Nortel Communication Server 1000
Nortel Communication Server 1000 Release 6.0

Communication Server 1000E Upgrade

Hardware Upgrade Procedures

Document Number: NN43041-464
Document Release: 03.06
Date: October 2009

Contents

List of Procedures

New in this release

Features

The SIP Line (SIPL) feature is new in Communication Server 1000 Release 6.0. SIPL contains three software components. SIPL package 417 runs on the Call Server. SIP Line Gateway (SLG), and SIP Management Service (SMS) are Signaling Server applications that run on a dedicated CP PM or COTS Signaling Server.

Communication Server 1000 Release 6.0 introduces a CP PM Coresident Call Server and Signaling Server which is capable of running the Call Server, Signaling Server, and System Management software together on the same hardware platform.

The Media Gateway 1010 (MG 1010) is a new rack mount Media Gateway chassis that provides a larger amount of card slots than a MG 1000E with Media Gateway Expander. The MG 1010 provides 1 dedicated MGC slot, 2 dedicated CP card slots, and ten IPE card slots. The MG 1010 also includes a Media Gateway Utility (MGU) card.

Revision history

October 2009

Standard 03.06. This document is upissued to include Media Gateway Extended Peripheral Equipment Controller (MG XPEC) card content.

September 2009

Standard 03.05. This document is upissued to include Media Gateway 1010 content.

June 2009

Standard 03.04. This document is upissued to include updates for CP PM BIOS upgrades, CP PM Coresident Call Server and Signaling Server, and MGC setup.

May 2009

Standard 03.03. This document is upissued to include task flow graphics for upgrades to Communication Server 1000 Release 6.0.

May 2009

Standard 03.02. This document is upissued to include clarifications for upgrades to Communication Server 1000 Release 6.0.

May 2009

Standard 03.01. This document is issued for Communication Server 1000 Release 6.0.

January 2009

Standard 02.09. This document is upissued to add technical content in the Upgrading small system hardware chapter.

October 2008

Standard 02.08. This document is upissued to add technical content in the Overview and Review prerequisites checklist chapters.

August 2008

Standard 02.07. This document is upissued to give reference to the Communication Server 1000E Software Upgrades document.

August 2008

Standard 02.06. This document is upissued to include the PLM inputs to support Communication Server 1000E hardware upgrade Release 5.5.

May 2008

Draft 02.05. This document is upissued to include lab trial information.

April 2008

Draft 02.04. This document is upissued to include lab trial information.

March 2008

Standard 02.03. This document is upissued to include Conversion and Mapping information.

February 2008

Standard 02.02. This document is upissued to support Communication Server 1000 Release 5.5.

December 2007

Standard 02.01. This document is upissued to support Communication Server 1000 Release 5.5. This document contains the hardware upgrade information previously contained in the following Release 5.0 documents:

- *Communication Server 1000E Upgrade Procedures* (NN43041-458)
- *Option 11C Cabinet (TDM) to Communication Server 1000E Upgrade Procedures* (NN43041-464)
- *Option 11C Chassis (TDM) to Communication Server 1000E Upgrade Procedures* (NN43041-465)
- *Communication Server 1000M Cabinet to Communication Server 1000E Upgrade Procedures* (NN43041-466)
- *Communication Server 1000M Chassis to Communication Server 1000E Upgrade Procedures* (NN43041-467)
- *Communication Server 1000S to Communication Server 1000E Upgrade Procedures* (NN43041-470)

For Release 5.5, software upgrade information is covered in *Communication Server 1000E Software Upgrades* (NN43041-458).

July 2007

Standard 01.05. This document is upissued to support Communication Server 1000 Release 5.0.

July 2007

Standard 01.04. This document is upissued to address the following CRs:

- Q01598009
- Q01639378
- Q01650913-01

- Q01649647
- Q01668243-01
- Q01646098

June 2007

Standard 01.03. This document is upissued to address CR Q01652825.

May 2007

Standard 01.02. This document is upissued 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 upissued to support Communication Server 1000 Release 4.5.

September 2004

Standard 2.00. This document is upissued 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).)

System Information

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

Subject

Communication Server 1000E Hardware Upgrade Procedures (NN43041-464) describes the process required to upgrade the hardware for an existing (Release 5.5 or earlier) Option 11C or Communication Server 1000 system to a Communication Server 1000E Release 6.0 system.

This guide does not describe how to add equipment (such as additional cabinets or line cards) to the system. See *Communication Server 1000E Installation and Commissioning* (NN43041-310) when the upgrade requires installing equipment (such as another cabinet expander at a remote site). Also see the site and system planning information in *Communication Server 1000E Planning and Engineering* (NN43041-220).

Note on legacy products and releases

This NTP contains information about systems, components, and features that are compatible with Nortel Communication Server 1000 Release 6.0 software. For more information about 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 Communication Server 1000E (CS 1000E) system.

Intended audience

This document is intended for individuals who upgrade and expand existing Communication Server 1000 systems.

Conventions

Terminology

In this document, the Communication Server 1000E system is referred to generically as system.

The following systems are referred to generically as Small system:

- Meridian 1 Option 11C Cabinet
- Meridian 1 Option 11C Chassis
- Communication Server 1000S (CS 1000S)

In this document, the Media Gateway 1000E (MG 1000E) and Media Gateway 1010 (MG 1010) are referred to generically as Media Gateway.

The following systems are referred to generically as Media Gateway:

- Meridian 1 Option 11C mini chassis (NTDK91) and Expander chassis (NTDK92)
- Meridian 1 Option 11C cabinet (NTAK11)
- MG 1000E chassis (NTDU14) and Expander chassis (NTDU15)
- MG 1010 chassis (NTC310)
- IPE module (NT8D37) with MG XPEC card (NTDW20)

Related information

This section lists information sources that relate to this document.

NTPs

This document references the following publications:

- *Features and Services* (NN43001-106)
- *Signaling Server IP Line Applications Fundamentals* (NN43001-125)
- *Network Routing Service Fundamentals* (NN43001-130)
- *Converging the Data Network with VoIP* (NN43001-260)
- *Circuit Card: Description and Installation* (NN43001-311)
- *IP Peer Networking Installation and Commissioning* (NN43001-313)
- *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315)
- *Element Manager: System Administration* (NN43001-332)
- *Telephony Manager 4.0 Installation and Commissioning* (NN43050-300)
- *Telephony Manager 4.0 System Administration* (NN43050-601)
- *CP PM Co-resident Call Server and Signaling Server Fundamentals* (NN43001-509)
- *Software Input/Output: Administration* (NN43001-611)
- *Element Manager: System Administration* (NN43001-632)
- *Software Input/Output: Maintenance* (NN43001-711)
- *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 Software Upgrades* (NN43041-458)

Online

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

www.nortel.com

CD-ROM

To obtain Nortel documentation on CD-ROM (NTLH91XX), 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 chapter contains the following topics:

Introduction

This guide describes how to perform a hardware upgrade from

- an existing small system to a CS 1000E system
- a Call Processor Pentium II (CP PII) platform to a Call Processor Pentium IV (CP PIV) platform

- a Call Processor Pentium II (CP PII) platform or a Call Processor Pentium IV (CP PIV) platform to a Common Processor Pentium Mobile (CP PM) platform.

The basic steps to upgrade hardware from CS1000 Release 5.5 to Communication Server 1000 Release 6.0 requires the following components:

- Supported Communication Server 1000 Release 6.0 Call Server hardware (CP PIV, CP PM).
- Commercial-off-the-Shelf (COTS) or CP PM Signaling Server installations or upgrades.
- Dedicated COTS or CP PM Signaling Server required for SIP Line software deployment and installation. For more information, see *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Communication Server 1000E Software Upgrades (NN43041-458) describes the installation and upgrade of Release 6.0 software.

Note: For your convenience, this document contains the procedures you require to back up the system database prior to the hardware upgrade.

Communication Server 1000 task flow

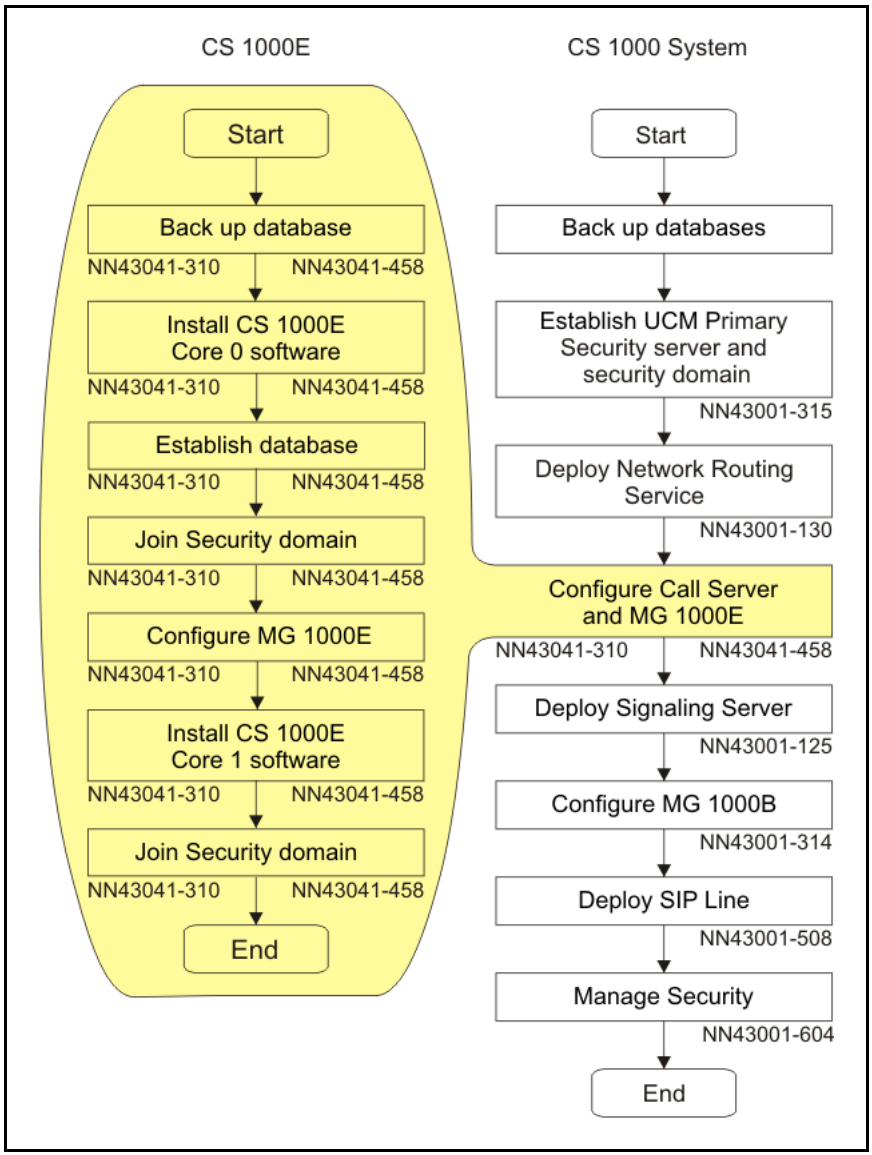
This section provides a high-level task flow for the installation or upgrade of a Communication Server 1000 system. The task flow indicates the recommended sequence of events to follow when configuring a system and provides the NTP number that contains the detailed procedures required for the task.

For more information refer to the following NTPs, which are referenced in Figure 1 on page 26:

- *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315)

- *Communication Server 1000E Installation and Commissioning* (NN43041-310)
- *Communication Server 1000E Software Upgrade Procedures* (NN43041-458)

Figure 1
Communication Server 1000E task flow



References in preparation for an upgrade

Communication Server 1000E Planning and Engineering (NN43041-220) and *Converging the Data Network with VoIP* (NN43001-260) describe network planning.

Signaling Server IP Line Applications Fundamentals (NN43001-125) and *IP Phones Fundamentals* (NN43001-368) describe installing, configuring, and managing Voice Gateway Media Cards and IP Phones.

Communication Server 1000E Installation and Commissioning (NN43041-310) describes installing and configuring components. *IP Peer Networking Installation and Commissioning* (NN43001-313), *Network Routing Service Fundamentals* (NN43001-130), and *Communication Server 1000E Overview* (NN43041-110) describe virtual trunking and the Network Routing Service (NRS).

For all other upgrade tasks, see “Related information” on page 19.

Communication Server 1000 hardware

Communication Server 1000 Release 5.0 introduced the following hardware for the CS 1000E system.

Media Gateway Controller Card (MGC)

Note: The NTDW60 MGC card replaces the Small System Controller (SSC) in the CPU card position (card 0) as well as the SSC as media gateway in the expansion cabinets . The NTDW98 MGC card is functionally identical to the NTDW60, but contains a metal faceplate for enhanced EMC containment. Nortel recommends you use a NTDW98 MGC card in the Media Gateway 1010 (MG 1010).

The MGC features include:

- Signaling and switching
- Conference and Tones
- Three remote SDI ports (NTDK48K) - MG 1000E only

- Internal RMD slot
- Six external ethernet switch ports
- DTRs and Multi Frequency controllers
- MGC 100BT Adapter (NTDW63AAE5)—Cabinets only

DSP Daughterboards (optional)

Two optional DSP Daughterboards are available for the MGC, the NTDW62AA 32-port DSP daughterboard and the NTDW64AA 96-port DSP daughterboard. These daughterboards provide DSP resources to connect IP and TDM devices. Communication Server 1000E supports Voice Gateway Media Cards for additional DSP resources.

Common Processor Pentium Mobile (CP PM) Call Server

The Communication Server 1000E system features single or dual Communication Server 1000E NTDW61 CP PM Core Call Servers (0 and 1). The NTDW99 CP PM card is functionally identical to the NTDW61, but contains a metal faceplate for enhanced EMC containment. Nortel recommends you use a NTDW99 CP PM card in the MG 1010. 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 (FMD) on the card and (2) a hot swappable removable media disk (RMD) accessible on the faceplate

  Note: The hardware shipped by Nortel includes three compact flash cards: the FMD (1 GB), the Software installation RMD (512 MB), and Backup RMD (128 MB).

- DDR RAM expandable up to 2 GB
- Support for up to 50 Media Gateways
- Three Ethernet ports

- Two NTAK19ECE6 serial data interface ports (one for maintenance and one for a modem).
- One USB port.
- Security device

CP PM Signaling Server

You can use CP PM hardware as a platform for the Communication Server 1000 Signaling Server. For more information, see “Coresident Call Server and Signaling Server” on page 45 and “Installing a CP PM or COTS server” on page 169.

Estimating installation time

When all equipment and software is available, Nortel recommends that you plan a 2- to 4-hour period in which to perform the hardware upgrade. Service interruptions can occur during this period. Software upgrades and network modifications require significantly more time beyond that of a hardware upgrade. You can perform network modifications after you preform a stand-alone configuration upgrade. Network modifications do not require the interruption of call processing. For more information, see *IP Peer Networking Installation and Commissioning* (NN43001-313) and *Network Routing Service Fundamentals* (NN43001-130).

System expansions and additional installations require additional time. For more information, see *Communication Server 1000E Installation and Commissioning* (NN43041-310).

Upgrade and installation times depend on the following criteria:

- number and availability of technicians
- familiarity with CS 1000E
- physical location of hardware components
- amount of hardware you replace or upgrade
- access to the external Domain Name System (DNS) servers to resolve Fully Qualified Domain Names (FQDN)

- access to the upgrade media (DVD or Compact Flash)
- network capable of routing between ELAN and TLAN networks
- interoperability products (Contact Center, TM, CallPilot, Symposium (5.0), OCS, HMS400, MCS 5100, NMC5.0/MAS 5.1)

Administration tools

Element Manager

Element Manager (EM) is an optional software component you can deploy on a Signaling Server. You must configure at least one Signaling Server with EM to allow for system management. You can access EM from the Unified Communications Management (UCM) centralized management server.

EM 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 EM to hide or show information helps you to focus on specific information, avoiding the distraction of multiple parameters.

EM reduces configuration errors by providing a full text description of each parameter and acronym. EM also reduces errors by simplifying parameter value selection by using preselected default values and 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, 87, and 90).
- **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 deactiveate patches for the Call Server and Voice Gateway Media Cards. Communication Server 1000 Release 6.0 Linux based components use UCM centralized patching.
- **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), *System Management* (NN43001-600), and *Element Manager: System Administration* (NN43001-632).

Telephony Manager 4.0 (TM 4.0)

You can use the TM 4.0 application to manage a network-wide view of most telephony equipment. Network management tools allow network-level views and navigation of elements within the network. You can add MG 1000B platforms to a network with the TM System Properties Network tab. For more information about TM, see *Telephony Manager 4.0 System Administration* (NN43050-601).

Web-based management tools

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

- Support for element-level configuration and maintenance.
- Support for network-wide functions.
- Support for web-based station administration.

Network-level tools

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

For more information, see *Telephony Manager 4.0 Installation and Commissioning* (NN43050-300) or *Communication Server 1000E Overview* (NN43041-110). For more information about retrieving Call Detail Recording records, see *Communication Server 1000E Installation and Commissioning* (NN43041-310).

Conversion and mapping information

The following information is required for the database conversion as part of the Release 6.0 software installation.

Option 11C Cabinet or Chassis to Media Gateway mapping

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

Table 1
SIPE cabinet/chassis to IPMG conversion

Cabinet/Chassis	Media Gateway
Main	000 0
Expansion Cabinet/Chassis 1	000 1
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 Communication Server 1000E TNs (large system TNs). The conversion feature maps the SIPE TNs to CS1000E TNs on the Media Gateways.

IP phone TN mapping

When you convert from small systems (Option 11C, MG1000B, Communication Server 1000M or Communication Server 1000S) to a Communication Server 1000E CP PM system, the slot and unit number maps 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 Phones do NOT require reprogramming with a new TN.

Table 2
IP phone TN mapping

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

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

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

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

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

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

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

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

Communication Server 1000S/M		Communication Server 1000E CP PM			
Slot	**Unit**	**Superloop**	**Shelf**	**Card**	**Unit**
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
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)

Communication Server 1000S/M		Communication Server 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
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

Table 4
Digital trunk mapping (Part 2 of 3)

Communication Server 1000S/M		Communication Server 1000E CP PM				
Slot	**Channel**	**Digital Loop**	**Channel**	**Superloop**	**Shelf**	**Card**
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
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

Table 4
Digital trunk mapping (Part 3 of 3)

Communication Server 1000S/M		Communication Server 1000E CP PM				
Slot	**Channel**	**Digital Loop**	**Channel**	**Superloop**	**Shelf**	**Card**
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 Communication Server 1000 small systems, the system uses them internally and they appear in the database. You must convert the contents of the XNET blocks 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 0	1
	2	MGC	000 0	2
Expansion 1	0	MGC	000 1	0
	1	MGC	000 1	1
	2	MGC	000 1	2
Expansion 2	0	MGC	004 0	0
	1	MGC	004 0	1
	2	MGC	004 0	2
Expansion 3	0	MGC	004 1	0
	1	MGC	004 1	1
	2	MGC	004 1	2
Expansion 4	0	MGC	008 0	0
	1	MGC	008 0	1
	2	MGC	008 0	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 Media Gateways (see Table 6 on page 41).

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

Communication Server 1000S/M		Communication Server 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 Media Gateway as shown in Table 7.

Table 7
Conference and Tone Generator conversion

Media Gateway	MG TDS	MG CONF
000 0	124	125
001 0	126	127
004 0	128	129
004 1	130	131
008 0	132	133

Media Gateway Configuration

The IP address for each Media Gateway 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 Media Gateway 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 Media Gateways

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 Media Gateway where the media card is located. DSP resources are required in all Media 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 introduced package 410 to enable and disable the Campus Redundancy or High Availability (HA) feature. For more information, see “Appendix A: Upgrading to High Availability” on page 197.

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 CP IV (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 IV.

The Database Media Converter Tool is a Windows application for copying database files from floppy disks to Compact Flash (CF) cards. This CP PM call server application supports only databases converted from CP PII.

> ***Note:*** You do not require this tool is not required for saved database files from a CP IV call server. The database file from a CP IV is already stored on a CF card, and you can directly insert it into the CP PM call server faceplate during software installation.

Coresident Call Server and Signaling Server

Contents

This chapter contains the following topics:

Overview

A Communication Server 1000 system consists of two major functional components, a Call Server and a Signaling Server. These two components have historically been running on separate Intel Pentium processor-based hardware platforms operating under the VxWorks Operating System.

Communication Server 1000 Release 6.0 introduces a CP PM Coresident Call Server and Signaling Server which can run the Call Server software, Signaling Server software, and System Management software on the same hardware platform operating under the Linux Base Operating System. For Communication Server 1000 Release 6.0, the only supported hardware platform for the Coresident Call Server and Signaling Server is the Common Processor Pentium Mobile (CP PM) platform.

The Coresident Call Server and Signaling Server provides a cost effective solution for Communication Server 1000 system installations that do not require a high user capacity or the need for a redundant Call Server.

This chapter provides a high level overview only. For more information about Coresident Call Server and Signaling Server, see *CP PM Co-resident Call Server and Signaling Server Fundamentals (*NN43001-509).

Supported configurations

You can deploy the CP PM Coresident Call Server and Signaling Server in the following configurations:

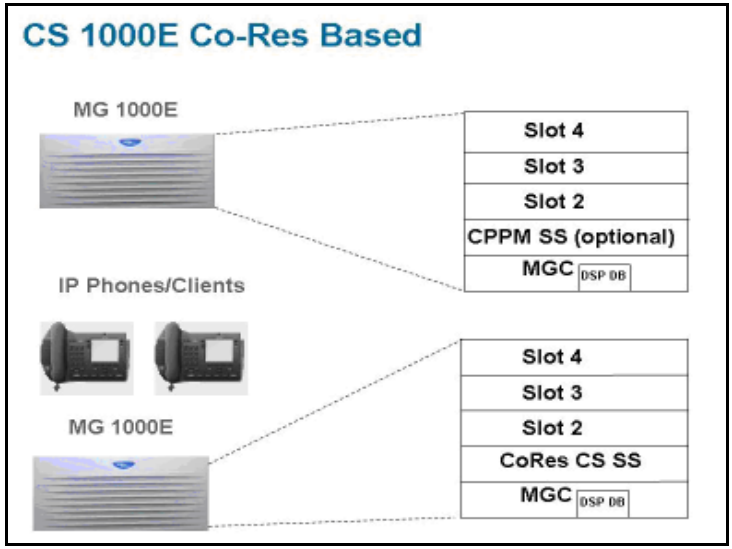
- Communication Server 1000E
- Branch Office Media Gateway
- Survivable Media Gateway
- Communication Server 1000E TDM

The Coresident Call Server and Signaling Server can be deployed either as a Main Office or Branch Office. For information about CS 1000E capacity limitations, see *Communication Server 1000E Planning and Engineering* (NN43041-220)

CP PM Coresident Call Server and Signaling Server based Communication Server 1000E system

Figure 2 on page 47 shows an example of a typical Communication Server 1000E system with a Coresident Call Server and Signaling Server. The MG 1000Es is shown, however you can use an MG 1010 which provides slots for one MGC, two CP PM, and ten IPE cards in one chassis.

Figure 2: CS1000E CP PM Coresident Call Server and Signaling Server

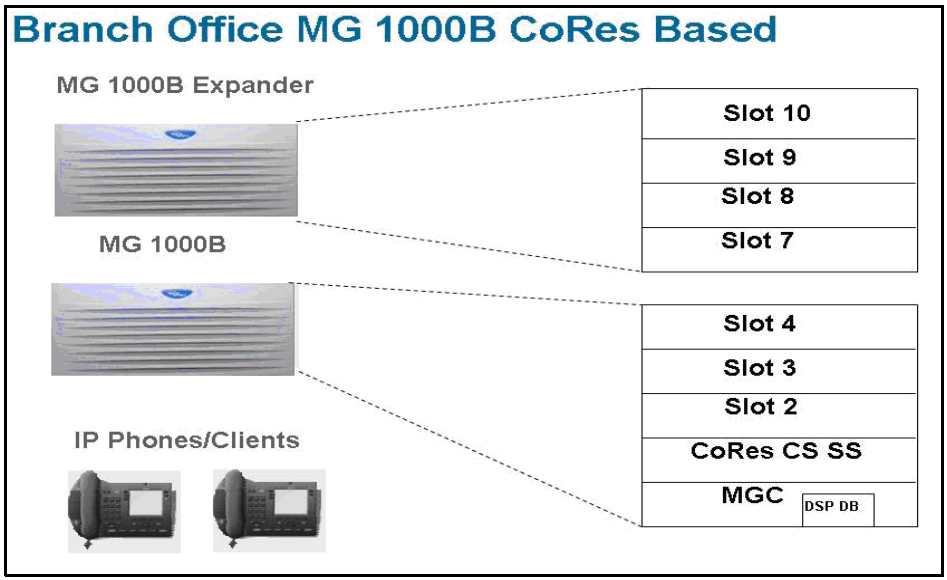


For information about adding an optional second Signaling Server to a CP PM CoRes CS and SS as shown, see *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315)

CP PM Coresident Call Server and Signaling Server based Branch Office Media Gateway

Figure 3 on page 48 shows an example of a Communication Server 1000 CP PM CoRes CS and SS based Branch Office Media Gateway (MG 1000B) system.

Figure 3: MG 1000B CP PM Coresident Call Server and Signaling Server



Communication Server 1000E TDM

Communication Server 1000 Release 6.0 supports a TDM only version of the CP PM CoRes CS and SS system. The CS 1000E TDM system has the following capacity limitations:

- 720 combined TDM users (Analog, Digital, CLASS, DECT users, including installed plus add-on)
- 5 Media Gateways
- 16 PRI cards
- 200 ACD Agents
- 0 IP Phones (no UNIStim, no SIP Line, no SIP DECT)
- 0 Virtual Trunks

The CS 1000E TDM system does not support NRS.

CP PM Coresident Call Server and Signaling Server upgrade paths

The following upgrade paths are supported for Communication Server 1000 systems.

- CS 1000 Release 5.5 or earlier Communication Server 1000E Call Server with Standard Availability (SA) to a Communication Server 1000 Release 6.0 CP PM Coresident Call Server and Signaling Server

If you upgrade from a non-CP PM based Communication Server 1000E Call Server, you must replace your existing Call Server with a CP PM card and upgrade the software.

- CS 1000 Release 5.5 or earlier Communication Server 1000E Signaling Server to Communication Server 1000 Release 6.0 CP PM Coresident Call Server and Signaling Server
- Option 11C, CS 1000M, or CS 1000S Call Server to Communication Server 1000 Release 6.0 CP PM Coresident Call Server and Signaling Server
- Option 11C Call Server to Communication Server 1000 Release 6.0 CS 1000E TDM.

The minimum CS 1000 Release for Small System migration to a CP PM Coresident Call Server and Signaling Server is Release 23.10

Hardware

The Coresident Call Server and Signaling Server runs on the same CP PM hardware platform introduced in Communication Server 1000 Release 5.0, however the software changes from VxWorks to Linux. The CP PM card requires BIOS version 18 or later, 2 GB memory, and a 40 GB hard drive to support the Coresident Call Server and Signaling Server.

