch cables.See Figure 50.

Figure 50
Attached Ethernet patch cable ferrite beads

—————— **End of Procedure** ——————

Installing a Nortel ISP1100 Signaling Server

Complete Procedure 11 to install the ISP1100 Signaling Server hardware into the 19-inch rack. Refer to *Signaling Server: Installation and Commissioning* (NN43001-312) for additional information.

Note: Save the packaging container and packing materials in the event you need to package the server for shipment.

Accessories pouch

You require specific hardware to install the Nortel ISP1100 server in a 19-inch rack. This hardware is included in the Nortel ISP1100 server accessories pouch. The accessories pouch must contain the following items:

• Two support brackets (A)

• Two rack-mounting brackets (B)

• Six rack-mount bracket screws (ten 25 x 1/4 inch pan-head Phillips)

Refer to Figure 51.

Figure 51
ISP1100 Signaling Server mounting accessories

Procedure 11
Preparing an ISP1100 Signaling Server for rack-mounting

Note: The Front Mount Bracket assembly is not intended for use as a slide rail system. The ISP1100 Signaling Server must be firmly attached to the rack.

> **WARNING**
>
> The load rating for this mounting kit is 50 pounds. If you exceed this limit, damage or injury can occur.

1   Make sure the Nortel ISP1100 server is not plugged in to an electrical outlet.

2   Align the end of the rail with the flange (B) toward the rear of the ISP1100 Signaling Server. See Figure 52.

Figure 52
Nortel ISP1100 Support bracket
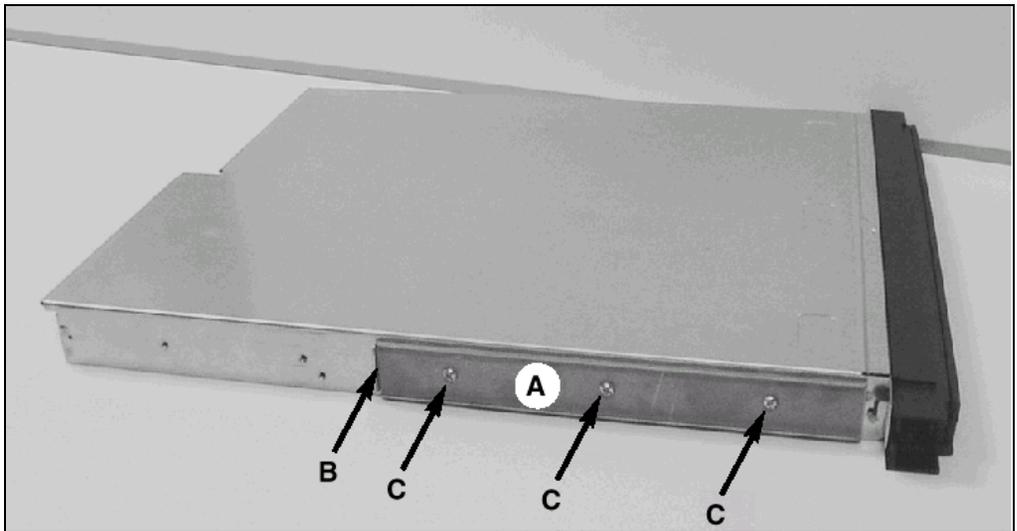
3 Align the screw holes in the rack-mount rail to the mating holes in the side of the ISP1100 Signaling Server chassis. Use three screws (C) on each side.

Note: Hand-tighten the screws to prevent cross-threading, then use a Phillips screwdriver to secure them.

4 Attach the bezel door to the faceplate of the Signaling Server, as shown in Figure 53 and Figure 54 on .

Figure 53
Left hinge mount

Figure 54
Right hinge mount
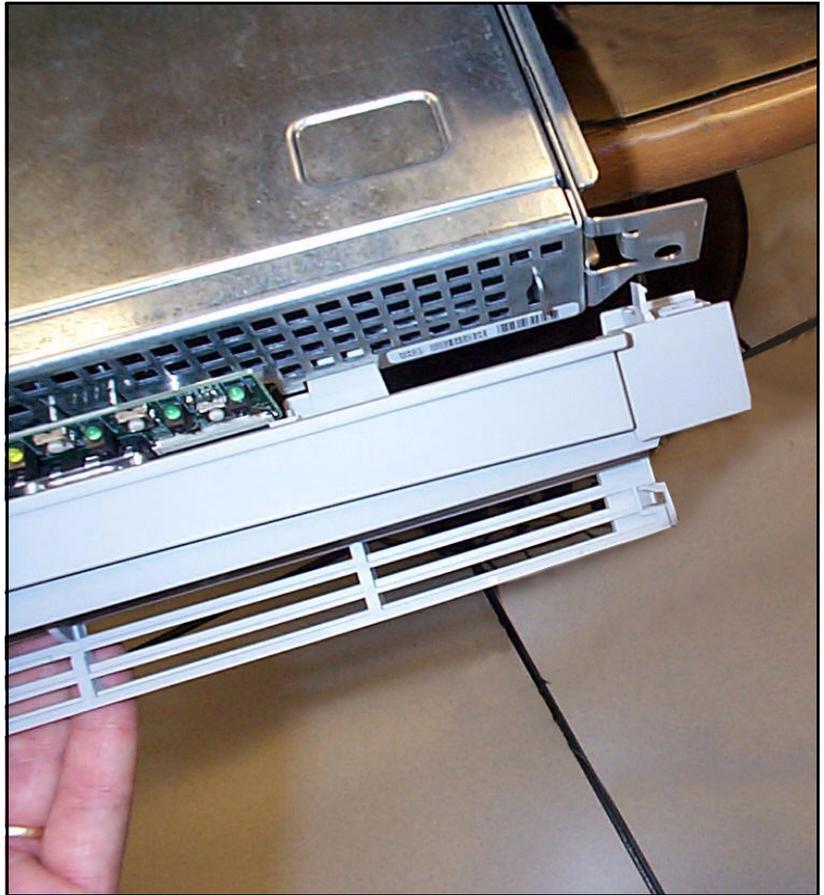
When the door is attached to the ISP1100 Signaling Server and rack-mount apparatus, it should appear as shown in Figure 55 on .

Figure 55
Snapped-in bezel door
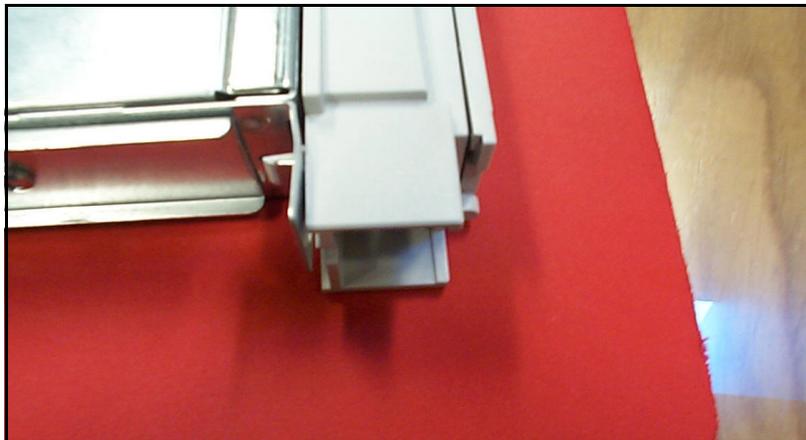
---------- End of Procedure ----------

Rack-mounting the Nortel ISP1100 server

Procedure 12
Rack-mounting a ISP1100 Signaling Server

This procedure describes how to install the server in a rack.

Read the following warnings carefully before you begin installing the ISP1100 Signaling Server in the rack.

DANGER OF ELECTRIC SHOCK

DISCONNECT AC POWER

The ISP1100 Signaling Server must be completely disconnected from any AC power source before performing this procedure. Pressing the Power button DOES NOT turn off power to this Signaling Server. Some circuitry in the unit can continue to operate even though the front panel Power button is off.

Failure to disconnect the ISP1100 Signaling Server from its AC power source can result in personal injury or equipment damage.

DANGER OF ELECTRIC SHOCK

GROUNDING THE RACK INSTALLATION

To avoid the potential for an electrical shock hazard, include a third wire safety grounding conductor with the rack installation.

If the ISP1100 Signaling Server power cords are plugged into AC outlets that are part of the rack, then provide proper grounding for the rack itself.

If the ISP1100 Signaling Server power cords are plugged into wall AC outlets, the safety grounding conductor in each power cord provides proper grounding for the ISP1100 Signaling Server only. Provide additional, proper grounding for the rack and other devices installed in it.

> **WARNING**
>
> MAIN AC POWER DISCONNECT
>
> A main AC power disconnect must be installed. The main AC power disconnect must:
>
> • disconnect power to the entire rack unit
>
> • be readily accessible
>
> • be labeled as controlling power to the entire unit, not just to the ISP1100 Signaling Server(s)

> **WARNING**
> **OVERCURRENT PROTECTION**
>
> The Nortel ISP1100 server is designed for an AC line voltage source with up to 20 amperes (A) of over-current protection. If you install the power system for the equipment rack on a branch circuit with more than 20 A of protection, provide supplemental protection for the Nortel ISP1100 server. If you install more than one server in the rack, the power source for each server must be from a separate branch circuit.

1   Attach the rack-mount brackets ("B" as shown in Figure 51 on) to the equipment rack. Install the left and right side at an equal height. Use standard length screws from the accessories pouch, and screw them into the top and bottom drill holes of the bracket (see Figure 56 on).

Figure 56
Installed rack-mount bracket

2   When both brackets are fixed in place:

   a.   Align the rack-mount brackets on the ISP1100 Signaling Server with the slide rail system on the rack posts.

   b.   Slide the ISP1100 Signaling Server in place. Refer to Figure 57 on .

Figure 57
Rack-mounting the ISP1100 Signaling Server

3   Tighten the screws through the faceplate of the ISP1100 Signaling Server
to the rack-mount bracket.

Note: Do not apply excessive torque while tightening the bolts. The bezel
door is plastic and does not require or withstand overtightening.

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

Connections

Connection checklist

⚠️	**WARNING** Do not modify or use a supplied AC power cord if it is not the correct type required for the host region.

IMPORTANT!
Nortel CP PM servers are powered through the backplane of the Media Gateway, Universal Equipment Module or 11C cabinet into which they are installed and thus require no power cord.

Before connecting a Signaling Server, ensure that you have the following materials on-hand.

Table 16
Connections checklist

Have you:	
Obtained a serial cable (DTE-DTE null modem cable) to connect the server to a maintenance terminal?	
Obtained the NTAK19EC cable (if you are connecting a Nortel CP PM server)? This cable adapts the 50-pin MDF connector on the back of the shelf of the Media Gateway, Universal Equipment Module, or 11C cabinet to a 25-pin DB connector.	
Obtained the CAT5 cables (or better) to connect the server to the ELAN and TLAN subnets?	

