Nortel Communication Server 1000

Nortel Communication Server 1000 Release 7.0

Communication Server 1000M and Meridian 1

61C CP PII to CS 1000M MG CP PIV FNF Upgrade

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Date: June 2010

Contents

New in this release

This chapter contains information about Nortel Communication Server 1000 Release 7.0 new features.

Hardware

Common Processor Dual Core (CP DC) card

The Common Processor Dual Core (CP DC) card is introduced in CS 1000 Release 7.0.

The CS 1000M system supports the NTDW54AAE6 double slot metal faceplate CP DC card as a stand-alone Signaling Server platform.

The CP DC card contains a dual core AMD processor and upgraded components which can provide improvements in processing power and speed over existing Server cards.

The CP DC card requires the Linux Base Operating System. The CP DC card does not support the standard or high availability Call Server configuration.

Other

See the following sections for information about changes that are not feature-related:

Revision history

June 2010

Standard 04.02. This document is upissued to update the CS 1000M task flow graphic and to include CP PM version 2 content.

June 2010

Standard 04.01. This document is upissued to support Communication Server 1000 Release 7.0.

June 2009

Standard 03.03. This document is upissued to update the CP PM BIOS upgrade procedure.

May 2009

Standard 03.02. This document is upissued to include task flow graphics for Nortel Communication Server 1000 Release 6.0.

May 2009

Standard 03.01. This document is issued to support Nortel Communication Server 1000 Release 6.0.

November 2007

Standard 02.01. This document is issued to support Nortel Communication Server 1000 Release 5.5.

July 2007

Standard 01.03. This document is upissued with corrections for invoking the install menu during CP PIV and CP P4 upgrades.

June 2007

Standard 01.02. This document is upissued with corrections to requirements for CNI to 3PE cables.

May 2007

Standard 01.01. This document is upissued for 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 Large System Upgrades* (553-3021-258).

May 2006

Standard 5.00. This document is upissued with corrections for installing clock controllers and keycode database procedure for CP IV.

January 2006

Standard 4.00. This document is upissued with corrections to various upgrade procedures.

August 2005

Standard 3.00. This document is upissued to support CP PIV and Communication Server 1000 Release 4.5.

September 2004

Standard 2.00. This document is upissued for Communication Server 1000 Release 4.0.

October 2003

Standard 1.00. This document is a new NTP for Succession 3.0. It was created to support a restructuring of the Documentation Library. This document contains information previously contained in the following legacy document, now retired: *Upgraded Systems Installation: Upgrade to Options 51C, 61C, 81C* (553-3001-258).

Finding the latest updates on the Nortel web site

The content of this documentation was current at the time the product was released. To check for updates to the latest documentation and software for CS 1000 Release 7.0, click one of the links below.

Latest Software	Go directly to the Nortel page for CS 1000 Release 7.0 software.
Latest Documentation	Go directly to the Nortel page for CS 1000 Release 7.0 documentation.

How to get help

This chapter explains how to get help for Nortel products and services.

Getting help from the Nortel Web site

The best way to get technical support for Nortel products is from the Nortel Technical Support Web site:

www.nortel.com/support

This site provides quick access to software, documentation, bulletins, and tools to address issues with Nortel products. More specifically, the site enables you to:

- download software, documentation, and product bulletins

- search the Technical Support Web site and the Nortel Knowledge Base for answers to technical issues

- sign up for automatic notification of new software and documentation for Nortel equipment

- open and manage technical support cases

Getting help over the telephone from a Nortel Solutions Center

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

In North America, call 1-800-4NORTEL (1-800-466-7835).

Outside North America, go to the following Web site to obtain the phone number for your region:

www.nortel.com/callus

Getting help from a specialist by using an Express Routing Code

To access some Nortel Technical Solutions Centers, you can use an Express Routing Code (ERC) to quickly route your call to a specialist in your Nortel product or service. To locate the ERC for your product or service, go to:

www.nortel.com/erc

Getting help through a Nortel distributor or reseller

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

System information

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

Subject

Use this document to perform upgrades on Meridian 1 Large Systems. This document also contains information about database transfers, Call Processor card upgrades, and network group upgrades.

This document also contains information about converting Release 3.0 or later software to CS 1000 Release 7.0 on Meridian 1 Options 51C, 61C, 81C, CS 1000M SG and CS 1000M MG systems. For software conversion procedures prior to Release 3.0, see the *Software conversion procedures* (553-2001-320) NTP for software Release 24.

> **IMPORTANT!**
>
> Database conversion for Meridian 1 Options 21E, 51, 61, 71, STE, NT, and XT must be completed by Nortel's Software Conversion Lab. Consult the current Nortel price book for cost and contact information.

Note on legacy products and releases

This NTP contains information about systems, components, and features that are compatible with Nortel Communication Server 1000 Release 7.0 software. For more information about legacy products and releases, click the **Technical Documentation** link under **Support** on the Nortel home page:

www.nortel.com/

Applicable systems

This document applies to the following systems:

- Communication Server 1000M Single Group (CS 1000M SG)

- Communication Server 1000M Multi Group (CS 1000M MG)

- Meridian 1 PBX 61C

- Meridian 1 PBX 81C

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

System migration

When particular Meridian 1 systems are upgraded to run CS 1000 Release 7.0 software and configured to include a Signaling Server, they become CS 1000M systems. Table 1 lists each Meridian 1 system that supports an upgrade path to a CS 1000M system.

Table 1
Meridian 1 systems to CS 1000M systems

This Meridian 1 system...	Maps to this CS 1000M system
Meridian 1 PBX 61C	CS 1000M Single Group
Meridian 1 PBX 81C	CS 1000M Multi Group

Signaling Server configuration

Meridian 1 Large Systems can be configured to run one or more Signaling Servers. The following Signaling Servers are supported in a Large System configuration for CS 1000 Release 7.0:

- CP PM Signaling Server

- Common Processor Dual Core (CP DC)

- Commercial off-the-shelf (COTS) Signaling Server

For more information, see "Installing a Signaling Server" on .

Upgrade paths

This document contains information about the following Large System upgrades:

- Meridian 1 Options 61C, 81C, CS 1000M SG, and CS 1000M MG

- upgrades to FNF

- software upgrades

- network additions

The upgrades documented in this NTP are structured as source platform to target platform upgrades.

Intended audience

This document is intended for individuals responsible for upgrading Large Systems.

This document is intended for individuals responsible for software conversion and memory upgrades.

Conventions

Terminology

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

- Communication Server 1000M Half Group (CS 1000M HG)

- Communication Server 1000M Single Group (CS 1000M SG)

- Communication Server 1000M Multi Group (CS 1000M MG)

- Meridian 1 PBX 51C

- Meridian 1 PBX 61C

- Meridian 1 PBX 81C

- Commercial off-the-shelf (COTS) servers

    — IBM x306m server (COTS1)

    — HP DL320 G4 server (COTS1)

    — IBM x3350 server (COTS2)

    — Dell R300 server (COTS2)

In this document, the generic term COTS refers to all COTS servers. The term COTS1 or COTS2 refers to the specific servers in the preceding list

The Common Processor Pentium Mobile, Common Processor Dual Core (CP DC), and Commercial off-the-Shelf (COTS) platforms are referred to as server.

NTP feedback

Nortel strives to provide accurate documentation for our customers. However, if you feel there are errors or omissions in this document, your feedback is welcome.

Send comments via email to gntsdoc@nortel.com or open a problem report via the normal procedures.

Please provide as much information as possible including the NTP number, standard version and date of the document, as well as the page, problem description, and any supporting documentation and capture files.

Related information

	CAUTION — Data Loss
⚠	Only personnel who are familiar with the system and with conversion procedures should perform the conversion.
	Read the applicable procedures carefully before beginning any the conversion.

Note: Converting software on single CPU systems disrupts call processing and allows service only to those telephones connected to Power Failure Transfer Units (PFTU).

	CAUTION WITH ESDS DEVICES
	To avoid damaging equipment from electrostatic discharge, wear a properly connected antistatic wrist strap when working on system equipment.

Perform pre-conversion and postconversion procedures for every system conversion.

Throughout this document the term *media* refers to tape, disk, CD-ROM or Compact Flash (CF), whichever applies to the system.

The term **source** refers to the hardware and software that is currently running. The term **target** refers to the new hardware and software to which the system is converting.

> **CAUTION — Data Loss**
>
> Read "General software conversion information" in *CS 1000M and Meridian 1 Large System Upgrades Overview* (NN43021-458) before performing any operations.
>
> It contains information vital to the conversion process.

NTPs

The following NTPs are referenced in this document:

- *Product Compatibility* (NN43001-256)

- *Converging the Data Network with VoIP* (NN43001-260)

- *Circuit Card: Description and Installation* (NN43001-311)

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

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

- *Features and Services* (NN43001-106)

- *Software Input/Output: Administration* (NN43001-611)

- *Element Manager: System Administration* (NN43001-632)

- *IP Trunk: Description, Installation, and Operation* (NN43001-563)

- *Signaling Server IP Line Applications Fundamentals* (NN43001-125)

- *ISDN Basic Rate Interface: Features* (NN43001-580)

- *Software Input/Output: Maintenance* (NN43001-711)

- *Communication Server 1000M and Meridian 1: Large System Planning and Engineering* (NN43021-220)

- *Communication Server 1000M and Meridian 1: Large System Installation and Commissioning* (NN43021-310)

- *Communication Server 1000M and Meridian 1: Large System Maintenance* (NN43021-700)

- *Communication Server 1000M and Meridian 1 Large System Upgrade NTPs* (NN43021-458 – NN43021-475)

Online

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

www.nortel.com

CD-ROM

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

Technical support

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

Preparing and planning for the upgrade

Contents

This chapter contains the following topics:

Introduction

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).

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

Each 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 2:

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

Procedure Step	Page
Planning	25
Upgrade Checklists	29
Preparing	29
Identifying the proper procedure	29
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Table 2
Prepare for upgrade steps (Part 2 of 2)

Procedure Step	Page
Backing up the database (data dump)	34
Transferring the database from floppy disk to CF (customer database media converter tool)	38

Planning

Planning for an upgrade involves the following tasks:

• Read and understand the current release Product Bulletin.

• Review the current release product bulletin related specifically to the software being upgraded.

• 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.

   Note: For information about adding new network shelves, see *Communication Server 1000M and Meridian 1: Large System Installation and Commissioning* (NN43021-310).

• Ensure sufficient power for new columns/modules or applications.

• 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.

- Determine if software can be converted on site or must be sent to Nortel.

- 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.

Communication Server 1000 task flow

This section provides a high-level task flow for the installation or upgrade of a CS 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 :

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

- *Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310)

- *Communication Server 1000M and Meridian 1 Large System Upgrades Overview* (NN43021-458)

Figure 1
Communication Server 1000M task flow
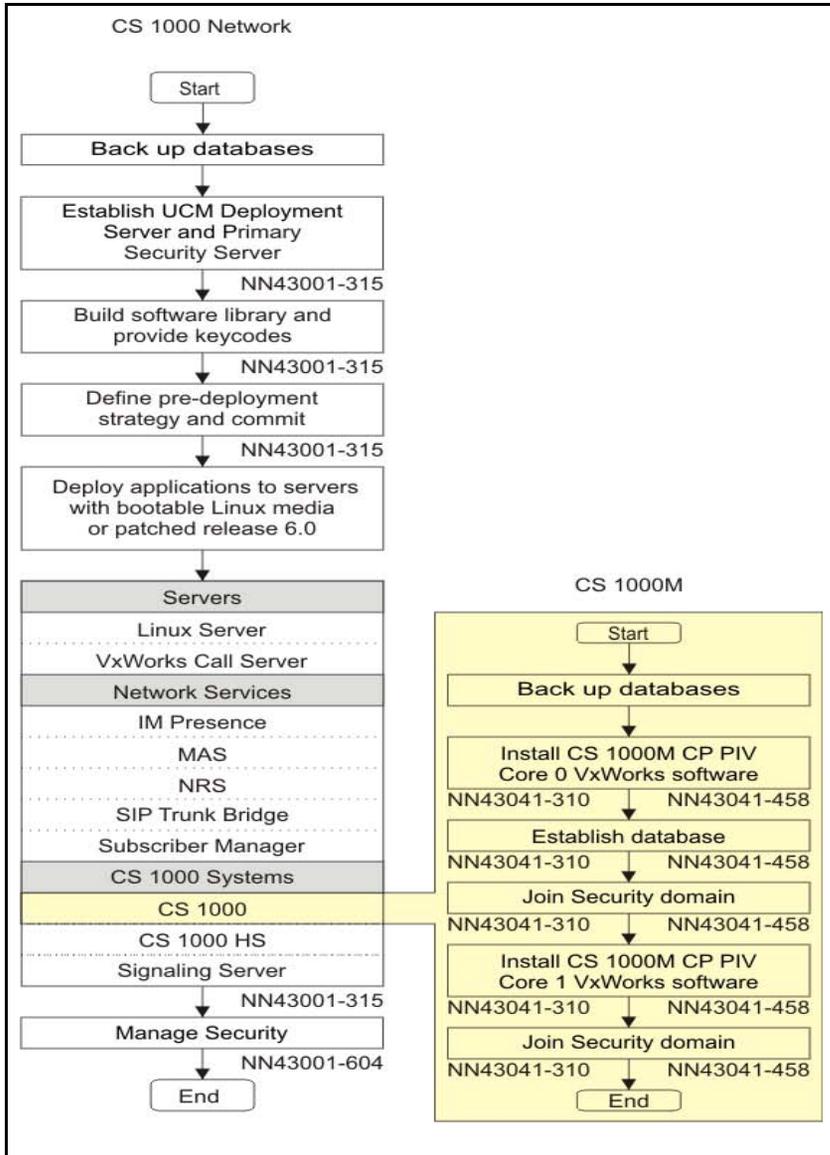
Upgrade Checklists

Upgrade checklists can be found in "Upgrade checklists" on page 175. Engineers may print this section for reference during the upgrade.