CP PM Media Storage

The CP PM card on a new CP PM Coresident Call Server and Signaling Server ships with a 40 GB internal Fixed Media Drive (FMD). You must ensure switch S5 on the CP PM card is in position 2 to enable the system to boot from the hard drive FMD. Switch S5 in position 1 configures the CP PM card to boot from an internal Compact Flash (CF) FMD.

The CP PM card supports two types of Removable Media Drives (RMD)

- CF card, supports the installation of Linux Base and Linux applications
- USB memory stick device, supports the installation of Linux applications (cannot use to install Linux Base)

For Linux Base and Linux application software installations, the minimum size supported for the RMD is 1 GB. For more information about supported media for Coresident Call Server and Signaling Server installations, see *Linux Platform Base and Applications Installation and Commissioning (NN43001-315)*.

Software

The CP PM Coresident Call Server and Signaling Server does not directly support SIP Line Gateway and SIP DECT. You must provision an additional Signaling Server for this software.

The CP PM Coresident Call Server and Signaling Server supports the following software applications

- Linux Call Server
- Line Telephony Proxy Server (LTPS)
- Unicode Name Directory (UND)
- SSG including H.323 Gateway and SIP Gateway
- Failsafe SIP Proxy service, Gatekeeper
- Personal Directory (PD)
- Network Routing Service (NRS)

— You can configure the NRS as a Primary, however you can only configure NRS as a Secondary if the Primary is also running on a CP PM Coresident Call Server and Signaling Server.

— The CP PM Coresident Call Server and Signaling Server does not support a Secondary or backup NRS to a higher capacity Primary NRS due to the small disk size and low call rates on a CP PM Coresident Call Server and Signaling Server system.

- Element Manager (EM)
- Unified Communications Management (UCM) Primary security server in limited deployment. For more information about UCM Primary security server procedures, see *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

The listed applications are bundled into predetermined CP PM Coresident Call Server and Signaling Server options that you can install using the Deployment Manager Web-based Graphical User Interface (GUI) as follows.

- Call Server and Signaling Server (basic stand-alone CP PM Coresident Call Server and Signaling Server).
- Call Server and Signaling Server with NRS (CP PM Coresident Call Server and Signaling Server with Branch Office support).

A separate CP PM or COTS server can support SIP Line Gateway for SIP Phones.

High Availability (HA) support

The CP PM Coresident Call Server and Signaling Server does not support a HA configuration (dual core with active/inactive role). For systems requiring HA configuration, you must deploy a VxWorks-based Call Server .

For more information about Coresident Call Server and Signaling Server, see *CP PM Co-resident Call Server and Signaling Server Fundamentals (NN43001-509).*

IP Telephony Node Manager

This management interface includes the configuration and enabling of Signaling Server application services such as UNIStim, LTPS, SIP Gateway, H.323 Gateway, and SIP Line.

For more information about IP Telephony Node Manager, see *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Review Prerequisites Checklist

Contents

This chapter contains the following topics:

Planning the upgrade

Planning for an upgrade involves the following tasks:

- Review existing 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.
- Determine if additional ELAN and TLAN network connections are required to allow for additional MGC cards.
- Perform an inventory on required software and hardware.

Things to know

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.

Note: Communication Server 1000T is not supported post Communication Server 1000 Release 5.0. For more information, see *Communication Server 1000E Software Upgrades* (NN43041-458).

Check required hardware

Table 8 lists the hardware required for the upgrade.

Table 8
Hardware requirements

Order number	Description	Quantity in each Media Gateway
NT4N39	Common Processor Pentium IV (CP PIV) Call Server	Depends on configuration
NTDW61 NTDW99	Common Processor Pentium Mobile (CP PM) Call Server (Figure 4 on page 57)	Depends on configuration

Table 8
Hardware requirements

Order number	Description	Quantity in each Media Gateway
NTDW60 NTDW98	Media Gateway Controller (Figure 5 on page 58)	1
NTDW62AAE5 (32 Port) NTDW64AAE5 (96 Port)	DSP Daughterboard (Figure 6 on page 59)	Depends on configuration
CAT5 cable	For ELAN and TLAN connections	2 or 4
NTAK19EC	2-port SDI cable	1 for MG 1000E 1 for CP PM cards in slots 1-10 of a MG 1010
NTBK48AA	3-port SDI cable	1 for MG 1000E Not required for MG 1010
NTC325AAE6	MG 1010 serial cable kit	1 for MG 1010

Note: A TLAN IP address is needed for each DSP Daughterboard.

Note: A customer supplied straight through DB25 to DB25 female to female adapter is required to connect a PC to the NTAK19EC cable.

Note: A customer supplied straight through shielded CAT5 Ethernet cable is required to connect a NTC325AAE6 serial cable kit.

Figure 4
NTDW61 CP PM card

Figure 5
NTDW60 MGC card

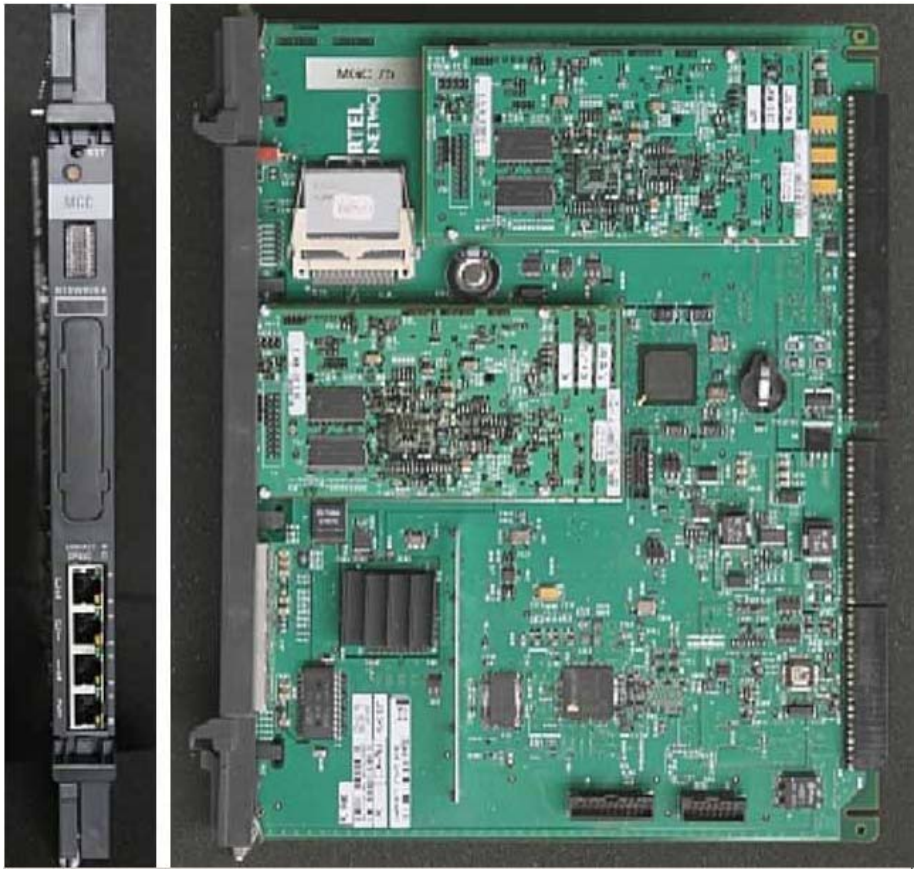
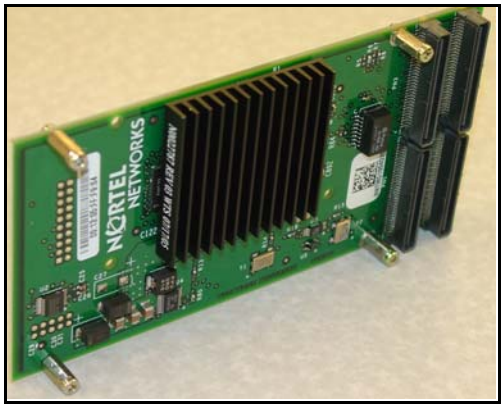


Figure 6
DSP daughterboard



Readiness checklist

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

Table 9
Upgrade readiness checklist (Part 1 of 4)

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)? ***Note:*** If another card is removed to open up a slot for the CP PM card, it is recommended that all configuration for that slot be removed prior to an upgrade from a small to a large system.	

Table 9
Upgrade readiness checklist (Part 2 of 4)

Action	✓
Cables: • CAT5 cables (for ELAN and TLAN connections) • NTAK19EC 2-port SDI cable for MG 1000E, and CP PM cards in slots 1-10 of a MG 1010. • Customer supplied straight through DB25 to DB25 female adapter to connect the NTAK19EC cable to a PC. • NTBK48AA 3-port SDI cable for MG 1000E • NTC325AAE6 serial cable kit for MG 1010. • Customer supplied straight through shielded CAT5 Ethernet cable to connect the NTC325AAE6 serial cable kit. ***Note:*** To connect a terminal to the CP PM card with a NTAK19EC cable, complete the following steps: • Connect the NTAK19EC cable (shipped with the NTDW61 CP PM Signaling Server) to the 50 pin MDF connector on the back of the desired shelf of the Media Gateway. • Connect a 25 pin to 9 pin straight through serial cable to the 25 pin DB connector at the end of the NTAK19EC cable (a female to female gender changer may be required). These are customer provided. • Connect the other end of the 25 pin to 9 pin straight through serial cable to the serial port on the maintenance terminal. These are customer provided.	

Table 9
Upgrade readiness checklist (Part 3 of 4)

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

Table 9
Upgrade readiness checklist (Part 4 of 4)

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, in: • *Converging the Data Network with VoIP* (NN43001-260) • *IP Peer Networking Installation and Commissioning* (NN43001-313) • *Network Routing Service Fundamentals* (NN43001-130) • *Communication Server 1000E Installation and Commissioning* (NN43041-310) • *Communication Server 1000E Software Upgrades* (NN43041-458)	

Upgrading Small System hardware

Contents

This chapter contains the following topics:

Backing up the Small System Call Server to an external drive

Note: For your convenience, the procedures required to back up the system database prior to the hardware upgrade are contained in this NTP.

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)

- LD 43 BKO

  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 (CF) card (with a PCMCIA card adapter when plugged into the SSC card) so that it can be inserted into the CP PM call server during software installation to perform the database conversion. LD 43 EDD updates the database on the internal drive (to ensure that the latest memory contents are backed up) and LD 143 backs up the database to the backup RMD (128 MB). 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 allows for multiple databases to be copied to the RMD. 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 card-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.

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 backup RMD in LD 143), enter **LD 43** at the command prompt.

2 Enter **EDD**. The following output appears.

```
>LD 43
EDD

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

EDD000
```

3 The internal backup is complete.

End of Procedure

LD 143 using the UPGRADE command

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

Procedure 2
Archiving the database in LD 143

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

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

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

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

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

```
Call Server/Main Cabinet Software Installation Main Menu :
1. New Install or Upgrade from Option 11/11E - From
Software DaughterBoard
2. System Upgrade
3. Utilities
4. New System Installation - From Software Delivery Card

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

```
Enter Selection : 3
```

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

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

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

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

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

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

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

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

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

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

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

The following list is generated:

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

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

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

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

End of Procedure

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

Choosing the cabinet or chassis and slot locations

A Media Gateway 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 or chassis; however, the CP PM call server sits in one of the Media Gateway slots. Slot location is based on the type of system:

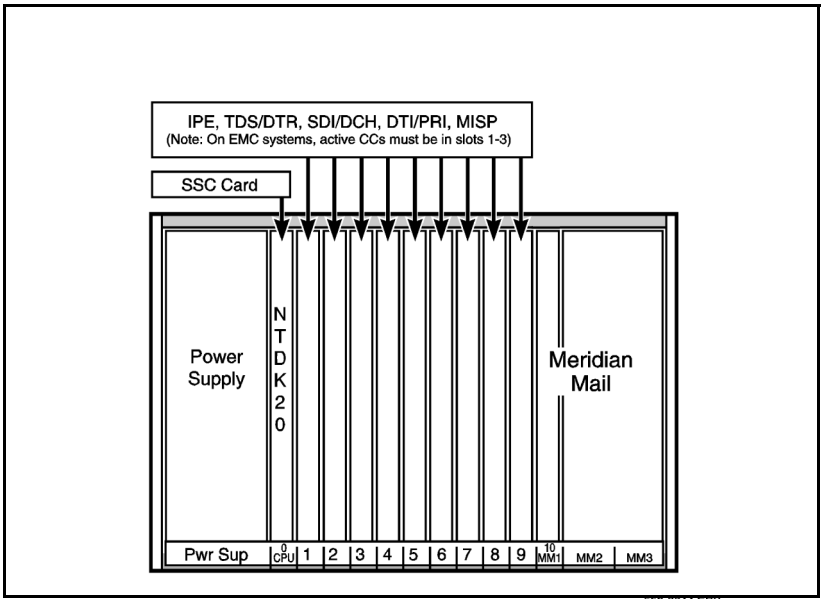
- For MG 1000E cabinet systems, see “MG 1000E cabinet” on page 71
- For MG 1000E chassis systems, see “MG 1000E chassis” on page 74
- For MG 1010 chassis systems, see “MG 1010 chassis” on page 76
- For Communication Server 1000S systems, see “Communication Server 1000S” on page 78

MG 1000E cabinet

The CP PM Call Server interfaces with the Media Gateway 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 Media Gateway:

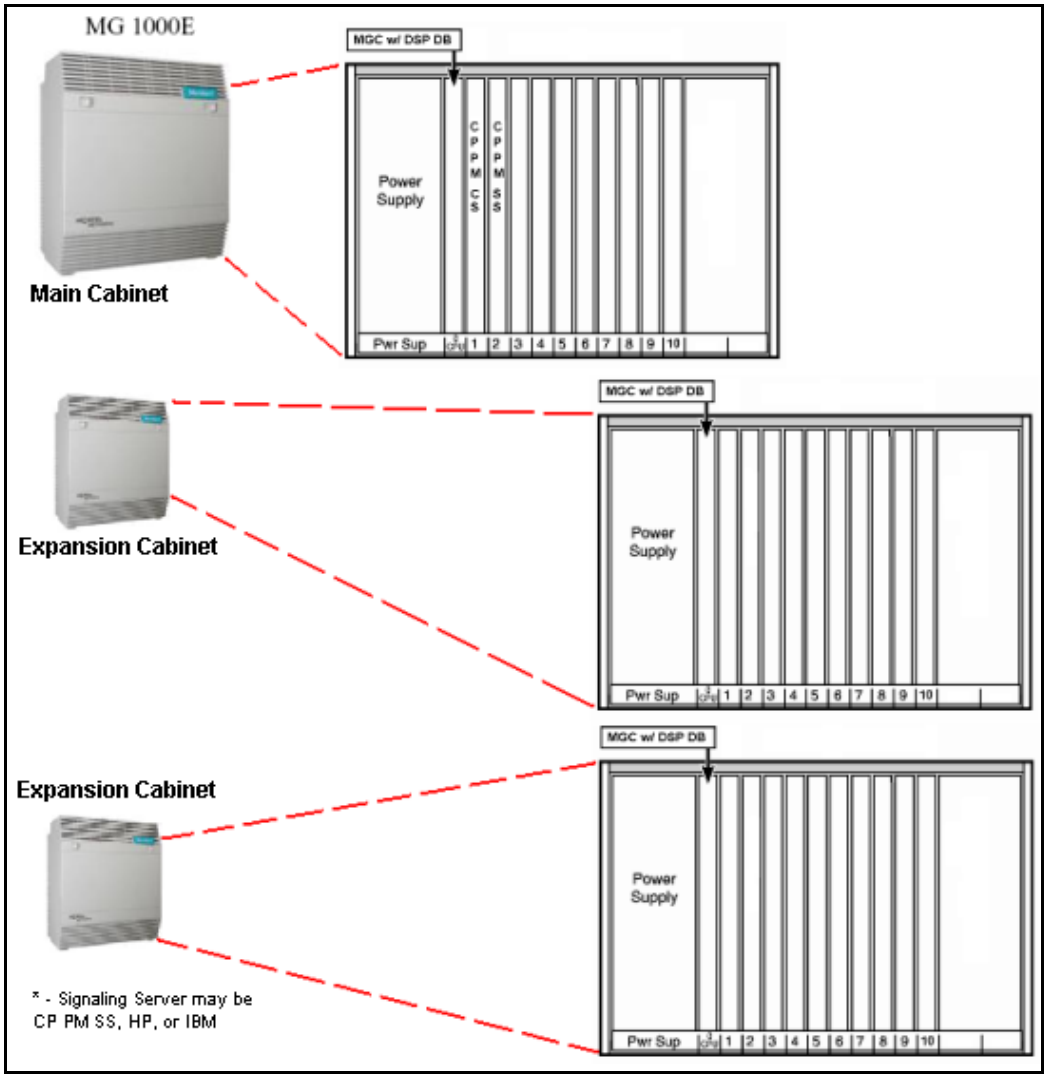
- The CP PM Call Server cannot be placed in slot 0 of any Media Gateway. Slot 0 is reserved for the MGC.
- To allow for ease of cabling, the CP PM call server may be placed in slots 1 through 10 (see Figure 7). The CP PM Signaling Server may be placed in slots 1 through 10 (see Figure 8 on page 73) or in another cabinet if necessary.
- If utilizing the Campus Redundancy High Availability (HA) Call Server option, place the two CP PM call servers in separate Media Gateway cabinets to allow for increased survivability. HA is not supported on a CP PM coresident Call Server and Signaling Server system.

Figure 7
NTAK11 Cabinet with SSC card



Once the upgrade is complete, a typical SA three cabinet system resembles Figure 8 on page 73 with an MGC in slot 0, and a CP PM call server and signaling server in the main cabinet. The additional Media Gateways contain MGC cards only for an SA configuration.

Figure 8
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, see "Appendix A: Upgrading to High Availability" on page 197.

To proceed with the upgrade, proceed to the "Hardware Upgrade Task Overview" on page 81.

MG 1000E chassis

The CP PM Call Server interfaces with the Media Gateway 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 Media Gateway:

- The CP PM Call Server cannot be placed in slot 0 of any Media Gateway. Slot 0 is reserved for the MGC.
- To allow for ease of cabling, the CP PM call server may be placed in slots 1 through 4 of the chassis, with the exception of the Option 11C Mini. The Option 11C Mini cannot have a CP PM card installed in slot 4 as this slot was originally allocated for the 48 port DLC only.
- The CP PM Signaling Server may be placed in slots 1 through 4 (see Figure 9 on page 75) or in another chassis if necessary.
- If utilizing the Campus Redundancy High Availability (HA) Call Server option, place the two CP PM call servers in separate chassis' to allow for increased survivability. HA is not supported on a CP PM coresident Call Server and Signaling Server system.

Figure 9 shows an existing Option 11C or Communication Server 1000M chassis call server with the SSC card. After the upgrade, an SA Media Gateway chassis system resembles Figure 10 on page 75 with an MGC in slot 0, and a CP PM call server and signaling server in the main chassis. The additional Media Gateways contain MGC cards only for an SA configuration.

Figure 9
Option 11C or Communication Server 1000M chassis call server

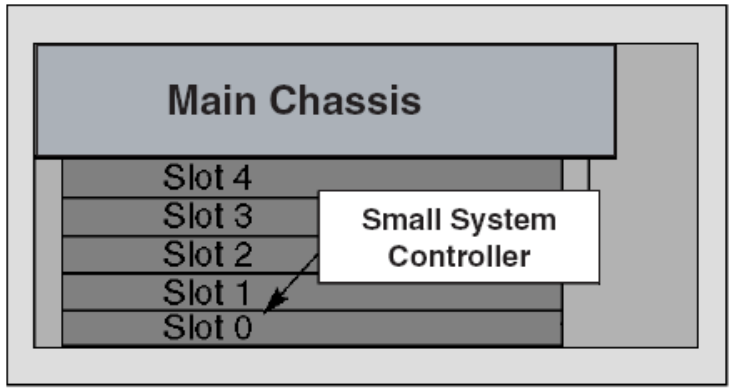
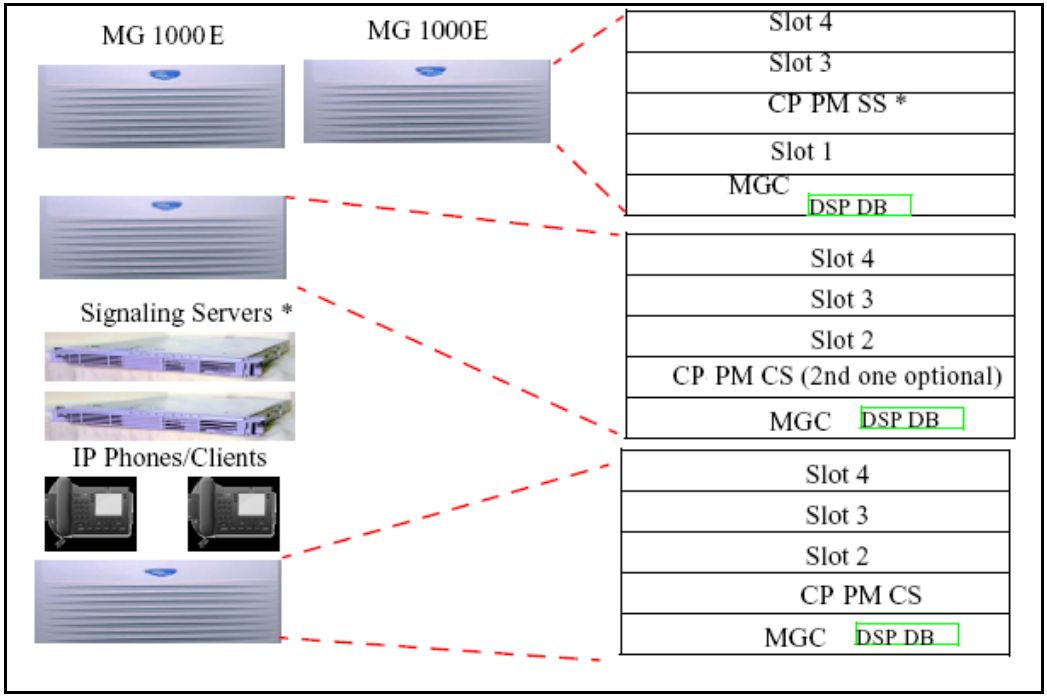


Figure 10
Typical SA chassis system



* Signaling Servers may be one of the following:

- Nortel CP PM Signaling Server
- Dell R300 Commercial off-the-shelf (COTS) Signaling Server
- HP DL320 G4 COTS Signaling Server
- IBM x306m COTS Signaling Server
- IBM x3350 COTS Signaling Server

CP PM Signaling Servers are cards which reside in a Media Gateway. COTS Signaling Servers are separate 1U rack mount servers.

You must activate the High Speed Pipe package 410 to install any redundancy options. For more information, see "Appendix A: Upgrading to High Availability" on page 197.)

To proceed with the upgrade, proceed to the "Hardware Upgrade Task Overview" on page 81.

MG 1010 chassis

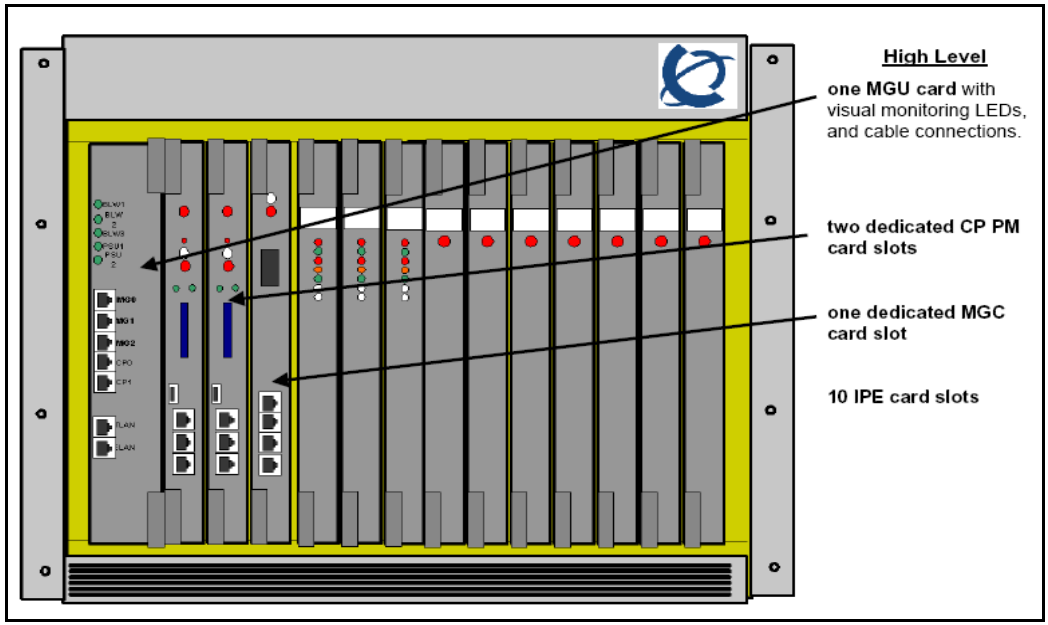
The CP PM Call Server interfaces with the Media Gateway through the MGC using the ELAN interface, and therefore does not require backplane connectivity (other than power and slot ID). The following rules apply to the placement of the CP PM cards in the Media Gateway 1010:

- When facing the front of the MG 1010, from left to right is MGU slot 21, CP PM slots 22and 23, MGC slot 0, a metal divider, and IPE slots 1 to 10.
- The CP PM Call Server cannot be placed in slot 0 of any Media Gateway. Slot 0 is reserved for the MGC.
- The MG 1010 provides dedicated slots 22 and 23 for CP PM Call Servers and CP PM Signaling Servers.
- The MG 1010 supports a 12 CP PM configuration. A maximum of ten additional CP PM cards can be placed in IPE slots 1 through 10. CP PM cards in slots 1-10 of a MG 1010 require the NTAK19EC for serial connections.

- An MG 1010 with greater than five but less than 12 CP PM cards requires a blank card assembly kit (NTC350AAE6) for EMC containment. Five blank cards are included in the blank card assembly kit.
- If utilizing the Campus Redundancy High Availability (HA) Call Server option, place the two CP PM Call Servers in separate chassis' to allow for increased survivability. HA is not supported on a CP PM coresident Call Server and Signaling Server system.

Figure 11 shows a SA Media Gateway 1010 chassis system with an MGC in slot 0, a CP PM Call Server, and a CP PM Signaling Server in the main chassis.

Figure 11
MG 1010 chassis system overview



You must activate the High Speed Pipe package 410 to install any redundancy options. For more information, see "Appendix A: Upgrading to High Availability" on page 197.)

To proceed with the upgrade, proceed to the "Hardware Upgrade Task Overview" on page 81.

Communication Server 1000S

The CP PM Call Server interfaces with the Media Gatewaythrough 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 Media Gateway:

- The CP PM Call Server cannot be placed in slot 0 of any Media Gateway. Slot 0 is reserved for the MGC.
- To allow for ease of cabling, the CP PM call server may be placed in slots 1 through 4 of the chassis, with the exception of the Option 11C Mini. The Option 11C Mini cannot have a CP PM card installed in slot 4 as this slot was originally allocated for the 48 port DLC only. The CP PM Signaling Server may be placed in slots 1 through 4 (see Figure 12 on page 79) or in another chassis if necessary.
- If utilizing the Campus Redundancy High Availability (HA) Call Server option, place the two CP PM call servers in separate chassis's to allow for increased survivability. HA is not supported on a CP PM coresident Call Server and Signaling Server system.

Figure 9 shows an existing CS 1000S call server with the SSC card. Once the upgrade is complete, a typical SA chassis system will resemble Figure 13 on page 80 with an MGC in slot 0, and a CP PM call server and signaling server in the main chassis. The additional Media Gateways contain MGC cards only for an SA configuration.

Figure 12
CS 1000S (NTDU30) call server

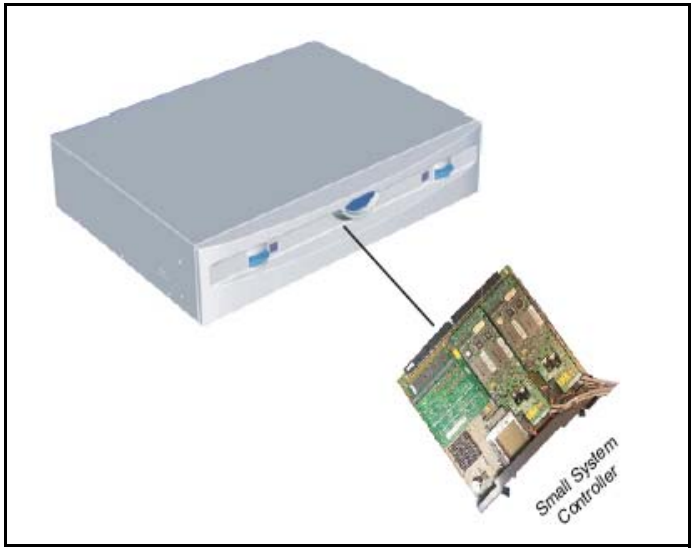
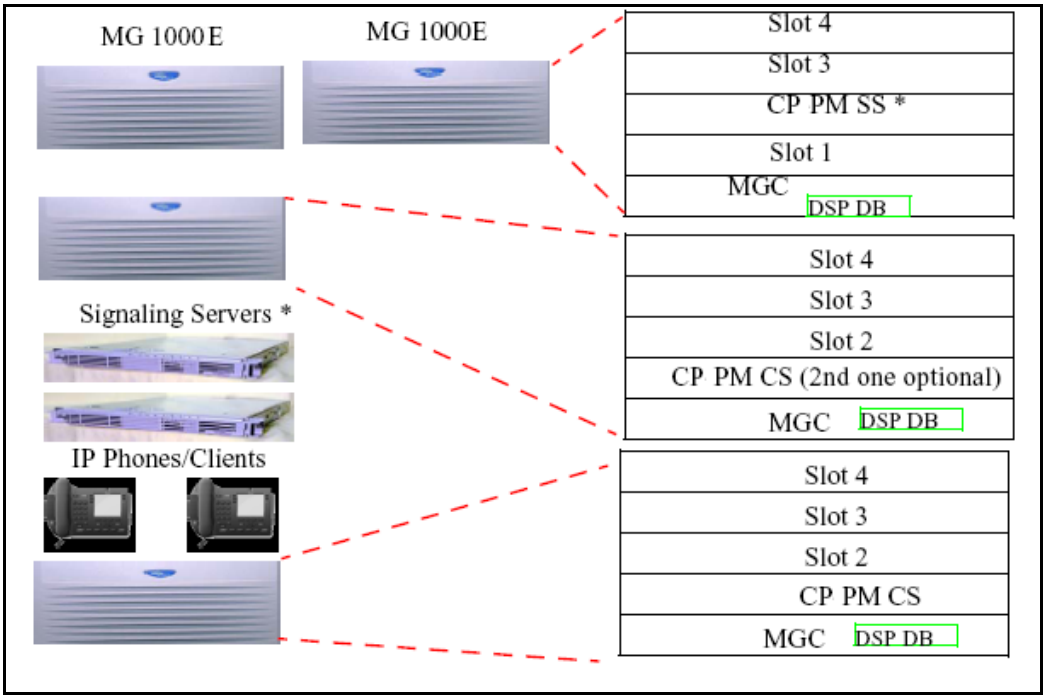


Figure 13
Typical SA Chassis system



*—Signaling Server may be one of the following:

- Nortel CP PM Signaling Server
- Dell R300 Commercial off-the-shelf (COTS) Signaling Server
- HP DL320 G4 COTS Signaling Server
- IBM x306m COTS Signaling Server
- IBM x3350 COTS Signaling Server

A High Speed Pipe package (410) must be activated in order to install any type of redundancy option. For more information, see “Appendix A: Upgrading to High Availability” on page 197.

Hardware Upgrade Task Overview

To install the hardware for a Small System upgrade, perform the following steps:

1. Power down the Main Cabinet or Chassis.
2. Remove the SSC card as described in Procedure 3 on page 81.
3. Install the DSP Daughterboard on the MGC card as described in Procedure 4 on page 84.
4. Install the MGC card as described in Procedure 5 on page 87.
5. Install the CP PM as described in Procedure 7 on page 94.
6. Cable the cards as shown in “Cabling the cards” on page 96.
7. Power up the Media Gateway.
8. 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. Power down the system.
2. Unlatch the SSC card.

3 Remove the SSC card from its slot.

IMPORTANT!

The SSC card and dongle 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 center upon confirmation of a successful upgrade. No further orders will be accepted for the serial number since it will be decommissioned and tracked in Nortel's database.

Note: If the upgrade fails, you will not be able to revert back to the old system without the SSC card and dongle.

End of Procedure

Installing a DSP Daughterboard onto an MGC card

Table 10 lists the configuration options for Position 1 and 2.

Table 10
DSP Daughterboard configurations

Position 1 (DB1)	Position 2 (DB2)
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)
Note: Only the PRI - Media Gateway MGC can house two 96 port DSP daughter boards.	

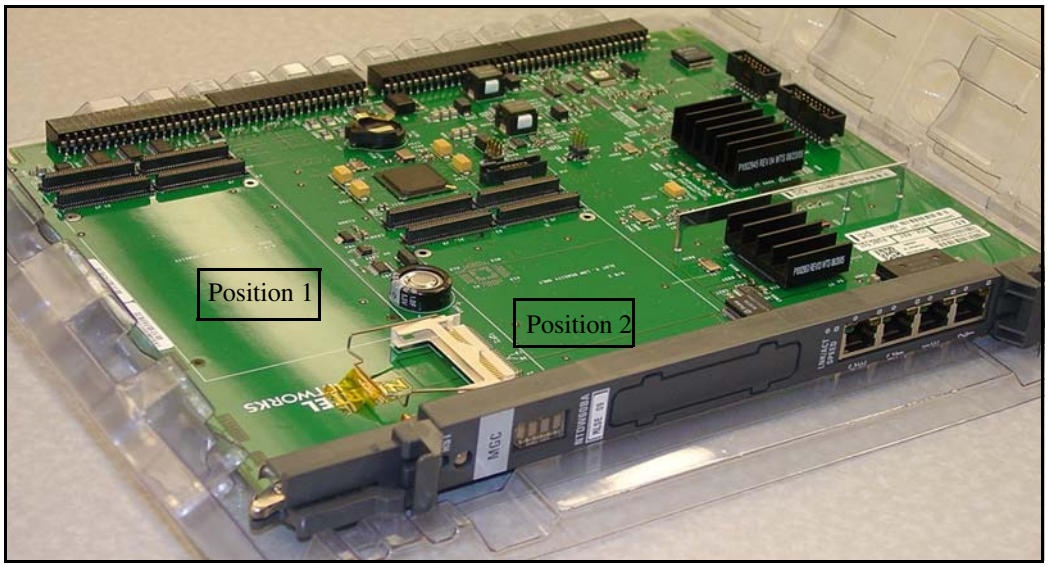
IMPORTANT!

Due to historical TN mapping for the Call Server SL1 software, even though the DSP channels will occupy Card 0 in the Media Gateways, the TN (l s c u) 000 0 00 00 (for example, unit 0 of card 0 in the first Media Gateway <supl sh> = 000 0) is not available.

A single channel (unit 0) is not available on the first Media Gateway ONLY if there is a 32 port DB installed in daughterboard position #2. If there is a 96 port DB installed in daughterboard position #1, all 96 channels are available. If there is a 32 port DB installed in daughterboard position #1, all 32 channels are available.

The following procedure describes how to install a DSP Daughterboard on an MGC card. See Figure 14.

Figure 14
DSP Daughterboard



Procedure 4
Installing a DSP Daughterboard

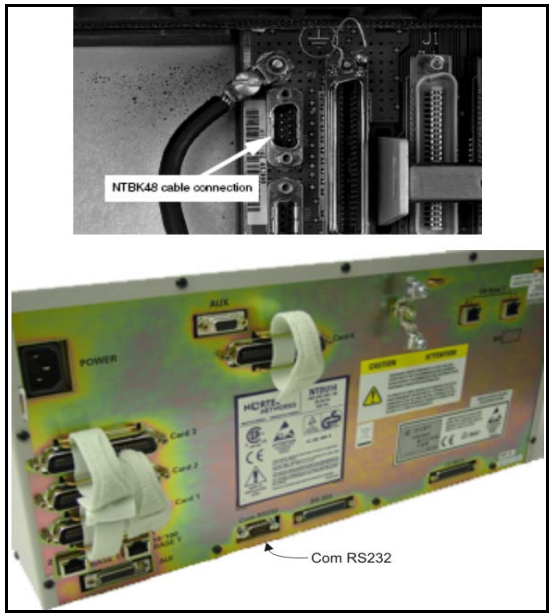
1. Place the MGC on a safe ESD surface.
2. Place the DSP DB in either DB position 1 (for DSP DB-32 or DSP DB-96) or DB position 2 (for DSP DB-32), depending on how the DB is configured from a TN perspective.
3. Ensure the DSP DB is securely attached to the MGC. (using supplied screws).

End of Procedure

Installing the MGC card

Reuse the existing 3-port SDI cable (NTBK48) for installation of a MGC in a MG 1000E cabinet or chassis. Connect it to the SDI port on the cabinet and the COM RS232 port on the chassis. Figure on page 85 illustrates the two connectors.

Figure 15
NTBK48 connectors



The 3-port SDI cable is not required for a MGC installation in a MG 1010 chassis. The MG 1010 MGU card faceplate ports provide the serial connectors. Use the NTC325AAE6 serial cable kit with a MG 1010.

MGC serial port capabilities

Table 11
MGC Serial Port Capabilities

Port	Modem Support?	Used for initial Configuration?
SDI0 (TTY0)	Yes (requires null modem to connect to a TTY)	Yes
SDI1 (TTY1)	No (No hardware flow control)	No. Port 1 is not enabled during the initial configuration of the MGC.
SDI2 (TTY2)	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

The MGC card replaces the existing SSC used in a small system cabinet or chassis.

1 Insert the MGC into Slot 0 of the Media Gateway.

IMPORTANT!

Please DESTROY or RETURN the SSC dongle to your local Nortel Repairs/Returns center upon confirmation of a successful upgrade. If the SSC system was using remote dongles for any expansion cabinets, please DESTROY or RETURN to your local Nortel Repairs/Returns center upon confirmation of a successful upgrade.

Note: If the upgrade fails, you will not be able to revert back to the old system without the SSC card and dongle.

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

2 Connect the serial cable.

- For the MG 1000E, connect the 3-port SDI cable (NTBK48AA) to the SDI0 port on the Media Gateway. Connect the opposite end of the cable to a maintenance terminal.
- For the MG 1010, connect a shielded CAT5 Ethernet cable to the NTC325AAE6 serial cable kit. Connect this cable to the MGU faceplate port labelled MGC TTY0 in the Media Gateway. Connect the opposite end of the cable to a maintenance terminal.

3 Power on the Media Gateway.

- The MGC display shows BOOT.
- The power on self-test runs. The MGC display shows POST.
- The MGC display shows PASS if the self-test is successful. Otherwise the MGC display shows an Exxx error code.
- The MGC loads the application software. The MGC display shows LOAD.

End of Procedure

Configuring the MGC

Use Procedure 6 to configure the MGC through CLI.

Procedure 6
Configuring the MGC on the Call Server

Initial configuration of the MGC is command line ONLY.

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

There are two ways to enter mgcsetup:

- If no IP information exists on the MGC, it will boot directly into the setup menu.
- If IP information exists, use <CTRL>L<CTRL>D<CTRL>B, (provide LDB username and password to access LDB). Invoke the mgcsetup command.

You can access the MGC setup after you logon to one of the following shells:

- `<CTRL> OAM,` (provide OAM username and password to access OAM shell)
- `<CTRL> LDB,` (provide LDB username and password to access LDB shell)
- `<CTRL> PDT,` (provide PDT username and password to access PDT shell)

1 If IP information already exists on the MGC card, input the CLI command **`mgcsetup`**.

2 Enter network IP information at the MGC setup menu:

```
ELAN IP : 192.168.3.33
ELAN subnet mask : 255.255.255.0
```

```
ELAN gateway IP : 192.168.3.1
Primary CS IP : 192.168.3.32
```

Note: Depending on the date of manufacture, the Gold image may prompt for TLAN and/or secondary call server information. If these prompts appear they can be ignored. This information is configured through EM and is retrieved by the MGC at registration. The new image after upgrade will not have these prompts.

3 Enter port and security parameters, if required:

Note: This step is only necessary if you are using advanced security features.

```
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
```

IMPORTANT!

Nortel recommends that you disable ELAN security during system installation.

```
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)
```

4 Review the network information and enter “y” to confirm (see Figure 16 on page 91).

Figure 16
Network information

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

Hostname              : IPMG0-0
ELAN IP               : 192.168.3.33
ELAN subnet mask      : 255.255.255.0
ELAN gateway IP       : 192.168.3.1
Primary CS IP         : 192.168.3.32
TLAN set to auto negotiate.
ELAN set to auto negotiate.
ELAN security Disabled

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

WARNING

Service Interruption

IP changes to the MGC require a reboot. A service interruption can occur.

5 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 Call Server and downloads the remaining configuration information.

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

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

Rebooting the MGC

The MGC reboots and registers with the Call Server.

```
Found device : INTEL 82365SL

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

                              VxWorks System Boot

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

auto-booting...

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

Found device : INTEL 82365SL

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

Loadware upgrade

If the MGC loadware is out of date (compared to the loadware on the Call Server), an upgrade of the loadware occurs based on the Centralized Upgrade setting defined during the software install and the values set in LD 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 configured Media Gateways synchronize with the Call Server.

Each Media Gateway IP address must be configured in overlay 97. For more information, see *Communication Server 1000E Software Upgrades* (NN43041-458).

End of Procedure

Installing the CP PM card

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

MG 1010 slots 22 and 23 require the NTDW99 CP PM card with metal faceplate. MG 1000E and MG 1010 slots 1-10 support NTDW61 and NTDW99 CP PM cards. If you require more than two CP PM cards in a MG 1010, you can install additional CP PM cards in slots 1-10.

Ensure that the Dip Switch (S5) is set to position 1 if using the CP PM as a Call Server or position 2 if using the card as a CP PM Signaling Server.

Procedure 7
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.

   Note 1: This first step is applicable only when the CP PM card is used as a Call Server.

   Note 2: Remove the retainer clip from the FMD slot when the card is used as a Signaling Server. The clip must be removed to prevent it from shorting out adjacent cards.

2. Ensure that the FMD (1 GB) is correctly inserted and locked in place.

3. Insert the CP PM card.

   - Slide the CP PM call processor into Slot 1 (or higher) of the MG 1000E cabinet or chassis.
   - Slide the CP PM call processor into Slot 22 or 23 of the MG 1010 chassis.

4. Lock the card into the faceplate latches.

5. Connect the serial cable.

   - For a MG 1000E or MG 1010 with CP PM cards in slots 1-10, connect the 2-port SDI cable. The 50-pin Amphenol NTAK19EC connects to the back of the CP PM call server.
   - For a MG 1010, connect a shielded CAT5 Ethernet cable to the NTC325AAE6 serial cable kit. Connect this cable to the MGU

faceplate port labelled TTY0 for CP1 or CP2. CP1 is for slot 22, CP2 is for slot 23.

- Connect the opposite end of the serial cable to the serial port on the maintenence terminal.

Note: To connect a terminal to the CP PM card with a NTAK19EC cable, complete the following steps:

- Connect the NTAK19EC cable (shipped with the CP PM Signaling Server) to the 50 pin MDF connector on the back of the desired MG 1000E.
- Connect a 25 pin to 9 pin straight through serial cable to the 25 pin DB connector at the end of the NTAK19EC cable (a female to female gender changer may be required). You must povide this adapter.
- Connect the other end of the 25 pin to 9 pin straight through serial cable to the serial port on the maintenance terminal.

End of Procedure

Figure 17
2-port SDI cable (NTAK19EC) cable

End of Procedure

The preceding steps enable users to upgrade the system one Media Gateway at a time. For each additional Media Gateway, repeat Procedure 3 to Procedure 5 on page 87.

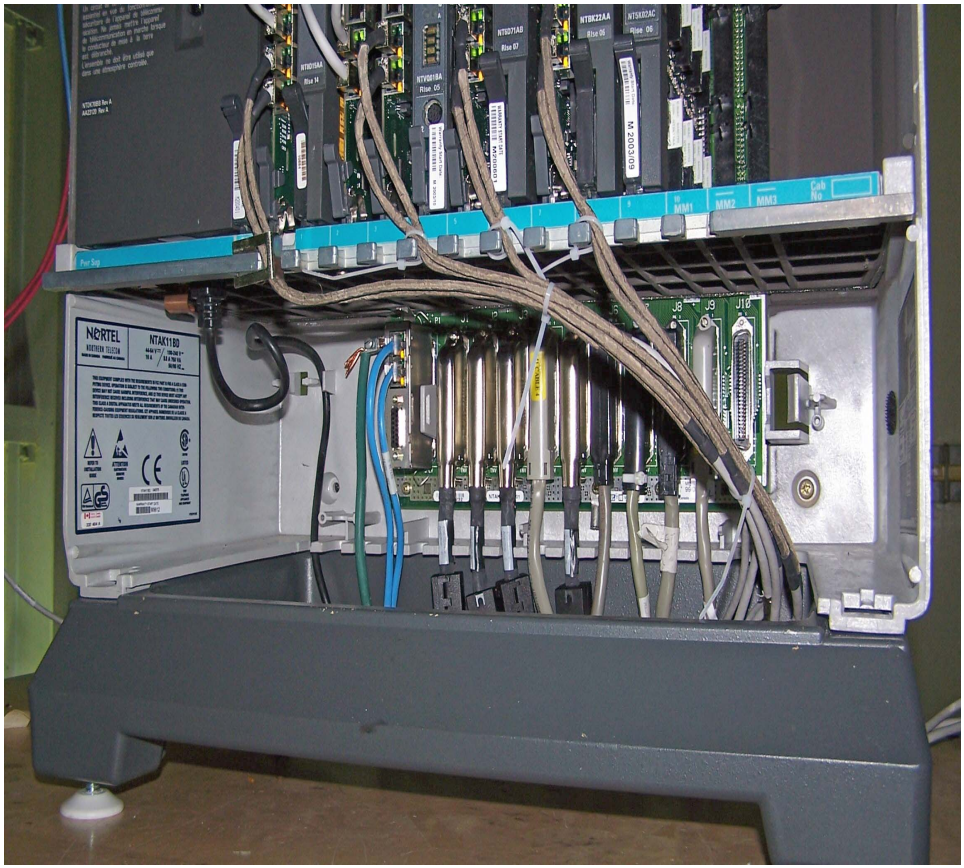
Cabling the cards

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

Guidelines for Cabling an Option 11C cabinet

When you use an Option 11C Cabinet as a Media Gateway Cabinet, Nortel recommends you use shielded cables including shielded CAT5 cable for the ELAN and TLAN. You need to route the cables towards the right side of the cabinet, see Figure 18 on page 97.

Figure 18
Cabling an Option 11C cabinet



Cabling the MGC

The MGC card contains six auto negotiating Ethernet interfaces, four on the faceplate and two on the backplane. Figure 19 on page 98 shows the Ethernet connectors on the front of the MGC. The CE and CT ports are available for supported cabling to the CP PM card or as maintenance ports to the ELAN and TLAN. The two ports on the backplane connector are accessible using the MG 1010 MGU faceplate ELAN and TLAN ports, the100BT breakout adapter in a Cabinet, or available through 10/100BaseT Ethernet connectors on the back of the Media Gateway. See Figure 20 on page 99. You must attach the 1E (ELAN) and 2T (TLAN) Ethernet ports to a Layer 2 switch.

Figure 19
MGC faceplate

Figure 20
Breakout adaptor

Nortel recommends you use direct connections from the faceplate jacks of the MGC to the Layer 2 switch. Figure 21 on page 99 illustrates a Media Gateway chassis with a MGC connected directly to a Layer 2 switch. Figure 22 on page 100 illustrates a Media Gateway cabinet with MGC connected directly to the Layer 2 switch.

Figure 21
MGC MG Cable

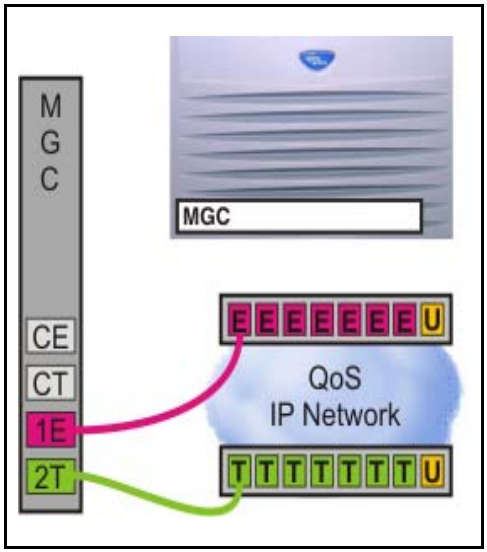
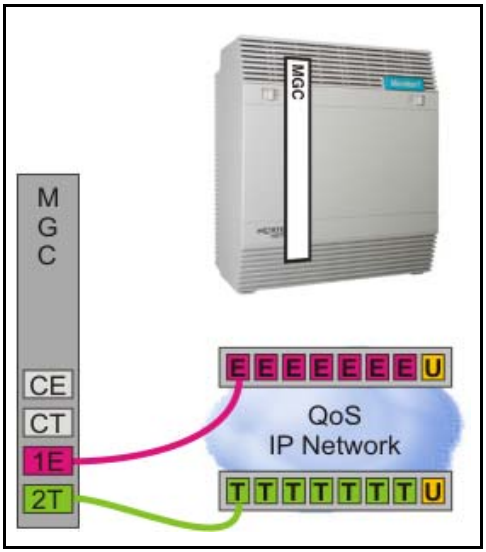


Figure 22
MGC Cabinet Cable



For more information on supported cabling options, see "Appendix D: Supported cabling options" on page 211.

Cabling the CP PM card

In a MG 1000E or a MG 1010 with CP PM cards in slots 1-10, the SDI port of the CP PM card routes through the backplane to the 50-pin Amphinol connector on the back of the Media Gateway. A SDI cable (NTAK19EC) ships with the CP PM that adapts the 50-pin Amphinol connector to two 25-pin DB connectors. Use Port 0 for maintenance access, and Port 1 for an external modem connection.

In a MG 1010, the MGU provides TTY0 and TTY1 serial ports for the CP PM card in slot 22 and slot 23. Connect a shielded CAT5 Ethernet cable to the NTC325AAE6 serial cable kit. Attach this cable to the MGU port labelled TTY0 for CP1 or CP2. CP1 is for slot 22, CP2 is for slot 23.

Nortel recommends you use direct connections from the faceplate jacks of the CP PM cards to the Layer 2 ethernet switches. Figure 23 on page 101

illustrates a Media Gatweay chassis with a CP PM Call Processor connected directly to a Layer 2 switch. Figure 24 on page 102 illustrates a Media Gateway chassis with a CP PM Signaling Server connected directly to a Layer 2 switch.

Figure 23
CPPM CP MG Cable

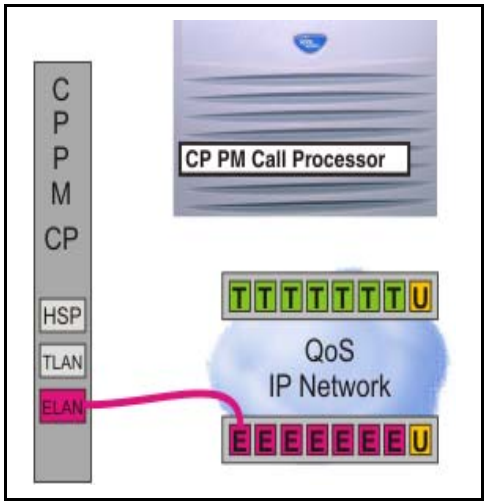


Figure 24
CPPM SS MG cable

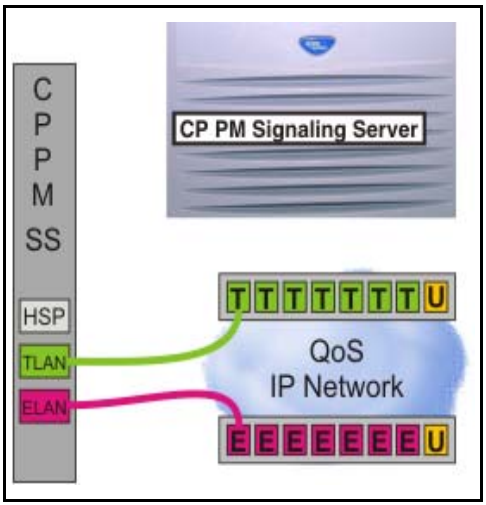


Figure 25 on page 103 illustrates a Media Gateway cabinet with CP PM Call Processor connected directly to a Layer 2 switch.

Figure 25
CPPM CP Cabinet cable

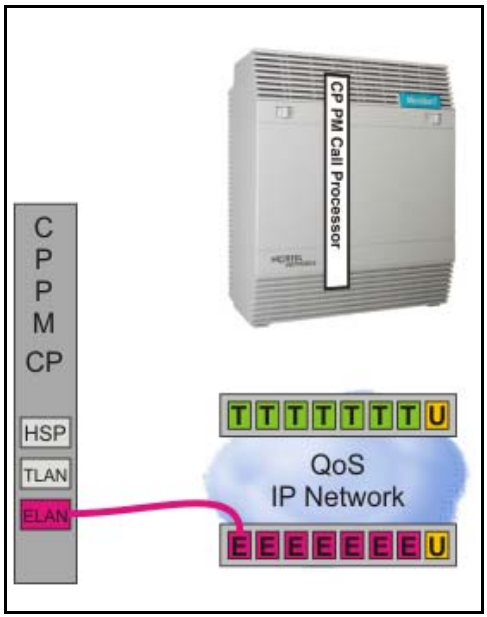
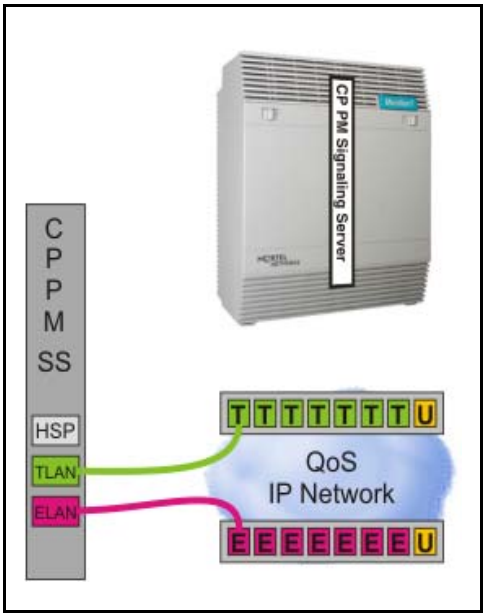


Figure 26 on page 104 illustrates a Mediai Gateway cabinet with a CP PM Signaling Server connected directly to a Layer 2 switch.