Connecting a Nortel CP PM Signaling Server

This section contains instructions for connecting the NTDW61BAE5 and NTDW66AAE5 models of the Nortel CP PM Signaling Server to the ELAN

and TLAN subnets of a CS 1000E and CS 1000M system respectively. It also contains instructions for connecting a maintenance terminal to the Nortel CP PM Signaling Server.

The NTDW61BAE5 model of the Nortel CP PM Signaling Server was designed for use in a CS 1000E system. As such, it is inserted into a slot of the Media Gateway (MG 1000E or MG 1000B). The Media Gateway also hosts the Media Gateway Controller (MGC) that has Ethernet ports for connecting to the ELAN and TLAN subnets of your CS 1000 system.

However, it is common in a CS 1000E system for the Call Server to be connected to the MGC through these ELAN and TLAN Ethernet ports. If the Call Server is not connected to the MGC through these Ethernet ports, the NTDW61BAE5 model of the CP PM Signaling Server uses them to connect to the ELAN and TLAN subnets of the CS 1000E system. If the Call Server is using the MGC ELAN and TLAN Ethernet ports, the Nortel CP PM Signaling Server is connected directly to the ELAN and TLAN Ethernet switches from the faceplate ELAN and TLAN Ethernet ports.

The NTDW66AAE5 model of the Nortel CP PM Signaling Server was designed for use in a CS 1000M system. As such, it is inserted into a slot of a Universal Equipment Module (UEM). UEMs do not have built-in ELAN and TLAN Ethernet ports. These Ethernet ports must be installed on the back of the UEM to enable the Nortel CP PM Signaling Server to connect to the ELAN and TLAN subnets of your CS 1000 system (see Procedure 10: "Installing ELAN and TLAN Ethernet ports on the back of a CS 1000M UEM" on .)

Figure 58 shows the faceplates of the two models of the Nortel CP PM Signaling Server with labeling for all components (NTDW61BAE5 on the left and NTDW66AAE5 on the right).

Figure 58
Faceplates of the Nortel CP PM server
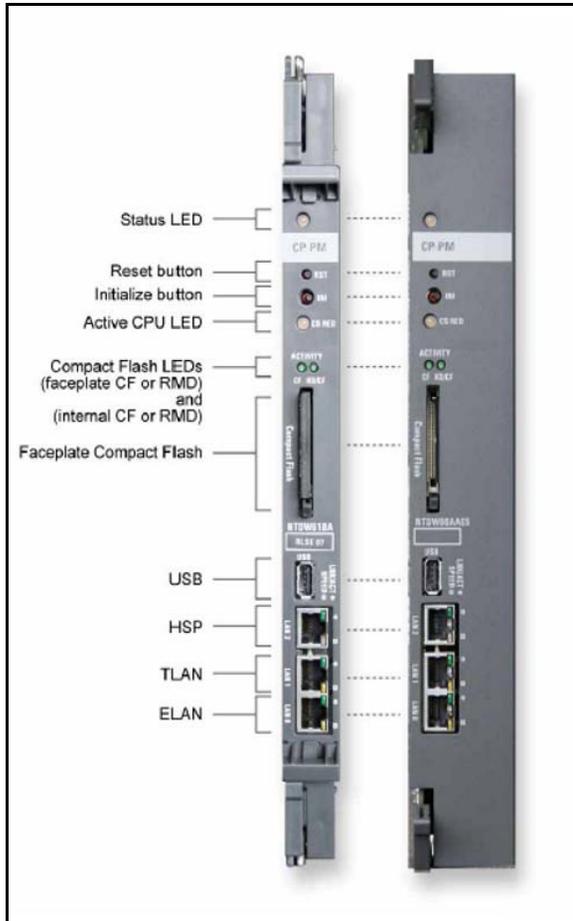
Procedure 13
Connecting a Nortel CP PM Signaling Server

> *Note:* Refer to Figure 58 when performing the following procedure.

1   Establish a maintenance terminal connection at the back of the shelf of the IPMG, IPE cube, or 11C chassis. The com (SDI) port of the CP PM circuit card Signaling Server is routed through the backplane of the shelf to the 50 pin MDF connector on the back of the shelf. A special cable is shipped with the CP PM signaling server that adapts the 50 pin MDF connector to a 25 pin DB connector (NTAK19EC). A DTE-DTE null modem serial cable is required to adapt the SDI port to a typical PC serial port.

> **a.**   Connect the NTAK19EC cable (shipped with the CP PM Signaling Server) to the 50 pin MDF connector on the back of the desired shelf of the IPMG, IPE cube or 11C chassis.

> **b.**   Connect a DTE-DTE null modem serial cable to the 25 pin DB connector at the end of the NTAK19EC cable.

> **c.**   Connect the other end of the DTE-DTE null modem serial cable to the serial port on the maintenance terminal.

2   Insert the Signaling Server circuit card into an appropriate slot on the shelf of the IPMG, IPE cube, or 11C chassis. The CP PM Signaling Server is hot-pluggable so it may be inserted without powering off the system. The maintenance terminal now has access to the CP PM Signaling Server through the 50-pin MDF connector connected at the back of the shelf of the IPMG, IPE cube or 11C chassis.

3   Connect the Signaling Server to the TLAN subnet. Insert the RJ-45 CAT5 (or better) cable into the LAN1 port (TLAN network interface) on the front of the Signaling Server. The LAN1 port is the middle one of the three network interfaces.

4   Connect the Signaling Server to the ELAN subnet. Insert the RJ-45 CAT5 (or better) cable into the LAN0 port (ELAN network interface) on the front of the Signaling Server. The LAN0 port is the bottom one of the three network interfaces.

5 Set the COM port on the maintenance terminal as follows:

- Terminal type: VT100

- Speed: 9 600

- Data bits: 8

- Parity: none

- Stop bits: 1

- Flow control: none

Note: The CP PM Signaling Server is shipped with the Admin Serial port set to 9600 Bit/s. Other available speeds are 19 200, 38 400, and 115 200 Bits. You can change the port speed using the maintenance terminal. To verify or change the baud rate on a Nortel CP PM Signaling Server, see *Signaling Server: Installation and Commissioning* (NN43001-312).

6 Configure the Signaling Server maintenance terminal. Refer to *Signaling Server: Installation and Commissioning* (NN43001-312).

——— **End of Procedure** ———

Complete Procedure 14 to connect a Nortel CP PM Signaling Server (model NTDW61BAE5) to the ELAN and TLAN subnets of a CS 1000E system.

Procedure 14
Connecting a CP PM Signaling Server to the ELAN and TLAN subnets of a CS 1000E system

1 Connect the Signaling Server to the ELAN subnet.

- if the Call Server is not connected to the Media Gateway Controller (MGC)

  — Insert the end of one of the 25-cm RJ-45 CAT5 Ethernet cables shipped with the server (NTDU0606E6) into the ELAN network interface port (ELAN port) on the faceplate of the server

  — insert the other end of the 25-cm RJ-45 CAT5 Ethernet cable into the MGC ELAN Ethernet port

- if the Call Server is connected to the MGC

  — Insert the end of a longer RJ-45 CAT5 Ethernet cable (not supplied) into the ELAN network interface port (ELAN port) on the faceplate of the server

  — Insert the other end of the RJ-45 CAT5 Ethernet cable into an Ethernet port on the ELAN Ethernet switch

2 Connect the Signaling Server to the TLAN subnet.

 • if the Call Server is not connected to the Media Gateway Controller (MGC)

  — Insert the end of one of the 25-cm RJ-45 CAT5 Ethernet cables shipped with the server (NTDU0606E6) into the TLAN network interface port (TLAN port) on the faceplate of the server

  — Insert the other end of the 25-cm RJ-45 CAT5 Ethernet cable into the MGC TLAN Ethernet port

 • if the Call Server is connected to the MGC

  — Insert the end of a longer RJ-45 CAT5 Ethernet cable (not supplied) into the TLAN network interface port (TLAN port) on the faceplate of the server

  — Insert the other end of the RJ-45 CAT5 Ethernet cable into an Ethernet port on the TLAN Ethernet switch

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

Note: If the Call Server is connected to the Media Gateway Controller, you can not use the 25-cm CAT5 Ethernet cables shipped with the Signaling Server (NTDU0606E6). You must obtain CAT5 Ethernet cables that are long enough to connect the Signaling Server directly to the ELAN and TLAN Ethernet switches from the faceplate ELAN and TLAN Ethernet ports.

Complete Procedure 15 to connect a Nortel CP PM Signaling Server (model NTDW66AAE5) to the ELAN and TLAN subnets of a CS 1000M system.

IMPORTANT!

Connecting a Nortel CP PM Signaling Server to the ELAN and TLAN subnets of a CS 1000M system causes a service disruption.

Procedure 15
Connecting a CP PM Signaling Server to the ELAN and TLAN subnets of a CS 1000M system

1   Insert the end of an RJ-45 CAT5 Ethernet cable (not supplied) into the ELAN network interface port (ELAN port) on the back of the CS 1000M UEM. (You installed this ELAN port at the back of the UEM when you installed the Signaling Server in the UEM. See "Installing ELAN and TLAN Ethernet ports on the back of a CS 1000M UEM" on page 110.)

2   Insert the other end of the RJ-45 CAT5 Ethernet cable into an Ethernet port on the ELAN Ethernet switch.

3   Insert the end of another RJ-45 CAT5 Ethernet cable (not supplied) into the TLAN network interface port (TLAN port) on the back of the CS 1000M UEM. (You installed this TLAN port at the back of the UEM when you installed the Signaling Server in the UEM (see "Installing ELAN and TLAN Ethernet ports on the back of a CS 1000M UEM" on page 110).

4   Insert the other end of the RJ-45 CAT5 Ethernet cable into an Ethernet port on the TLAN Ethernet switch.

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

Verify or change the baud rate

To verify or change the baud rate on a Nortel CP PM Signaling Server, see *Signaling Server: Installation and Commissioning* (NN43001-312).

Connecting an IBM X306m Signaling Server

In geographic regions that are susceptible to electrical storms, Nortel recommends that you plug the IBM X306m Signaling Server into an AC surge suppressor.

Figure 59 shows the rear view of the IBM X306m Signaling Server.