Preparing

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 (see *Communication Server 1000M and Meridian 1: Large System Planning and Engineering* (NN43021-220)).

- Verify proper cable lengths 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 system-patchable components.

- Determine the required patches or DEP lists are installed on applicable applications.

- Determine and communicate the required maintenance window, contingency plan and the impact to the customer to complete the procedure.

- Perform an inventory on required software and hardware.

- 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.

Identifying the proper procedure

Each procedure has been written in a "source- to-target" format. Each procedure features warning boxes and check boxes placed at critical points.

Changing the procedure or ignoring the warning boxes could cause longer service interruptions.

Connect a terminal

Procedure 1
Connecting a terminal

A maintenance terminal is required to access the Core or Core/Net modules during the upgrade procedure.

1   Connect a terminal to the J25 port on the I/0 panel in the *inactive* Core or Core/Net module.

2   The settings for the terminal are:

    a.   9600 baud

    b.   8 data

    c.   parity none

    d.   1 stop bit

    e.   full duplex

    f.   XOFF

3   If only one terminal is used for both Core or Core/Net modules, the terminal must be connected from side-to-side to access each module. An "A/B" switch box can also be installed to switch the terminal from side to side.

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

Printing site data

Print site data to preserve a record of the system configuration (see Table 3 on). 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 3
Print site data (Part 1 of 3)

Site data	Print command	
Terminal blocks for all TNs	LD 20	
	REQ	PRT
	TYPE	TNB
	CUST	<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>
*Configuration Record	LD 22	
	REQ	PRT
	TYPE	CFN

Table 3
Print site data (Part 2 of 3)

Site data	Print command	
*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
ACD data block for all customers	LD 23	
	REQ	PRT
	TYPE	ACD
	CUST	Customer Number
	ACDN	ACD DN (or <CR>)
Superloop card IDs and software version (peripheral controller, superloop network and controller cards)	LD 32	
		IDC loop
Multi-purpose ISDN Signaling Processor (MISP) card	LD 27	
	REQ	PRT
	TYPE	MISP
	LOOP	loop number (0-158)
	APPL	<cr>
	PH	<cr>
DTI/PRI data block for all customers	LD 73	
	REQ	PRT
	TYPE	DDB

Table 3
Print site data (Part 3 of 3)

Site data	Print command	
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
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 — Service Interruption**
>
> **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

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 to save all system memory to the hard disk.

Procedure 2
Performing a data dump

1   Log into the system.

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

   LD 43   Load program

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

   EDD   Begin the data dump

> **CAUTION — Service Interruption**
>
> **Loss of Data**
>
> If the data dump does not succeed, do not continue. Contact your technical support organization. You must correct a data dump problem before the system can be upgraded.

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

    ****   Exit program

5   Remove and label the floppy disk.

> **IMPORTANT!**
>
> Preserve database backup information for a minimum of 5 days.

Making the RMD bootable

> **CAUTION — Data Loss**
>
> The PC utility used in the following procedure (mkbootrmd.exe) does not validate whether the drive letter entered is a valid RMD CF card. You must enter the correct RMD drive letter when prompted or risk formatting the incorrect drive.
>
> *Note:* This utility is supported by all versions of Microsoft Windows.

The installation RMD CF card must come preformatted and bootable from Nortel. Consumer CF cards are not bootable by default and must be made bootable as outlined in Procedure 3 on .

Procedure 3
Making the RMD bootable

1   After downloading the software image file, unzip it to a directory on your PC.

2   Open the utilities folder.

3   Double click the mkbootrmd.bat file. Insert a blank 512 MByte CF card (see Figure 2).

Figure 2
mkbootrmd.bat

```
C:\WINDOWS\system32\cmd.exe                                          _ □ ×

******************************************************************
                         WARNING:
                         ----------

 * ------------------------------------------------
 * THIS UTILITY FORMATS THE RMD
 * THE DATA ON THE CARD WILL BE ERASED....!
 * ------------------------------------------------

 * This utility creates Bootable RMD for CS 1000M and CS 1000E,
   which can be used to boot a system with CP PIV processors.

 * This utility assumes that the drive entered is correct.
   So, please enter the correct RMD drive.

 * For more information please read README_BOOTABLE_RMD.txt

 ******************************************************************

 Please insert a RMD (Compact Flash) in drive now.
```

4   Enter the correct drive letter of the RMD (see Figure 3).

Figure 3
mkbootrmd.bat
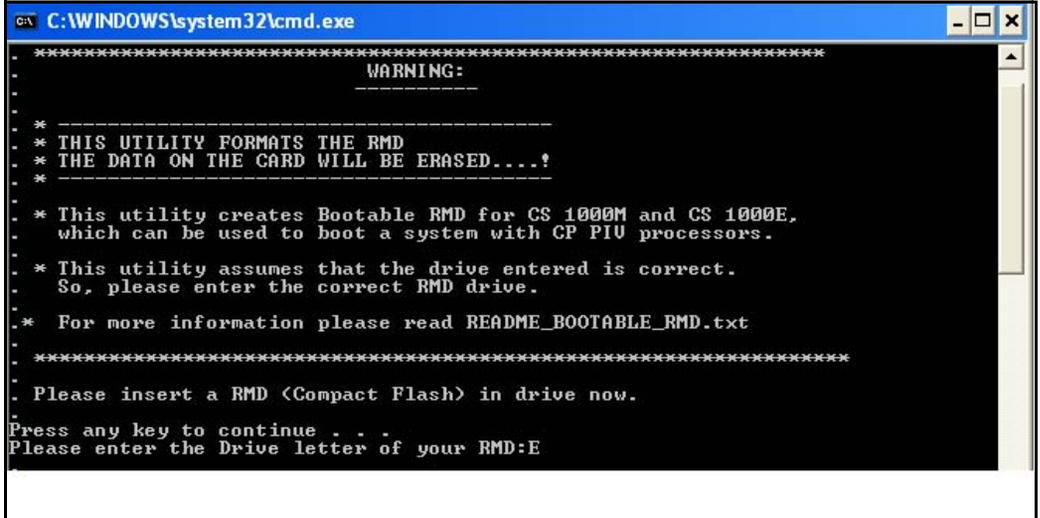
5   The boot sector files (bootrom.sys and nvram.sys) are successfully copied making the CF card bootable (see Figure 4).

Figure 4
Boot sector successfully installed

```
. RMD format Successful ...
.
. Installing Boot sector ...
.
. Copying files . . .
.
. bootrom.sys copied OK.
.
. Check whether the following output shows
. "All the specified file<s> are contiguous"
.
.            * * * WARNING * * *
.IF THE FILES ARE NOT CONTIGUOUS,
.    PLEASE RECREATE THE RMD
.            * * * * * * * * *
Press any key to continue . . .
The type of the file system is FAT.
Volume CS1000BOOT created 4/12/2006 12:22 PM
Volume Serial Number is 389E-1E98
Windows is verifying files and folders...
File and folder verification is complete.
Windows has checked the file system and found no problems.

  512,180,224 bytes total disk space.
      352,256 bytes in 1 files.
  511,827,968 bytes available on disk.

        8,192 bytes in each allocation unit.
       62,522 total allocation units on disk.
       62,479 allocation units available on disk.
All specified files are contiguous.
```

—————— **End of Procedure** ——————

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

> **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).

The floppy disk that contains the backed up customer database needs to be transferred to a CF card. This procedure converts the customer database from a 2 MByte floppy disk to CF card, which is restored during the CS 1000

Release 7.0 software upgrade later in this section. Nortel recommends using the extra CF card included with the Software Install Kit.

Procedure 4
Transferring the customer database from floppy disk to CF

This procedure 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).

1   After downloading the software image file, unzip it to a directory on your PC.

2   Open the Utilities folder. See Figure 5.

Figure 5
Utilities folder
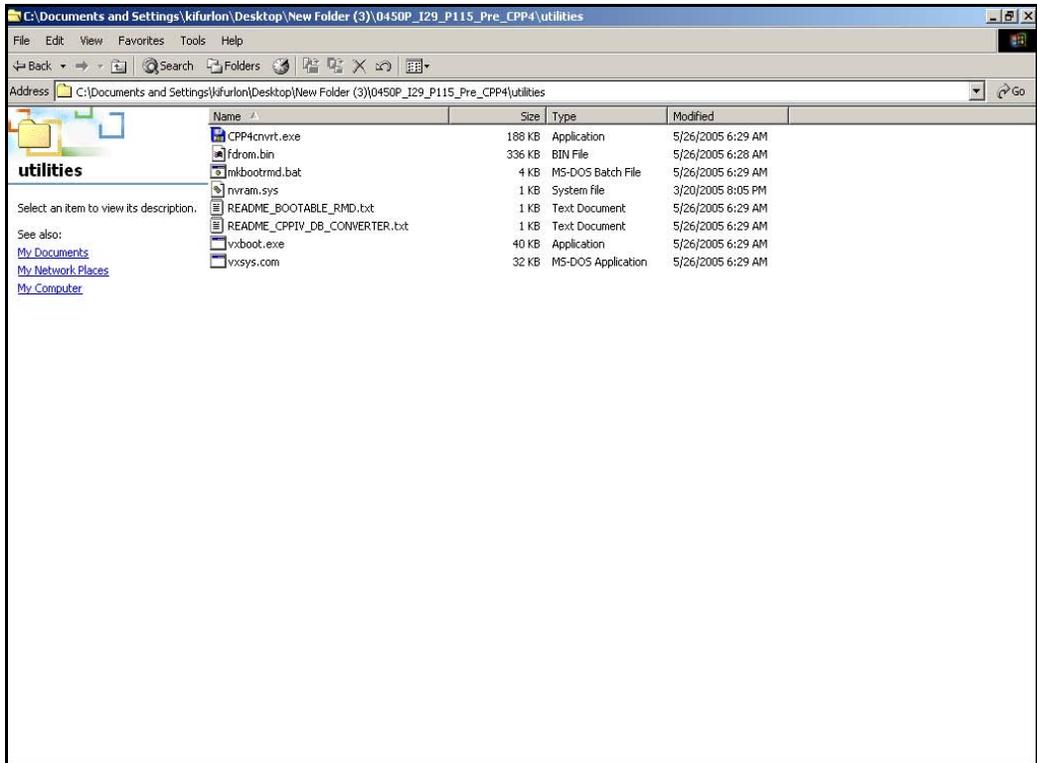
3 Insert the floppy disk containing the backed up customer database from Procedure 2 on .

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

5 Start the Database Media Converter utility by double clicking the CPP4cnvrt.exe file. The first screen (Figure 6) prompts you to select the correct drive letter for the floppy disk drive.