Figure 26
CPPM SS Cabinet cable



For more information about supported cabling options, see "Appendix D: Supported cabling options" on page 211.

Once the cabling of the MGC and CP PM cards is complete, power up the system. You may now proceed to *Communication Server 1000E Software Upgrades* (NN43041-458) to begin the software upgrade.

For information about upgrades to a CP PM Co-resident Call Server and Signaling Server system, see *CP PM Co-resident Call Server and Signaling Server Fundamentals* (NN43001-509).

Upgrading a Call Server from CP PII to CP PIV

Contents

This chapter contains the following topics:

Introduction

This chapter provides instructions for performing a hardware upgrade from a CS 1000E CP PII source platform to a CS 1000E CP PIV target platform.

Preparing for the upgrade

This document implements a “source- to-target” approach to performing an upgrade. It is important to correctly identify the source platform, target platform, and maintenance window required to perform the upgrade.

IMPORTANT!

This upgrade requires that the PC you are working from is equipped with a floppy disk drive and CF reader (or, if a CF reader is not available, a PCMCIA CF adaptor).

This chapter features check boxes indicating what condition the system should be in at that stage of the upgrade. If the system is not in the proper condition steps should be taken to correct this.

This section is written to maintain Dial Tone where possible and limit service interruptions.

Before attempting any software or hardware upgrade field personnel should follow the steps in Table 12 below:

Table 12
Prepare for upgrade steps

Planning

Planning for an upgrade involves the following tasks:

- Read and understand the current release Product Bulletin.
- Conduct a site inspection to determine proper power and grounding.
- Review the site profile to determine proper foot space if adding new columns or modules.
- Identify all applications (CallPilot, SCCS, IP, etc.) 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.
- Download a copy of the CP PIV customer database media converter tool. This tool is used to transfer the customer database from floppy disk to CF card.
- Request additional ELAN and TLAN network connections to allow for installation of additional MGC cards.
- 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.

Upgrade Checklists

Upgrade checklists can be found in the "Upgrade checklists" chapter on page 201. Engineers may print this section in order to facilitate the upgrade.

Preparing

IMPORTANT!

In a Campus configuration, as both cores may be physically separate, it is important to plan for required attendance at both core sites at some point in 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 Server, Voice Gateway Media Cards, Signaling Servers and so on).
- Determine the required patches or DEP lists installed on all applications (CallPilot, Symposium Call Center Server, TM, and so on).
- 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.
- Secure the source software and key code.
- Secure the target software and key code.
- Verify the new key code using the DKA program.
- Print site data.

Connecting a terminal

Procedure 8
Connecting a terminal

A maintenance terminal is required to access the Call Servers during the upgrade procedure.

1. Connect a terminal to the COM 1 port on the faceplate of CP PII card of the *inactive* Call Server.
2. The settings for the terminal are:
   a. Terminal type: VT100
   b. 9600 Baud
   c. Data bits: 7

d. Parity: odd

e. Stop bits: 1

f. Flow control: none

Note: If the telnet session is set to 7 odd 1 versus 8 none 1,the system messages generate before the INI prints, otherwise a portion of the database conversion reference of lost TN's does not appear.

End of Procedure

Printing site data

Print site data to preserve a record of the system configuration (Table 13 on page 109). Verify that all information is correct. Make corrections as necessary.

Note: Items marked with an asterisk (*) are required. Other items are recommended for a total system status.

Table 13
Print site data (Part 1 of 4)

Site data	Print command	
Terminal blocks for all TNs	LD 20	
	REQ	PRT
	TYPE	TNB
	TN	<cr>
	CDEN	<cr>
	CUST	<cr>
	DATE	<cr>
	PAGE	<cr>
	DES	<cr>
Directory Numbers	LD 20	
	REQ	PRT
	TYPE	DNB
	CUST	<cr>

Table 13
Print site data (Part 2 of 4)

Site data	Print command	
Attendant Console data block for all customers	LD 20	LD 20
	REQ TYPE CUST	PRT ATT, 2250 <cr>
*Customer data block for all customers	LD 21	LD 21
	REQ TYPE CUST	PRT CDB <cr>
Route data block for all customers	LD 21	
	REQ TYPE CUST ROUT ACOD	PRT RDB Customer number <cr> <cr>
*Configuration Record	LD 22	
	REQ TYPE	PRT CFN
*Software packages	LD 22	
	REQ TYPE	PRT PKG
*Software issue, and tape ID	LD 22	
	REQ REQ	ISS TID
* Peripheral software versions	LD 22	
	REQ TYPE	PRT PSWV
Print configured D-channel information	LD 22	

Table 13
Print site data (Part 3 of 4)

Site data	Print command	
	REQ TYPE	PRT ADAN DCH
ACD data block for all customers	LD 23	
	REQ TYPE CUST ACDN	PRT ACD Customer Number ACD DN (or <CR>)
Multi-purpose ISDN Signaling Processor (MISP) card	LD 27	
	REQ TYPE LOOP APPL PH	PRT MISP loop number (0-158) <cr> <cr>
Review the configured T1 information	LD 60	STAT
DTI/PRI data block for all customers	LD 73	
	REQ TYPE	PRT DDB
Review the configured D-channel information	LD 96	STAT DCH
Print the configured host information	LD 117	PRT HOST (provides system IP addresses)

Table 13
Print site data (Part 4 of 4)

Site data	Print command	
Superloops and XPEs	LD 97	
	REQ TYPE SUPL	CHG SUPL Vxxx V stands for a virtual superloop and xxx is the number of the virtual superloop. xxx = 0-252 in multiples of four for MG 1000E xxx = 96-112 in multiples of four for MG 1000T (See Table 29)
Note: Items marked with asterisks (*) are required printout for conversion. Other items are recommended for a total system status.		

Performing a template audit

A template audit (LD 01) reviews the templates in your system. Corrupted and duplicate templates are cleaned up. An example of the information generated during the audit is listed below.

Note: The template audit may take an extended period of time on large systems. Run the audit during a low traffic period.

CAUTION

Loss of Data

Do not abort this overlay until the audit is complete. If the overlay is interrupted, data will be corrupted.

LD 01 The audit begins as soon as LD 01 is entered.

TEMPLATE AUDIT

CONFIRM TEMPLATE AUDIT NOW? (Y/N)

STARTING PBX TEMPLATE SCAN

TEMPLATE 0001 USER COUNT LOW CHECKSUM OK

TEMPLATE 0002 USER COUNT HIGH CHECKSUM OK

TEMPLATE 0003 NO USERS FOUND

STARTING SL1 TEMPLATE SCAN

TEMPLATE 0001 USER COUNT OK CHECKSUM OK

•

•

TEMPLATE 0120 USER COUNT OK CHECKSUM OK

TEMPLATE AUDIT COMPLETE

Backing up the database (data dump)

To back up system data, perform a data dump of backup data to a floppy disk.

Procedure 9
Performing a data dump

1. Log into the system.
2. Insert a floppy disk into the active Core/Net floppy drive to back up the database.

3 Load the Equipment Data Dump Program (LD 43). At the prompt, enter:

LD 43	Load program

4 When "EDD000" appears on the terminal, enter:

EDD	Begin the data dump

CAUTION

Loss of Data

If the data dump is not successful, do not continue; contact your technical support organization. A data dump problem must be corrected before proceeding.

5 The messages "DATADUMP COMPLETE" and "DATABASE BACKUP COMPLETE" will appear once the data dump is complete.

****	Exit program

6 The message "Backup process to local Removable Media Device ended successfully" appears. Remove and label the floppy disk.

IMPORTANT!

Database backup information should be preserved for a minimum of 5 days.

End of Procedure

Performing the upgrade

Reviewing upgrade requirements

This section describes the *minimum* hardware required for CP PIV. 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 have 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.

Checking required hardware

Table 14 lists the hardware required for the upgrade.

Table 14
Hardware requirements for Communication Server 1000E upgrade

Order number	Description	Quantity per system
NT4N39	Call Processor Pentium IV	2
NTDU68AA	Drive Carrier Card blank faceplate replacement	2

Figure 27 on page 116 shows the CP PIV processor card side view. Figure 28 on page 117 shows the CP PIV processor card front view. Figure 29 on page 118 shows the CP PIV Drive Carrier Card blank faceplate replacement.

Figure 27
CP PIV card (side)

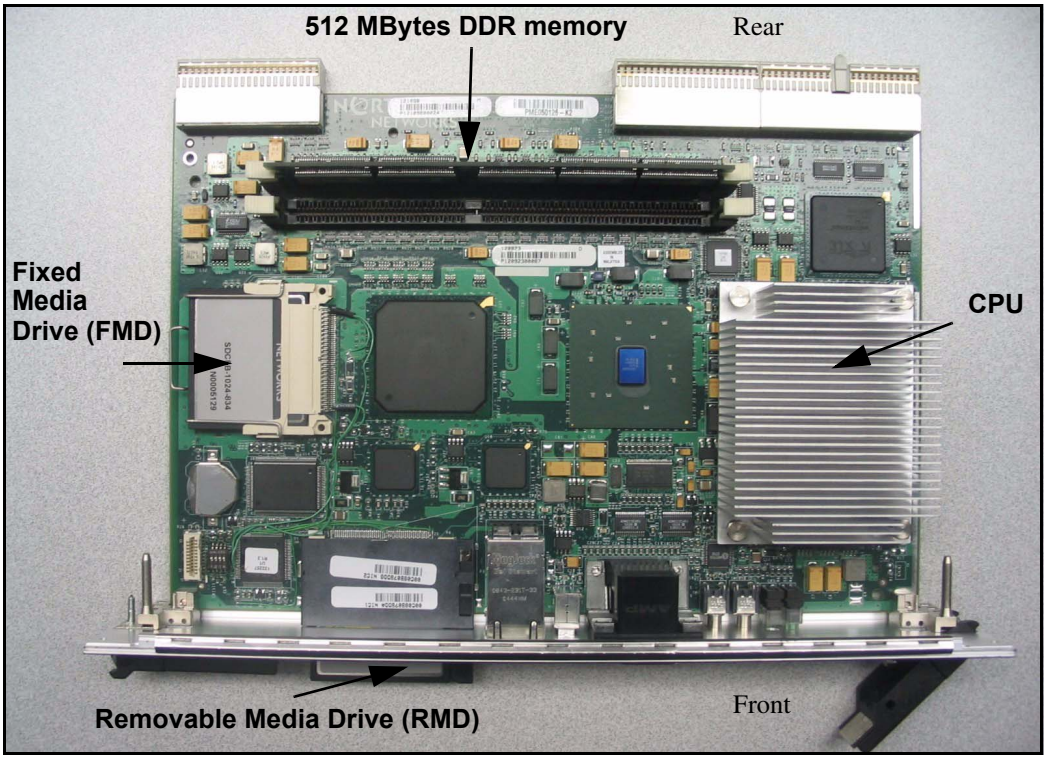


Figure 28
CP PIV card (front)

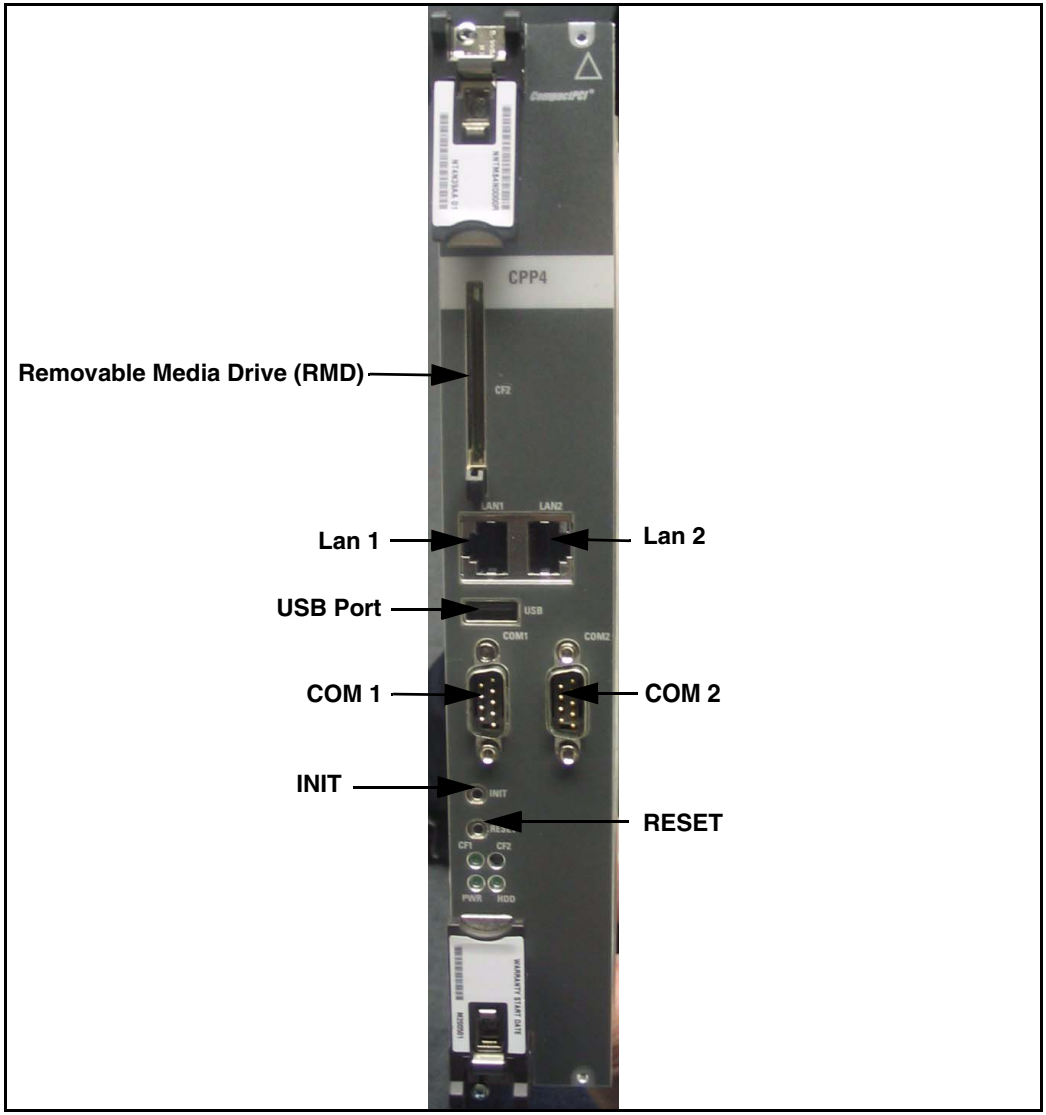


Figure 29
CS 1000E CP PIV Drive Carrier Card blank faceplate replacement

Verifying CP PIV hardware

Verifying CP PIV card location

The NT4N39 CP PIV card is located in the CP slot (see Figure 28 on page 117).

The NTDU68AA blank faceplate is located at the slot next to the CP PIV card.

Upgrading Call Server 1

Procedure 10
Checking that Call Server 0 is active

To upgrade Call Server 1, verify that Call Server 0 is the active side performing call processing:

1 Verify that Call Server 0 is active.

LD 135	Load program
STAT CPU	Get the status of the CPUs

2 If Core 1 is active, make Core 0 active:

SCPU	Switch to Call Server 0 (if necessary)
********	Exit program

End of Procedure

Procedure 11
Splitting the Call Servers

1 In Call Server 0,enter the SPLIT command from LD 135.

LD 135	Load program
SPLIT	Split the Call Servers
****	Exit program

The system is now in split mode, with call processing on Call Server 0.

End of Procedure

Removing Call Server 1 CP PII card and Drive Carrier Card

Procedure 12
Removing the Call Server 1 CP PII Processor and Drive Carrier Card

1 Disconnect and label the LAN1 and LAN 2 cables from the Call Server 1 CP PII card faceplate. See Figure 30 on page 122.

2 Disconnect and label the COM 1 and COM 2 cables from the Call Server 1 CP PII card faceplate. See Figure 30 on page 122.

3 Unscrew and unlatch the Call Server 1 CP PII card. See Figure 30 on page 122.

4 Remove the Call Server 1 CP PII card from its slot.

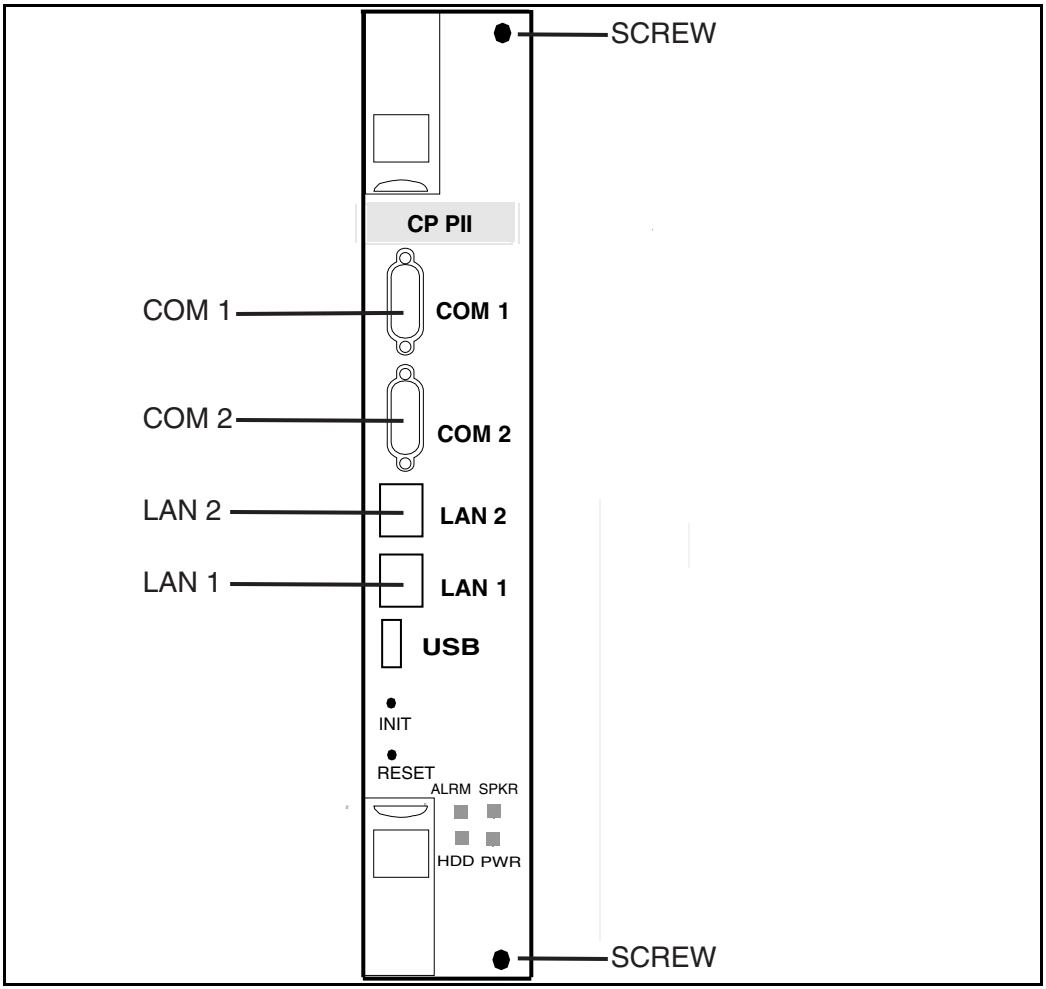
5 Unscrew, unlatch and remove the Drive Carrier Card from its slot. Retain the Drive Carrier Card (and database backup) in a safe and secure location until the successful completion of this upgrade.

IMPORTANT!

Database backup information, the Drive Carrier Card and original CP PII card should be preserved for a minimum of 5 days.

End of Procedure

Figure 30
CP PII faceplate connections

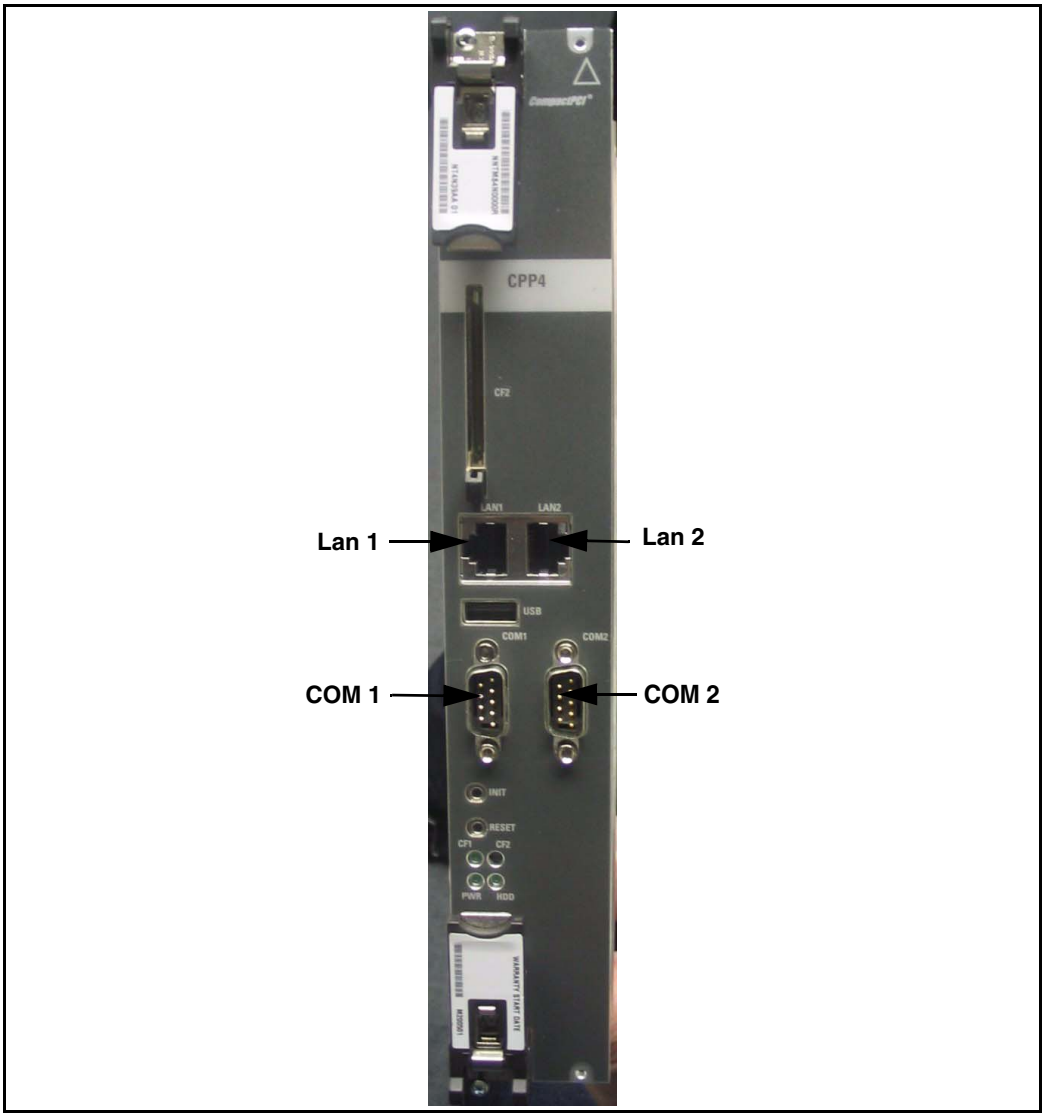


Installing Call Server 1 CP PIV card and blank faceplate

Procedure 13
Installing Call Server 1 CP PIV Processor and blank faceplate

1. Insert the Communication Server 1000E CP PIV Drive Carrier Card blank faceplate replacement into the empty Drive Carrier Card slot using the supplied screws.
2. Insert the CP PIV card into the empty CP slot in Call Server 1. Seat the card and secure the latches and screws.
3. Attach the COM 1 and COM 2 cables to the CP PIV card faceplate. See Figure 31 on page 124.

Figure 31
CP PIV faceplate connections



4 Attach the LAN 1 and LAN 2 cables to the CP PIV card faceplate at this point in the upgrade.

End of Procedure

At this point, the hardware upgrade is complete for Call Server 1. To perform the software upgrade, or to upgrade to a High Availability system (which requires a second Call Server), see *Communication Server 1000E Software Upgrades* (NN43041-458). To install the hardware required for Call Server 0, repeat Procedure 8 through Procedure 13.

Upgrading a CP PII or CP PIV to CP PM

Contents

This section contains information on the following topics:

Task overview

The following task overview list provides a summary of steps to perform the hardware upgrade from a CS 1000E CP PII or CP PIV source platform to a CS 1000E CP PM target platform.

- "Connecting a terminal" on page 131
- "Printing site data" on page 131
- "Performing a template audit" on page 134
- "Backing up the CP PII or CP PIV customer database" on page 136
- "Removing the SSC card" on page 148

- "Installing a DSP Daughterboard onto an MGC card" on page 149
- "Installing the MGC card" on page 151
- "Installing the CP PM card" on page 160
- "Cabling the MGC" on page 163
- "Cabling the CP PM card" on page 166

Preparing for the upgrade

This chapter implements a "source- to-target" approach to performing an upgrade. It is important to correctly identify the source platform, target platform, and maintenance window required to perform the upgrade.

IMPORTANT!

This upgrade requires that the PC you are working from is equipped with a CF reader (or, if a CF reader is not available, a PCMCIA CF adaptor).

This chapter features check boxes indicating what condition the system should be in at that stage of the upgrade. If the system is not in the proper condition steps should be taken to correct this.

This section is written to maintain Dial Tone where possible and limit service interruptions.

Before attempting any software or hardware upgrade field personnel should follow the steps in Table 15 below:

Table 15
Prepare for upgrade steps (Part 1 of 2)

Procedure Step	Page
Planning	129
Upgrade Checklists	130
Preparing	130

Table 15
Prepare for upgrade steps (Part 2 of 2)

Procedure Step	Page
Connecting a terminal	131
Printing site data	131
Performing a template audit	134
Backing up the CP PII or CP PIV customer database	136

Planning

Planning for an upgrade involves the following tasks:

- Read and understand the current release Product Bulletin.
- Conduct a site inspection to determine proper power and grounding.
- Review the site profile to determine proper foot space if adding new columns or modules.
- Identify all applications (CallPilot, SCCS, IP, etc.) 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.
- Download a copy of the customer database media converter tool. This tool is used to transfer the customer database from floppy disk to CF card if you are upgrading from a CP PII.
- 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.

Upgrade Checklists

Upgrade checklists can be found in the "Upgrade checklists" chapter on page 201. Engineers may print this section in order to facilitate the upgrade.