Figure 59
IBM X306m Signaling Server (rear view)
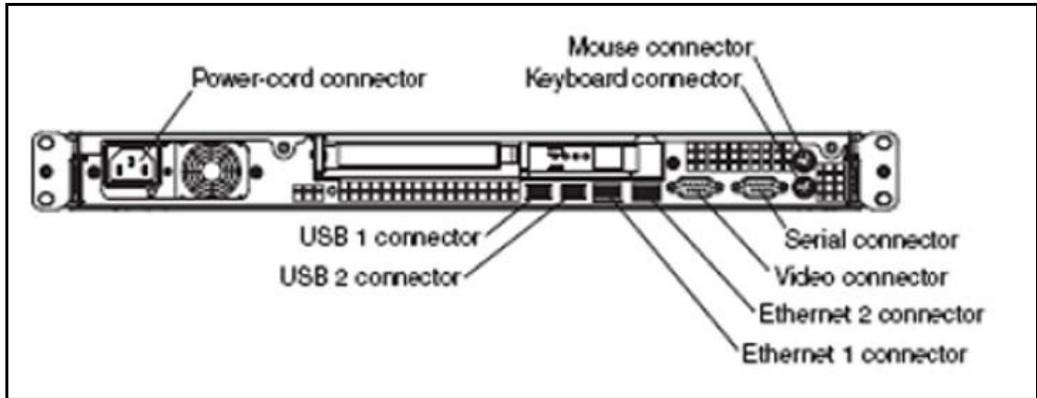
Note: Refer to Figure 59 when performing the following procedure.

Procedure 16
Connecting an IBM X306m Signaling Server

1   Connect the Signaling Server to the TLAN subnet. Insert the RJ-45 CAT5 (or better) cable into Port 1 (TLAN network interface) on the back of the Signaling Server. Port 1 is the right-most of the two network interfaces.

2   Connect the Signaling Server to the ELAN subnet. Insert the RJ-45 CAT5 (or better) cable into PEthernet 2 connector (ELAN network interface) on the back of the Signaling Server. Port 2 is the left-most of the two network interfaces.

3   Connect a DTE–DTE null modem serial cable from the serial port on the back of the Signaling Server to the serial port on a maintenance terminal.

4   Connect the Signaling Server power cord.

   a.   Check that the power cord is the type required in the region where the Signaling Server is used. Do not modify or use the supplied AC power cord if it is not the correct type.

   b.   Attach the female end of the power cord to the mating AC power receptacle on the left side of the Signaling Server's back panel. Plug the male end of the AC power cord into the AC power source (wall outlet).

5   Set the baud rate for the serial port on the Signaling Server to 9 600 b/ps. See *Signaling Server: Installation and Commissioning* (NN43001-312).

   Note: The IBM X306m Signaling Server ships with the serial port set to 9600 b/ps.

6   Configure the connected maintenance terminal. See *Signaling Server: Installation and Commissioning* (NN43001-312).

7   Press the Power switch.

   Note: Refer to the Signaling Server Product Guide on the CD-ROM shipped with the IBM X306m Signaling Server for additional operating information.

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

Connecting an HP DL320-G4 Signaling Server

In geographic regions that are susceptible to electrical storms, Nortel recommends that you plug the HP DL320-G4 Signaling Server into an AC surge suppressor.

Figure 60 shows the rear view of the HP DL320-G4 Signaling Server.

Figure 60
HP DL320-G4 Signaling Server (rear view)
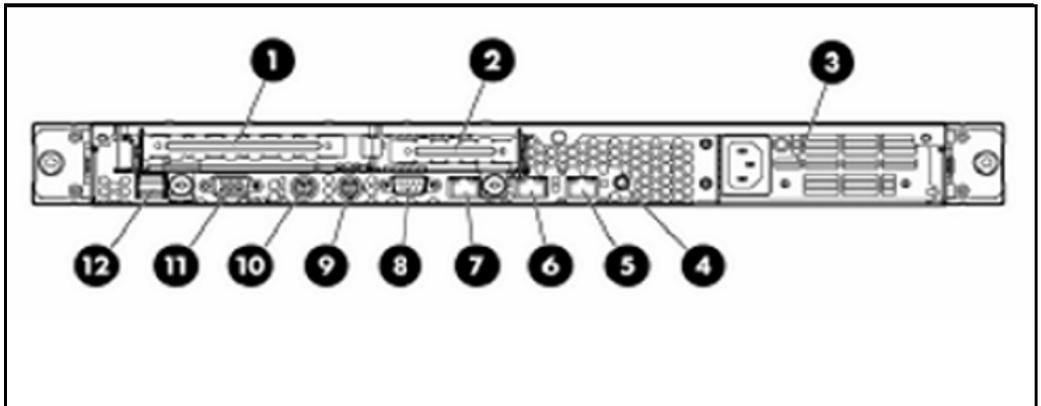
Procedure 17
Connecting an HP DL320-G4 Signaling Server

1   Connect the Signaling Server to the TLAN subnet. Insert the RJ-45 CAT5
     (or better) cable labeled with the number 5 into the port (TLAN network
     interface) on the back of the Signaling Server.

2   Connect the Signaling Server to the ELAN subnet. Insert the RJ-45 CAT5
     (or better) cable labeled with the number 6 into the port (ELAN network
     interface) on the back of the Signaling Server.

3   Connect a DTE–DTE null modem serial cable from the Serial Port on the
     back of the Signaling Server to a maintenance terminal.

4   Connect the Signaling Server power cord.

     a.   Check that the power cord is the type required in the region where
          the Signaling Server is used. Do not modify or use the supplied AC
          power cord if it is not the correct type.

     b.   Attach the female end of the power cord to the mating AC power
          receptacle on the right-hand side of the Signaling Server's back
          panel. Plug the male end of the AC power cord into the AC power
          source (wall outlet).

5   Configure the COM1 serial port as the communication port for the
     connected maintenance terminal. Set the COM 1 baud rate for the serial
     port on the Signaling Server to 9 600 b/ps. See *Signaling Server:
     Installation and Commissioning* (NN43001-312).

6   Configure the connected maintenance terminal. See *Signaling Server:
     Installation and Commissioning* (NN43001-312).

7   Press the Power switch.

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

Maintenance terminal configuration parameters

To configure Signaling Server maintenance terminal configuration
parameters, see the Maintenance chapter of *Signaling Server: Installation
and Commissioning* (NN43001-312).

Installing the Signaling Server software

IMPORTANT!

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

Introduction

This section provides installation procedures for CS 1000 Release 5.0 Signaling Server software on an IBM X306m or HP DL320-G4 Signaling Server.

IMPORTANT!

CP PM, IBM X306m and HP DL320-G4 Signaling Servers do not support any Signaling Server software prior to CS 1000 Release 5.0.

IMPORTANT!

CS 1000 Release 5.0 Signaling Server software does not need to be installed on the CP PM Signaling Server. It is delivered with the Signaling Server software, operating system, applications and web files pre-loaded onto the hard drive. Only basic system configuration parameters need to be entered on the first boot of the CP PM Signaling Server.

Before you begin

Before installing the software, you must do the following:

- Connect and power up the Signaling Server. See "Connections" on page 131.

- For CP PM Signaling Servers, ensure that Switch S5 is set to position 2 (to support the internal hard disk drive)

- For IBM X306m and HP DL320-G4 Signaling Servers, you must obtain the CS 1000 Release 5.0 Signaling Server Software Install CD.

Installing the software

To install software and enter basic system configuration parameters on an IBM X306m or HP DL320-G4 Signaling Server, complete Procedure 18.

Procedure 18
Installing Signaling Server software

Upon completion of Step 1, this procedure takes approximately 45 minutes to complete.

1   From your Planning and Engineering group, obtain the following network and IP Telephony data for this Signaling Server:

- node ID for the IP Telephony node

- node IP address for the IP Telephony node

- hostname for the Signaling Server

- ELAN network interface IP address, Subnet mask, and Gateway

- TLAN network interface IP address, Subnet mask, and Gateway

- ELAN network interface IP address of the Call Server

- Primary and Alternate NRS IP addresses for this networked system. Refer to *IP Peer Networking: Installation and Commissioning* (NN43001-313)

- NRS role, if applicable. Refer to *IP Peer Networking: Installation and Commissioning* (NN43001-313)

2   Boot the Signaling Server from the Removable Media Device (RMD):

- For IBM X306m, HP DL320-G4, or Nortel ISP1100 Signaling Servers, insert the CS 1000 Release 5.0 Signaling Server Software CD into the CD drive and press the RST button on the front panel of the Signaling Server to trigger a cold boot. This forces the Signaling Server to boot from the CD.

- For a Nortel CP PM Signaling Server, insert the CS 1000 Release 5.0 Signaling Server Software CF card into the faceplate CF drive and press the RST button on the faceplate of the Signaling Server to trigger a cold boot. The CP PM System BIOS Configuration screen appears (see Figure 61) with an instruction to press F to force the Signaling Server to boot from the CF card.

Figure 61
Nortel CP PM system BIOS configuration

```
+-----------------------------------------------------------------+
|      System BIOS Configuration, (C) 2005 General Software, Inc.  |
+-----------------------------------+-----------------------------+
| System CPU      : Pentium M       | Low Memory      : 632KB      |
| Coprocessor     : Enabled         | Extended Memory : 1011MB     |
| Ide 0 Type      : 3               | Serial Ports 1-2  : 03F8 02F8 |
| Ide 1 Type      : 3               | ROM Shadowing   : Enabled    |
| Ide 2 Type      : 3               | BIOS Version    : NTDU74AA 15|
+-----------------------------------+-----------------------------+

Press F to force board to boot from faceplate drive.
.........................................
```

- The VxWorksTM banner screen appears (see Figure 62) followed by system messages indicating that the Signaling Server Software Installation Tool is being loaded from either the Signaling Server Software CD or CF Card.

Figure 62
VxWorks system banner

```
]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]]
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]]]]]]]]]]]]]]]]]]]]]]]]]]]]]        Development System
]]]]]]]]]]]]]]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]]]]]]]]]]]]]]          VxWorks version 5.5.1
]]]]]]]]]]]]]]]]]]]]]]]]]]]]]          KERNEL: WIND version 2.6
]]]]]]]]]]]]]]]]]]]]]]]]]]]]]      Copyright Wind River Systems, Inc., 1984-2003

                                CPU: PC PENTIUM.   Processor #0.
                             Memory Size: 0x20000000.  BSP version 1.2/3.
                           WDB Comm Type: WDB_COMM_END
                           WDB: Ready.
```

When the Install Tool banner appears (Figure 63), press <CR> to perform
system checks and begin software installation.

Figure 63
Install Tool banner screen

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

         #####
      #########   ########
     ########``  `############
    ########        ``    `############
   #######`        #####```####
   #######     ######``    `###          NORTEL NETWORKS
  #######   #####``         ####
  ####### #####`             #### Communication Server 1000 Software
  `#########`                ####`
   #######`                 #####        Copyright 2002 – 2006
   `#######                #####'
   ##########             `###`
  ##``##########            #
 ##   `#######################
 `#     `######################
   #########################``
    ````````   ````####````


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

3   Press <CR> to perform system checks. If the system has less than 1
        Gbyte of RAM, the following error message appears:

```
WARNING: Your system has less than 1 GB RAM.
In order to run Rls 5.0 software you must
upgrade RAM to 1 GB and repeat install.
Otherwise serious service problems are likely

   Please enter:
<CR> -> <q> - Quit.
        <a> - Accept the possible risks and
continue install.
```

Press <CR> to quit. Upgrade to 1 Gbyte of RAM (see *Signaling
Server: Installation and Commissioning* (NN43001-312)) and restart
the Signaling Server Install Tool again.