Figure 6
Select the floppy disk drive
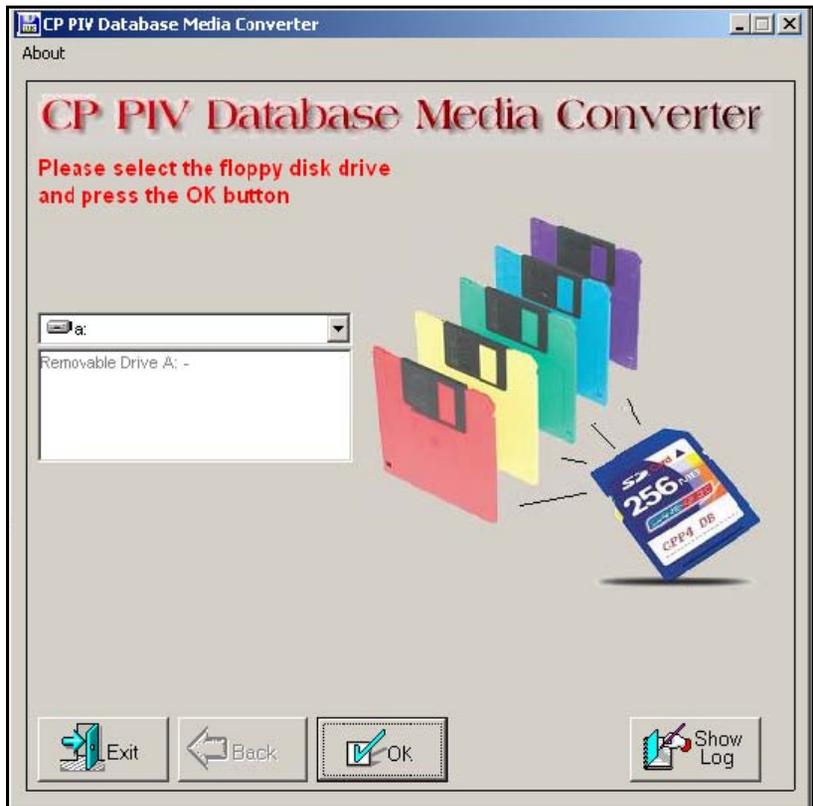
6 The utility then prompts you to insert the floppy disk (diskette 1) and click OK (see Figure 7 on).

Figure 7
Insert diskette 1
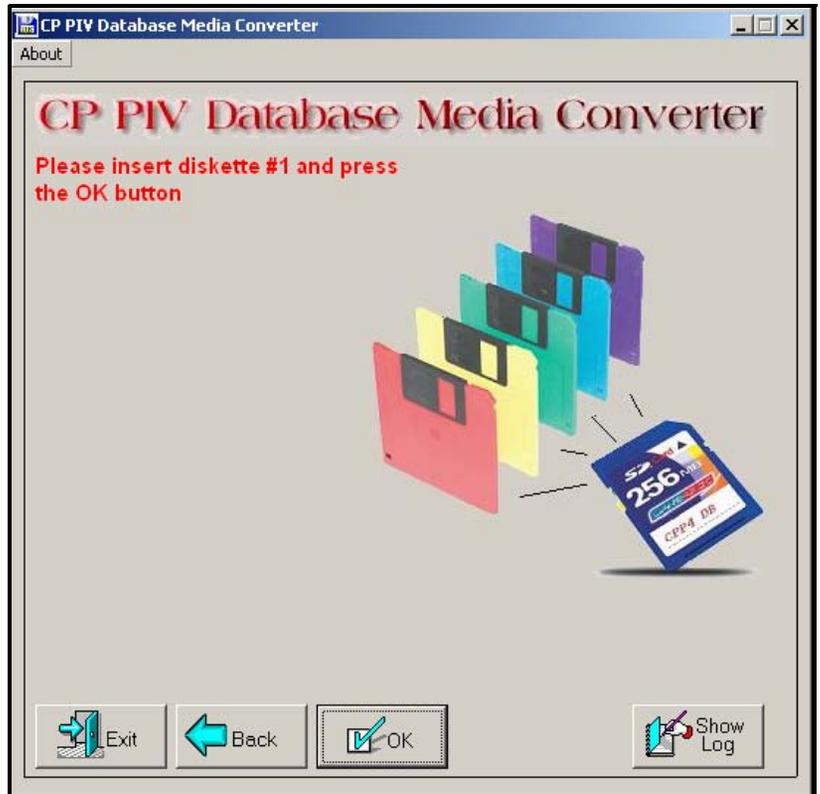
7 After verifying the database on the floppy disk, the utility prompts you to
select the CF drive (see Figure 8 on).

Figure 8
Select the CF drive
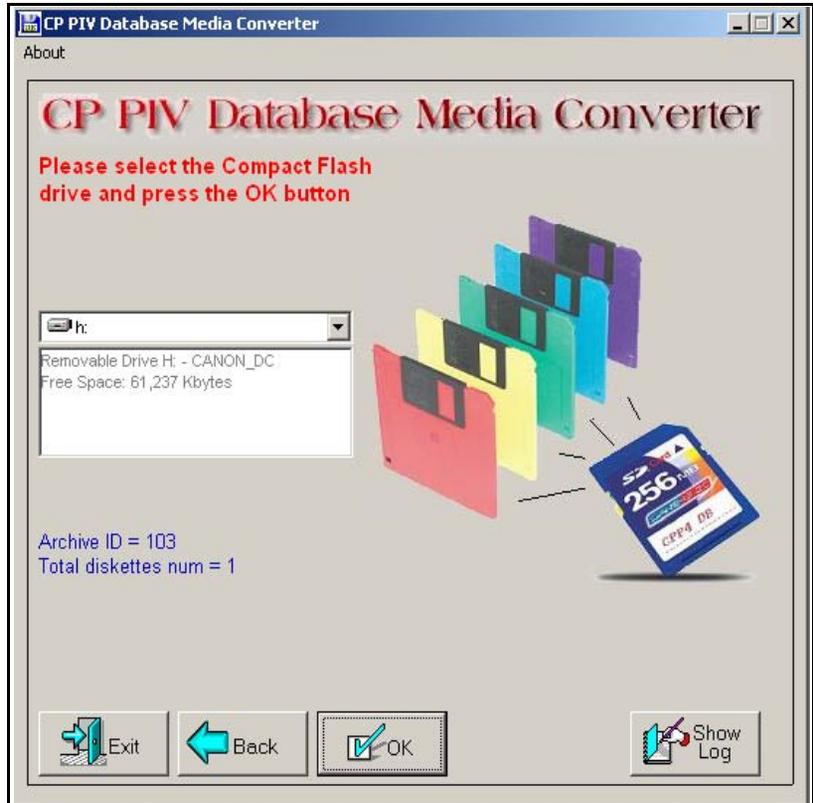
8   At this point, 2 options are available:

   a.   If the CF card already contains a previously backed-up database, a
dialog box appears (see Figure 9 on page 43). Click yes to replace
old database.

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

Figure 9
Replace database on CF drive
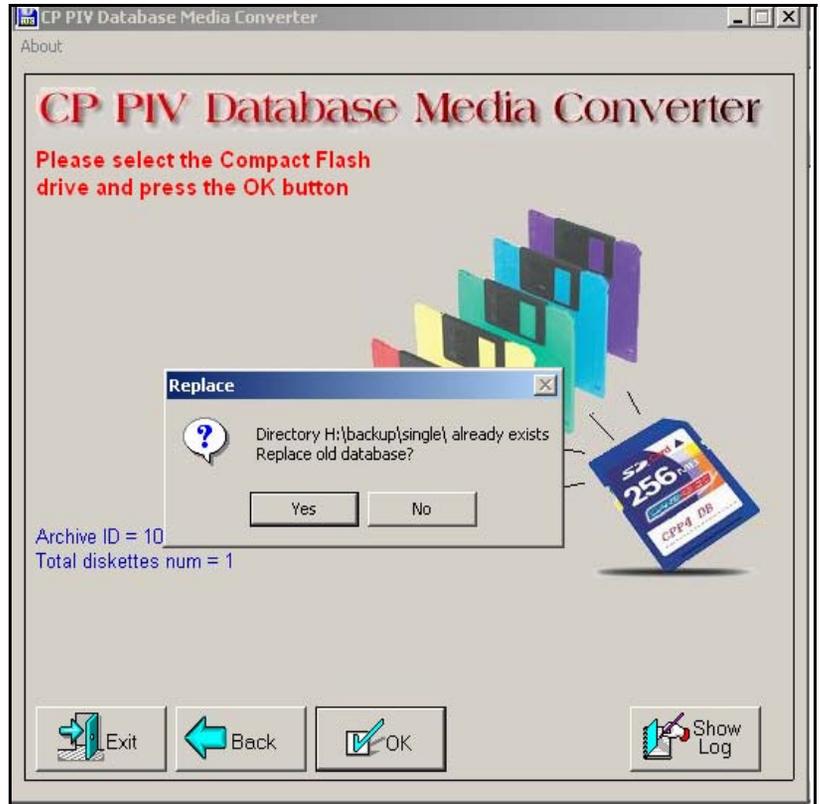
9 The utility completes the transfer to CF and prompts you to copy another or EXIT.

Figure 10
Copy another or exit
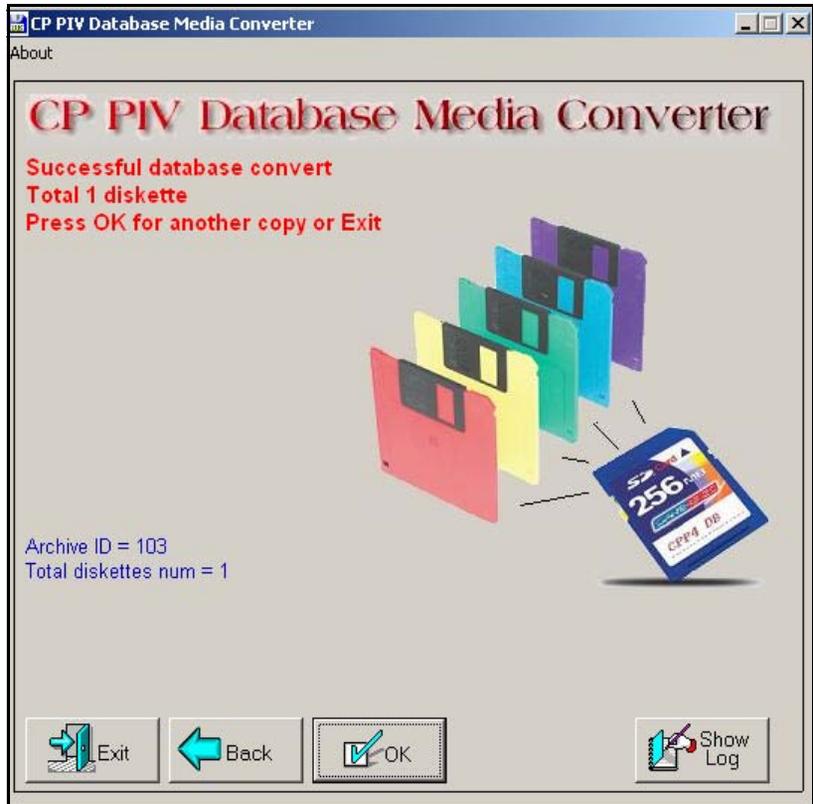
—————— **End of Procedure** ——————

Check requirements for CNI to 3PE cables (NTND14)

IMPORTANT!

When configuring NTND14 cables, observe the following rules:

- The shortest NTND14 Cable should always be used.

- A network group requires 4 NTND14 cables, 2 to each half group. Both cables to each half group must be the same length.

- A check should be made on the existing NTND14 cables. Replace any cables that do not meet the above requirement.

Note: The NTND14 BX 50' cables are manufacture discontinued.

Performing the upgrade

Contents

This chapter contains the following topics:

Reviewing upgrade requirements

Upgrading to CS 1000M

The upgrade to CS 1000M (installing a Signaling Server) occurs after completing the procedures in this section. See Appendix : "Installing a Signaling Server" on .

This section describes the *minimum* hardware and software required for CP PIV. Additional equipment can also be installed during the upgrade. Verify that *all* hardware and software 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.

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).


Checking required software

The following software packages are required to upgrade a system to Meridian 1 Option 81C with CP PIV:

• CORENET Core Network Module Package 299

• CPP_CNI CP Pentium Backplane for Intel Machine Package 368

• FIBN Fiber Network Package 365

- Compact Flash Software Install Kit, containing the following items:
    — One CF (512 MByte) card containing:
        – Install Software files
        – CS 1000 Release 7.0 software
        – Dep. Lists (PEPs)
        – Key code File
    — One blank CF card for database backup
    — One Nortel CS 1000 Release 7.0 Documentation CD

	IMPORTANT!
⚠️	Systems and components delivered to customer sites may include preinstalled software. However, the preinstalled software versions are typically older and are included only for manufacturing and order management purposes. **Do not attempt to operate the system with the preinstalled software.** The latest software must be downloaded from the Nortel Software Downloads web site and installed as part of the upgrade process.

Checking required hardware

Meridian 1 Option 81C CP PIV hardware is configured at the factory according to customer requirements. Table 4 lists the hardware required for the upgrade.

Table 4
Hardware requirements for Meridian 1 Option 81C CP PIV upgrade

Order number	Description	Quantity per system
NT4N39	Control Processor Pentium IV	2
N0026096	MMDU replacement faceplate	2

Figure 11 on shows the CP PIV processor card side view. Figure 12 on shows the CP PIV processor card front view.