Preparing

IMPORTANT!

In a Campus configuration, as both cores may be physically separate, it is important to plan for required attendance at both core sites at some point in 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 Server, Voice Gateway Media Cards, Signaling Servers and so on).
- Determine the required patches or DEP lists installed on all applications (CallPilot, Symposium Call Center Server, TM, and so on).
- 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.
- Determine if additional ELAN and TLAN network connections are required for the installation of MGC cards.
- Verify that the target CP PM card has 2 GB ram, 40 GB HDD, and BIOS version 18 to support CS 1000 Release 6.0.
- Secure the source software and key code.

- Secure the target software and key code.
- Verify the new key code using the DKA program.
- Print site data.

Connecting a terminal

Procedure 14
Connecting a terminal

A maintenance terminal is required to access the Call Servers during the upgrade procedure.

1 Connect a terminal to the COM 1 port on the faceplate of the CP PII or CP PIV card of the *inactive* Call Server.

2 The settings for the terminal are:

a. Terminal type: VT100

b. 9600 Baud

c. Data bits: 7

d. Parity: odd

e. Stop bits: 1

f. Flow control: none

Note: If the telnet session is set to 7 odd 1 versus 8 none 1,the system messages generate before the INI prints, otherwise a portion of the database conversion reference of lost TN's does not appear.

End of Procedure

Printing site data

Print site data to preserve a record of the system configuration (Table 16 on page 132). Verify that all information is correct. Make corrections as necessary.

Note: Items marked with an asterisk (*) are required. Other items are recommended for a total system status.

Table 16
Print site data (Part 1 of 3)

Site data	Print command	
Terminal blocks for all TNs	LD 20	
	REQ	PRT
	TYPE	TNB
	TN	<cr>
	CDEN	<cr>
	CUST	<cr>
	DATE	<cr>
	PAGE	<cr>
	DES	<cr>
Directory Numbers	LD 20	
	REQ	PRT
	TYPE	DNB
	CUST	<cr>
Attendant Console data block for all customers	LD 20	LD 20
	REQ	PRT
	TYPE	ATT, 2250
	CUST	<cr>
*Customer data block for all customers	LD 21	LD 21
	REQ	PRT
	TYPE	CDB
	CUST	<cr>
Route data block for all customers	LD 21	
	REQ	PRT
	TYPE	RDB
	CUST	Customer number
	ROUT	<cr>
	ACOD	<cr>

Table 16
Print site data (Part 2 of 3)

Site data	Print command	
*Configuration Record	LD 22	
	REQ	PRT
	TYPE	CFN
*Software packages	LD 22	
	REQ	PRT
	TYPE	PKG
*Software issue, and tape ID	LD 22	
	REQ	ISS
	REQ	TID
* Peripheral software versions	LD 22	
	REQ	PRT
	TYPE	PSWV
Print configured D-channel information	LD 22	
	REQ	PRT
	TYPE	ADAN DCH
ACD data block for all customers	LD 23	
	REQ	PRT
	TYPE	ACD
	CUST	Customer Number
	ACDN	ACD DN (or <CR>)
Multi-purpose ISDN Signaling Processor (MISP) card	LD 27	
	REQ	PRT
	TYPE	MISP
	LOOP	loop number (0-158)
	APPL	<cr>
	PH	<cr>
Review the configured T1 information	LD 60	STAT

Table 16
Print site data (Part 3 of 3)

Site data	Print command	
DTI/PRI data block for all customers	LD 73	
	REQ TYPE	PRT DDB
Review the configured D-channel information	LD 96	STAT DCH
Print the configured host information	LD 117	PRT HOST (provides system IP addresses)
Superloops and XPEs	LD 97	
	REQ TYPE SUPL	CHG SUPL Vxxx V stands for a virtual superloop and xxx is the number of the virtual superloop. xxx = 0-252 in multiples of four for MG 1000E xxx = 96-112 in multiples of four for MG 1000T (See Table 29)

Note: Items marked with asterisks (*) are required printout for conversion. Other items are recommended for a total system status.

Performing a template audit

A template audit (LD 01) reviews the templates in your system. Corrupted and duplicate templates are cleaned up. An example of the information generated during the audit is listed below.

Note: The template audit may take an extended period of time on large systems. Run the audit during a low traffic period.

CAUTION

Loss of Data

Do not abort this overlay until the audit is complete. If the overlay is interrupted, data will be corrupted.

LD 01 The audit begins as soon as LD 01 is entered.

TEMPLATE AUDIT

CONFIRM TEMPLATE AUDIT NOW? (Y/N)

STARTING PBX TEMPLATE SCAN

TEMPLATE 0001 USER COUNT LOW **CHECKSUM OK**

TEMPLATE 0002 USER COUNT HIGH **CHECKSUM OK**

TEMPLATE 0003 NO USERS FOUND

STARTING SL1 TEMPLATE SCAN

TEMPLATE 0001 USER COUNT OK **CHECKSUM OK**

•

•

TEMPLATE 0120 USER COUNT OK **CHECKSUM OK**

TEMPLATE AUDIT COMPLETE

Backing up the CP PII or CP PIV customer database

To back up call server data, perform a data dump to backup the customer database to floppy on CP PII or Compact Flash (CF) on CP PIV.

Procedure 15
Performing a data dump to backup the customer database:

1 Log into the system.

2 Insert the appropriate backup media. Perform **a** for CP PII. Perform **b** for CP PIV.

a. Insert a floppy disk into the active Core/Net floppy drive to back up the database.

b. Insert a CF card into the active Core/Net RMD slot to back up the database.

3 Load the Equipment Data Dump Program (LD 43). At the prompt, enter:

LD 43	Load program

4 When “EDD000” appears on the terminal, enter:

EDD	Begin the data dump

CAUTION

Loss of Data

If the data dump is not successful, do not continue; contact your technical support organization. A data dump problem must be corrected before proceeding.

5 The messages “DATADUMP COMPLETE” and “DATABASE BACKUP COMPLETE” will appear once the data dump is complete.

****	Exit program

6 The message “Backup process to local Removable Media Device ended successfully” appears. Remove and label the floppy disk or CF card.

IMPORTANT!

Database backup information should be preserved for a minimum of 5 days.

End of Procedure

Note: Before attempting any updrade, the loop, shelf, and side must be verified.

Once you have completed the backup and archive of the Call Server customer database, shut down the system and remove the backup media. You are now ready to install the hardware.

Transferring the CP PII database from floppy disk to CF card

You must convert the CP PII floppy disk backup to a CF card. The CP PM card requires a CF card with backup data for restoration. To transfer using the customer database media converter tool, see Procedure 16 on page 138.

Transferring the database from floppy disk to CF card (customer database media converter tool)

The floppy disk that contains the backed up customer database needs to be transferred to a Compact Flash (CF) card. Nortel recommends you use the extra CF card included with the Software Install Kit.

IMPORTANT!

This upgrade requires that the PC you are working from is equipped with a floppy disk drive and CF reader (or, if a CF reader is not available, a PCMCIA CF adaptor).

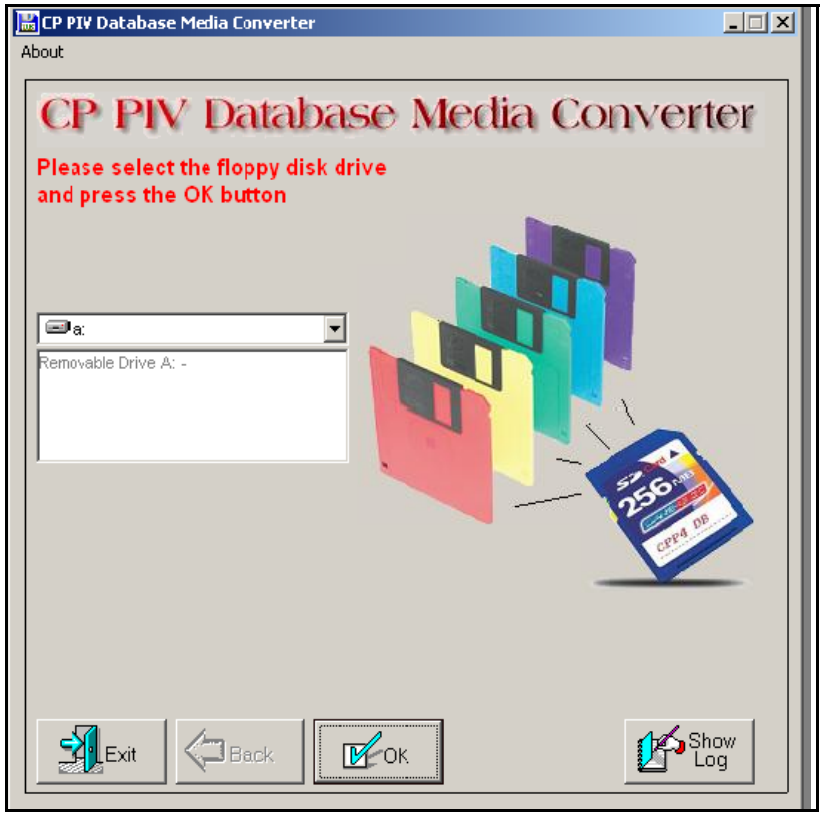
Procedure 16
Transferring the customer database from floppy disk to CF

1 Insert the floppy disk containing the backed up customer database from Procedure 15 on page 136.

2 Insert a CF card (there is one blank one included in the Software Install Kit) into the CF reader or PCMCIA CF adapter.

3 Start the customer database media converter tool. The first screen (Figure 32 on page 138) prompts you to select the correct drive letter for the floppy disk drive.

Figure 32
Select the floppy disk drive



4 Insert the the floppy disk (diskette 1) and click OK (see Figure 33 on page 139).

Figure 33
Insert diskette 1

5 After verifying the database on the floppy disk, the utility prompts you to select the CF drive (see Figure 34 on page 140).

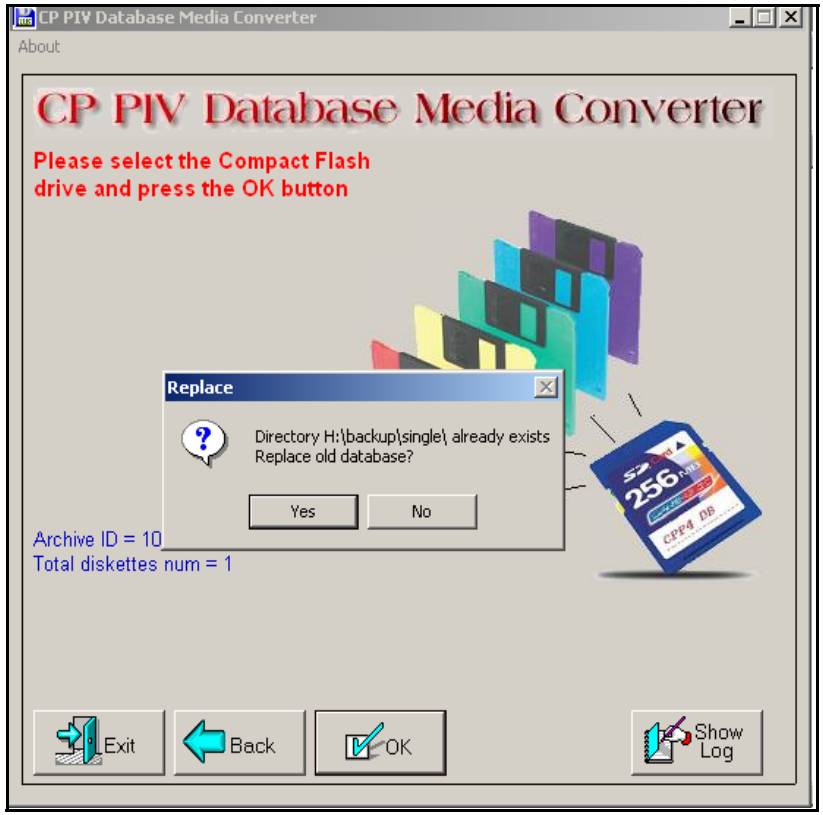
Figure 34
Select the CF drive

6 At this point, 2 options are available:

a. If the CF card already contains a previously backed-up database, a dialog box appears (see Figure 35 on page 141). Click yes to replace old database.

b. If the CF card is blank, the database is backed up to the CF card.

Figure 35
Replace database on CF drive



7 The utility completes the transfer to CF and prompts you to copy another or EXIT (see Figure 35 on page 141).

Figure 36
Copy another or exit

End of Procedure

Installing the cards

Hardware Upgrade Task Overview

To install the hardware for a CP PM upgrade, perform the following steps:

1. Power down the CP PII or CP PIV Call Server.
2. Remove any SSC cards as described in Procedure 17 on page 148.
3. Install the DSP Daughterboard on the MGC card as described in Procedure 18 on page 151.
4. Install the MGC card as described in Procedure 19 on page 153.
5. Install the CP PM as described in Procedure on page 160.
6. Cable the cards as shown in “Cabling the cards” on page 162.
7. Power up the Media Gateway.
8. 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.

Media Gateway slot locations

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

The CP PM Call Server interfaces with the Media Gateway through the MGC or MG XPEC using the ELAN interface, and therefore does not require backplane connectivity (other than power and slot ID).

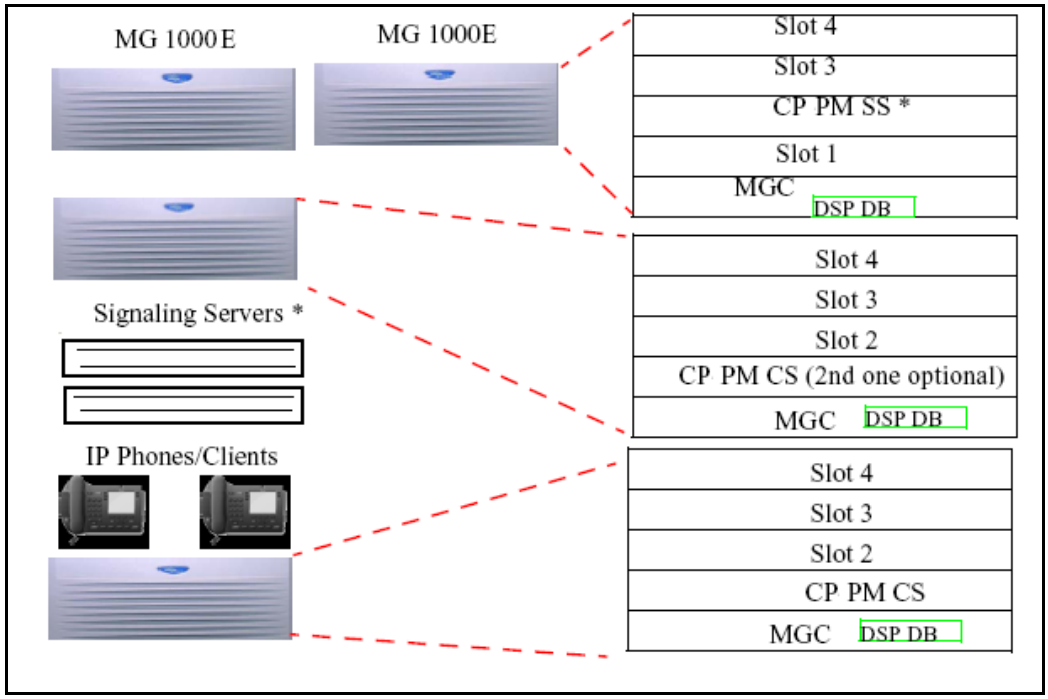
Media Gateway 1000E

The following rules apply to the placement of the CP PM cards in a Media Gateway 1000E:

- The CP PM Call Server cannot be placed in slot 0 of any Media Gateway. Slot 0 is reserved for the MGC.
- To allow for ease of cabling, the CP PM call server may be placed in slots 1 through 4 of the MG 1000E chassis, with the exception of the Option 11C Mini. The Option 11C Mini cannot have a CP PM card installed in slot 4 as this slot was originally allocated for the 48 port DLC only.
- The CP PM Signaling Server may be placed in slots 1 through 4 (see Figure 37 on page 145) or in another chassis if necessary.
- If utilizing the Campus Redundancy High Availability Call Server option, place the two CP PM call servers in separate Chassis' to allow for increased survivability.

Once the upgrade is complete, a typical SA MG 1000E chassis system will resemble Figure 37 on page 145 with an MGC in slot 0, and a CP PM call server and signaling server in the main chassis. The additional Media Gateways contain MGC cards only for an SA configuration.

Figure 37
MG 1000E chassis system



*—Signaling Server may be one of the following:

- Nortel CP PM Signaling Server;
- Dell R300 Commercial off-the-shelf (COTS) Signaling Server
- IBM x306m COTS Signaling Server
- IBM x3350 COTS Signaling Server
- HP DL320 G4 COTS Signaling Server

CP PM Signaling Servers are cards which resise in a Media Gateway, COTS Signaling Servers are separate 1U rack mount servers.

You must activate the High Speed Pipe package (410) to install any redundancy options. For more information, see "Appendix A: Upgrading to High Availability" on page 197.)

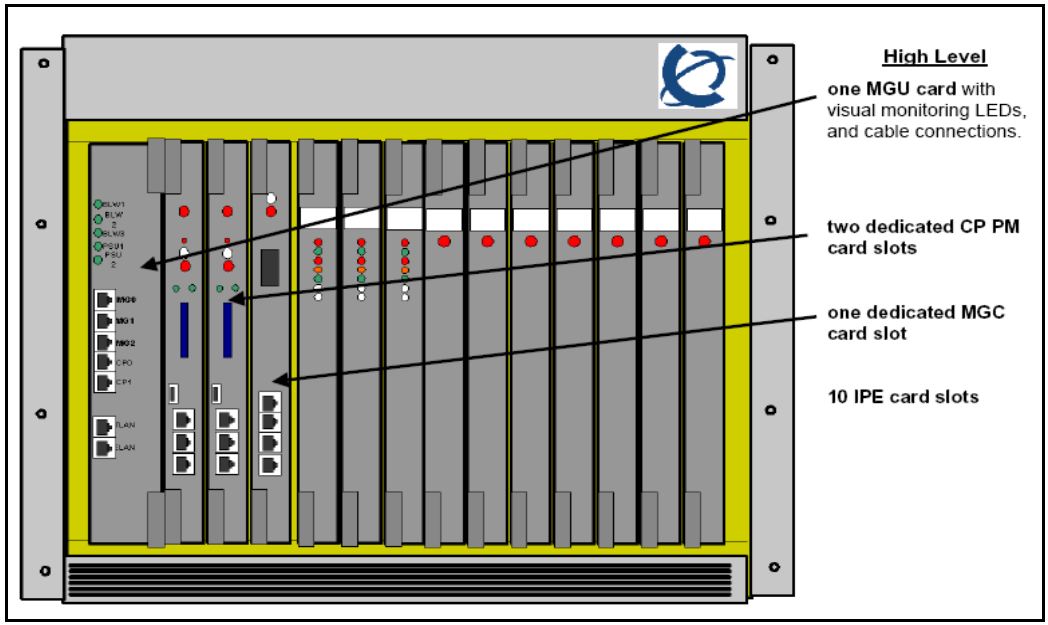
Media Gateway 1010

The following rules apply to the placement of the CP PM cards in the Media Gateway 1010:

- When facing the front of the MG 1010, from left to right is MGU slot 21, CP PM slots 22and 23, MGC slot 0, a metal divider, and IPE slots 1 to 10.
- The CP PM Call Server cannot be placed in slot 0 of any Media Gateway. Slot 0 is reserved for the MGC.
- The MG 1010 provides dedicated slots 22 and 23 for CP PM Call Servers and CP PM Signaling Servers.
- The MG 1010 supports a 12 CP PM configuration. A maximum of ten additional CP PM cards can be placed in IPE slots 1 through 10. CP PM cards in slots 1-10 of a MG 1010 require the NTAK19EC for serial connections.
- An MG 1010 with greater than five but less than 12 CP PM cards requires a blank card assembly kit (NTC350AAE6) for EMC containment. Five blank cards are included in the blank card assembly kit.
- If utilizing the Campus Redundancy High Availability (HA) Call Server option, place the two CP PM Call Servers in separate chassis' to allow for increased survivability. HA is not supported on a CP PM coresident Call Server and Signaling Server system.

Figure 38 on page 147 shows a SA Media Gateway 1010 chassis system with an MGC in slot 0, a CP PM Call Server, and a CP PM Signaling Server in the main chassis.

Figure 38
MG 1010 chassis system overview



You must activate the High Speed Pipe package 410 to install any redundancy options. For more information, see "Appendix A: Upgrading to High Availability" on page 197.)

Media Gateway Extended Peripheral Equipment Controller (MG XPEC) card

You can convert NT8D37 Communication Server 1000M and Meridian 1 large system IPE modules into Communication Server 1000E Media Gateways with the Media Gateway Extended Peripheral Equipment Controller (MG XPEC) card. The MG XPEC card provides a solution to migrate IPE modules from a Meridian 1 TDM system, or CS 1000M system to a CS 1000E system. The MG XPEC card converts one IPE module into two Media Gateway shelves (type MGX) for use in a CS 1000E system.

The following rules apply to the placement of the CP PM cards in an IPE module with MG XPEC card:

- The CP PM Call Server cannot be placed in the controller slot. The controller slot is reserved for the MG XPEC.
- The CP PM Call Server can be placed inslots 0 through 7 on the left and right side or the IPE module. You renumber the IPE module right side slots 8 to 15 as 0 to 7 with a new label included in the MG XPEC cable kit. CP PM cards in an IPE module require the NTAK19EC for serial connections.
- If utilizing the Campus Redundancy High Availability (HA) Call Server option, place the two CP PM Call Servers in separate IPE modules to allow for increased survivability. HA is not supported on a CP PM coresident Call Server and Signaling Server system.

For more information about converting an NT8D37 IPE module into Media Gateways with an NTDW20 MG XPEC card, see *Communication Server 1000M and Meridian 1 Planning and Engineering* (NN43021-220).

For information about the installion and cabling of an MG XPEC card, see *Communication Server 1000E Installation and Commissioning* (NN43041-310)

Removing the SSC card

Procedure 17
Removing the SSC Card

1. Power down the system.
2. Unlatch the SSC card.

3 Remove the SSC card from its slot.

IMPORTANT!

The SSC card and dongle 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 center upon confirmation of a successful upgrade. No further orders will be accepted for the serial number since it will be decommissioned and tracked in Nortel's database.

Note: If the upgrade fails, you will not be able to revert back to the old system without the SSC card and dongle.

End of Procedure

Installing a DSP Daughterboard onto an MGC card

Table 17 lists the configuration options for Position 1 and 2.

Table 17
DSP Daughterboard configurations

Position 1 (DB1)	Position 2 (DB2)
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)
Note: Only the PRI - Media Gateway MGC can house two 96 port DSP daughter boards.	

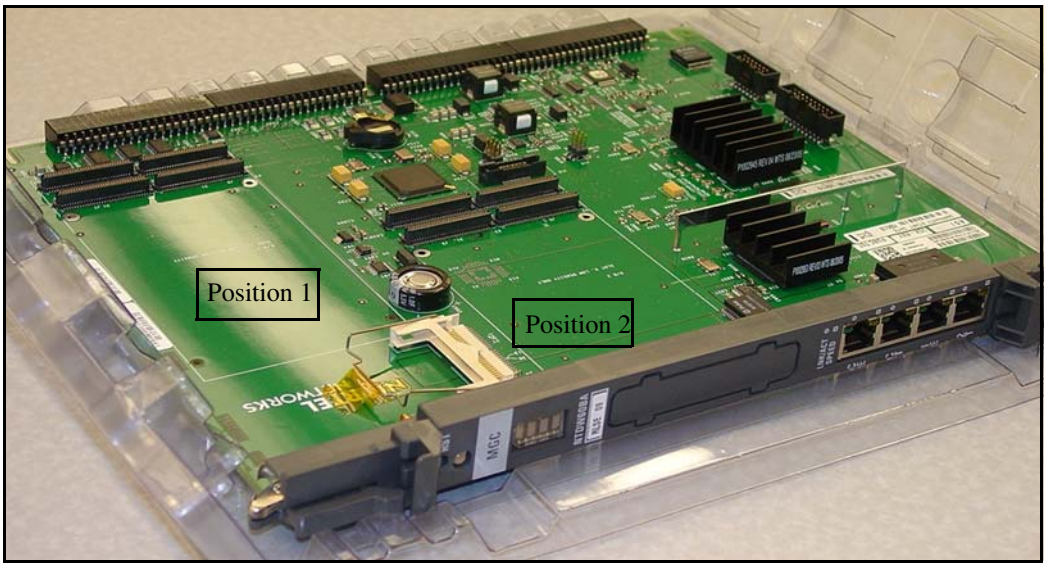
IMPORTANT!

Due to historical TN mapping for the Call Server SL1 software, even though the DSP channels will occupy Card 0 in the Media Gateways, the TN (l s c u) 000 0 00 00 (ie unit 0 of card 0 in the first Media Gateway <supl sh> = 000 0) is not available.

A single channel (unit 0) is not available on the first Media Gateway ONLY if there is a 32 port DB installed in daughterboard position #2. If there is a 96 port DB installed in daughterboard position #1, all 96 channels are available. If there is a 32 port DB installed in daughterboard position #1, all 32 channels are available.

The following procedure describes how to install a DSP Daughterboard on an MGC card. See Figure 39.

Figure 39
DSP Daughterboard



Procedure 18
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-32 or DSP DB-96) or DB position 2 (for DSP DB-32), depending on how the DB is configured from a TN perspective.

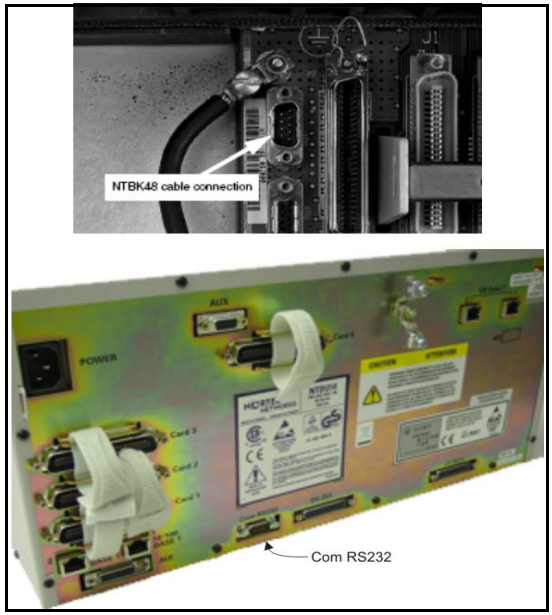
3 Ensure the DSP DB is securely attached to the MGC. (using supplied screws).

End of Procedure

Installing the MGC card

Reuse the existing 3-port SDI cable (NTBK48) for installation of a MGC in a MG 1000E chassis. Connect it to the COM RS232 port on the chassis. Figure 40 on page 151 illustrates the two connectors.

Figure 40
NTBK48 connectors



The 3-port SDI cable is not required for a MGC installation in a MG 1010 chassis. The MG 1010 MGU card provides a the serial connection. Use the NTC325AAE6 serial cable kit with a MG 1010.