The system verifies the file systems.

- If the hard drive of the Signaling Server is not partitioned, the file systems verification process fails. Upon failure, the menu in Figure 64 appears.

Figure 64
File systems verification failure

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

The filesystems verification failed! (This is normal for a new
system.)

The hard disk must be (re)partitioned and (re)initialized. This will
erase all data on the hard disk. The system will then reboot and
the Install Tool will restart.

        Please enter:
<CR> -> <a> - Partition and initialize the hard disk, then reboot.

        Enter Choice> a
```

    a. Enter a to partition and initialize the hard disk, and to reboot the Signaling Server.

The system displays the messages:

```
Partitioning hard disk ...
Hard disk partitioning succeeded.

Creating filesystems ...
Filesystems creation succeeded.

Rebooting system ...
```

    b. The Install Tool banner screen (Figure 63 on) reappears. Go back to beginning of Step 2.. If the hard drive of the Signaling Server is partitioned, the following system messages appear.

```
Filesystems verification succeeded.
```

    c. Confirm or enter the date and time (Figure 65 on).

Figure 65
Date and time

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

You should ensure the system date and time are correct prior to
installation, since all files copied or created during install will
be time-stamped.

You can press <CR> to accept the current values.

Current date is: FRIDAY 01-04-2006
Enter new date (dd mm yyyy): 04 04 2006
Date is set to: MONDAY 04-04-2006
Current time is: 09:47:18
Enter new time (hh mm ss): 08 38 30
Time is set to: 08:38:30
Current date and time is:
MONDAY 04-04-2005, 08:38:30
```

- When reinstalling the software on an existing system, the system verifies the file systems. The disk check reports:

  `Filesystems verification succeeded.`

  The system summary appears (Figure 66 on page 148). Enter **a** to continue the installation.

  Note: For a new installation, the data fields in the system summary are blank.

Figure 66
System Summary

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

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

+=============================================================+
|   Hostname: SS_Node276_Ldr         S/W Ver: x.xx.xx         |
|                                                             |
|      Role: Leader                  Set TPS: Disabled        |
|   Node ID:                        Vtrk TPS: Disabled        |
|   Node IP:                      NRS Config: Alternate SIP   |
|  H.323 ID: SS_Node276_Ldr            CS IP:                 |
|                                                             |
|   ELAN IP: 192.168.10.20          TLAN IP: 192.168.20.20    |
|   ELAN SM: 255.255.255.0          TLAN SM: 255.255.255.0    |
|   ELAN GW: 192.168.10.1           TLAN GW: 192.168.20.1     |
|  ELAN MAC: 00:02:b3:c5:51:c6     TLAN MAC: 00:02:b3:c5:51:c7 |
+=============================================================+
        Please enter:
<CR> -> <a> - Continue with Install Tool.
        <q> - Quit.

        Enter Choice>
```

Figure 67
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, IP Phone f/w, Voice Gateway Media
              Card l/w, basic Signaling Server configuration).
        <b> - To install/upgrade Signaling Server software only.
        <c> - To copy IP Phone firmware only.
        <d> - To copy Voice Gateway Media Card loadware only.
        <e> - To perform basic Signaling Server configuration only.
        <t> - To go to the Tools Menu.
        <q> - Quit.

        Enter Choice>
```

4   At the Main Menu (Figure 67), enter **a** to install Signaling Server software. Option **a** performs options **b**, **c**, **d**, and **e**.

The following sample lines display on the screen:

```
Copying "/cd0/sse37012.p3/disk.sys" to "/u/disk.sys".
Processing the install control file ...
"/cd0/sse37012.p3/install.dat" parsed.
```

The Dependency Lists installation screen appears (Figure 68).

Figure 68
Dependency lists installation

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


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>
```

5   Press <CR> or enter y to install the dependency lists. The Installation Status Summary screen appears:

The Installation status screen appears (Figure 69 on page 151).

Figure 69
Installation Status

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


+================+========+========+======================================+
|    Option      | Choice | Status |              Comment                 |
+================+========+========+======================================+
| Software       |  yes   |        | new install x.xx.xx                  |
+----------------+--------+--------+--------------------------------------+
| Dependency Lists|  yes   |        | copy ALL                             |
+----------------+--------+--------+--------------------------------------+
| firmware       |  yes   |        | copy ALL                             |
+----------------+--------+--------+--------------------------------------+
| loadware       |  yes   |        | copy ALL                             |
+----------------+--------+--------+--------------------------------------+
| configuration  |  yes   |        |                                      |
+----------------+--------+--------+--------------------------------------+


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

        Enter Choice>
```

6   Enter **y** to start the installation. The screens shown in Figures 70 to 76, which start on , appear.

Figure 70
Installation output

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

You have selected to install version x.xx.xx on the system. As
this is a new install, all necessary directories and files will
be created on the hard disk.

Starting new install of version x.xx.xx.

Initializing protected partition ...
"/p" initialized.

Creating directory ... (many directories are created here) ...
Copying ... (many files are copied here) ...

Boot ROM "/p/load/bootrom.bin" installed.
```

Figure 71
Software installation 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.
```

Figure 72
IP Phone firmware

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

The installation source contains multiple Internet Telephone firmware
files.

Copying /cd0/0603Bxx.bin" to "/u/fw/0603Bxx.bin".
Copying "/cd0/0602Bxx.bin" to "/u/fw/0602Bxx.bin".
Copying "/cd0/0604Dxx.bin" to "/u/fw/0604Dxx.bin".
```

Figure 73
Voice Gateway Media Card loadware

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

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

Copying "/cd0/IPL4xxxx.p2" to "/u/fw/IPL4xxxx.p2".
Copying "/cd0/IPL4xxxx.sa" to "/u/fw/IPL4xxxx.sa".
```

7 After the Signaling Server software and system components are installed, the Restore IP configuration screen appears (Figure 74 on).

Figure 74
Restore IP configuration

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

Please insert the database diskette in the removable drive
to restore the IP configuration to the hard disk

        Please enter:
<CR> -> <a> - Diskette is now in the removable drive.
              Continue.
        <b> - Continue without restoring the IP configuration
        <q> - Quit.

        Enter Choice> b
```

8 Do one of the following:

- If you are migrating a Leader Signaling Server (see "Signaling Server migration" in *Signaling Server: Installation and Commissioning* (NN43001-312),insert the Removable Media Device (RMD) into the appropriate drive, and press <CR> or enter a to restore the IP configuration data. After the restore is complete, the following system message appears:

  ```
  Done copying IP configuration to disk
  ```

  The IP Telephony parameter confirmation screen appears (Figure 75 on page 155). Go to step 12 on page 180.

Figure 75
IP telephony parameter confirmation

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

You have entered the following parameters for this Leader SS :
(Press <a>-<l> to correct, <y> to proceed, <n> to reconfigure all.)

        Please enter:
<CR> -> <y> - Yes, these parameters are correct.
        <n> - Re-enter all of the parameters

        <a> - Node ID          I : 9
        <b> - Hostname           : CS1000E_PIV
        <c> - ELAN IP            : 192.167.102.4
        <d> - ELAN subnet mask   : 255.255.255.0
        <e> - ELAN gateway IP    : 192.167.102.1
        <f> - TLAN IP            : 192.167.103.2
        <g> - TLAN subnet mask   : 255.255.255.0
        <h> - TLAN gateway IP    : 192.167.103.1
        <i> - Node IP            : 192.167.103.3
        <j> - Call Server IP     : 192.167.102.3
              NRS configuration : Primary GK + SIP
        <k> - Primary NRS IP    : 192.167.103.2
        <l> - Alternate NRS IP  :

        Enter Choice>
```

9 If you are installing a new Signaling Server, or you are migrating a Follower or Standalone Signaling Server (see "Signaling Server migration" in *Signaling Server: Installation and Commissioning* (NN43001-312)), select b to bypass the restoration of IP configuration data. The Signaling Server role selection screen appears (Figure 76 on page 156).

Figure 76
Signaling Server role selection

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
====================================================================
Note: This step will over-write all existing configuration parameters
      on this Signaling Server.

Please select the role of this Signaling Server.

If this Signaling Server will be a Leader then its data networking
and IP Telephony parameters must be entered now. (This will pre-
configure the IP Telephony node files.)

If this Signaling Server will be a Follower then its data networking
and IP Telephony parameters must be configured through Element
Manager later.

        Please enter:
<CR> -> <a> - Set this Signaling Server as a Leader.
        <b> - Set this Signaling Server as a Follower.
        <q> - Quit.

        Enter Choice>
```

10 Configure the Signaling Server as Leader or Follower. See Figure 76 on page 156.

• If there is already a Leader Signaling Server in the IP Telephony node, enter **b** at the prompt to set this Signaling Server as Follower. The Follower Signaling Server configuration screen appears (Figure 77 on page 157). Go to step 10 on page 176.

Figure 77
Follower Signaling Server configuration

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

This Follower Signaling Server will obtain its data network and IP
telephony configuration from the Leader Signaling Server at boot.

To identify this Signaling Server, please enter a Hostname.

Hostname : SS_Node276_Ldr
```

- If there is not already a Leader Signaling Server in the IP Telephony node, or if the Signaling Server is to be a stand-alone Signaling Server, enter **a** at the prompt to configure this Signaling Server as Leader. The Application configuration screen appears (Figure 78 on).

Figure 78
Application configuration

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

Please select the application configuration for this Signaling Server.

        Please enter:
<CR> -> <a> - Co-resident (LTPS + VTRK + NRS).
        <b> - Stand-alone (NRS only - no Call Server).
        <q> - Quit.

        Enter Choice>
```

11 Configure the application configuration for this Signaling Server. See Figure 78 on page 157.

- If the IP Phone TPS, Virtual Trunk TPS, and optional Network Routing Service (NRS) applications are to be enabled on this Signaling Server, enter **a** at the prompt to configure this Signaling Server as a co-resident Signaling Server.

- If only the NRS is to be enabled on this Signaling Server:

    — If this Signaling Server is to be associated with a Call Server, enter **a** at the prompt to configure this Signaling Server as a co-resident Signaling Server. After you have finished installing the Signaling Server software, you can disable the Set TPS and Virtual Trunk TPS in Element Manager (refer to *Element Manager: System Administration* (NN43001-332)).

    — If this Signaling Server is not to be associated with a Call Server, enter **b** at the prompt to set this Signaling Server as a stand-alone Signaling Server.

Depending on the application configuration selected, either the NRS - Coresident Signaling Server screen or the NRS - Standalone Signaling Server screen appears.

Figure 79
Network Routing Service (NRS) — co-resident Signaling Server

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

Please select the Network Routing Service (NRS) configuration for this
Signaling Server.

        Please enter:
<CR> -> <a> - H.323 Gatekeeper and SIP Redirect/Proxy Server.
        <b> - H.323 Gatekeeper only.
        <c> - SIP Redirect/Proxy Server only.
        <d> - None.

        Enter Choice>
```

Figure 80
Network Routing Service (NRS) — stand-alone Signaling Server

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

Please select the Network Routing Service (NRS) configuration for this
Signaling Server.