Figure 11
CP PIV call processor card (side)
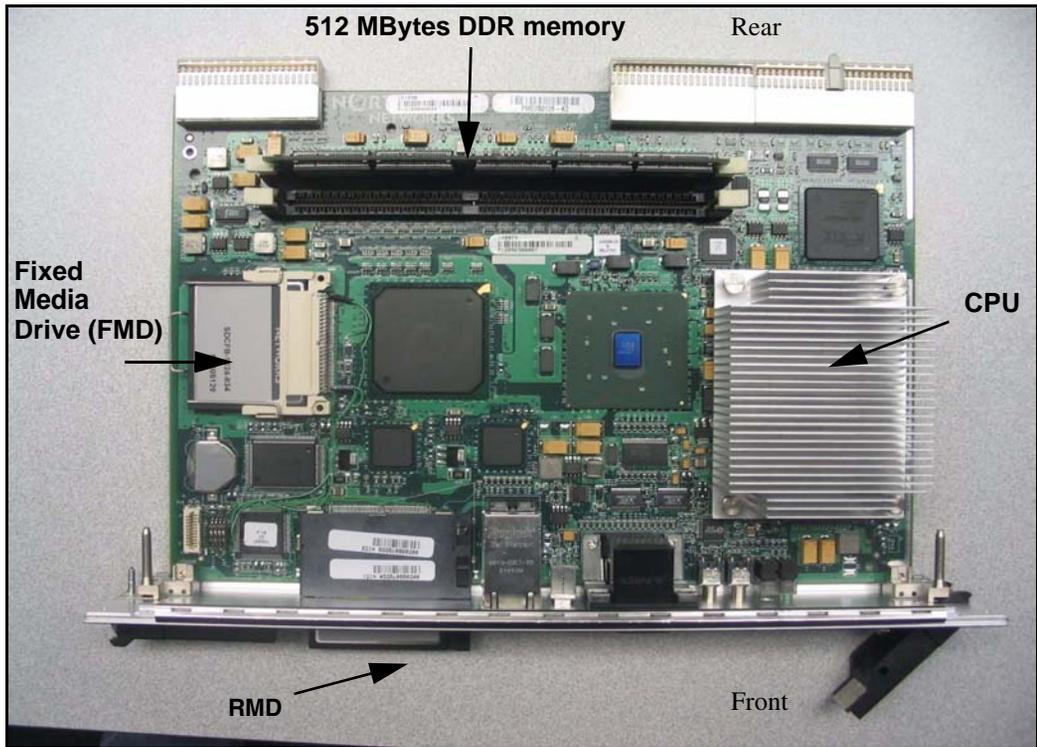
Figure 12
CP PIV call processor card (front)
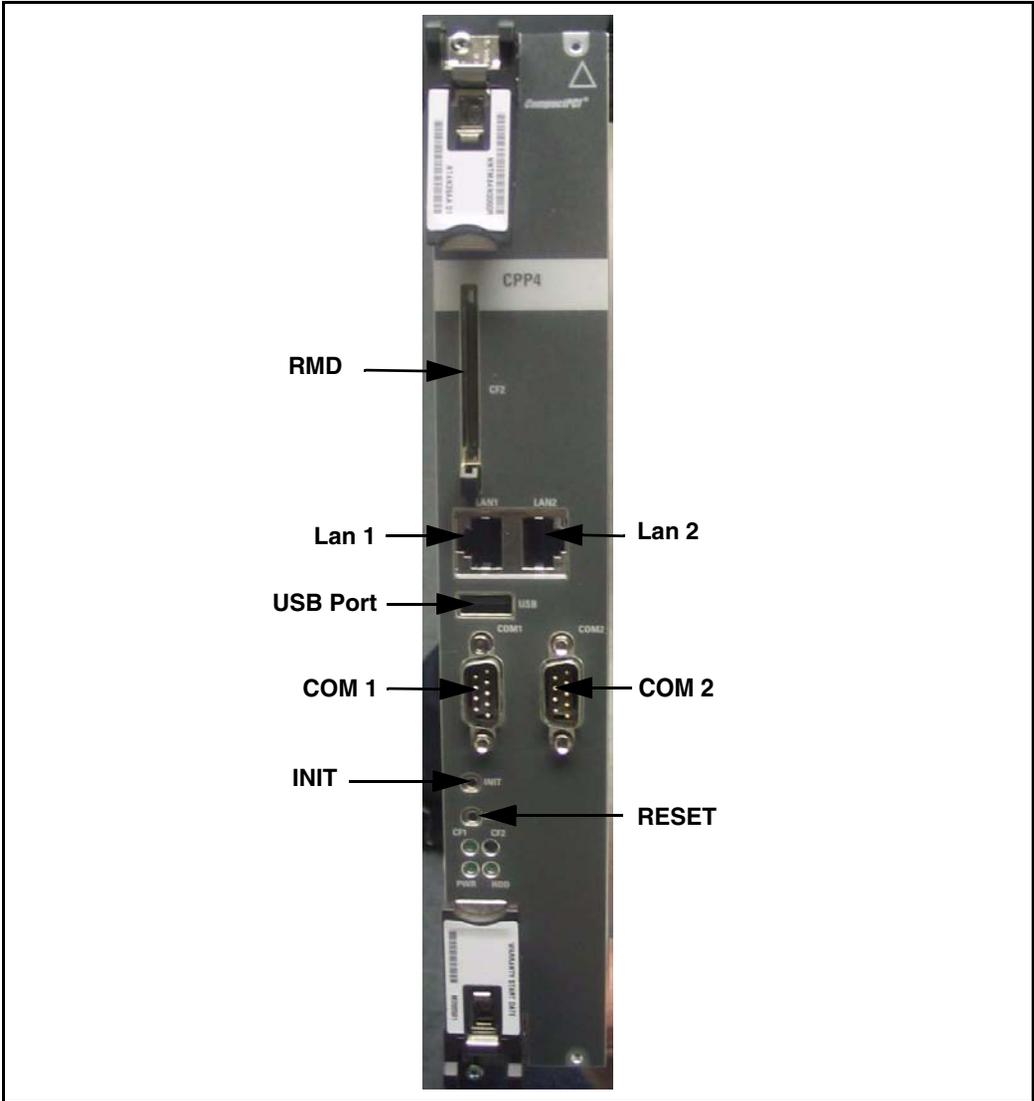
Figure 13
CP PIV NT4N41 Core/Net Module
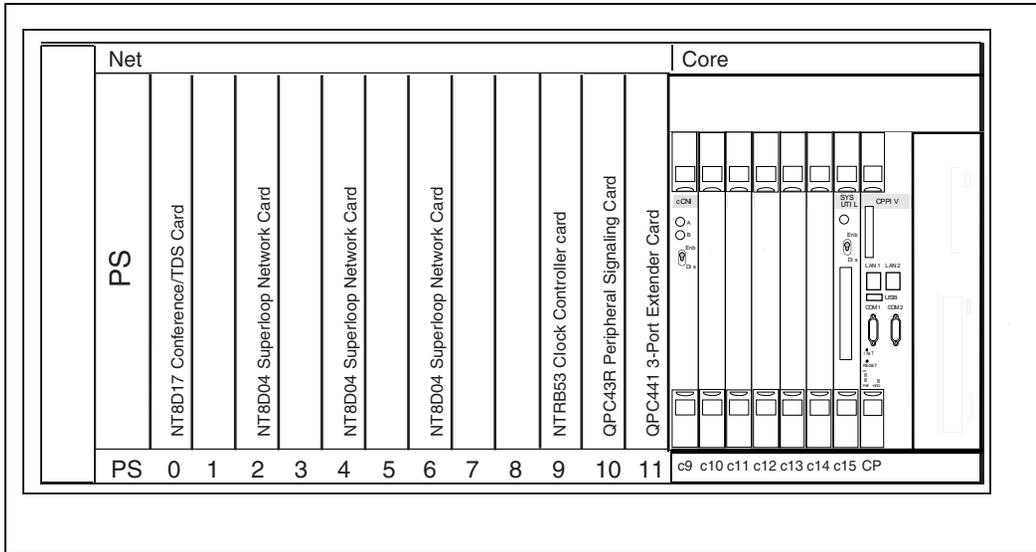
Verifying CP PIV hardware

Verifying CP PIV card location

The NT4N39 CP PIV card is located in the Call Processor slot (see Figure 14 on).

The N0026096 blank faceplate is located in the extreme right-hand slot next to the CP PIV card.

Figure 14
CP PIV Card location
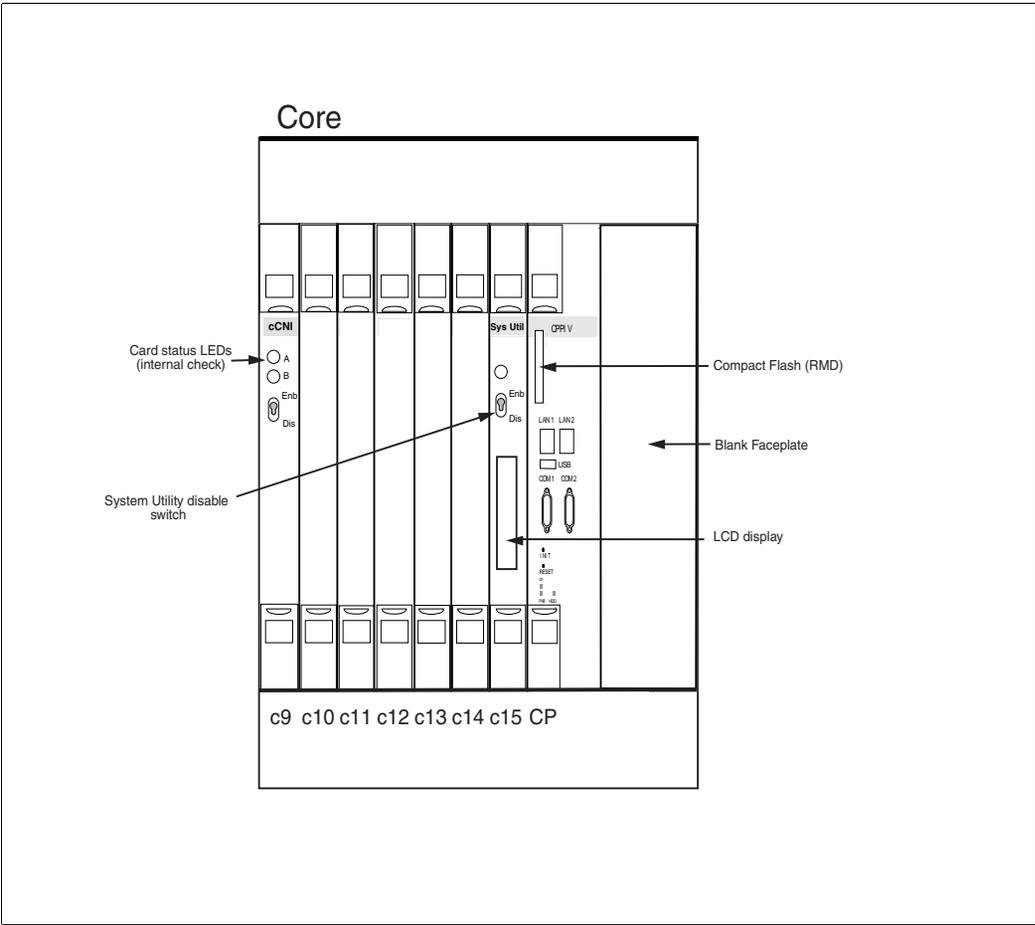
Upgrading Core 1

Procedure 5
Checking that Core 0 is active

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

1   Verify that Core 0 is active.

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

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

SCPU	Switch to Core 0 (if necessary)
****	Exit program

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

Procedure 6
Checking that Clock Controller 0 is active

1   Check the status of the Clock Controllers:

LD 60	Load program
SSCK 0	Obtain the status of Clock Controller 0
SSCK 1	Obtain the status of Clock Controller 1

2   If Clock Controller 1 is active, switch to Clock Controller 0.

SWCK	Switch to Clock Controller 0 (if necessary)
****	Exit program

3   Disable Clock Controller 1.

    DIS CC 1   Software disable Clock Controller 1

    ****   Exit program

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

Procedure 7
Splitting the Cores

1   In Core/Net 0, enter the SPLIT command from LD 135.

    LD 135   Load program

    SPLIT   Split the Cores

    ****   Exit program

2   Hardware disable all CNI cards in Core 1.

> ✔ The system is now in split mode, with call processing on Core 0.