MGC serial port capabilities

Table 18 on page 152 shows the MGC Serial Port Capabilities.

Table 18
MGC Serial Port Capabilities

Port	Modem Support?	Used for initial Configuration?
SDI0 (TTY0)	Yes (requires null modem to connect to a TTY)	Yes
SDI1 (TTY1)	No (No hardware flow control)	No. Port 1 is not enabled during the initial configuration of the MGC.
SDI2 (TTY2)	No (No hardware flow control)	No (Only available after FPGA is enabled. Not available during initial configuration menu display)

Procedure 19
Installing the MGC card

The MGC card replaces the existing SSC card. The MG 1010 does not support the SSC card.

1 Insert the MGC into Slot 0 of the Media Gateway.

IMPORTANT!

Please DESTROY or RETURN the SSC dongle to your local Nortel Repairs/Returns center upon confirmation of a successful upgrade. If the SSC system was using remote dongles for any expansion cabinets, please DESTROY or RETURN to your local Nortel Repairs/Returns center upon confirmation of a successful upgrade.

Note: If the upgrade fails, you will not be able to revert back to the old system without the SSC card and dongle.

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

2 Connect the serial cable.

- For the MG 1000E, connect the 3-port SDI cable (NTBK48AA) to the SDI0 port on the Media Gateway. Connect the opposite end of the cable to a maintenance terminal.
- For the MG 1010, connect a shielded CAT5 Ethernet cable to the NTC325AAE6 serial cable kit. Connect this cable to the MGU faceplate port labelled MGC TTY0 in the Media Gateway. Connect the opposite end of the cable to a maintenance terminal.

3 Power on the Media Gateway.

- The MGC display shows BOOT.
- The power on self-test runs. The MGC display shows POST.
- The MGC display shows PASS if the self-test is successful. Otherwise the MGC display shows an Exxx error code.
- The MGC loads the application software. The MGC display shows LOAD.

End of Procedure

Configuring the MGC

Use Procedure 20 to configure the MGC through CLI.

Procedure 20
Configuring the MGC on the Call Server

Initial configuration of the MGC is command line ONLY.

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

There are two ways to enter mgcsetup:

- If no IP information exists on the MGC, it will boot directly into the setup menu.
- If IP information exists, use <CTRL>L<CTRL>D<CTRL>B, (provide LDB username and password to access LDB). Invoke the mgcsetup command.

The MGC Shells can be accessed using the following commands:

- `<CTRL> OAM,` (provide OAM username and password to access OAM shell)
- `<CTRL> LDB,` (provide LDB username and password to access LDB)
- `<CTRL> PDT,` (provide PDT username and password to access PDT shell)

1 If IP information already exists on the MGC card, input the CLI command **`mgcsetup`**.

2 Enter network IP information at the MGC setup menu:

```
ELAN IP : 192.168.3.33
ELAN subnet mask : 255.255.255.0
```

```
ELAN gateway IP : 192.168.3.1
Primary CS IP : 192.168.3.32
```

Note: Depending on the date of manufacture, the Gold image may prompt for TLAN and/or secondary call server information. If these prompts appear they can be ignored. This information is configured through EM and is retrieved by the MGC at registration. The new image after upgrade will not have these prompts.

3 Enter port and security parameters, if required:

Note: This step is only necessary if you are using advanced security features.

```
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
```

IMPORTANT!

Nortel recommends that you disable ELAN security during system installation.

```
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)
```

4 Review the network information and enter “y” to confirm (see Figure 41 on page 157).

Figure 41
Network information

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

Hostname              : IPMG0-0
ELAN IP               : 192.168.3.33
ELAN subnet mask      : 255.255.255.0
ELAN gateway IP       : 192.168.3.1
Primary CS IP         : 192.168.3.32
TLAN set to auto negotiate.
ELAN set to auto negotiate.
ELAN security Disabled

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

WARNING

Service Interruption

IP changes to the MGC require a reboot. A service interruption can occur.

5 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 Call Server and downloads the remaining configuration information.

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

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

Rebooting the MGC

The MGC reboots and registers with the Call Server.

```
Found device : INTEL 82365SL

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

                              VxWorks System Boot

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

auto-booting...

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

Found device : INTEL 82365SL

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

Loadware upgrade

If the MGC loadware is out of date (compared to the loadware on the Call Server), an upgrade of the loadware occurs based on the Centralized Upgrade setting defined during the software install and the values set in LD 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 configured Media Gateways synchronize with the Call Server.

Each Media Gateway IP address must be configured in overlay 97. For more information, see *Communication Server 1000E Upgrade Procedures* (NN43041-458)

End of Procedure

Installing the CP PM card

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

MG 1010 slots 22 and 23 require the NTDW99 CP PM card with metal faceplate. MG 1000E and MG 1010 slots 1-10 support NTDW61 and NTDW99 CP PM cards. If you require more than two CP PM cards in a MG 1010, you can install additional CP PM cards in slots 1-10.

Ensure that the Dip Switch (S5) is set to position 1 if using the CP PM as a Call Server or position 2 if using the card as a CP PM Signaling Server.

Procedure 21
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.

Note 1: This first step is applicable only when the CP PM card is used as a Call Server.

Note 2: Remove the retainer clip from the FMD slot when the card is used as a Signaling Server. The clip must be removed to prevent it from shorting out adjacent cards.

2 Ensure that the FMD (1 GB) is correctly inserted and locked in place.

3 Insert the CP PM card.

- Slide the CP PM call processor into Slot 1 (or higher) of the MG 1000E cabinet or chassis.
- Slide the CP PM call processor into Slot 22 or 23 of the MG 1010 chassis.

4 Lock the card into the faceplate latches.

5 Connect the serial cable.

- On a MG 1000E or MG 1010 with CP PM cards in slots 1-10,connect the 2-port SDI cable. The 50-pin Amphenol NTAK19EC connects to the back of the CP PM call server.
- For a MG 1010, connect a shielded CAT5 Ethernet cable to the NTC325AAE6 serial cable kit. Connect this cable to the MGU

faceplate port labelled TTY0 for CP1 or CP2. CP1 is for slot 22, CP2 is for slot 23.

- Connect the opposite end of the serial cable to the serial port on the maintenence terminal.

Note: To connect a terminal to the CP PM card with a NTAK19EC cable, perform the following steps:

- Connect the NTAK19EC cable (shipped with the CP PM Signaling Server) to the 50 pin MDF connector on the back of the desired MG 1000E.
- Connect a 25 pin to 9 pin straight through serial cable to the 25 pin DB connector at the end of the NTAK19EC cable (a female to female gender changer may be required). You must povide this adapter.
- Connect the other end of the 25 pin to 9 pin straight through serial cable to the serial port on the maintenance terminal.

End of Procedure

Figure 42
2-port SDI cable (NTAK19EC) cable

End of Procedure

The preceding steps enable users to upgrade the system one Media Gateway at a time. For each additional Media Gateway, repeat Procedure 17 to Procedure 19 on page 153.

Cabling the cards

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

Cabling the MGC

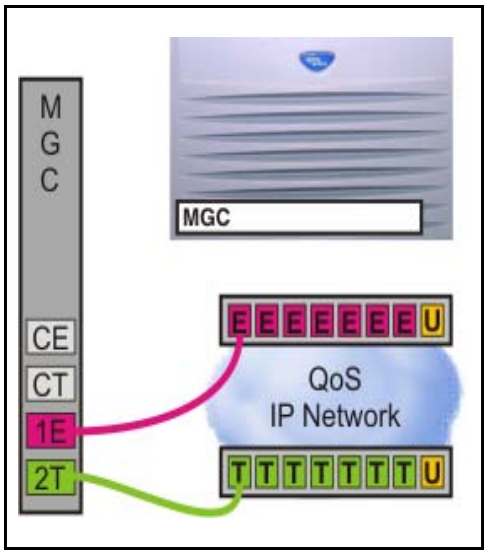
A MGC features six Ethernet interfaces set to autonegotiate by default, four on the faceplate and two on the backplane. Figure 43 on page 163 shows the Ethernet connectors on the front of the MGC. The CE and CT ports are available for supported cabling to the CP PM card or as maintenance ports to the ELAN and TLAN. The two ports on the backplane connector are accessible using the MG 1010 MGU faceplate ELAN and TLAN ports, the 100BT breakout adapter (See Figure 44 on page 164) in a Cabinet, or available through 10/100BaseT Ethernet connectors on the back of the Media Gateway. The 1E (ELAN) and 2T (TLAN) Ethernet ports must be attached to a Layer 2 switch.

Figure 43
MGC faceplate

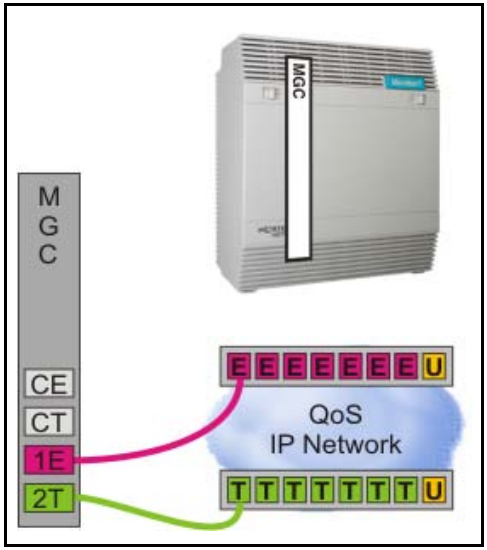
Figure 44
Breakout adaptor

Nortel recommends you use direct connections from the faceplate jacks of the MGC to the Layer 2 switch. Figure 45 on page 165 illustrates a Media Gateway chassis with a MGC connected directly to a Layer 2 switch. Figure 45 on page 165 illustrates a Media Gateway cabinet with MGC connected directly to the Layer 2 switch.

Figure 45
MGC MG Cable



MGC Cabinet Cable



For more information on supported cabling options, see "Appendix D: Supported cabling options" on page 211.

Cabling the CP PM card

In a MG 1000E or a MG 1010 with CP PM cards in slots 1-10, the SDI port of the CP PM card routes through the backplane to the 50-pin Amphinol connector on the back of the MG 1000E. A SDI cable (NTAK19) ships with the CP PM that adapts the 50-pin Amphinol connector to two 25-pin DB connectors. Use Port 0 for maintenance access, and Port 1 for an external modem connection.

In a MG 1010, the MGU provides TTY0 and TTY1 serial ports for the CP PM card in slot 22 and slot 23. Connect a shielded CAT5 Ethernet cable to the NTC325AAE6 serial cable kit. Attach this cable to the MGU port labelled TTY0 for CP1 or CP2. CP1 is for slot 22, CP2 is for slot 23.

Nortel recommends you use direct connections from the faceplate jacks of the CP PM cards to the Layer 2 ethernet switches. Figure 46 on page 167 illustrates a Media Gateway chassis with a CP PM call processor connected directly to a Layer 2 switch. Figure 47 on page 167 illustrates a Media Gateway chassis with a CP PM Signaling Server connected directly to a Layer 2 switch.

Figure 46
CPPM CP MG Cable

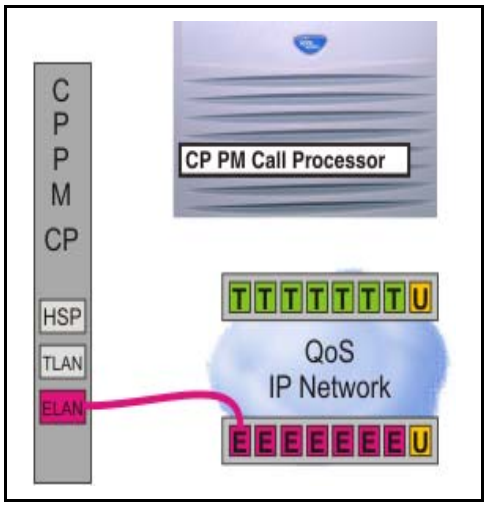


Figure 47
CPPM SS MG cable

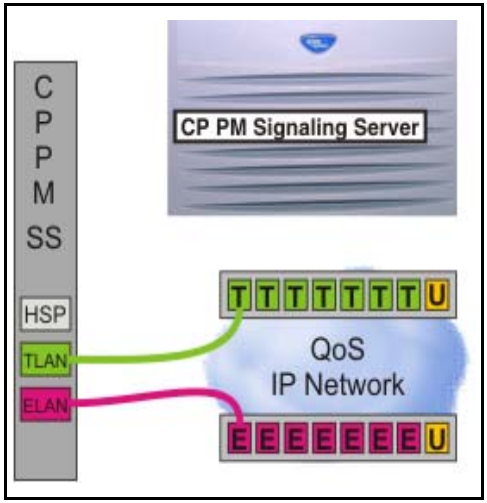
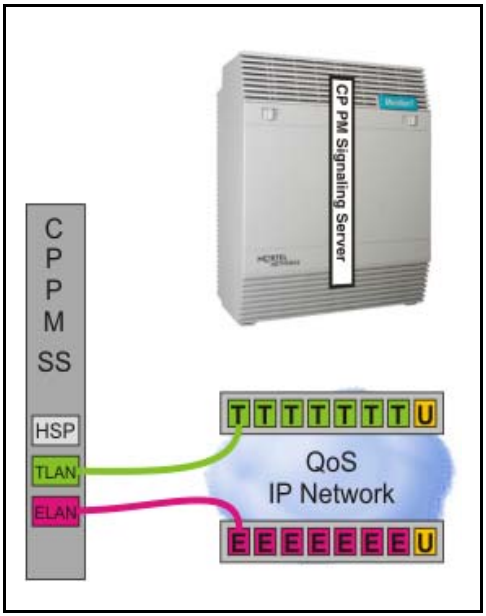


Figure 48 on page 168 illustrates a Media Gateway cabinet with a CP PM Signaling Server connected directly to a Layer 2 switch.

Figure 48
CPPM SS Cabinet cable



For more information about supported cabling options, see "Appendix D: Supported cabling options" on page 211.

Once the cabling of the MGC and CP PM cards is complete, power up the system. You may now proceed to *Communication Server 1000E Upgrade Procedures* (NN43041-458) to begin the software upgrade and restore the customer database.

For information about upgrades to a CP PM Co-resident Call Server and Signaling Server system, see *CP PM Co-resident Call Server and Signaling Server Fundamentals* (NN43001-509).

Installing a CP PM or COTS server

Contents

This chapter contains the following topics:

Introduction

This chapter contains general instructions to install and connect the Nortel Common Processor Pentium Mobile (CP PM) circuit card hardware. This chapter also contains general instructions to connect Commercial off-the-shelf (COTS) servers. Installation instructions for COTS servers are not included. See your IBM, HP, or Dell server user guide for your COTS server for detailed installation instructions.

A Nortel CP PM or COTS server that you deploy with Linux Signaling Server applications is referred to as a Signaling Server,. A Nortel CP PM or COTS server that you deploy with the Linux SIP Line application can be referred to as a SIP Line Gateway.

IMPORTANT!

Instructions to install an IBM X306m, IBM x3350, or HP DL320-G4, or Dell R300 COTS server are not included in this chapter. Detailed installation instructions are in the IBM xSeries 306m User Guide, IBM x3350 User Guide, HP ProLiant DL320 Generation 4 Server User Guide, or the Dell PowerEdge R300 User Guide shipped with the server.

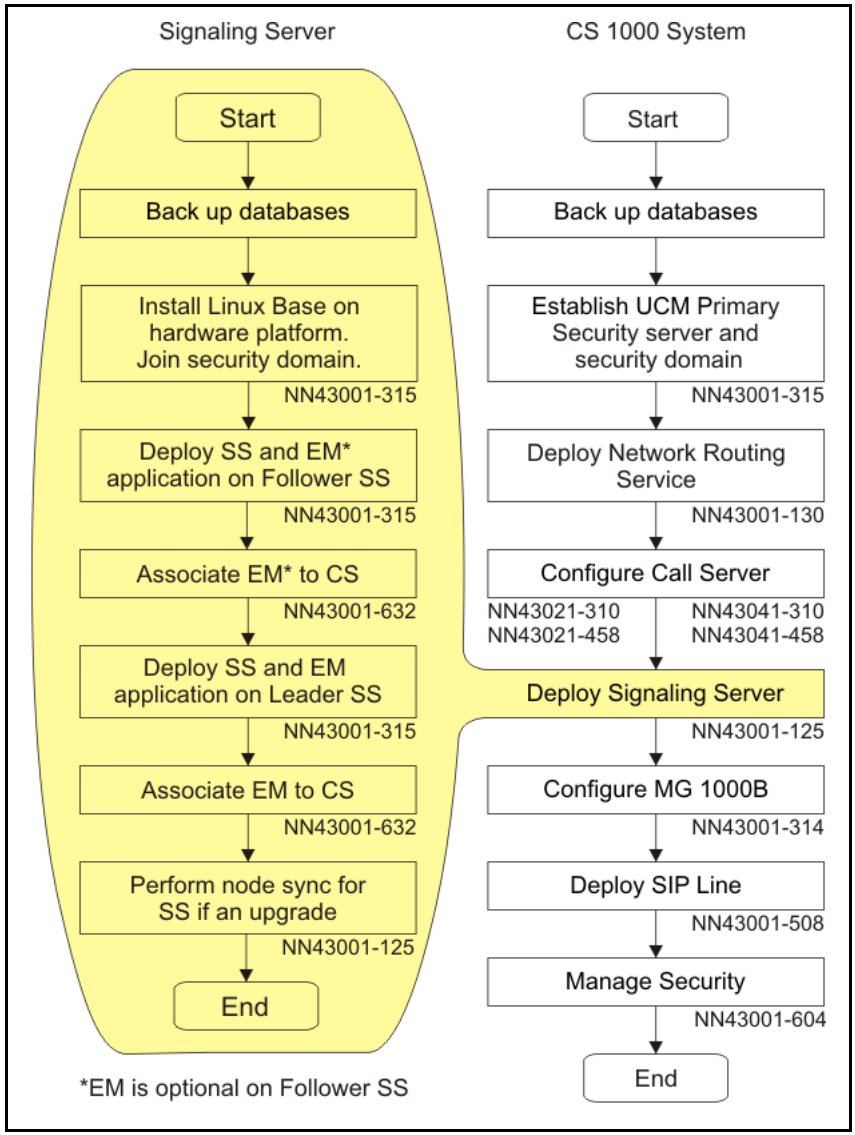
Signaling Server task flow

This section provides a high-level task flow for the installation or upgrade of a Communication Server 1000 system. The task flow indicates the recommended sequence of events to follow when configuring a system and provides the NTP number that contains the detailed procedures required for the task.

For more information refer to the following NTPs, which are referenced in Figure 49 on page 171:

- *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315)
- *Element Manager System Administration* (NN43001-632)
- *Signaling Server IP Line Applications Fundamentals* (NN3001-125)

Figure 49
Signaling Server task flow



Readiness checklist

Before you install a CP PM or COTS server in a Communication Server 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 19
Readiness checklist (Part 1 of 2)

Have you:	
Read all safety instructions in *Communication Server 1000E: Installation and Commissioning* (NN43041-310) as appropriate for your Communication Server 1000 system?	
Received all equipment and peripherals? **For COTS servers:** • installation accessories for rack-mounting the server • AC-power cord • a DTE-DTE null modem cable (supplied) • NTE90672 - Linux Signaling Server software DVD for COTS servers **For CP PM servers:** • NTM427CBE6 - CP PM Signaling Server Linux Upgrade kit, which includes: — NTDW6102E5 - CP PM Signaling Server Hard Drive kit (Linux OS preloaded) — NTM42703 - 2 GB Compact Flash (CF) with Linux software, 2 GB blank CF — NTDW6109E6 - 1 GB DDR SO-DIMM memory upgrade • NTAK19ECE6 - CP PM Signaling Server 2 port SDI Cable assembly kit • NTC325AAE6 - MG 1010 serial cable kit • a DTE-DTE null modem cable (supplied) ***Note:*** Save the packaging container and packing materials in case you must ship the product.	
Made sure the area meets all environmental requirements?	
Checked for all power requirements?	
Made sure the CP PM or COTS hardware meets all required specifications (2GB ram, 40GB hard drive, CP PM BIOS version 18 or higher)?	
Checked for correct grounding facilities?	

Table 19
Readiness checklist (Part 2 of 2)

Have you:	
Obtained the following: • screwdrivers • an ECOS 1023 POW-R-MATE or similar type of multimeter • appropriate cable terminating tools • shielded CAT5 Ethernet cables • 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) or *Communication Server 1000E: Planning and Engineering* (NN43041-220), as appropriate for your Communication Server 1000 system?	