        Please enter:
<CR> -> <a> - H.323 Gatekeeper and SIP Redirect/Proxy Server.
        <b> - H.323 Gatekeeper only.
        <c> - SIP Redirect/Proxy Server only.

        Enter Choice>
```

12 Select the Network Routing Service (NRS) to be provided by this
Signaling Server. See Figure 79 on for a co-resident Signaling
Server or Figure 80 on for a stand-alone Signaling Server.

- Enter **d** if this Signaling Server is configured as a Coresident Leader
  and is not providing an NRS. Go to step 13.

- Press <CR> or enter **a** if this Signaling Server is to provide an H.323
  Gatekeeper and a SIP Redirect/Proxy Server.

- Enter **b** if this Signaling Server is to provide only an H.323
  Gatekeeper.

- Enter **c** if this Signaling Server is to provide only a SIP Redirect/Proxy
  Server.Refer to *Network Routing Service Installation and
  Commissioning* (NN43001-564) for more information on the NRS.

Depending on the application configuration selected, either the NRS type:
Coresident Signaling Server screen or the NRS type: Standalone Signaling
Server screen appears.

Figure 81
NRS type — co-resident Signaling Server

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

Please select the type of Network Routing Service (NRS) for this
Signaling Server.

        Please enter:
<CR> -> <a> - Primary.
        <b> - Alternate.
        <c> - Failsafe.

        Enter Choice>
```

Figure 82
NRS type — stand-alone Signaling Server

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

Please select the type of Network Routing Service (NRS) for this
Signaling Server.

        Please enter:
<CR> -> <a> - Primary.
        <b> - Alternate.

        Enter Choice>
```

13 Select the type of NRS to be provided by this Signaling Server. See
    Figure 81 for a co-resident Signaling Server.

    •   If this Signaling Server is to be the Primary NRS, enter **a**.

    •   If this Signaling Server is to be the Alternate NRS, enter **b**.

    •   If this Signaling Server is not a stand-alone Signaling Server and is
        to be the Fail-safe NRS, enter **c**.

    Refer to *Network Routing Service Installation and Commissioning*
    (NN43001-564) for more information on the NRS.

Depending on whether the Signaling Server is configured as Leader or Standalone, either the Leader Signaling Server configuration screen (Figure 83) or the Standalone Signaling Server configuration screen (Figure 84) appears.

Figure 83
Leader Signaling Server configuration

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

Please enter the data networking and IP Telephony parameters for
this Leader Signaling Server.

Node ID         : 276

Hostname        : SS_Node276_Ldr

ELAN IP         : 192.168.10.20
ELAN subnet mask: 255.255.255.0
ELAN gateway IP : 192.168.10.1

TLAN IP         : 192.168.20.20
TLAN subnet mask: 255.255.255.0
TLAN gateway IP : 192.168.20.1

Node IP         : 192.168.10.20

Call Server IP  : 192.168.10.10
```

Figure 84
Stand-alone Signaling Server configuration

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

Please define the data networking parameters for this Standalone
Signaling Server. Note that the ELAN parameters are necessary for
management access (e.g. SNMP).

Hostname        : SS_SA

ELAN IP         : 192.168.10.20
ELAN subnet mask: 255.255.255.0
ELAN gateway IP : 192.168.10.1

TLAN IP         : 192.168.20.20
TLAN subnet mask: 255.255.255.0
TLAN gateway IP : 192.168.20.1
```

14 Enter the data networking and IP telephony parameters for the Signaling
Server, as prompted. The IP information applies to a temporary IP
Telephony node, to ensure that the existing node is not affected. The
entry of data networking and IP telephony parameters also preconfigures
the IP Telephony node files. After the Signaling Server software
installation, the node files are imported into Element Manager for further
configuration (see "Importing IP Telephony nodes" in *Signaling Server:
Installation and Commissioning* (NN43001-312)).

- If this is a Leader Signaling Server, enter the parameters for the
  Node, ELAN network interface, TLAN network interface, and Call
  Server as required.

  — If installing the Signaling Server at an office that is not a branch
     office, enter the ELAN network interface IP address of the Call
     Server.

  — If installing the Signaling Server at a branch office, enter the
     ELAN network interface IP address of the MG 1000B Core.

- If this is a Follower Signaling Server, enter the Hostname of the
  Leader Signaling Server. Then go to step 16 on .

- If this is a stand-alone Signaling Server and not associated with a
  Call Server (that is, **b** was selected in step 11 on), enter the

TLAN subnet parameters as required. The Call Server IP address is automatically set to 0.0.0.0.

Depending on whether the Signaling Server is configured as Primary, Alternate, or Standalone, either the Primary NRS IP address screen, the Alternate NRS IP address screen, or both (in succession) appear. Both screens appear in succession for a Standalone Signaling Server.

Figure 85
Primary NRS IP address

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

Please enter the Primary NRS IP Address:

Primary NRS IP   :
```

Figure 86
Alternate NRS IP address

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

Please enter the Alternate NRS IP Address:

Alternate NRS IP :
```

15 Enter the Primary NRS IP address or the Alternate NRS IP address, depending on the option entered in step 12 on or step 13 on .

- If **a** was entered in step 13, you can enter the address of the Alternate NRS if you know it, but it is not required. See.

- If **b** was entered in step 13, enter the address of the Primary NRS..

- If **c** was entered in step 13:

  — Enter the address of the Primary NRS..

  — Enter the address of the Alternate NRS.

- If **d** was entered in step 12:

— Enter the address of the Primary NRS (optional).

— If you did enter the address of the Primary NRS, enter the address of the Alternate NRS (also optional).

The Gatekeeper configuration can be updated later using Element Manager.

The IP Telephony parameter confirmation screen appears (Figure 87).

Figure 87
IP Telephony parameter configuration

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

You have entered the following parameters for this Leader
Signaling Server:

Node ID          : 276
Hostname         : SS_Node276_Ldr
ELAN IP          : 192.168.20.100
ELAN subnet mask: 255.255.255.0
ELAN gateway IP : 192.168.10.1
TLAN IP          : 192.168.20.20
TLAN subnet mask: 255.255.255.0
TLAN gateway IP : 192.168.20.1
Node IP          : 192.168.20.100
Call Server IP  : 192.168.10.10
NRS configuration: Alternate GK + SIP
Primary NRS IP   : 192.168.20.10
Alternate NRS IP : 192.168.20.24


        Please enter:
<CR> -> <y> - Yes, these parameters are correct.
        <n> - No, these parameters are not correct.

        Enter Choice>
```

16   Enter <CR> or **y** to confirm the parameters.

The example in Figure 87 on is for a Leader Signaling Server configured with an Alternate H.323 and SIP NRS. The confirmation screens for a Follower and stand-alone Signaling Server are similar, showing the same list of parameters, specifically:

- The configuration screen for the Follower Signaling Server displays only the value for the Hostname parameter; all other values are blank.

- The configuration screen for the stand-alone Signaling Server displays values for the Hostname, ELAN network interface, TLAN network interface, and NRS parameters. The Node ID field is set to 0. The Call Server IP field is set to 0.0.0.0.

After you confirm the IP configuration, the following system messages appear:

```
For future reference, the ELAN MAC address is:
"00:02:b3:c5:5l:c6".

Wrote config file "/u/config/bootp.tab".

Wrote config file "/boot/nvram.sys".

Wrote config file "/u/config/config.ini".

Wrote config file "/u/config/nrsconf.xml".
```

Note: You must configure the ELAN network interface MAC address for the newly installed Signaling Server in the Element Manager node configuration web page.

17   To complete the installation, the Installation Status Summary screen appears as shown in Figure 88 on .

Figure 88
Installation Status Summary

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


+================+========+========+=======================================+
|    Option      | Choice | Status |                Comment                 |
+================+========+========+=======================================+
| software       |  yes   |   ok   | new install x.xx.xx                    |
+----------------+--------+--------+----------------------------------------+
| Dependency Lists|  yes  | ignore | copy NONE                              |
+----------------+--------+--------+----------------------------------------+
| firmware       |  yes   |   ok ⊤ | copy Ixxxx version x.xx                |
| firmware       |  yes   |   ok ⊥ | copy Ixxxx version x.xx                |
| firmware       |  yes   |   ok   | copy PhaseX IP Firmware version x.xx   |
| firmware       |  yes   |   ok   | copy Ixxxx IP Firmware version x.xx    |
| firmware       |  yes   |   ok   | copy Ixxxx IP Firmware version x.xx    |
| firmware       |  yes   |   ok   | copy Ixxxx IP Firmware version x.xx    |
| firmware       |  yes   |   ok   | copy Ixxxx IP Firmware version x.xx    |
+----------------+--------+--------+----------------------------------------+
| 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  |  yes   |   ok   | set as Leader                          |
+----------------+--------+--------+----------------------------------------+

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

18 Press <CR> to exit to the Main Menu (see Figure 89 on). Enter q at the Main Menu to quit the installation process. Figure 90 on appears. Enter q again.

Figure 89
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, IP Phone f/w, Voice Gateway Media
              Card l/w, basic Signaling Server configuration).
        <b> - To install/upgrade Signaling Server software only.
        <c> - To copy IP Phone firmware only.
        <d> - To copy Voice Gateway Media Card loadware only.
        <e> - To perform basic Signaling Server configuration only.
        <t> - To go to the Tools Menu.
        <q> - Quit.

        Enter Choice>
```

Figure 90
Quit

```
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> q
```

19 Remove the Signaling Server Software CD or the Signaling Server Software CF Card (as appropriate) from the RMD drive of the Signaling Server and enter q to close/terminate the Installation Tool and reboot the system. The following system messages appear:

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

Rebooting system ....
```

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

First boot of a new Nortel CP PM Signaling Server

Nortel CP PM Signaling Servers have CS 1000 Release 5.0 software, applications, operating system, and web files preloaded on the hard drive when they are shipped. On the first boot of a Nortel CP PM Signaling Server, the Signaling Server Software Installation Tool prompts you to enter basic system configuration parameters.

Before you begin

Before booting the new Nortel CP PM Signaling Server for the first time and entering basic system configuration parameters, you must perform the following tasks:

- Install and connect the Signaling Server (refer to "Installing the CP PM Signaling Server hardware" on page 107).