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

Remove Core 1 CP PII card and MMDU

Procedure 8
Removing the Core 1 CP PII processor and MMDU

1   Disconnect and label the LAN1 and LAN 2 cables from the Core 1 CP PII card faceplate. See Figure 15.

Figure 15
CP PII faceplate connections
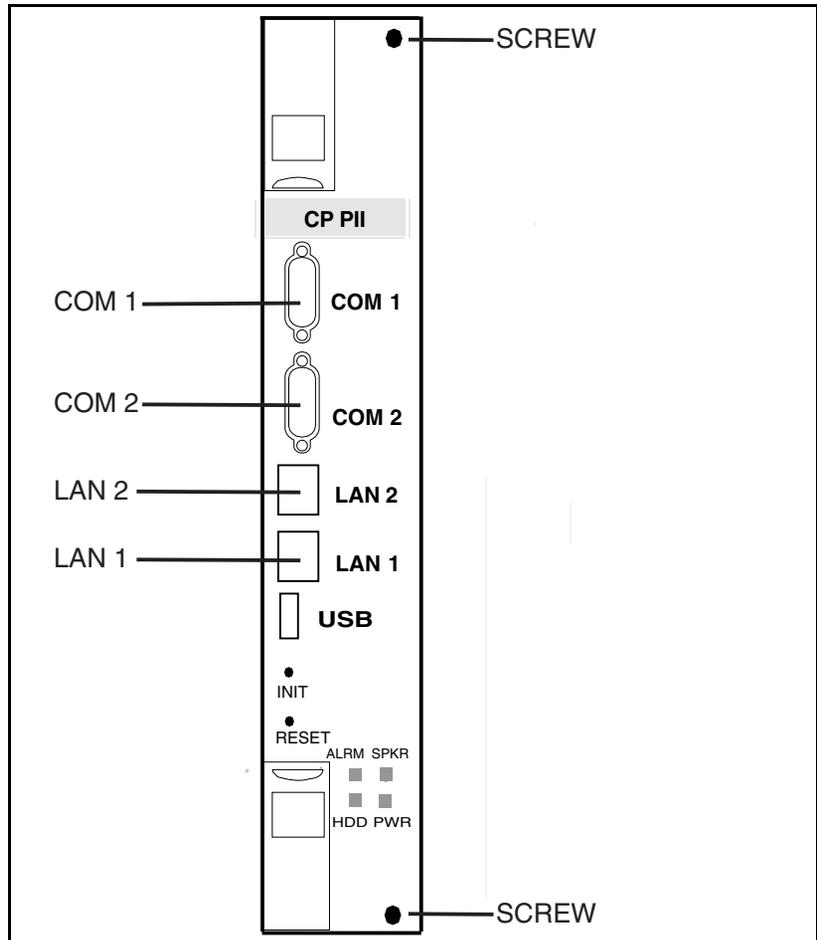
2   Disconnect and label the COM 1 and COM 2 cables from the Core 1 CP PII card faceplate. See Figure 16.

3   Unscrew and unlatch the Core 1 CP PII card. See Figure 15 on .

4   Pull the Core 1 CP PII card from its slot.

5   Remove the rear access plate on the left side of the Core 1 module. See Figure 16.

Figure 16
NT4N46 Core/Net module

6   From the rear access point of the Core 1 shelf (add picture of the 40 shelf here), remove the MMDU power cable from the backplane.

7   From the rear access point of the Core 1 shelf (, remove the two IDE cables from the backplane. See Figure 16 on .

8   Unscrew the MMDU from the front of Core 1.

9   Slowly pull the MMDU from its slot. Ensure the IDE and power cables do not catch on other equipment as you remove the MMDU.

10 Retain the MMDU (and database backup) in a safe and secure location until the successful completion of this upgrade.

> ⚠️ **IMPORTANT!**
>
> Database backup information, the MMDU, and original CP PII card should be preserved for a minimum of 5 days.

——————— **End of Procedure** ———————

Install Core 1 CP PIV card and blank faceplate

Procedure 9
Installing the Core 1 CP PIV processor and blank faceplate

1   Attach the blank faceplate to the empty MMDU slot using the supplied screws.

2   Insert the CP PIV card into the empty CP slot in Core 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 17 on .

Figure 17
CP PIV faceplate connections
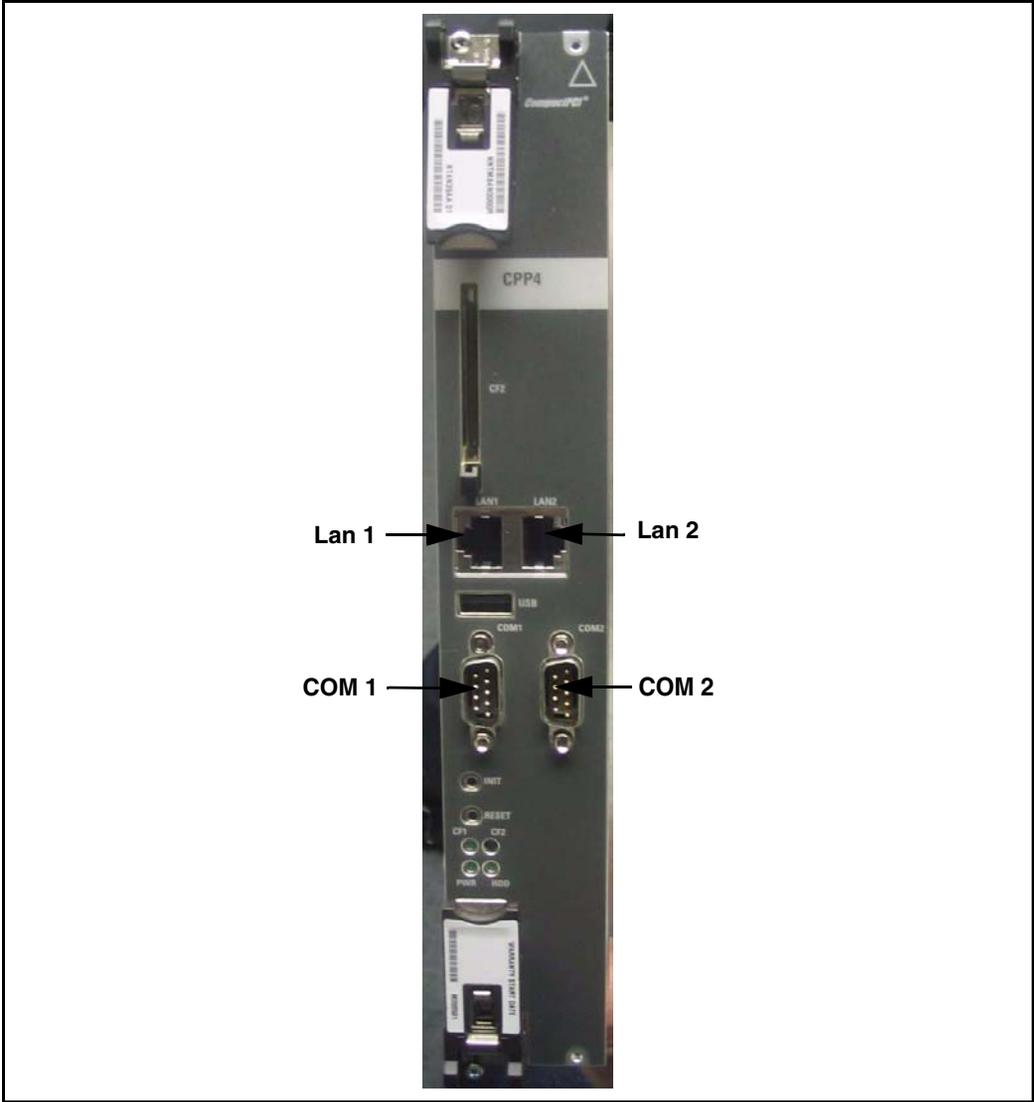
> **4** Attach the LAN 2 cable to the CP PIV faceplate connector on Core 1. Do not connect the LAN 1 cable at this point.

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

Moving Clock Controller 1

Procedure 10
Moving Clock Controller 1

⚠	**IMPORTANT!** Clock Controller cards must be NTRB53.

⚠	**CAUTION — Service Interruption** **Service Interruption occurs if wrong Clock Controller is removed!** Move only Clock Controller 1 at this point in the upgrade. Do not move Clock Controller 0 at this time.

If the system has a QPC471 or QPC775 Clock Controller, replace it with NTRB53 Clock Controller and verify settings according to Table 5 on .

1 Hardware disable Clock Controller 1.

2 Move Clock Controller 1 from the Core/net 1 shelf to network shelf 1, any group, slot 13.

3 Label and disconnect the clock to clock cable from Clock Controller 1.

4 If primary and secondary clock reference cables are connected to the Clock Controller 1 faceplate, label and disconnect them last.

5 Unseat and remove Clock Controller 1.

6 Set the new NTRB53 Clock Controller 1 switch settings according to Table 5 on .

Note: If the NTRC49AA cable is used, set switches 3 and 4 to 0-14 feet. If the NTRC49BA cable is used, set switches 3 and 4 to 15-20 feet.

7   Place Clock Controller 1 in any Network Shelf 1, slot 13. Do NOT seat the Clock Controller 1 and do not faceplate-enable the card.

8   Move and re-connect clock reference cable(s).

Note: If possible, Clock Controllers 1 and 0 should be located in different Network groups in different columns.

Table 5
Clock Controller switch settings for NTRB53

Multi Group Single group	Machine Type #1	Faceplate Cable Length CC to CC			Side Number	Machine Type #2
1	2	3	4		5	6
Multi Group = Off Single group = On	21E = Off 51, 61, 51C, 61C 71, 81, 81C = On	Off	Off	0-14 Ft.	Side 0 = On Side 1 = Off	71,81 = Off 21E, 51, 51C, 61. 61C, 81C = On
		Off	On	4.6–6.1 m (15–20 ft.)		
		On	Off	6.4–10.1 m (21–33 ft.)		
		On	On	10.4–15.2 m (34–50 ft.)		
Note: Switch 7 and 8 are not used.						

Add Side 1 FIJI Hardware

Procedure 11
Add Side 1 FIJI hardware

1   Faceplate-disable the FIJI cards.

2   Insert the FIJI cards in Side 1. **DO NOT seat the FIJI cards.**

   Note: Double slot FIJI cards install in slots 2 and 3 of the Network modules, and slots 8 and 9 of the Core/Net modules. Single slot FIJI cards (with vintages later than NTRB33BBE5) install in slot 2 of the Network modules, and slot 9 of the Core/Net modules.

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

Connecting the shelf 1 FIJI Ring cables (descending)

IMPORTANT!

The shortest Fiber Cable must always be used.

The cables from group 0 to group 1 must always be the same length as the cables from the last group back to group 0

The distance between the lengths of each fiber ring from group 0 to any other group must not exceed 50'. Rings are directional. Ring 0 is ascending and ring 1 is descending.

Note: When adding an additional network group, fiber cables must be changed to adhere to the rules above.

Create Fiber Ring 1. Connect the FIJI cards in all Network shelves 1 in **descending** order, from Tx to Rx (Figure 18 on .)

Figure 18
Shelf 1 *descending* fiber-optic Ring (Meridian 1 Option 81C 5 group example)
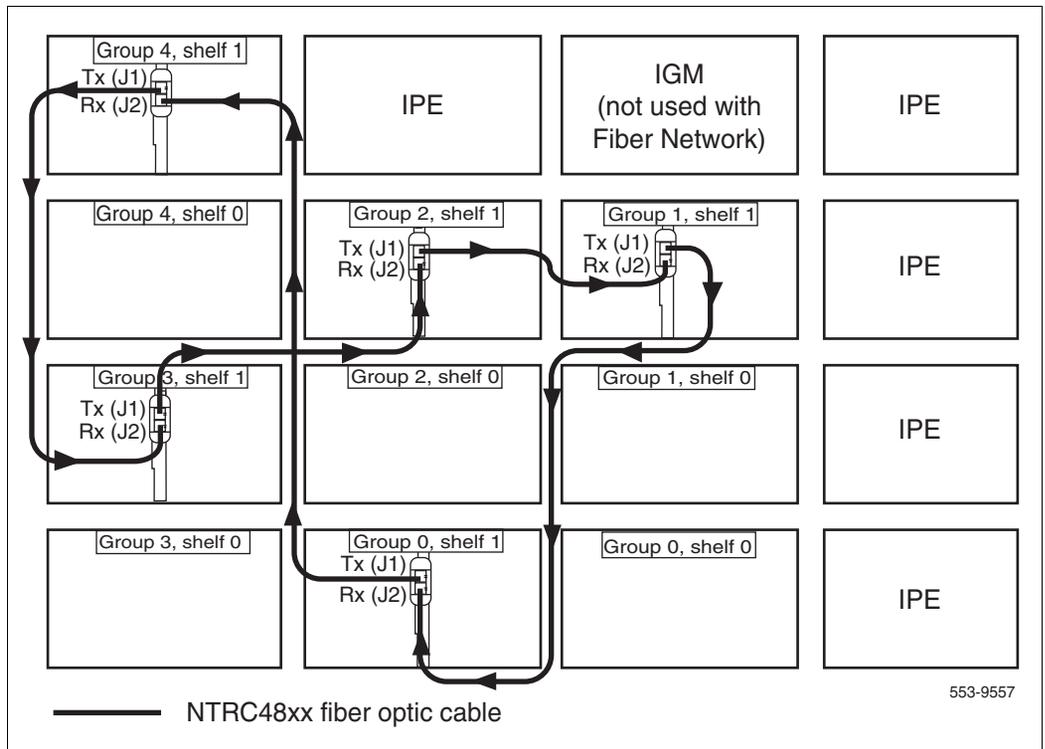
Remove the black cap from the end of each cable before it is connected.