Read all safety instructions in *Communication Server 1000E: Planning and Engineering* (NN43041-220), as appropriate for your Communication Server 1000 system?	

Installing the CP PM hardware

The Nortel CP PM server is a circuit card, and is not mounted in a rack. This section contains general instructions to install the CP PM circuit card in a Communication Server 1000E systems. For additional installation instructions, see *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

IMPORTANT!

CP PM circuit cards contain several switches. All switch settings must be factory defaults except for the switch labelled S5. Switch S5 must be in position 2 to support the internal hard drive on the CP PM card when you deploy a CP PM Signaling Server or a CP PM Co-resident Call Server and Signaling Server.

Installation in a Communication Server 1000E system

The NTDW61BAE5 and NTDW99AAE6 models of the Nortel CP PM are for use in a Communication Server 1000E system. The first task to perform is to install the hard drive and memory upgrade from the Linux upgrade kit. For more information, see *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

CP PM cards cannot use slot 4 on older chassis (slot 4 is allocated for the 48 port DLC only on older chassis).

The Media Gateway 1010 (MG 1010) dedicated CP slots 22 and 23 require the NTDW99AAE6 CP PM card. The NTDW99AAE6 CP PM card contains a metal faceplate for enhanced EMC containment.

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 server is powered through the backplane of the Media Gateway and does not require a power cord.

Before you connect a CP PM or COTS server, ensure that you have the following materials on hand.

Table 20
Connections checklist

Have you:	
Obtained a serial cable (DTE-DTE null modem cable) to connect the server to a maintenance terminal? The IBM x3350 requires a NTRX26NPE6 9 pin femail to 9 pin female null modem cable.	
Obtained the NTAK19EC cable (required for MG 1000E and MG 1010 with CP PM cards in slots 1-10). This cable adapts the 50-pin MDF connector on the back of the MG 1000E, Universal Equipment Module, or 11C cabinet to a 25-pin DB connector. A DB25 female to DB25 female gender changer is required.	
Obtained theNTC325AAE6 serial cable kit (required for MG 1010). This cable kit adapts customer supplied shielded CAT5 Ethernet cables for serial connections.	
Obtained the CAT5 cables (or better) to connect the server to the ELAN and TLAN subnets?	

Connecting a Nortel CP PM Signaling Server

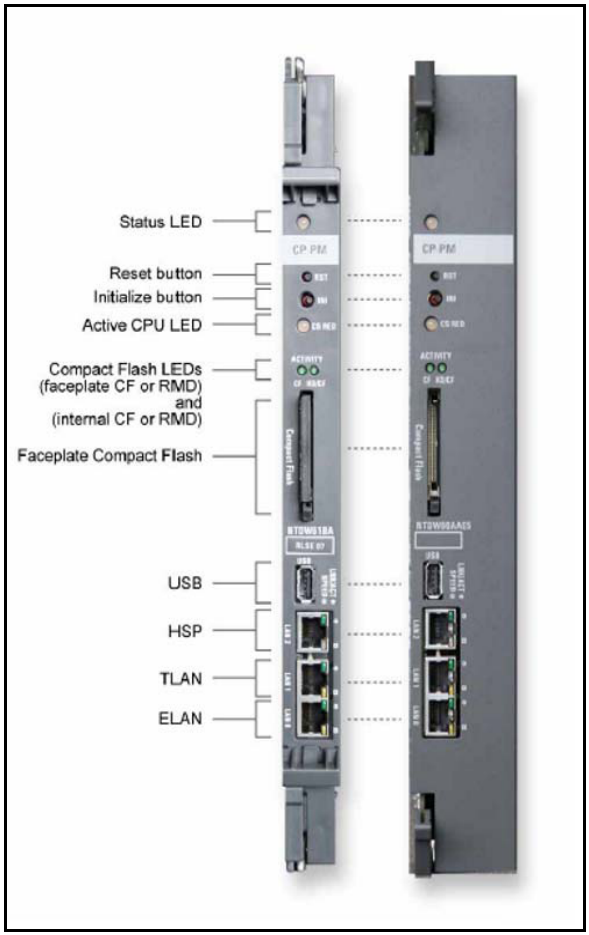
This section contains instructions to connect a Nortel CP PM Signaling Server to the ELAN and TLAN subnet of a Communication Server 1000E system. It also contains instructions to connect a maintenance terminal to the Nortel CP PM Signaling Server.

Communication Server 1000E systems use the NTDW61BAE5 or NTDW99AAE6 model of the CP PM Signaling Server. Insert the CP PM card into the appropriate slot of the Media Gateway. For more infomation on installing the CP PM, see "Installing the CP PM card" on page 160. The Media Gateway also hosts the Media Gateway Controller (MGC) that has Ethernet ports to connect to the ELAN and TLAN subnets of your system. For more information on installing the MGC, see "Installing the MGC card" on page 151.

It is common in a Communication Server 1000E system for the Call Server to connect to the MGC Ethernet ports. If the Call Server is not connected to the MGC Ethernet ports, the CP PM can use them to connect to the ELAN and TLAN subnets of your system. If the Call Server uses the MGC Ethernet ports, you require a long Ethernet cable to connect the CP PM faceplate ELAN and TLAN Ethernet ports directly to the ELAN and TLAN Ethernet switches.

Figure 50 shows the faceplates of two models of the Nortel CP PM Signaling Server with labeling for all components. NTDW61BAE5 for use with Communication Server 1000E is on the left and NTDW66AAE5 for use with Communication Server 1000M is on the right. The NTDW99AAE6 is functionally identical to the NTDW61BAE5, but contains a metal faceplate for enhanced EMC containment. Nortel recommends you to use NTDW99AAE6 CP PM cards in the MG 1010, however NTDW61BAE5 CP PM cards are supported in slots 1-10 of the MG 1010.

Figure 50
Faceplates of the Nortel CP PM server



Procedure 22
Connecting a Nortel CP PM Signaling Server

Note: Refer to Figure 50 when you perform the following procedure.

1 Connect the serial cable.

- On a MG 1000E or MG 1010 with CP PM cards in slots 1-10, connect the 2-port SDI cable. The 50-pin Amphenol NTAK19EC connects to the back of the CP PM Signaling Server.
- On a MG 1010, connect a shielded CAT5 Ethernet cable to the NTC325AAE6 serial cable kit. Connect this cable to the MGU faceplate labelled TTY0 for CP1 or CP2. CP1 is for the CP PM in slot 22, CP2 is for the CP PM in slot 23.
- Connect the other end of the serial cable to the serial port on the maintenence terminal.

Note: To connect a terminal to the CP PM card with a NTAK19EC cable, perform the following steps:

- Connect the NTAK19EC cable (shipped with the CP PM Signaling Server) to the 50 pin MDF connector on the back of the desired MG 1000E.
- Connect a 25 pin to 9 pin straight through serial cable to the 25 pin DB connector at the end of the NTAK19EC cable (a female to female gender changer may be required). You must povide this adapter.
- Connect the other end of the 25 pin to 9 pin straight through serial cable to the serial port on the maintenance terminal.

2 Insert the CP PM card into an appropriate slot in the Media Gateway. The CP PM card is hot-pluggable so you can insert it without powering off the system. The maintenance terminal can now access the CP PM card through the serial connection associated with the CP PM card inserted in the Media Gateway.

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

4 Connect the CP PM card to the ELAN subnet. Insert the RJ-45 CAT5 (or better) cable into the ELAN port (ELAN network interface) on the front of the CP PM. The ELAN port is the right most position of the three network interfaces.

5 Configure 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 card ships with the Admin Serial port configured to 9600 Bit/s. Other available speeds are 19 200, 38 400, and 115 200 Bits. You can change the port speed by using the maintenance terminal. To verify or change the baud rate on a CP PM card, see *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

6 Configure the Signaling Server maintenance terminal. See *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

End of Procedure

Perform Procedure 23 to connect a Nortel CP PM Signaling Server to the ELAN and TLAN subnets of a Communication Server 1000E system.

IMPORTANT!

Connecting a Nortel CP PM Signaling Server to the ELAN and TLAN subnets of a Communication Server 1000E system can disrupt service.

Procedure 23
Connecting a CP PM Signaling Server to the ELAN and TLAN subnets

1 Connect the Signaling Server to the ELAN subnet.

- if the Call Server is not connected to the Media Gateway Controller (MGC) CE port
  - — Insert the end of one customer supplied 25-cm RJ-45 CAT5 Ethernet cable 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 CE port
  - — 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 customer supplied 25-cm RJ-45 CAT5 Ethernet cable 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

Note: When you connect using this method, data packet captures cannot be captured from the device without disrupting service.

If the Call Server connects to the Media Gateway Controller, you must obtain shielded CAT5 Ethernet cables that are long enough to connect the CP PM faceplate ELAN and TLAN Ethernet ports directly to the ELAN and TLAN Ethernet switches.

End of Procedure

Verify or change the baud rate

To verify or change the baud rate on a Nortel CP PM Signaling Server, see *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Connecting an IBM COTS server

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

Figure 51 shows the rear view of the IBM X306m server.

Figure 51
IBM X306m (rear view)

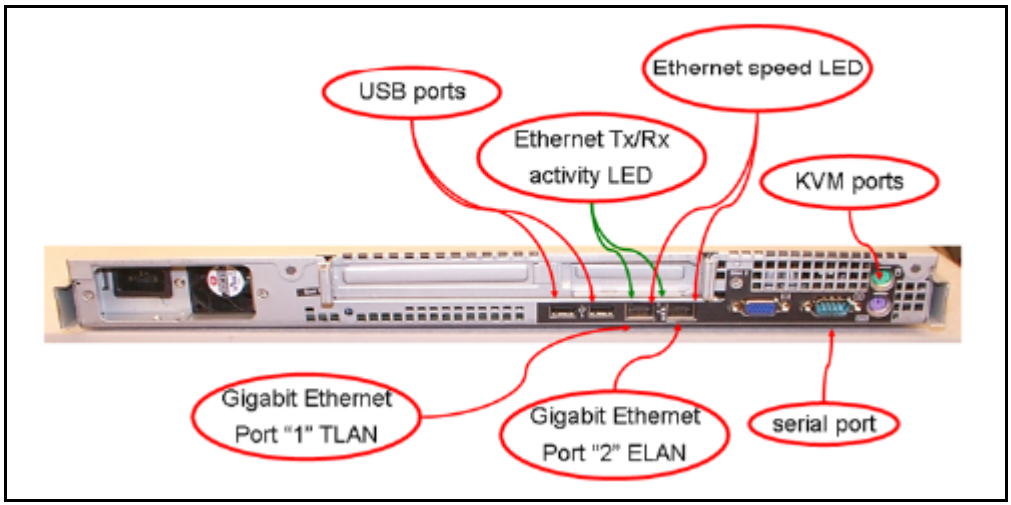
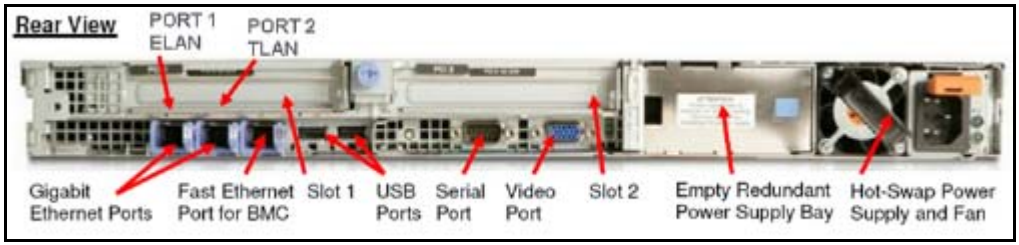


Figure 52 shows the rear view of the IBM x3350 server.

Figure 52
IBM x3350 (rear view)



Note: Refer to Figure 51 or Figure 52 when you preform Procedure 24, "Connecting an IBM COTS server," on page 184.

Procedure 24
Connecting an IBM COTS server

1. Connect the IBM server to the TLAN subnet. Insert the RJ-45 CAT5 (or better) cable into TLAN Ethernet port on the back of the server.
2. Connect the IBM server to the ELAN subnet. Insert the RJ-45 CAT5 (or better) cable into ELAN Ethernet port on the back of the server.
3. Connect a DTE–DTE null modem serial cable from the serial port on the back of the server to the serial port on a maintenance terminal. The IBM x3350 requires a NTRX26NPE6 9 pin female to 9 pin female null modem cable.
4. Connect the IBM server power cord.
   a. Check that the power cord is the type required in the region where the 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 server back panel. Plug the male end of the AC power cord into the AC power source (wall outlet).
5. Configure the baud rate for the serial port on the server to 9 600 b/ps. See *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

   Note: The IBM X306m Signaling Server ships with the serial port set to 9600 b/ps.
6. Configure the connected maintenance terminal. See *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).
7. Press the Power switch.

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

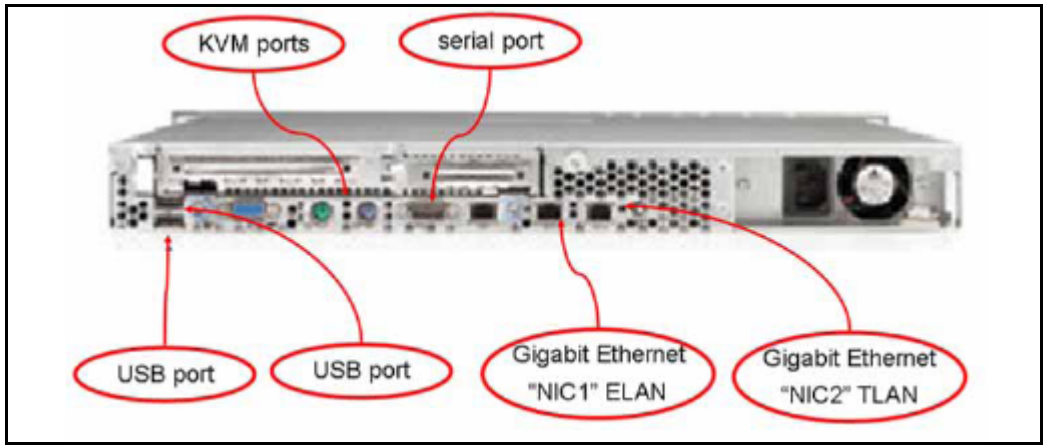
End of Procedure

Connecting an HP COTS server

In geographic regions that are susceptible to electrical storms, Nortel recommends that you plug the HP server into an AC surge suppressor.

Figure 53 shows the rear view of the HP DL320-G4 server.

Figure 53
HP DL320-G4 (rear view)



Note: Refer to Figure 53 when you perform Procedure 25, "Connecting an HP COTS server," on page 185.

Procedure 25
Connecting an HP COTS server

1. Connect the HP server to the TLAN subnet. Insert the RJ-45 CAT5 (or better) cable into the TLAN Ethernet port on the back of the server.
2. Connect the HP server to the ELAN subnet. Insert the RJ-45 CAT5 (or better) cable into the ELAN Ethernet port on the back of the server.
3. Connect a DTE–DTE null modem serial cable from the Serial Port on the back of the server to a maintenance terminal.
4. Connect the HP server power cord.

a. Check that the power cord is the type required in the region where the 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 server 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 server to 9 600 b/ps. See *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

6 Configure the connected maintenance terminal. See *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

7 Press the Power switch.

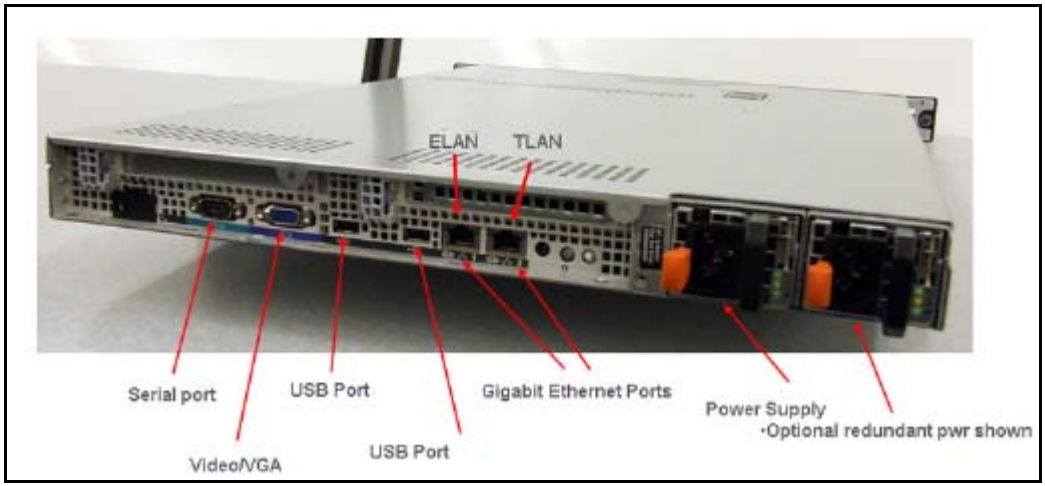
End of Procedure

Connecting a Dell COTS server

In geographic regions that are susceptible to electrical storms, Nortel recommends that you plug the Dell server into an AC surge suppressor.

Figure 54 shows the rear view of the Dell R300 server.

Figure 54
Dell R300 server (rear view)



Note: Refer to Figure 54 when you perform Procedure 26, "Connecting a Dell COTS server," on page 187.

Procedure 26
Connecting a Dell COTS server

1. Connect the Dell server to the TLAN subnet. Insert the RJ-45 CAT5 (or better) cable into the TLAN Ethernet port on the back of the server.
2. Connect the Dell server to the ELAN subnet. Insert the RJ-45 CAT5 (or better) cable into the ELAN Ethernet port on the back of the server.
3. Connect a DTE–DTE null modem serial cable from the Serial Port on the back of the server to a maintenance terminal.
4. Connect the Dell server power cord.

a. Check that the power cord is the type required in the region where the 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 server 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 server to 9 600 b/ps. See *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

6 Configure the connected maintenance terminal. See *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

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 *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Installing the software

IMPORTANT!

The CP PM and COTS server are out of service during software installation.

Introduction

This section provides references you can use when you install Communication Server 1000 Release 6.0 Linux Base and application software on CP PM and COTS servers.

IMPORTANT!

CP PM, and COTS servers support no Signaling Server software prior to Communication Server 1000 Release 5.0 and support no SIP Line software prior to Communication Server 1000 Release 6.0.

Communication Server 1000 Release 6.0 Signaling Server and SIP Line software runs only on the Linux Base platform.

Before you begin

Before installing the software, you must perform the following

- Connect and power up the server. See “Connections” on page 176.
- For CP PM Signaling Servers or Coresident CS and SS systems, ensure that Switch S5 is in position 2 (to support the internal hard drive)
- Obtain the CS 1000 Release 6.0 Linux Base installation media.
- Nortel advises that you remove the wire on the CF card clip before you insert the card into the slot. The clip can fall open and cause an electrical short.

Upgrade the CP PM BIOS

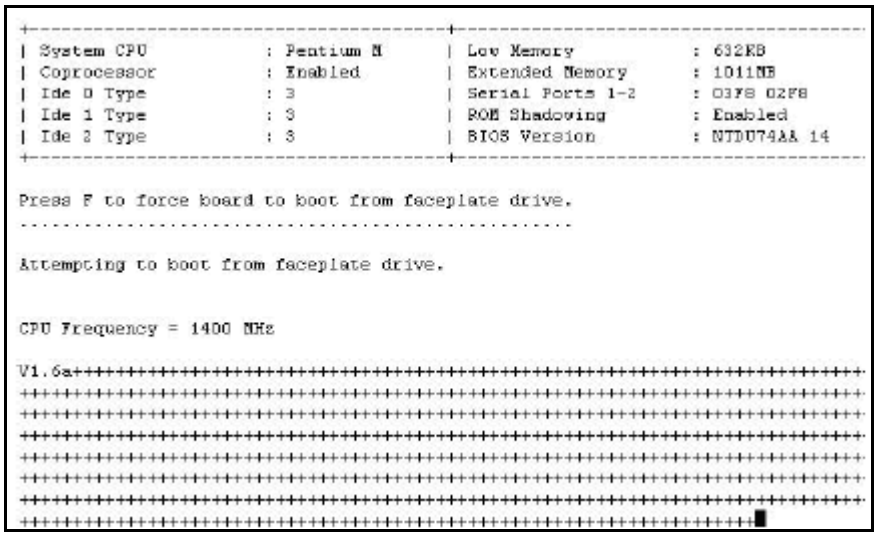
The Communication Server 1000 Release 6.0 Linux Platform Base installer requires CP PM BIOS version 18. If the installer detects a lower version on the CP PM card it automatically loads software for you to upgrade the CP PM BIOS. Perform the steps in Procedure 27 to upgrade the CP PM BIOS to version 18.

For information about manually upgrading the CP PM BIOS with VxWorks software, see *Communications Server 1000E Maintenance* (NN43041-700).

Procedure 27
Upgrading the CP PM BIOS

1. Connect to serial port 1 on the CP PM.
2. Insert the Linux Base installation CF card into the faceplate CF slot.
3. Power on the system.
4. Once the initial boot and memory check completes, Figure 55 appears. Press the **F** key to boot from the Linux Base installation faceplate CF card.

Figure 55
CP PM faceplate drive boot



5 The welcome screen appears. Press **ENTER** to direct the input and output to COM1.

6 Figure 56 appears if the CP PM card has a BIOS version lower than 18. Enter **yes** to proceed with the automatic upgrade.

CAUTION — Damage to Equipment

Do not interrupt the BIOS upgrade process.

Figure 56
CP PM BIOS automatic upgrade