- Obtain the network and IP Telephony data for the Signaling Server from your Planning and Engineering group:

    – node ID for the IP Telephony node

    – node IP address for the IP Telephony node

    – hostname for the Signaling Server

    – ELAN network interface IP address, Subnet mask, and Gateway

    – TLAN network interface IP address, Subnet mask, and Gateway

    – ELAN network interface IP address of the Call Server

> – Primary and Alternate NRS IP addresses for this networked system. Refer to *IP Peer Networking: Installation and Commissioning* (NN43001-313)
>
> – NRS role, if applicable. Refer to *IP Peer Networking: Installation and Commissioning* (NN43001-313)

Entering basic system parameters

Procedure 19
Entering basic system configuration parameters

1 Press the RST button on the faceplate of the CP PM Signaling Server. This cold-reboots the Signaling Server and triggers the Install Tool on the hard drive (see Figure 91)

Figure 91
Install Tool banner screen

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

        #####
     #########   ########
    ########``  `############
   ########        ``    `############
  #######`          ######```####
  #######      ######``     `###        NORTEL NETWORKS
 #######    #####``          ####
 ####### #####`              #### Communication Server 1000 Software
 `#########`                 ####`
  #######`                   #####     Copyright 2002 - 2006
  `#######                 #####'
  ##########              `###`
 ##``##########            #
 ##   `#####################
 `#      `####################
   #########################``
    ````````  ````####````


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

2    Press <CR> to continue with the configuration. The Restore IP
configuration screen appears (Figure 92).

**Figure 92**
**Restore IP configuration**

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

Please insert the database diskette in the removable drive
to restore the IP configuration to the hard disk

        Please enter:
<CR> -> <a> - Diskette is now in the removable drive.
              Continue.
        <b> - Continue without restoring the IP configuration
        <q> - Quit.
                                                I
        Enter Choice> b
```

3   Enter b at the prompt to bypass the restore of IP configuration data. The
CP PM board location screen appears (Figure 93).

Figure 93
CP PM board location

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

This CS 1000 Signaling Server is currently located in the IPMG
configured as (Loop-Shelf-Card) :

Please enter new IPMG location for this CPPM SS, or press <CR> to skip.

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 OAM shell)


New IPMG location (Loop and Shelf only)  [LL SS] :
```

4   Enter the location (loop and shelf) of the IPMG board.

Note: If the IPMG has not been configured yet, the loop and shelf information can be left at the current value. The IPMG board location can be updated using OAM shell commands after the Signaling Server is configured.

5   The Leader/Follower configuration screen appears (Figure 94).

Figure 94
Leader/Follower Signaling Server configuration

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
=====================================================================
Note: This step will over-write all existing configuration parameters
      on this Signaling Server.
Please select the role of this Signaling Server.

If this Signaling Server will be a Leader then its data networking
and IP Telephony parameters must be entered now. (This will pre-
configure the IP Telephony node files.)

If this Signaling Server will be a Follower then its data networking
and IP Telephony parameters must be configured through Element
Manager later.

        Please enter:
<CR> -> <a> - Set this Signaling Server as a Leader.
        <b> - Set this Signaling Server as a Follower.
        <q> - Quit.

        Enter Choice>
```

6   Configure the Signaling Server as a Leader or Follower. If there is already a Leader Signaling Server in the IP Telephony node, enter b at the prompt to configure this Signaling Server as Follower. The Follower Signaling Server configuration screen appears (Figure 95). Go to step 15 on .

Figure 95
Follower Signaling Server configuration

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

This Follower Signaling Server will obtain its data network and IP
telephony configuration from the Leader Signaling Server at boot.

To identify this Signaling Server, please enter a Hostname.

Hostname : SS_Node276_Ldr
```

    7   If there is not a Leader Signaling Server in the IP Telephony node already, or if the Signaling Server is to be a stand-alone Signaling Server, press <CR> or enter a at the prompt to configure this Signaling Server as Leader.

8 Configure the application configuration for this Signaling Server. See Figure 96.

- If you are planning on enabling the IP Phone TPS, Virtual Trunk TPS, and optional Network Routing Service (NRS) applications on this Signaling Server, enter **a** at the prompt to configure this Signaling Server as a co-resident Signaling Server.

- If you are planning on enabling only the NRS on this Signaling Server:

  — If this Signaling Server is to be associated with a Call Server, enter **a** at the prompt to configure this Signaling Server as a co-resident Signaling Server. After you finished installing the Signaling Server software, you can disable the IP Phone TPS and Virtual Trunk TPS in Element Manager (refer to *Element Manager: System Administration* (NN43001-332)).

  — If this Signaling Server is not to be associated with a Call Server, enter **b** at the prompt to set this Signaling Server as a Standalone Signaling Server - NRS.

Figure 96
Application configuration

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

Please select the application configuration for this Signaling Server.

        Please enter:
<CR> -> <a> - Co-resident (LTPS + VTRK + NRS).
        <b> - Stand-alone (NRS only - no Call Server).
        <q> - Quit.

        Enter Choice>
```

Depending on the application configuration selected, either the NRS type: co-resident Signaling Server screen (Figure 97 on page 174) or the NRS type: standalone Signaling Server screen (Figure 98 on page 174) appears.

Figure 97
Standalone Signaling Server - NRS

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

Please select the Network Routing Service (NRS) configuration for this
Signaling Server.

        Please enter:
<CR> -> <a> - H.323 Gatekeeper and SIP Redirect/Proxy Server.
        <b> - H.323 Gatekeeper only.
        <c> - SIP Redirect/Proxy Server only.

        Enter Choice>
```

Figure 98
NRS type — co-resident Signaling Server

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

Please select the type of Network Routing Service (NRS) for this
Signaling Server.

        Please enter:
<CR> -> <a> - Primary.
        <b> - Alternate.
        <c> - Failsafe.

        Enter Choice>
```

9   Select the type of NRS to be provided by this Signaling Server. See
     Figure 98 for a co-resident Signaling Server. See Figure 97 for a
     stand-alone Signaling Server.

     • If this Signaling Server is to be the Primary NRS, enter **a**.

     • If this Signaling Server is to be the Alternate NRS, enter **b**.

     • If this Signaling Server is not a stand-alone Signaling Server and is
       to be the Fail-safe NRS, enter **c**.

     Refer to *IP Peer Networking: Installation and Commissioning* (NN43001-313)
     for more information on the NRS.

Depending on whether the Signaling Server is configured as Leader, Follower or Stand-alone, the Leader Signaling Server configuration screen (Figure 99), the Follower Signaling Server configuration screen (Figure 100) or the Stand-alone Signaling Server configuration screen (Figure 101) appears.

Figure 99
Leader Signaling Server configuration

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

Please enter the data networking and IP Telephony parameters for
this Leader Signaling Server.

Node ID        : 276

Hostname       : SS_Node276_Ldr

ELAN IP        : 192.168.10.20
ELAN subnet mask: 255.255.255.0
ELAN gateway IP : 192.168.10.1

TLAN IP        : 192.168.20.20
TLAN subnet mask: 255.255.255.0
TLAN gateway IP : 192.168.20.1

Node IP        : 192.168.10.20

Call Server IP  : 192.168.10.10
```

Figure 100
Follower Signaling Server configuration

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

This Follower Signaling Server will obtain its data network and IP
telephony configuration from the Leader Signaling Server at boot.

To identify this Signaling Server, please enter a Hostname.

Hostname : SS_Node276_Ldr
```

Figure 101
Stand-alone Signaling Server configuration

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

Please define the data networking parameters for this Standalone
Signaling Server. Note that the ELAN parameters are necessary for
management access (e.g. SNMP).

Hostname        : SS_SA

ELAN IP         : 192.168.10.20
ELAN subnet mask: 255.255.255.0
ELAN gateway IP : 192.168.10.1

TLAN IP         : 192.168.20.20
TLAN subnet mask: 255.255.255.0
TLAN gateway IP : 192.168.20.1
```

10 Enter the data networking and IP telephony parameters for the Signaling Server, as prompted.

- If this is a Leader Signaling Server, enter the parameters for the Node, ELAN network interface, TLAN network interface, and Call Server as required. See Figure 83 on page 161. For the Call Server:

  — If installing the Signaling Server at an office that is not a branch office, enter the ELAN network interface IP address of the Call Server.

  — If installing the Signaling Server at a branch office, enter the ELAN network interface IP address of the MG 1000B Core.

- If this is a Follower Signaling Server, enter the Hostname of the Leader Signaling Server. The IP telephony parameter configuration screen appears (Figure 102 on page 177).

Figure 102
IP Telephony parameter configuration

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

You have entered the following parameters for this Leader SS :
(Press <a>-<l> to correct, <y> to proceed, <n> to reconfigure all.)

        Please enter:
<CR> -> <y> - Yes, these parameters are correct.
        <n> - Re-enter all of the parameters

        <a> - Node ID          I : 9
        <b> - Hostname           : CS1000E_PIV
        <c> - ELAN IP            : 192.167.102.4
        <d> - ELAN subnet mask   : 255.255.255.0
        <e> - ELAN gateway IP    : 192.167.102.1
        <f> - TLAN IP            : 192.167.103.2
        <g> - TLAN subnet mask   : 255.255.255.0
        <h> - TLAN gateway IP    : 192.167.103.1
        <i> - Node IP            : 192.167.103.3
        <j> - Call Server IP     : 192.167.102.3
              NRS configuration  : Primary GK + SIP
        <k> - Primary NRS IP     : 192.167.103.2
        <l> - Alternate NRS IP   :

        Enter Choice>
```

- Proceed to step 16 on .

- If this is a stand-alone Signaling Server and not associated with a Call Server (that is, **b** was selected in step 11 on), enter the TLAN subnet parameters as required. The Call Server IP address is automatically set to 0.0.0.0.

The IP information applies to a temporary IP Telephony node. This ensures that the existing node is not impacted. This also preconfigures the IP Telephony node files. In *Signaling Server: Installation and Commissioning* (NN43001-312), the node files are imported to Element Manager for further configuration.

Depending on whether the Signaling Server is configured as Primary, Alternate or Stand-alone, the Primary NRS IP address screen (Figure 103), the Alternate NRS IP address screen (Figure 104), or both in succession (for a Stand-alone Signaling Server) appear.

Figure 103
Primary NRS IP address

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

Please enter the Primary NRS IP Address:

Primary NRS IP   :
```

Figure 104
Alternate NRS IP address

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

Please enter the Alternate NRS IP Address:

Alternate NRS IP :
```

11 Enter the Primary NRS IP address or the Alternate NRS IP address, depending on the option entered in step 12 on page 159 or step 13 on page 160.

- If **a** was entered in step 13, you can enter the address of the Alternate NRS if you know it, but it is not required. See Figure 86 on page 163.

- If **b** was entered in step 13, enter the address of the Primary NRS. See Figure 85 on page 163.

- If **c** was entered in step 13:

   — Enter the address of the Primary NRS. See Figure 85.

   — Enter the address of the Alternate NRS. See Figure 86.

- If **d** was entered in step 12:

   — Enter the address of the Primary NRS (optional).

— If you did enter the address of the Primary NRS, enter the address of the Alternate NRS (also optional).

The Gatekeeper configuration can be updated later using Element Manager. The IP telephony parameter configuration screen appears (Figure 105).

Figure 105
IP Telephony parameter configuration

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

You have entered the following parameters for this Leader SS :
(Press <a>-<l> to correct, <y> to proceed, <n> to reconfigure all.)

        Please enter:
<CR> -> <y> - Yes, these parameters are correct.
        <n> - Re-enter all of the parameters

        <a> - Node ID           I : 9
        <b> - Hostname            : CS1000E_PIV
        <c> - ELAN IP             : 192.167.102.4
        <d> - ELAN subnet mask    : 255.255.255.0
        <e> - ELAN gateway IP     : 192.167.102.1
        <f> - TLAN IP             : 192.167.103.2
        <g> - TLAN subnet mask    : 255.255.255.0
        <h> - TLAN gateway IP     : 192.167.103.1
        <i> - Node IP             : 192.167.103.3
        <j> - Call Server IP      : 192.167.102.3
              NRS configuration : Primary GK + SIP
        <k> - Primary NRS IP      : 192.167.103.2
        <l> - Alternate NRS IP  :

        Enter Choice>
```

12 Press <CR> or enter y to confirm all parameters entered, n to re-enter all parameters, or a letter **a** through **l** to change the value of the corresponding system parameter. The configuration screens for a Follower and Standalone Signaling Server - NRS are similar, showing the same list of parameters, specifically:

- The screen for the Follower Signaling Server displays only the value for the Hostname parameter; all other values are blank.

- The screen for the stand-alone Signaling Server displays values for the Hostname, ELAN network interface, TLAN network interface, and NRS parameters. The Node ID field is set to 0. The Call Server IP field is set to 0.0.0.0.

The following message is displayed:

```
For future reference, the ELAN MAC address is:
"00:02:b3:c5:51:c6".
```

Note: The ELAN network interface MAC address must be configured in the Element Manager node configuration web page.

The Install Tool Main Menu screen appears (Figure 106):

Figure 106
Install tool

```
CS 1000 Signaling Server Scftware 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 selectively change initial system parameters.
        <g> - To change board location information (CPPM only).
        <t> - To go to the Tools Menu.
        <q> - Quit.

        Enter Choice> q
```

13 Enter **q** to quit the Install Tool. Confirm to reboot the system. The Installation Tool quit confirmation screen appears (Figure 107).