> *Note:* Each end of the NTRC48xx cable is labeled "Tx" or Rx" in the factory.

1 Start with Network group 0, shelf 1.

2 Connect a NTRC48xx FIJI Fiber Ring cable of the appropriate length from the Tx (J1) port of the FIJI card in **Group 0, shelf 1** to the Rx (J2) port of the FIJI card in the **highest Network group, shelf 1**.

3 Connect a NTRC48xx cable from the Tx (J1) port of the FIJI card from the Tx (J1) port in the **highest Network group, shelf 1** to the Rx (J2) port in the **second highest Network group, shelf 1**.

4   Continue to connect NTRC48xx FIJI Fiber Ring cables of the appropriate length from the Tx (J1) port to the Rx (J2) port in shelf 1 of each Network group. Connect these cables in **descending** order of Network groups.

5 To complete the Ring, connect a final cable from Tx in **Group 1, shelf 1** to Rx in Group 0, shelf 1.

Note: Connect the Side 1 FIJI Ring cables only.

Table 6
FIJI Ring 1 connections

Groups 0 - X are cabled in descending order		
Group/Shelf	**FIJI Connector**	**Tx/Rx**
0/1	P1	Tx
7/1	P2	Rx
7/1	P1	Tx
6/1	P2	Rx
6/1	P1	Tx
5/1	P2	Rx
5/1	P1	Tx
4/1	P2	Rx
4/1	P1	Tx
3/1	P2	Rx
3/1	P1	Tx
2/1	P2	Rx
2/1	P1	Tx
1/1	P2	Rx
1/1	P1	Tx
0/1	P2	Rx

End of Procedure

Figure 19
Shelf 1 des*cending* fiber-optic Ring (Meridian 1 Option 81 2 group example)

Group 1, shelf 1
Tx (J1)
Rx (J2)

Group 1, shelf 0
Tx (J1)
Rx (J2)

Group 0, shelf 1
Tx (J1)
Rx (J2)

Group 0, shelf 0
Tx (J1)
Rx (J2)

NTRC48 fiber optic cable

553-9557b
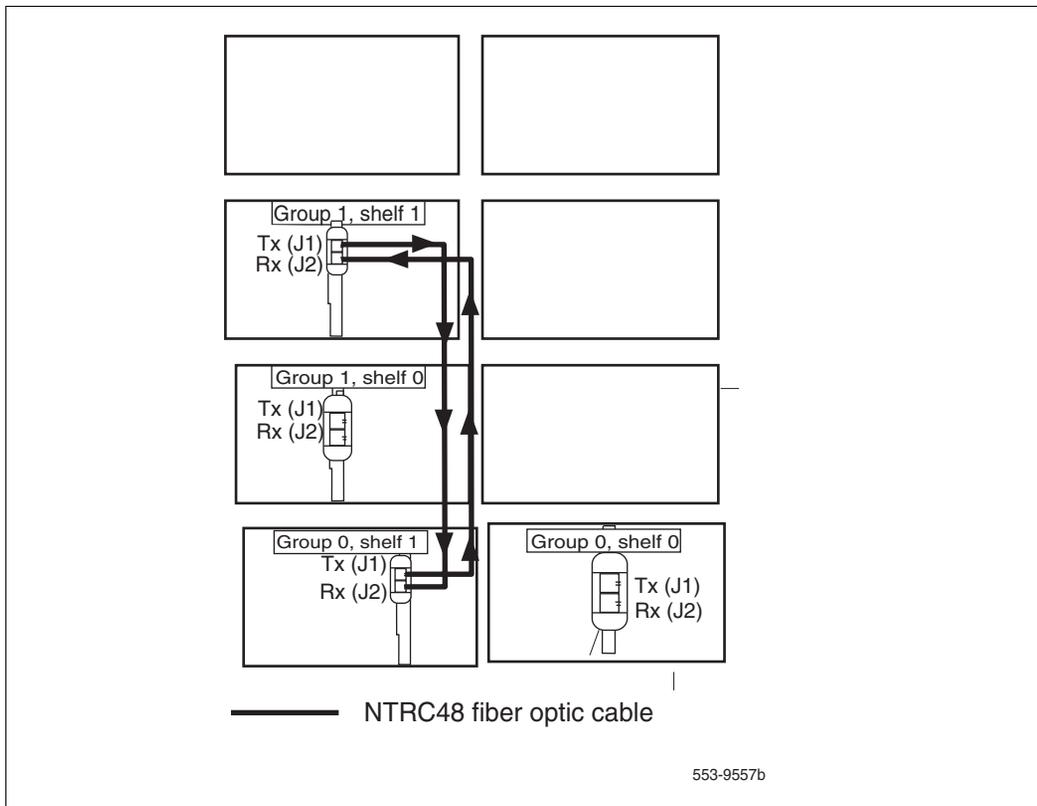
Figure 20
3PE Fanout Panel connections
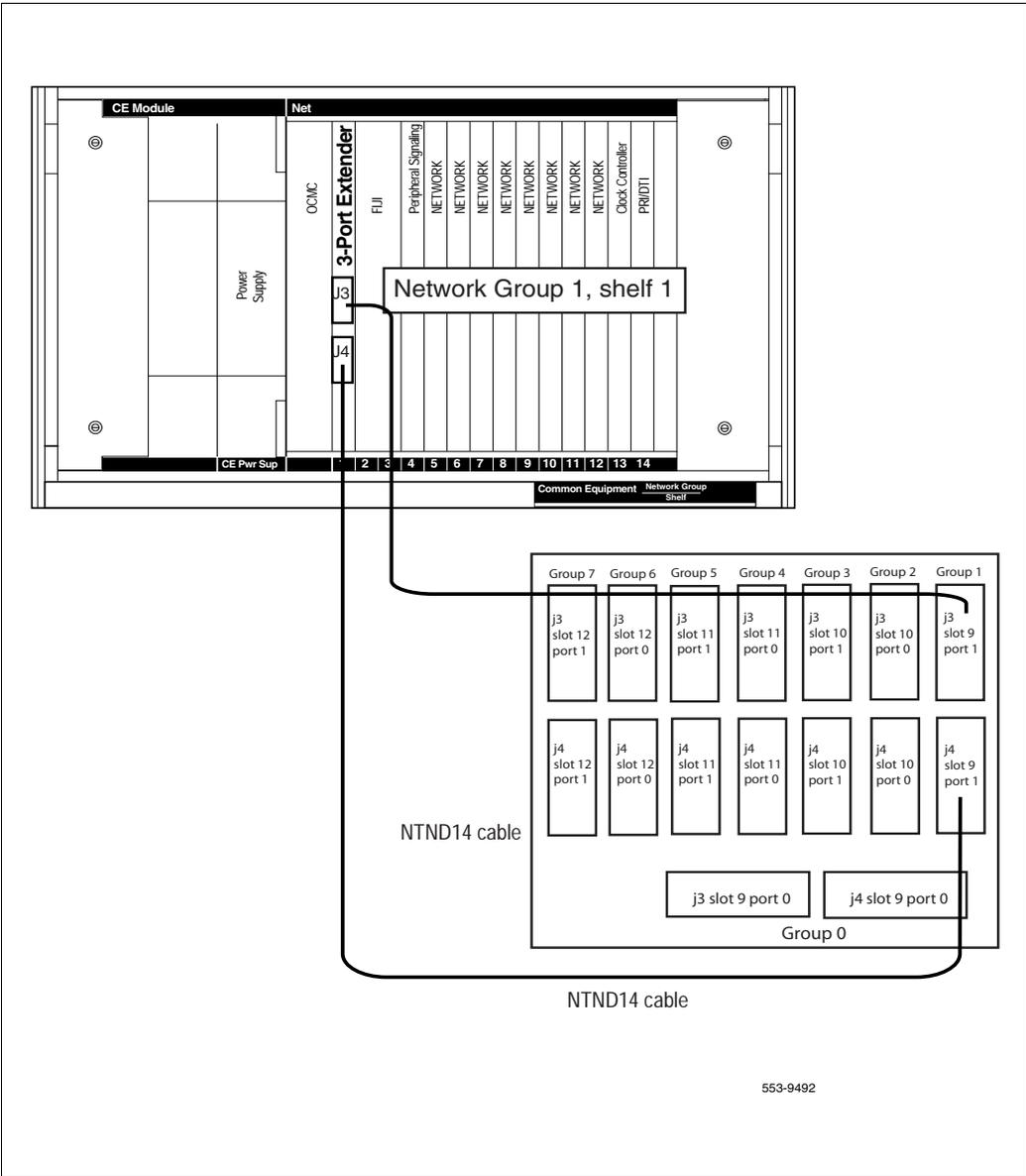
553-9492

Procedure 12
Cable the Clock Controller 1 to FIJI hardware

> **IMPORTANT!**
>
> Both NTRC46 cables must be the same length.

Connect the cables to the Clock Controller 1 as shown in Figure 21 on page 69.

1   Connect P2 of the NTRC49 cable to port J3 of Clock Controller 1.

2   Connect P2 of the NTRC46 cable from Clock 1 to J3 of the FIJI card in group 0, shelf 1.

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

Figure 21
Clock Controller cable configuration
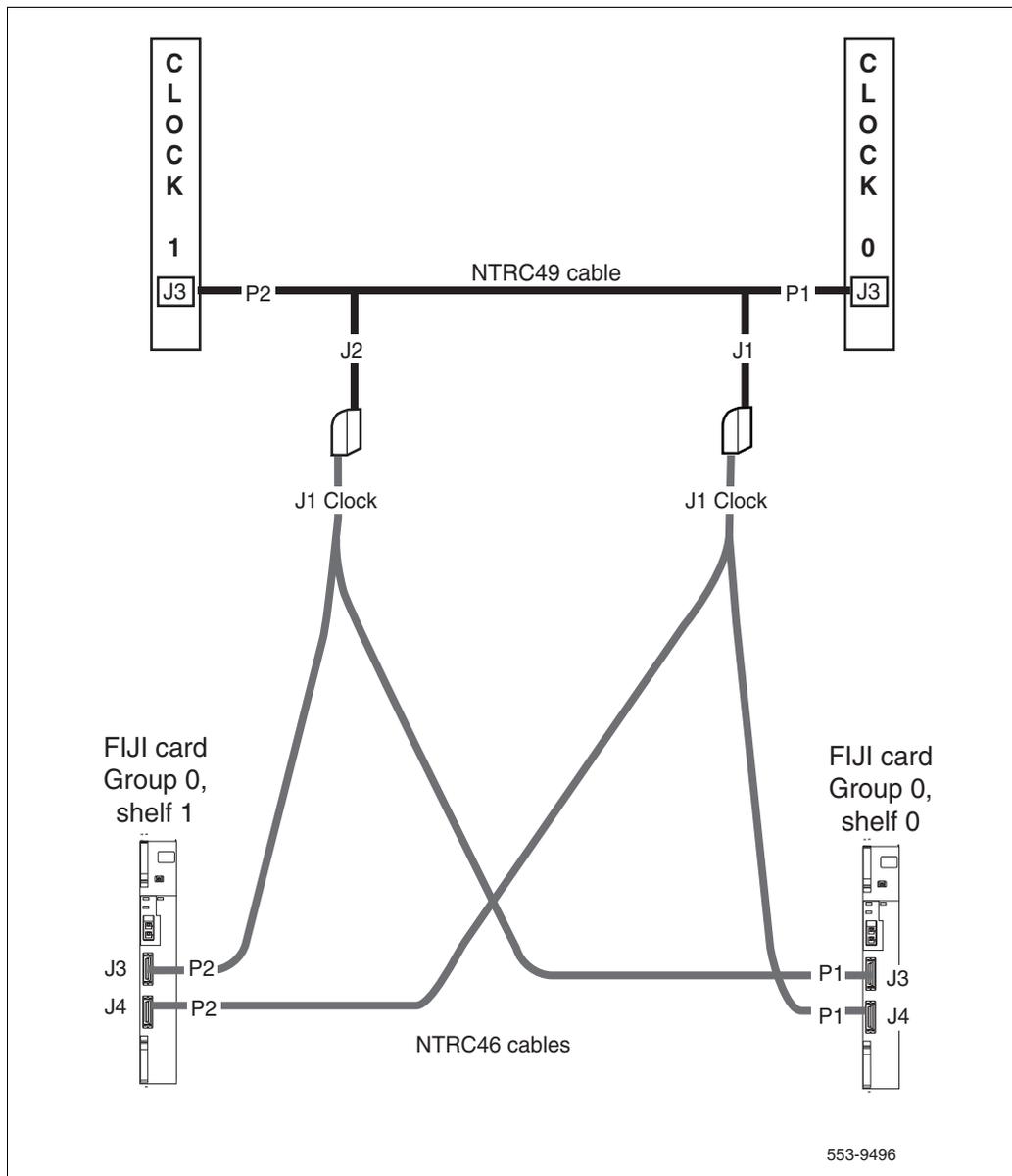
CS 1000 Release 7.0 upgrade

Upgrading the software

Procedure 13 outlines the steps involved in installing CS 1000 Release 7.0 for the CP PIV processor.