```
##########################################################################
#                                                                        #
#    CP-PM BIOS version is less than 18. BIOS upgrade is required.       #
#                                                                        #
# To complete the upgrade, BIOS settings must be changed to defaults.    #
#      Please refer to the documentation for more information.           #
#                                                                        #
##########################################################################


Do you want to upgrade BIOS ROM up to the version 18? (yes/no): yes

BIOS ROM upgrade. Please wait...


BIOS ROM upgrade is finished.

Machine will be rebooted right now... Press Enter key to continue
```

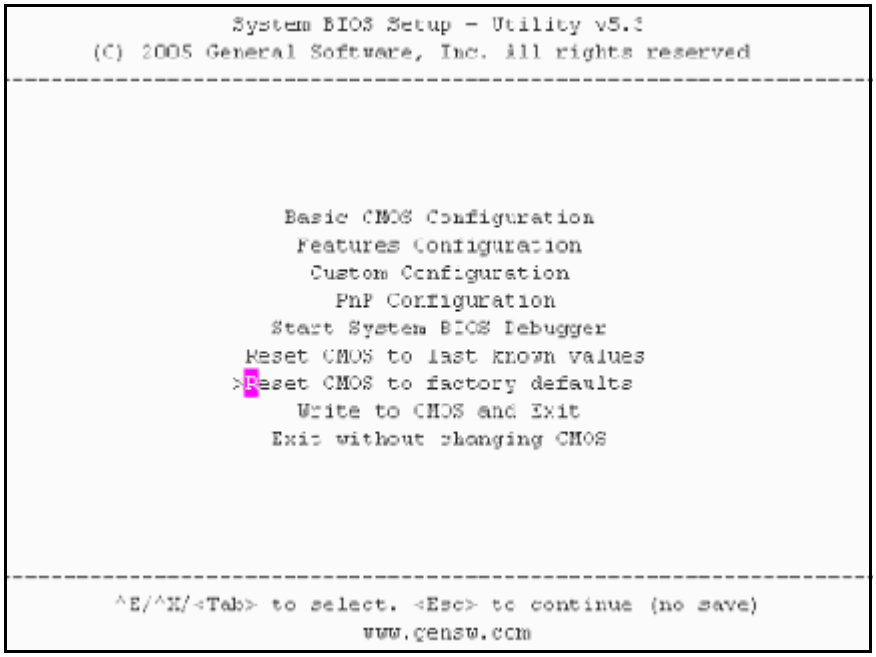
7 Verify that the BIOS upgrade is finished. Press **Enter** to reboot.

8 During the reboot memory check, press **Ctrl c** to access the CP PM BIOS setup menu.

Note: If you miss the timing to press **Ctrl c** you must reboot the system and try again. The Linux Platform Base installation software will display a warning if you do not reset the CP PM BIOS to factory defaults.

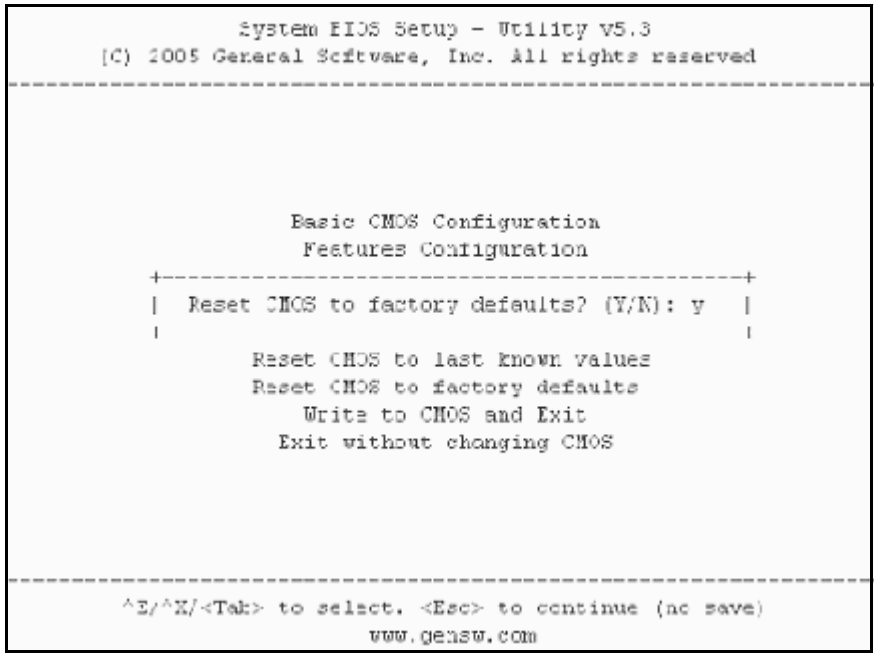
9 Figure 57 appears. Select **Reset CMOS to factory defaults** from the menu.

Figure 57
CP PM BIOS setup



10 Figure 58 appears. Press **y** to reset CMOS to factory defaults.

Figure 58
CP PM BIOS reset



11 The system reboots. After initial boot Figure 55 appears and the new BIOS version is displayed. Verify BIOS version is 18. You can now press the **F** key to boot from the faceplate CF card and proceed with the Linux Platform Base software installation.

End of Procedure

Installing the Linux Base

Perform the Linux Base installation if your Signaling Server does not currently run Linux Base for Release 6.0. The CP PM Linux upgrade kit contains a hard drive with Linux Base preloaded. You can install Linux Base from the command line interface (CLI) using a bootable CF card on CP PM, and using a bootable optical disk on COTS. Configure the ELAN, TLAN, IP address, Gateway, subnet masks, date, and time settings during the Linux Base installation. For more information about installing or upgrading Linux Base, see *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315). For more information about installing Linux base on a CP PM Co-resident Call Server and Signaling Server, see *CP PM Co-resident Call Server and Signaling Server Fundamentals* (NN43001-509).

Installing Linux applications

Nortel CS 1000 Release 6.0 Signaling Server and SIP line software are Linux applications. Linux applications install on Linux Base and interact with the Linux Base application framework. You can deploy and install Linux applications with the Linux Base Centralized Deployment manager. You can configure a deploy SIP Line with Element Manager (EM).

For information about Linux applications, Centralized Deployment manager, and EM, see *Element Manager System Administration* (NN43001-632), *Signaling Server IP Line Applications Fundamentals* (NN3001-125), and *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Joining the UCM security domain

The UCM Primary Security Server acts as the RADIUS server that Communication Server 1000 devices use to obtain authentication and access control parameters for CLI access. The UCM Primary Security Server sends RADIUS related parameters to Communication Server 1000 devices using the SSH protocol.

When a device joins the UCM security domain, a mutually-trusted SSH channel is created. You must manually confirm the fingerprint of the public

key before the UCM Primary Security Server RSA public key is added to the authorized key file, . This verification prevents third-party intercepts.

When a mutually-trusted SSH tunnel establishes a connection to a Communication Server 1000 device, the UCM Primary Security Server can send SSH remote commands to the device using RSA public key-based authentication.

For more information about joining the UCM security domain, see *Security Management Fundamentals* (NN43001-604).

Appendix A: Upgrading to High Availability

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. The 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 or later 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.

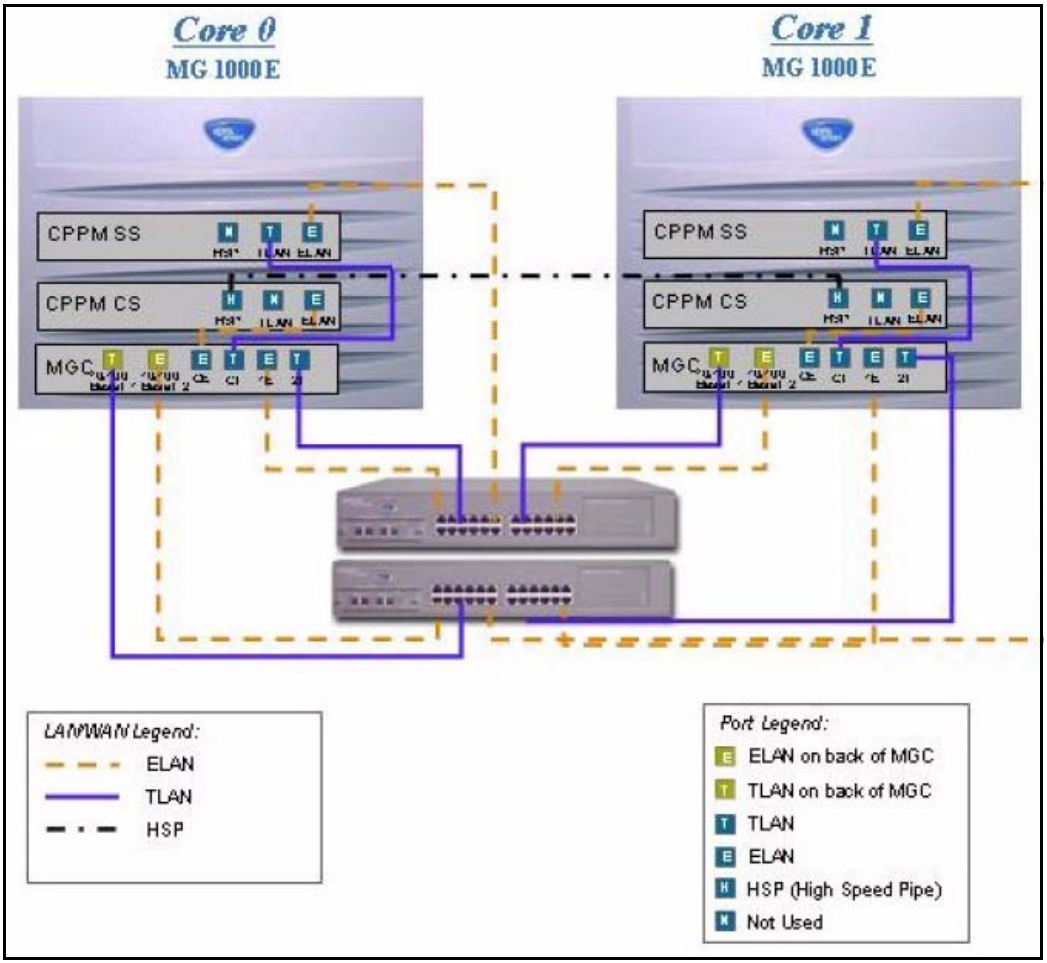
If the CP PM call server is not able to detect the other core, then it comes up as a single core system. If the HA package is not present in the keycode, then the existing call server software is modified to block the HSP connection so that the CP PM call server does not attempt to detect the presence 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 59 on page 198 depicts the configuration of the MG 1000E based Communication Server 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 and MGC, and the TLAN of the Signaling Server and 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 Communication Server 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 59
Campus Redundancy with CP PM call servers co-located



For the MG 1010, the ELAN and TLAN connections on the back of the MGC are provided by the ELAN and TLAN ports on the MGU faceplate.

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 *Communication Server 1000E Software Upgrades* (NN43041-458))
4. Run LD 137 on the active call server
5. Perform HSP tests and connect the two call servers.

For more information about upgrading to High Availability, see 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 Software 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: Upgrade checklists

Contents

This appendix contains the following topics:

Introduction

The following section provides upgrade checklists.

Technical Support

Nortel can provide an Installation and Upgrade Support team to assist with PBX upgrades on a scheduled basis. This service is billable and a purchase order is required. Please refer to current price book for rates.

> ***Note:*** This service requires that a service request be opened in advance of the upgrade.

Site details

Table 21
Site Details

Customer Name	
Tape ID (LD 22)	
Modem Number (Core)	
Switch Room Telephone	
Baud Rate	
Modem Password	
PBX Password	
System Type	
Software Generic	

Upgrade details

Table 22
Upgrade details

Current Software - Generic	
Target Software - Generic	
Hardware being added	
Feature Upgrade	
License Upgrade	

Pre-upgrade checklists

Software Upgrade

Software audit

Table 23
Software audit

Software Audit		
Perform the software audit prior to the scheduled upgrade.		
Take corrective action if answer is no		
	Yes	No
Software Disk Ready		
Keycode Disk Ready		
Install Disk Ready		
DEP Patch Disk Ready		
Review Keycode Data Sheet - (SDID, PKGS, License, TID)		
Review Site Specific Patches - (Non MDCS)		
Read GRB for target Release – (Verify Memory Requirements)		

License Upgrade

Table 24
Keycode audit

Keycode Audit		
Perform the keycode Audit prior to the scheduled upgrade.		
Take corrective action if answer is no		
	Yes	No
Keycode Disk Ready		
Keycode Data Sheet Ready		
SDID Matches System		
TID Matches System		
Perform a KDIFF in LD 143 to compare keycodes		

Hardware Upgrade

Hardware audit

Table 25
Hardware audit

Hardware Audit		
Perform the Hardware Audit prior to the scheduled upgrade.		
	Yes	No
Verify Shipping List - Complete and Accurate		
Audit Site for new hardware locations		
Pre Run Cables if possible		
Review All switch settings for new cards		
Read all applicable NTP Procedures completely		

Pre-conversion steps

Table 26
Pre-conversion steps (Part 1 of 2)

Pre Conversion Steps
A capture file should be made of the following information using a PC or Printer.
Perform an overall system check:
LD 135 SCPU (ensure that the system is redundant)
LD 137 STAT/TEST CMDU
LD 48 STAT AML
LD 32 STAT
LD 60 STAT
LD 30 LDIS (Verify what Is disabled if any)

Table 26
Pre-conversion steps (Part 2 of 2)

Get Software Information from LD 22
ISSP - Patches in service - Future Reference if required
TID/SLT - License Parameters - To compare with converted database
LD 21 - PRT CFN
LD 97 - PRT SUPL/XPEC
Run a Template Audit
LD 1 - Auto Run
Perform a Datadump
Backup at least two copies of the current database, retain the copies.
Print History File or System Event Log
Ld 22 - Print AHST - Capture Systems Events to compare will new software if required
Ld 117 - PRT SEL 500 - Same as above

Post-conversion checks

Table 27
Post-conversion checks

Post Conversion Checks
Perform these checks after a successful INI.
Test for dial tone
Ensure that all AUX applications are working
LD 30 LDIS (Verify that output is the same prior to upgrade)

Appendix C: Technical Assistance service

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

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

Table 28
Customer Technical Services (Part 1 of 3)

Location	Contact
Nortel Global Enterprise Technical Support (GETS) PO Box 833858 2370 Performance Drive Richardson, TX 75083 USA	North America Telephone: 1 800 4NORTEL
Nortel Corp. P.O. Box 4000 250 Sydney Street Belleville, Ontario K8N 5B7 Canada	North America Telephone: 1 800 4NORTEL

Table 28
Customer Technical Services (Part 2 of 3)

Location	Contact
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 28
Customer Technical Services (Part 3 of 3)

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

Appendix D: Supported cabling options

Although Nortel recommends using direct connections from the faceplate ethernet connectors of the MGC and CP PM cards to a Layer 2 switch, they also support the cabling configurations shown in this appendix.

IMPORTANT!

If your cabinet or chassis does not require specific Nortel supplied cables for CP PM cards, you must use shielded twisted pair Ethernet cables for the CP PM faceplate ELAN and TLAN connections.

The MGC can use the features of the MG 1000E by using two short cables to connect from the card faceplate Ethernet connectors to the two front bulkhead Ethernet connectors that are internally wired to the 100BaseT Ethernet connectors on the rear of the MG 1000E. In addition the MGC backplane connector provides both an ELAN and TLAN connection to te 10/100BaseT Ethernet connectors on the rear of the MG. Figure 60 on page 213 shows both options.

Connecting to the 1E and 2T ethernet connectors cause the 10/100BaseT leds to function on the rear of the MG 1000E.

If the NTDW67 MGC Reference ROHS cable is used the LED on the back of the MG 1000E will not function. Only the faceplate LEDs will function.

The CE and CT faceplate ethernet ports can be used as local ethernet maintenance ports.

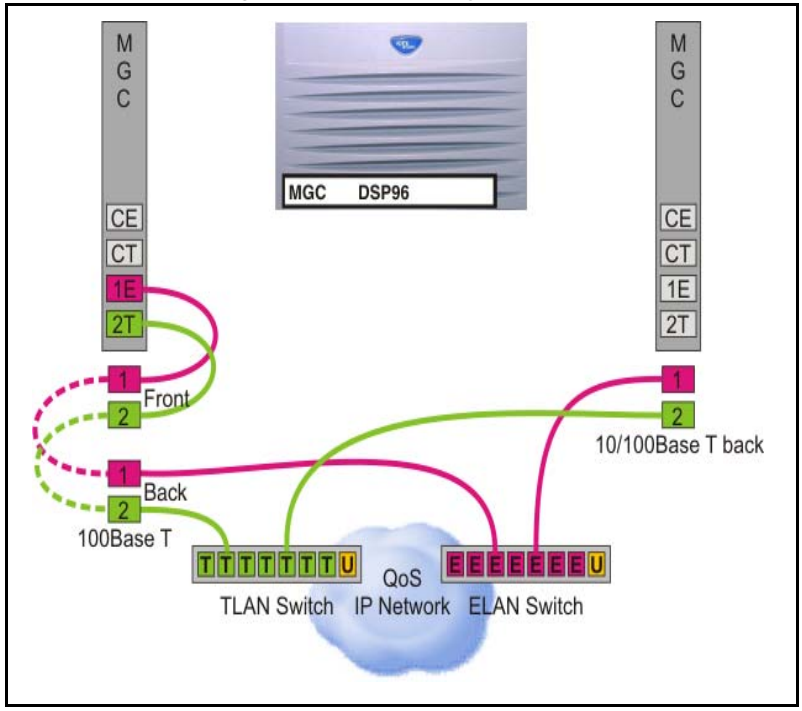
In a Media Gateway 1010 (MG 1010), the MGC backplane Ethernet connections are provided by the Media Gateway Utility (MGU) faceplate ELAN and TLAN ports.

CS 1000E dual-homing is supported in accordance with the following cabinets and chassis:

Table 29
Supported Cabinets and MG Chassis

Product Number	Product Name	Vintage	Release 5.0	Dual Homing Supported
NTDU14	Media Gateway Chassis	AA	Supported	No
		CA	Supported	Yes
		DA, DAE5	Supported	Yes
NTDU15	Media Gateway Expansion Chassis	AA	Supported	N/A
		DA	Supported	N/A
		DAE5	Supported	N/A
NTDK91	Chassis System Main Chassis	BBE5	Supported	No
NTDK92	Chassis System Chassis Expander	BB	Supported	N/A
NTAK11	Main/Expansion Cabinet	BD	Supported	Yes
NTC310	Media Gateway Chassis	AAE6	Supported	Yes

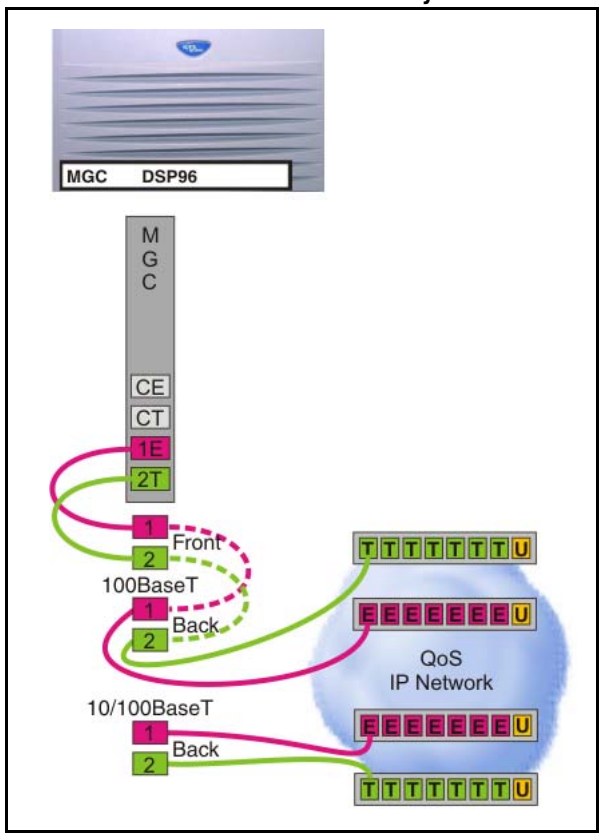
Figure 60
MGC cabling in a Media Gateway



MGC back connections are MGU faceplate ports in a MG 1010.

Figure 61 on page 214 demonstrates the MGC cabling in a dual-homed configuration.

Figure 61
MGC Dual-homed in a Media Gateway



MGC back connections are MGU faceplate ports in a MG 1010.

Figure 62 on page 215 shows the MGC cabling from the backplane connector to the MGC 100BT connector Cabinet.

Figure 62
MGC using MGC 100BT in a Cabinet

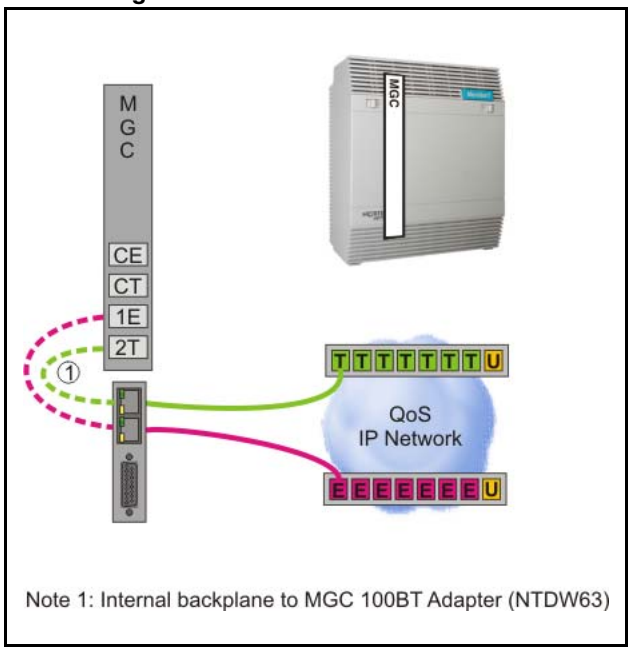


Figure 63 on page 216 shows the MGC in a dual-homed configuration in a Cabinet.

Figure 63
MGC Dual-homed in a Cabinet

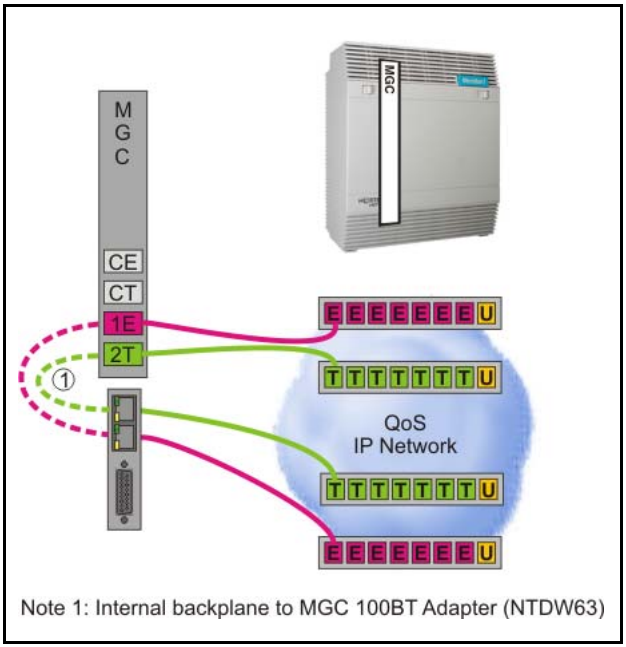


Figure 64 on page 217 shows the MGC and CP as a SA Call Server in a MG.

Figure 64
SA Call Server in a MG

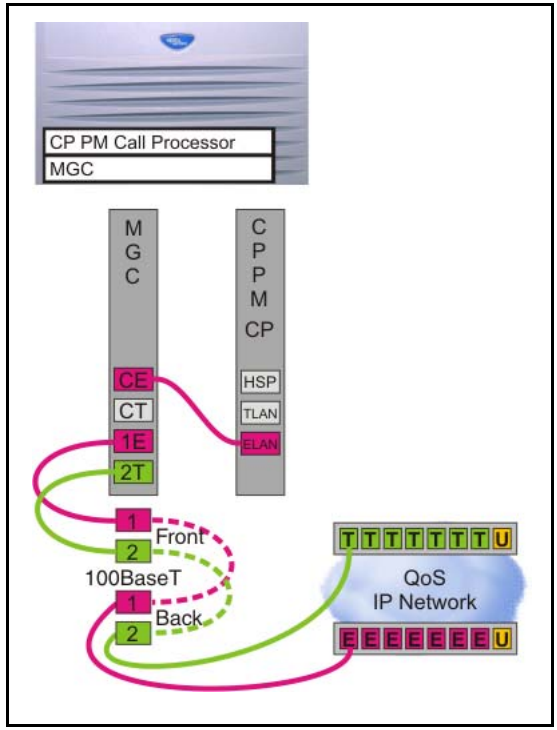


Figure 65 on page 218 shows the MGC and CP as a SA Call Server in a Cabinet.

Figure 65
SA Call Server in a Cabinet

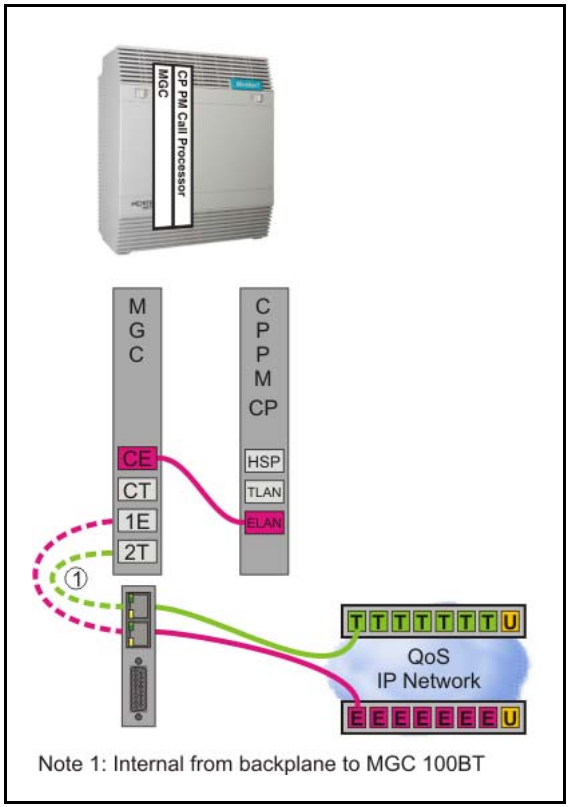
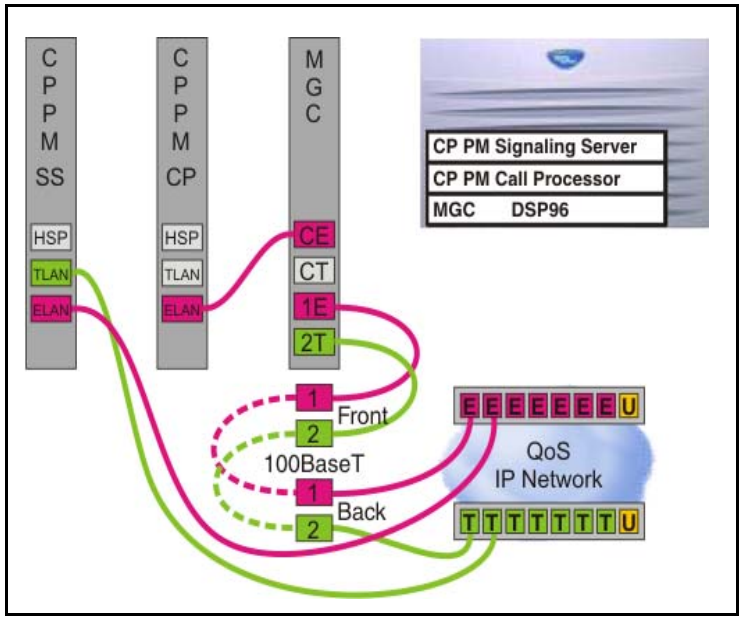


Figure 66 on page 219 shows a SA Call Server with a Signaling Server in a MG.

Figure 66
SA Call Server with SS in a MG



MGC back connections are MGU faceplate ports in a MG 1010.

Figure 67 on page 220 shows a SA Call server with a Signaling Server in a Cabinet.

Figure 67
SA Call Server with SS in a Cabinet

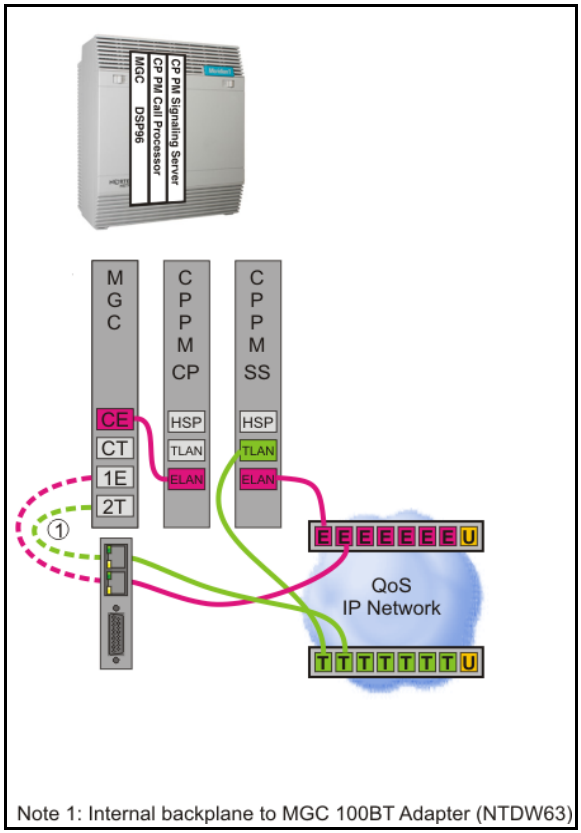
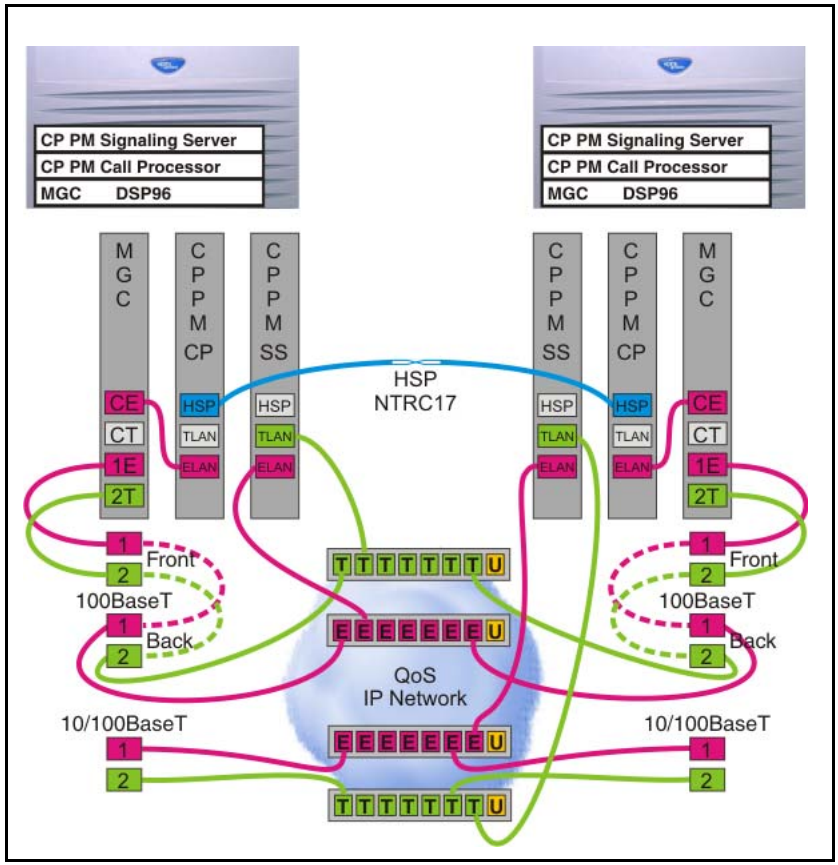


Figure 68 on page 221shows a Dual-homed HA Call Server with the HSP in Media Gateways.

Figure 68
Dual-homed HA Call Server with HSP in MG



MGC back connections are MGU faceplate ports in a MG 1010.

Figure 69 on page 222 shows a Dual-homed HA Call Server with the HSP in Cabinets.

Figure 69
Dual-homed HA Call Server with HSP in Cabinets

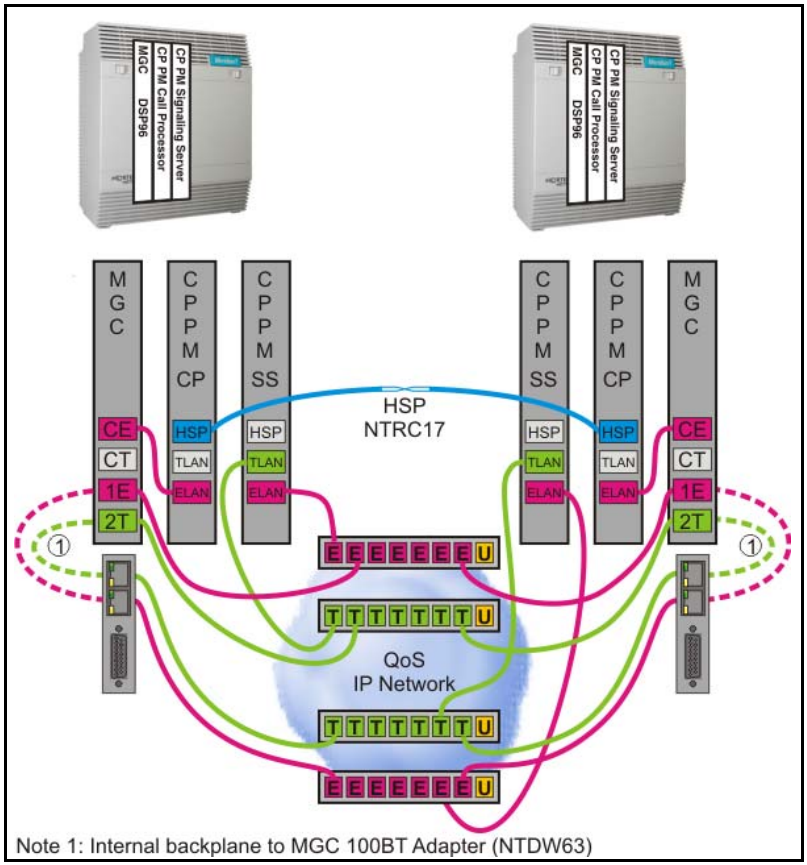
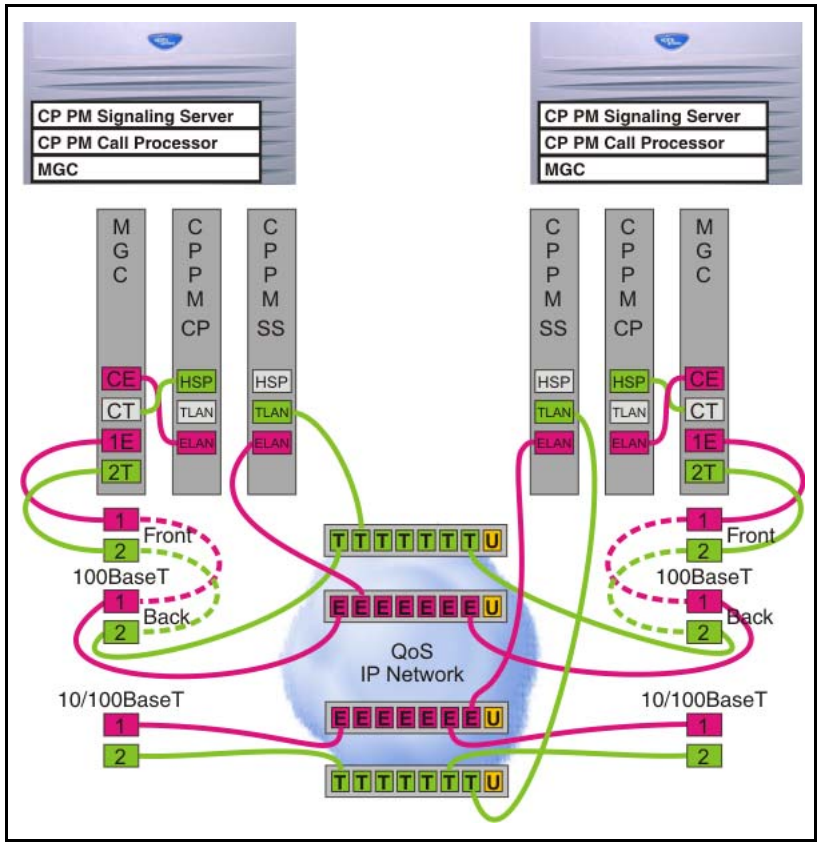


Figure 70 on page 223 shows a Dual-homed HA Call Server with a dual-homed HSP in Media Gateways.

Note: This configuration does not support DSP daughterboards on the MGC.

Figure 70
Dual-homed HA Call Server with a dual-homed HSP

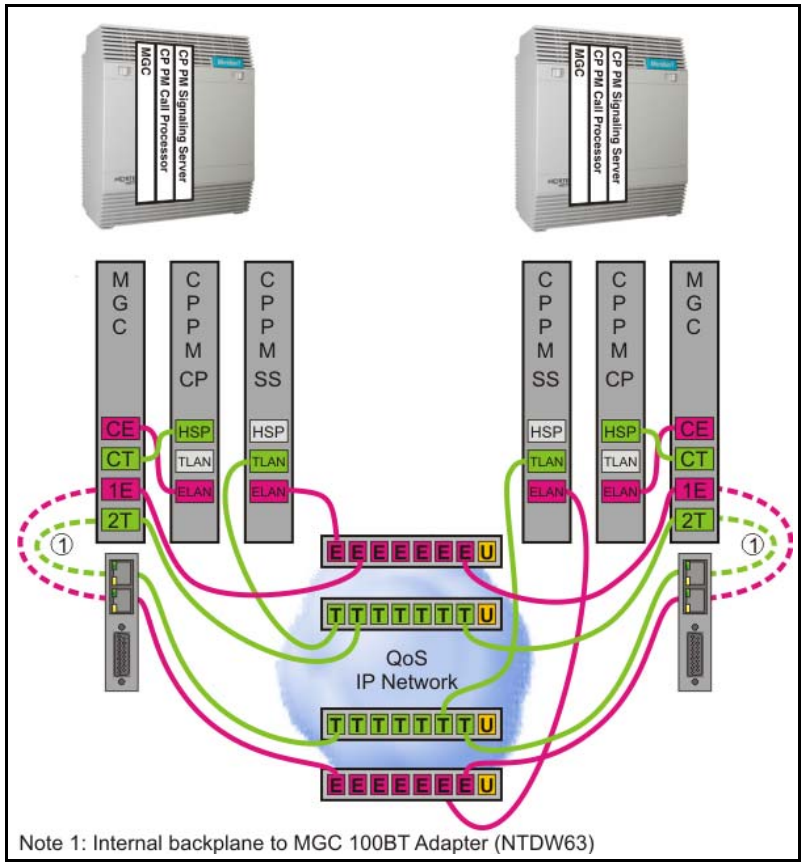


MGC back connections are MGU faceplate ports in a MG 1010.

Figure 71 on page 224 shows a Dual-homed HA Call Server with a dual-homed HSP in Cabinets.

This configuration does not support DSP daughterboards on the MGC.

Figure 71
Dual-homed HA Call Server with dual-homed HSP



Nortel Communication Server 1000

Communication Server 1000E Upgrade

Hardware Upgrade Procedures

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