Figure 107
Installation 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> q
```

14   Enter **q** to close/terminate the Installation Tool and reboot the Signaling
Server.

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

Adding a follower Signaling Server

After configuration and reboot, a Follower Signaling Server sends out
BOOTP requests and waits for a response. Since the Follower Signaling
Server is not yet configured in an IP Telephony node, there is no BOOTP
response. Do not wait for this response. Complete Procedure 20, "Adding a
Follower Signaling Server to an IP Telephony node," on .

Procedure 20
Adding a Follower Signaling Server to an IP Telephony node

Note: The first time the Follower Signaling Server is installed, it cannot obtain the system login and password, and does not have the current CONFIG.INI file with the Call Server IP address, therefore the FTP fails. In subsequent Follower installations, FTP succeeds.

1 Open the Web browser.

2 Enter the **Signaling Server Node IP address** in the Address Bar of the browser window and press Enter on the keyboard.

Note: The ELAN network interface IP address can be required, instead of the Node IP address, to access the Element Manager login Web page in secure environments.

3 The Element Manager **Login** Web page opens.

    a. Enter a valid **User ID** and **Password** combination.

        — A valid User Id and Password combination is one that is defined on the Call Server.

    The IP Address of the Call Server appears in the Call Server IP Address field.

    b. Click **Login**.

    The System Overview Web page appears.

4 Select **IP Network** > **Nodes: Servers**, **Media Cards** from the navigator. The Node Configuration web page opens, as shown in Figure 108.

Figure 108
Node Configuration web page
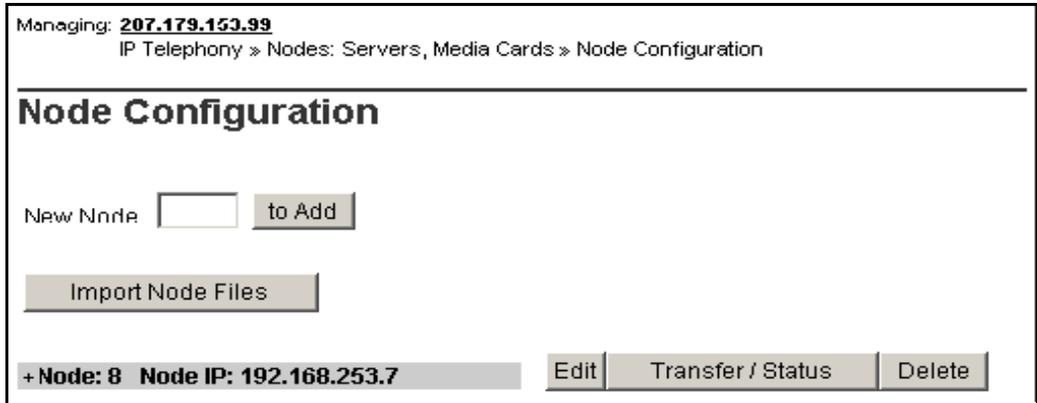
    5   Click Edit next to the node to which the Follower Signaling Server is to be
         added. The Edit web page opens, as shown in Figure 109.

Figure 109
Edit web page

Managing: **Navigation Sytem Name (192.167.102.3)**
System » IP Network » Node Configuration » IP Telephony: Node ID 9 » Edit

Edit

| Save and Transfer | Cancel |

− IP Telephony Node

Node ID 9

Telephony LAN (TLAN) Node IP address `192.167.103.3` *

Embedded LAN (ELAN) gateway IP address `192.167.102.1`

Embedded LAN (ELAN) subnet mask `255.255.255.0`

Voice LAN (TLAN) subnet mask `255.255.255.0`

+ VGW and IP phone codec profile

+ QoS

+ LAN configuration

+ SNTP

+ Virtual Trunk Network Health Monitor configuration

+ H323 GW Settings

+ Firmware

+ SIP GW Settings

+ SIP URI Map

+ SIP CD Services

+ SIP CTI Services

+ Cards | Add |

+ Signaling Servers | Add |

| Save and Transfer | Cancel |

Mandatory fields of current configuration

6 Click Add next to Signaling Servers.The section expands to show a list of Signaling Servers and a blank template for entering Signaling Server xxx.xxx.xxx.xxx properties, as shown in Figure 110.

Figure 110
Signaling Server properties template

7   Enter the information corresponding to the Follower Signaling Server. The Role field will automatically revert to Follower once the Follower Signaling Server has been added.

8 Click Save and Transfer to transfer the updated IP Telephony node information to the other elements of the node. Refer to Transferring IP Telephony files, and *IP Line: Description, Installation, and Operation* (NN43001-500) for detailed instructions on transferring IP Telephony node information.

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

Unpacking Help files for Virtual Terminal Emulator

Help files for the Virtual Terminal Emulator (VTE) component of Element Manager are copied to the Signaling Server as compressed files during installation of the Signaling Server software.

Unpacking the Help files is optional. However, they can be unpacked at any time after the Signaling Server software is installed. To unpack the files, refer to *Signaling Server: Installation and Commissioning* (NN43001-312).

IMPORTANT!

Unpacking the Help files takes approximately 20 to 30 minutes. Nortel recommends that you unpack the files during a service outage.

Refer to *Element Manager: System Administration* (NN43001-632) for more information on Element Manager and the Virtual Terminal Emulator.

Logging in to the Signaling Server

Use Procedure 21 on to log in to the vxWorks^{TM} shell to access the Signaling Server from a maintenance terminal.

Procedure 21
Logging in to the Signaling Server

Before you begin, make sure the DTE–DTE null modem cable (supplied with the Signaling Server) runs between the serial port on the back of the Signaling Server and the maintenance terminal.

1 Make sure the Signaling Server is powered up and connected to the maintenance terminal. Refer to *Signaling Server: Installation and Commissioning* (NN43001-312).

The Signaling Server must boot successfully before the user can log in.

2 Press <CR> to invoke the login prompt.

3 Enter the login credentials by doing one of the following:.

- If the Signaling Server has connected to the Call Server (the startup messages indicate if the PBX link is up), use the PWD1 login to access the Signaling Server.

- If the Signaling Server is not connected to the Call Server:

  a. Enter the default Signaling Server Command Line Interface (CLI) login **admin.**

  b. Enter the Signaling Server Command Line Interface (CLI) password.

  - If this Signaling Server has just been installed and you are logging in for the first time, enter the default password **cseadmin.**

    The system immediately prompts you to change the default password.

  - If this is not the first login to the Signaling Server, enter the appropriate password.

    If you have forgotten the password, reset it from the Tools Menu (see *Signaling Server: Installation and Commissioning* (NN43001-312)).

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

To log out of the Signaling Server, enter **exit** at the command line.

Verifying a successful configuration

To ensure that the Signaling Server Ethernet connections (for the ELAN and TLAN subnets) are configured correctly, perform a ping test to one or more of the other devices connected to the network, particularly the Call Server.

Procedure 22
Verifying the Signaling Server Ethernet connection

1   Log in to the Signaling Server, using Procedure 21 on .

2   Ping the IP address of the Signaling Server. Enter the command:

   `ping x.x.x.x`

   Where `x.x.x.x` is the Signaling Server ELAN network interface IP address.

3   Ping the IP address of the Call Server. Enter the command:

   `ping x.x.x.x,3`

   Where `x.x.x.x` is the Call Server ELAN network interface IP address.

4   If desired, repeat step 3 for other devices connected to the network.

——————— **End of Procedure** ———————

Testing the Leader Signaling Server

Configure two IP Phones to register to the Signaling Server on its temporary node. These IP Phones must be provisioned on the Call Server. Refer to *Communication Server 1000E: Installation and Commissioning* (NN43041-310), *Communication Server 1000M and Meridian 1: Large System Installation and Commissioning* (NN43021-310), or *Communication Server 1000M and Meridian 1: Small System Installation and Configuration* (NN43011-310) for the procedure appropriate to the system. After provisioning, the telephones can call each other.

Configuring the IPMG

Contents

This section contains information on the following topics:

Configuring the IPMG in Element Manager

Procedure 23 on describes how to configure the IPMG in Element Manager (for instructions on logging in to Element Manager, refer to steps 1 - 3 in Procedure 20 on).

Procedure 23
Configuring the IPMG (Element Manager)

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

Figure 111
Add IPMG

2   The preceding screen appears (see Figure 111). 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 112 on):

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 112
IPMG MGC configuration
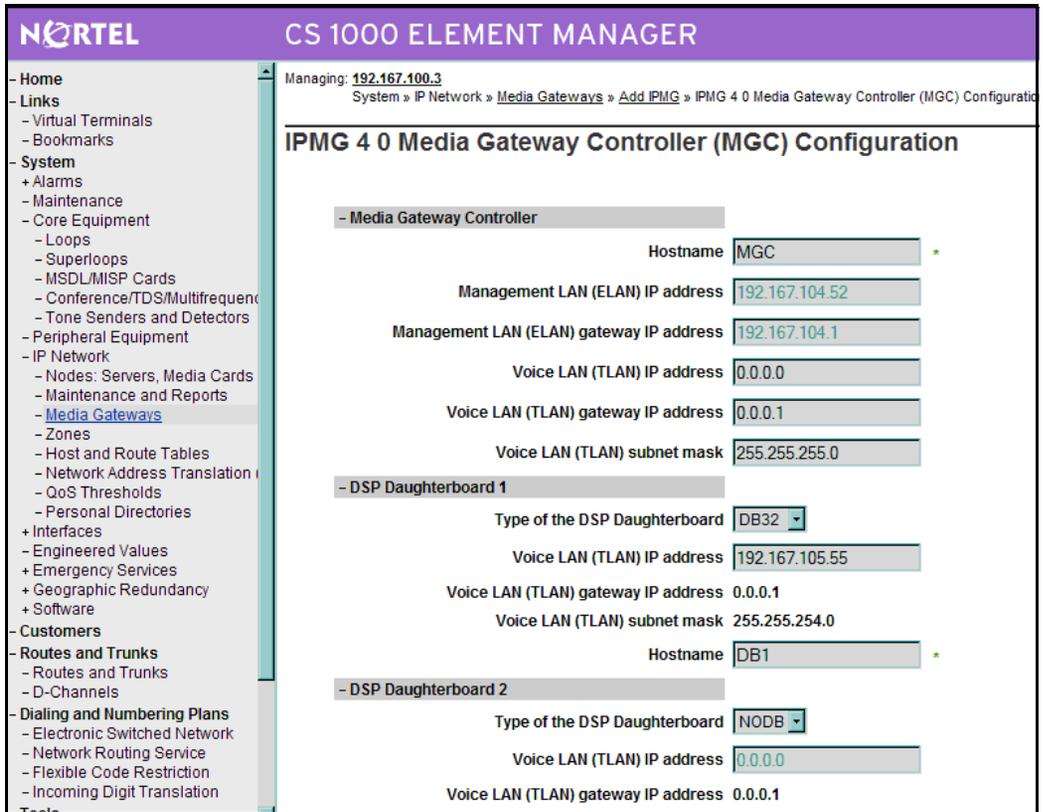
4   Once configuration of the MGC is complete, click **Add**. The following
     screen appears (see Figure 113 on page 194):

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 113
Media Gateways
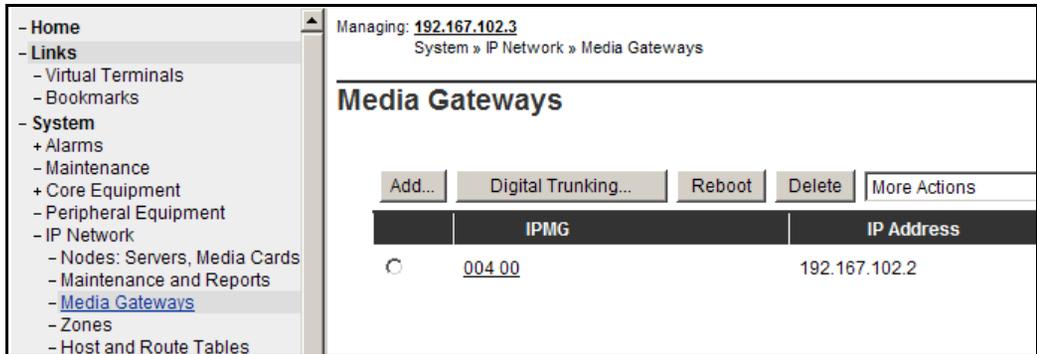
The following screen appears (see Figure 114):

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 114
Add VGW channels
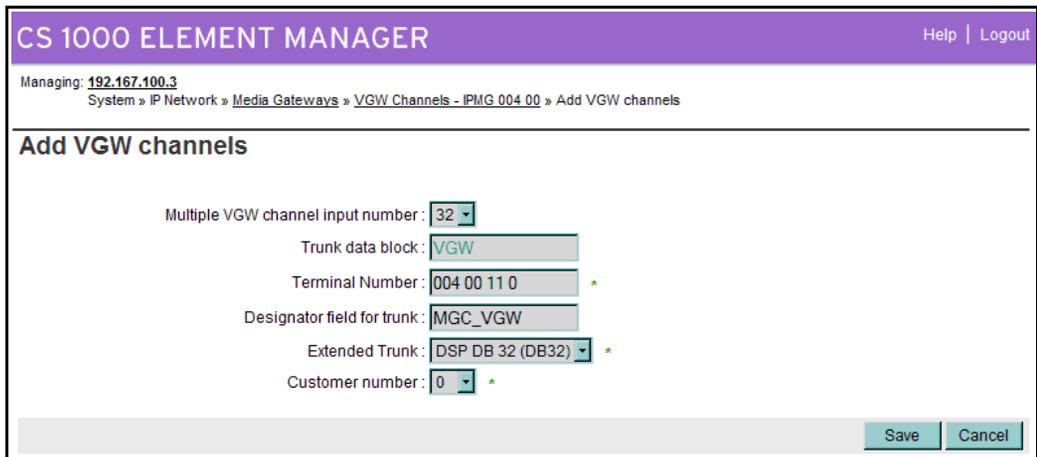
The following screen appears (Figure 115):

The MGC has been added to the list.

Figure 115
VGW Channels - IPMG

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

Configuring conference TDS

Procedure 24 on describes how to configure conference TDS for an IPMG using the CLI. To configure conference TDS for IPMG using Element Manager see Procedure 25 on .

Procedure 24
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 25 describes how to configure conference TDS for IPMG using Element Manager.

Procedure 25
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 116). Click the **Loops** button.

Figure 116
Media Gateway configuration

The loop configuration page appears.

3   From the drop down menu (see Figure 117 on), select **TDS** to add a TDS loop.

Figure 117
Loop configuration

The TDS loop configuration page appears (see Figure 118).

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

Figure 118
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 119
Confirmation

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

The updated loop configuration page appears (see Figure 120). The new Conference loop is displayed.

Figure 120
Loop configuration (updated)

——————— **End of Procedure** ———————

Configuring DSP Daughterboard Voice gateway channels

Procedure 26 describes how to configure DSP Daughterboard Voice gateway channels using the CLI. To configure DSP Daughterboard Voice gateway channels using Element Manager see Procedure 25 on .

Procedure 26
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

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 behaves in the same manner as the Release 4.5 CP II or CP IV (for example, it uses the HSP to try to detect the presence of the other core). If the other core is detected, then both cores negotiate to determine which 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 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 and the HSP ports on both cores are connected.

Campus Redundancy with co-located Call Servers

Figure 121 on 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 121
Campus Redundancy with CP PM call servers co-located
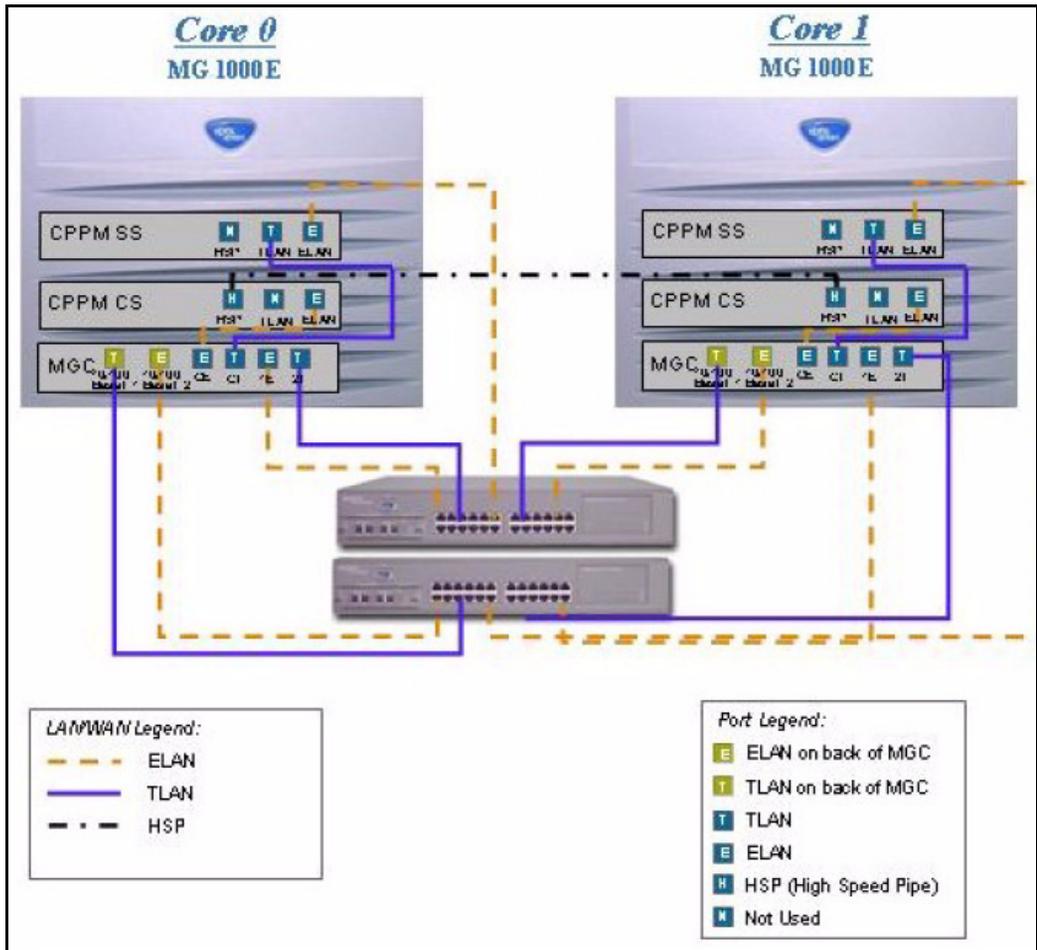
As the main cabinet has already been built in previous chapters, the steps required to upgrade to an HA system are:

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)

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 17 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 17
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 17
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 18 and 19 describe the service classifications.

Table 18
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 19
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 seriously affects 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 20 before you call for service.

Table 20
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 18 and 19)	
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 27 to download software from the Nortel Software Download web site

Procedure 27
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

Option 11C Cabinet to Communication Server 1000E

To provide feedback or report a problem in this document, go to www.nortel.com/documentfeedback.

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