Procedure 13
Upgrading the software

1   Check that a terminal is now connected to COM 1port in CP 1. The settings for the terminal are:

   a.   Terminal type: VT100

   b.   9600 Baud

   c.   Data bits: 8

   d.   Parity: none

   e.   Stop bits: 1

   f.   Flow control: none

2   Insert the RMD into the CF card slot on Call Processor 1 (inactive).

3   Perform a KDIF in LD 143.

4   Press the manual RESET button the Call Processor 1 (inactive) card faceplate.

5   Call up the Software Installation Program during a SYSLOAD. During SYSLOAD, the following prompt appears:

```
Read boot parameters from:

  F: Faceplate compact flash

  H: Hard Drive

  0 [H]
```

   Press F to boot from the compact flash (which contains the software).

For the CP PIV upgrade, the **F** must be in uppercase.

---

6   Enter <CR> at the Install Tool Menu.

Note: Blank CF prompts begin here.

```
Mounting /cf2
Found /cf2/nvram.sys
Mounting /boot|
Found /boot/nvram.sys

                   Selecting nvram file from 2
sources
Read boot parameters from:
F: Faceplate compact flash
H: Hard Drive

 10 [F]

Press <CR> when ready

Reading boot parameters from /boot/nvram.sys

Press any key to stop auto-boot...
```

```
Communication Server 1000 Software/Database/BOOTROM RMD Install Tool
====================================================================
        #####
      #########   ########
     #########''  `#########0#####
    #########       ``  `0#########0##0
    ########         ######0''`#0#
    #######    #######''    '###            NORTEL
   ########   ######`       ###0#
   ######## #####`          ####  Communication Server 1000 Software
  `########0#`              ##0#`
   ########`                #####    Install Tool version 29
   `#######                ####0#`
   #########0#            `###`    Copyright 1992 - 2007
   ##'`#########          #
  ##    ########################0#
  `#     `######################0#
   ######################0#####0##0``
     `````````   ```` ####`````

         Please press <CR> when ready ...

****
 WARNING:

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

 Proceed with the upgrade? (Y/N| y

 ****
 WARNING:

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

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

**7**    The system then enters the `Main Menu` for keycode authorization.

```
          M A I N   M E N U

The Software Installation Tool will install or
upgrade Communication Server 1000 Software,
Database and the CP-BOOTROM. You will be
prompted throughout the installation and given
the opportunity to quit at any time.

Please enter:

<CR> -> <u> - To Install menu

        <t> - To Tools menu.

        <q> - Quit.

        Enter Choice> <u>
```

The system searches for available keycode files in the "keycode" directory
on the RMD. If no keycode file is found, the system displays the following
menu:

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

No keycode files are available on the removable
media.

Please replace the RMD containing the keycode
file(s).

Please enter:

        <CR> -> <a> - RMD is now in the drive.

        <q> - Quit.

        Enter choice>
```

At this point, either replace the RMD or quit the installation. If you select option "<q> - Quit.", the system requires confirmation.

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

=============================================
===================
You selected to quit. Please confirm.

Please enter:

        <CR> -> <y> - Yes, quit.

        <n> - No, DON'T quit.

        Enter choice>
```

If "y" (quit) is selected, the system prints "INST0127 Keycode file is corrupted. Check Keycode file." and returns to the installation main menu.

After accessing the RMD containing the valid keycode(s), press <CR>. The system displays the keycode file(s) available as in the following example:

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

Name                    Size    Date        Time

-------------------    -------         -----

<CR> -> <1> -keycode.kcd 1114 mon-d-year hr:min

<2> - KCport60430m.kcd   1114 mon-d-year hr:min

<q> - Quit

Enter choice> 2
```

Note: A maximum of 20 keycode files can be stored under the "keycode" directory on the RMD. The keycode files must have the same extension ".kcd".

8   Select the keycode to be used on the system.The system validates the selected keycode and displays the software release and machine type authorized.

```
Validating keycode ...

Copying "/cf2/keycode/KCport60430m.kcd" to "/u/
keycode" -

Copy OK: 1114 bytes copied

The provided keycode authorizes the install of
xxxx software (all subissues) for machine type
xxxx (CP PIV processor on <system>).
```

Note: The software release displayed depends on the keycode file content. The system requests keycode validation.

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

================================================

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

Please enter:

        <CR> -> <y> - Yes, the keycode matches.
Go on to Install Menu.

        <n> - No, the keycode does not match.
Try another keycode.

Enter choice>
```

9   If the keycode matches, enter <CR> to continue the installation. The
     system displays the Install Menu. Select option "<a> .

     Note: Option A uses the existing db from the FMD. External database
     backup is Option B.

```
Communication Server 1000 Software/Database/
BOOTROM RMD Install Tool
===============================================
I N S T A L L    M E N U

        The Software Installation Tool will
install or upgrade Communication Server 1000
Software, Database and the CP-BOOTROM. You will be
prompted throughout the installation and given the
opportunity to quit at any time.

        Please enter:
<CR> -> <a> - To install Software, CP-BOOTROM.

        <b> - To install Software, Database,
CP-BOOTROM.

        <c> - To install Database only.

        <d> - To install CP-BOOTROM only.

        <t> - To go to the Tools menu.

        <k> - To install Keycode only.

             For Feature Expansion, use OVL143.

        <p> - To install 3900 set Languages.

        <q> - Quit.

        Enter Choice> <a>
```

10 The system requires the insertion of the RMD containing the software to be installed.

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

==================================================
Please insert the Removable Media Device into the
drive on Core x.

Please enter:

        <CR> -> <a> - RMD is now in drive.
Continue with s/w checking.

        <q> - Quit.

Enter choice> <CR>
```

11 If the RMD containing the software is already in the drive, select option
"<a> - RMD is now in drive. Continue with s/w checking." (or simply press
<CR>) to continue. If the RMD is not yet in the drive, insert it and then
press <CR>.

12 The system displays the release of the software found on RMD under the
"swload" directory and requests confirmation to continue the installation.

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

================================================

The RMD contains System S/W version xxxx.

Please enter:

        <CR> -> <y> - Yes, this is the correct
version. Continue.

        <n> - No, this is not the correct version.
Try another RMD or a different keycode.

Enter choice> <CR>
```

Note: If the RMD contains the correct software release, select option
"<y> - Yes, this is the correct version. Continue." (or simply press <CR>)
to continue. If the software release is not correct and you want to replace
the RMD, insert the correct RMD in the drive and then press <CR>. If you
want to replace the keycode, select option "<n> - No, this is not the correct
version".

13 Choosing Yes for the Dependency Lists installation.

Note: If Dependency Lists are not installed on media, the following prompts do not appear. Proceed to step 14 on .

Do you want to install Dependency Lists?

    Please enter:

<CR> -> <y> - Yes, Do the Dependency Lists installation

    <n> - No, Continue without Dependency Lists installation

    Enter choice>

    The default choice is YES as shown in the prompt.

    If the choice is no, then the following prompt will appear for the confirmation:

    Are you sure?

    Please enter:

<CR> -> <n> - No, Go to the Dependency List menu

    <y> - Yes, Go to the next menu

    Enter choice>

    The default choice is NO which will return the user to deplist menu.

Enable Automatic Centralized Software Upgrade (CSU) Feature?

Please enter:

<CR> -> <y> - Yes

    <n> - No

    Enter choice>

14 Select to enable/disable CSU option.

Note: if Sequential is selected `<1>`, upgrades to the MG 1000Es are performed across the LAN in a sequential manner. One MG 1000E is upgraded at a time. No other MG 1000E upgrades are initiated until the current MG 1000E completes its installation.

If Simultaneous is selected `<2>`, upgrades to the MG 1000Es are performed simultaneously across the LAN. Up to eight MG 1000Es are upgraded at the same time. If there are more than eight MG 1000Es, the upgrade to the next MG 1000E begins after the upgrade of one MG 1000E is complete. The following warning is presented to the installer:

```
 WARNING:
 Call Processing is not guaranteed to operate on the call server
 during simultaneous upgrades.
 Do you wish to proceed? (y/n)
```

```
 Set Automatic Centralized Software Upgrade Mode to:

          Please enter:

 <CR> -> <1> - Sequential

          <2> - Simultaneous

          Enter choice>

 >Processing the install control file ...

 >Installing release 0600x
```

15 The PSDL files menu appears. Enter the appropriate choice for the site's geographic location.

```
**************************************************
PSDL INSTALLATION MENU

The PSDL contains the loadware for all
downloadable cards in the system and loadware for
M3900 series sets.

**************************************************
Select ONE of the SEVEN PSDL files:

1. Global 10 Languages
2. Western Europe 10 Languages
3. Eastern Europe 10 Languages
4. North America 6 Languages
5. Spare Group A
6. Spare Group B
7. Packaged Languages
[Q]uit, <CR> - default

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

>Copying new PSDL ...
```

16 The installation summary screen appears. Verify the parameters and enter <CR> when ready.

17   Enter <CR> to confirm and continue upgrade.

Note: After entering yes below, the system copies the software from RMD to FMD (the files copied are listed). This file copy takes between 5 and 10 minutes to complete.

```
 Please enter:

<CR> -> <y> - Yes, start upgrade.

        <n> - No, stop upgrade. Return to the Main
Menu.


         Enter choice>

>Checking system configuration

You selected to upgrade Software release: XXXX to
release: xxxx. This will erase all old system
files.

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

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

Please enter:

        <CR> -> <a> - Continue with upgrade.

        <q> - Quit.

        Enter choice>

```

18 Successful installation confirmation appears, enter <CR> to continue.

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

=================================================

Software release xxxx was installed successfully
on Core x.

All files were copied from RMD to FMD.


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

19 Press "Enter" after checking the Installation summary.

20 Upon returning to the main install menu, enter **q** to quit.

```
            I N S T A L L     M E N U

        The Software Installation Tool will
install or upgrade Succession Enterprise System
Software, Database and the CP-BOOTROM. You will be
prompted throughout the installation and given the
opportunity to quit at any time.

        Please enter:

<CR> -> <a> - To install Software, CP-BOOTROM.

        <b> - To install Software, Database,
CP-BOOTROM.

        <c> - To install Database only.

        <d> - To install CP-BOOTROM only.

        <t> - To go to the Tools menu.

        <k> - To install Keycode only.

             For Feature Expansion, use OVL143.

        <p> - To install 3900 set Languages.

        <q> - Quit.

        Enter Choice> q
```

21 The system then prompts you to confirm and reboot. Enter <CR> to quit. Enter <CR> again to reboot.

```
You selected to quit. Please confirm.

    Please enter:

<CR> -> <y> - Yes, quit.

        <n> - No, DON'T quit.


        Enter choice> <CR>

You selected to quit the Install Tool.

You may reboot the system or return to the Main
Menu.



        -----------------------------

        DO NOT REBOOT USING RESET BUTTON!!!


        -----------------------------


        Please enter:

<CR> -> <a> - Reboot the system.

        <m> - Return to the Main menu.

        Enter Choice> <CR>

>Removing temporary file "/u/disk3521.sys"

>Removing temporary file "/u/disk3621.sys"

>Rebooting system ...
```

At this point the system reloads and initializes.

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

Verifying the upgraded database

Procedure 14
Verifying the upgraded database

1   Print ISSP (system software issue and patches)

LD 22	Load program
REQ	ISSP
****	Exit program

2   Print the system configuration record in LD 22 and compare the output
with the preupgraded configuration record.

LD 22	Load program
REQ	PRT
TYPE	CFN
****	Exit program

3   Print the SLT in LD 22. This output provides used and unused ISM
parameters. Compare with preupgrade SLT output.

LD 22	Load program
REQ	SLT
****	Exit program

4 Print the customer data block(s) in LD 21.

LD 21	Load program
REQ	PRT
TYPE	CDB
CUST	xx
****	Exit program

Checking for Peripheral Software Download to Core 1

Enter LD 22 and print Target peripheral software version. The Source peripheral software version was printed in "Printing site data" on . If there is a difference between the Source and Target peripheral software version:

• A forced download occurs during initialization when coming out of parallel reload.

• System initialization takes longer.

• The system drops established calls on IPE.

Access LD 22 and print Target peripheral software version.

LD 22	Load program
REQ	PRT
TYPE	PSWV
ISSP	Print System, DepList, and Patch information
SLT	Print System Limits
TID	Print the Tape ID
****	Exit program

Reconfiguring I/O ports and call registers

Procedure 15
Reconfiguring I/O ports and call registers

1   Evaluate the number of call registers and 500 telephone buffers that are configured for the system (suggested minimum values are 20,000 and 1000 respectively). If changes are required, reconfigure the values in LD 17:

LD 17	Load program
CHG	
CFN	
PARM YES	
500B 1000	Use 1000 as a minimum value
NCR 20000	Use 20000 as a minimum value
****	Exit program

2   Print the Configuration Record to confirm the changes made above:

LD 22	Load program
REQ PRT	Set the print Option
TYPE CFN	Print the configuration
****	Exit program

At this point, all applications must be shut down (CallPilot, Symposium, and so on).

> ⚠ **CAUTION — Service Interruption**
>
> **Service Interruption**
>
> The following procedures interrupt call processing. All active calls are lost.

Connecting LAN 1

Procedure 16
Connecting LAN 1

1   Attach the LAN 1 cable to the CP PIV faceplate connector on Core 1.

> ✔   LAN 1 and LAN 2 cables are now connected.

————   **End of Procedure**   ————

Switch call processing to Core/Net 1

Procedure 17
Switching call processing

1   Hardware enable all CNI cards in Core 1.

2   Enter LD 135 on Core/Net 0 and issue the CUTOVR command. Call processing switches to Core/Net 1 and service is interrupted.

LD 135

CUTOVR   Transfer call processing from active Core/Net to standby Core/Net

****   Exit program

3   After Core/Net 1 initializes. log in to Core/Net 1 and verify that the cutover was successful.

4   Hardware disable and remove Clock Controller 0.

5   Seat and hardware enable Clock Controller 1.

6   Seat and hardware enable FIJI cards in Ring 1.

7   Press the INIT button on the CP PIV card in Core 1. This initializes Core 1.

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

Test Core/Net 1

Procedure 18
Testing Core/Net 1

1   Check dial-tone.

2   Stat D-channels:

    LD 96

    STAT DCH   Stat all D-channels

    ****   Exit program

3   Stat all T1 interfaces and CC 1:

    LD 60

    SSCK 1   Stat Clock Controller 1

    STAT   Stat all DTI and PRI

    ****   Exit program

4   Stat FIJI Ring 1:

    LD 39

    STAT RING 1   Stat FIJI cards in Ring 1

    STAT ALRM 1   Stat alarms for Ring 1

    ****   Exit program

5   Stat network cards:

    LD 32

    STAT x   x = loop number

    ****   Exit program

6   Print status of all controllers:

    LD 97

    REQ   PRT

    TYPE   XPE (returns status of all controller cards)

    ****   Exit program

7   Make internal, external and network calls.

8   Check attendant console activity.

9   Check DID trunks.

10   Start up and check all applications.

During INI, FIJI error messages (from Shelf 0) appear on the screen. FIJI card on shelf 1 resets. Upon INI completion, RING 1 is full, FIJI Ring 0 (in Core/Net 0) is disabled, AUTO recovery is on and Clock Controller 1 is active.

——   End of Procedure   ——

> Core 1 is now active with ring 1 drives full. Clock Controller 1 is active. Call processing should be active on Core/Net 1.

Performing the customer's test plan

Ensure that all network resources in Core/Net shelf 1 are now functional.

Upgrading Core 0

Procedure 19
Checking that Core 1 is active

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

1 Verify that Core 1 is active:

LD 135   Load program

STAT CPU   Obtain the status of the CPUs

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

Procedure 20
Checking that Clock Controller 1 is active

1 Check the status of the Clock Controllers:

LD 60   Load program

SSCK 1   Obtain the status of Clock Controller 1

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

Procedure 21
Hardware disable CNI cards

1 Hardware disable all CNI cards in Core 0.

——— **End of Procedure** ———

Remove Core 0 CP PII card and MMDU

Procedure 22
Removing the Core 0 CP PII processor and MMDU

1 Disconnect and label the LAN1 and LAN 2 cables from the Core 0 CP PII card faceplate. See Figure 22 on page 94.

2 Disconnect and label the COM 1 and COM 2 cables from the Core 0 CP PII card faceplate. See Figure 22 on page 94.

3 Unscrew and unlatch the Core 0 CP PII card. See Figure 22 on page 94.

4 Pull the Core 0 CP PII card from its slot.

5 Remove the rear access plate on the left side of the Core 0 module. See Figure 22 on page 94.

Figure 22
CP PII faceplate connections
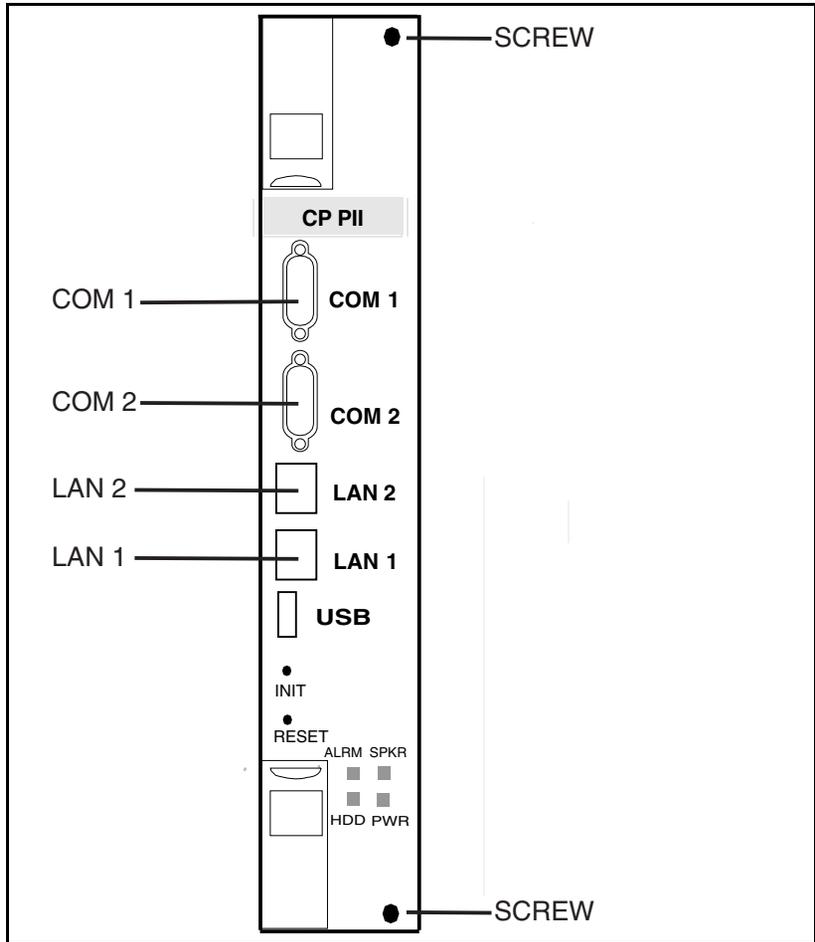
Figure 23
NT4N46 Core/Net module

6   From the rear access point of the Core 0 shelf, remove the MMDU power cable from the backplane.

7   From the rear access point of the Core 0 shelf, remove the two IDE cables from the backplane.

8   Unscrew the MMDU from the front of Core 0.

9   Slowly pull the MMDU from its slot. Ensure the IDE and power cables do not catch on other equipment as you remove the MMDU.

10 Retain the MMDU (and database backup) in a safe and secure location until the successful completion of this upgrade.

> **IMPORTANT!**
>
> Database backup information and MMDU should be preserved for a minimum of 5 days.

———— **End of Procedure** ————

Installing Core 0 CP PIV card and blank faceplate

Procedure 23
Installing the Core 0 CP PIV Processor and blank faceplate

1 Attach the blank faceplate to the empty MMDU slot using the supplied screws.

2 Insert the CP PIV card into the empty CP slot in Core 0. 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 24 on .

Figure 24
CP PIV faceplate connections
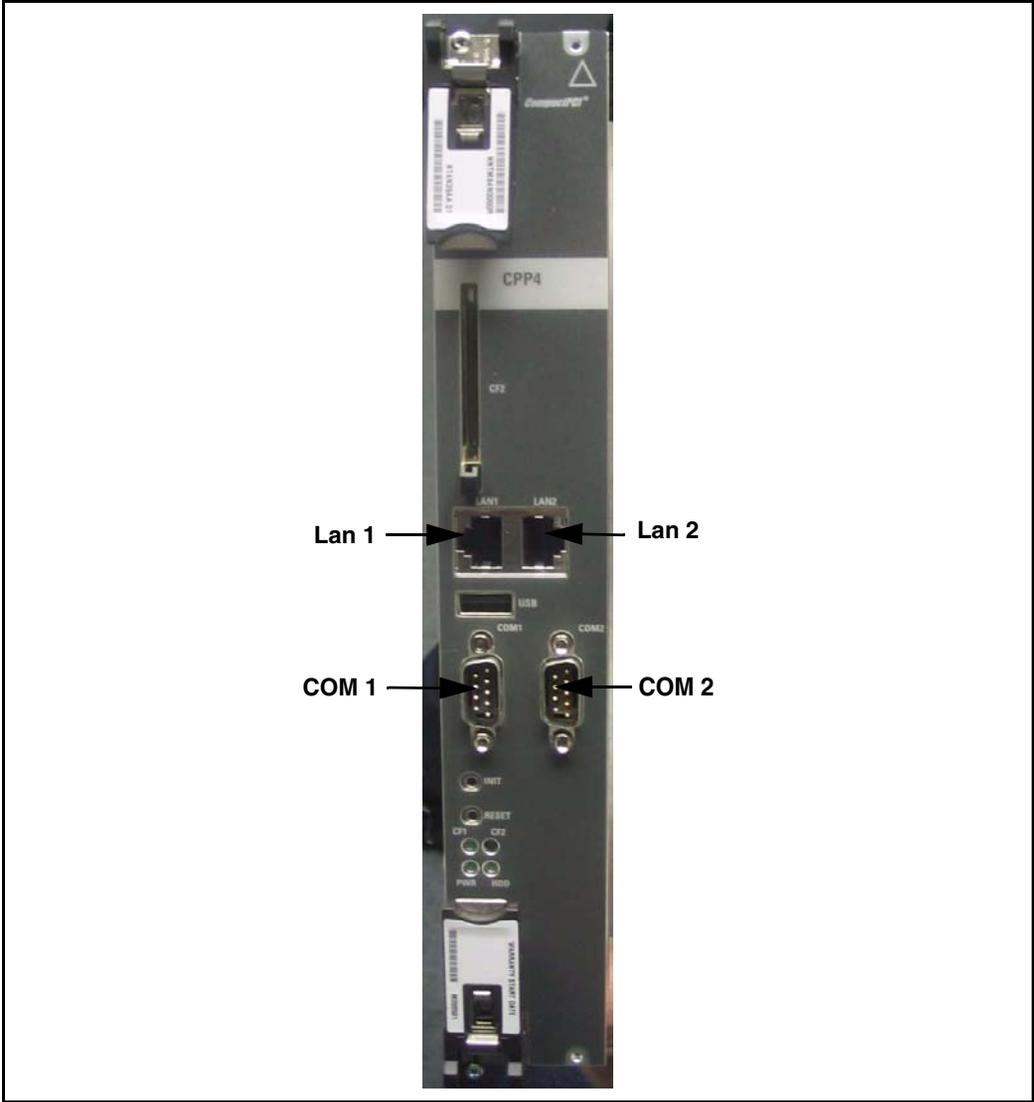
4   Attach the LAN 2 cable to the CP PIV faceplate connector on Core 0. Do not connect the LAN 1 cable at this point.

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

Adding Side 0 FIJI hardware

Procedure 24
Install Side 0 FIJI cards

1   Unpack the FIJI cards (NTRB33).

2   Faceplate-disable the NTRB33 cards.

1   Insert and seat the FIJI cards in all Side 0 shelves.

Note: Double slot FIJI cards install in slot 2 and 3 of the Network modules, and slots 8 and 9 of the Core/Net modules. Single slot FIJI cards (with vintages later than NTRB33BBE5) install in slot 2 of the Network modules, and slot 9 of the Core/Net modules.

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

Procedure 25
Connect the FIJI to FIJI cables

1   Connect P1 of a NTRC47 FIJI to FIJI cable to J4 of the FIJI cards in each Network shelf 1, except group 0.

2   Connect P2 of a NTRC47 FIJI to FIJI cable to J4 of the FIJI cards in each Network shelf 0, except group 0.

Note: The FIJI cards in Group 0 do not receive a FIJI to FIJI cable.

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

Figure 1
FIJI shelf 0 to FIJI shelf 1 connections

NTRC47AA FIJI to FIJI cables

553-9555
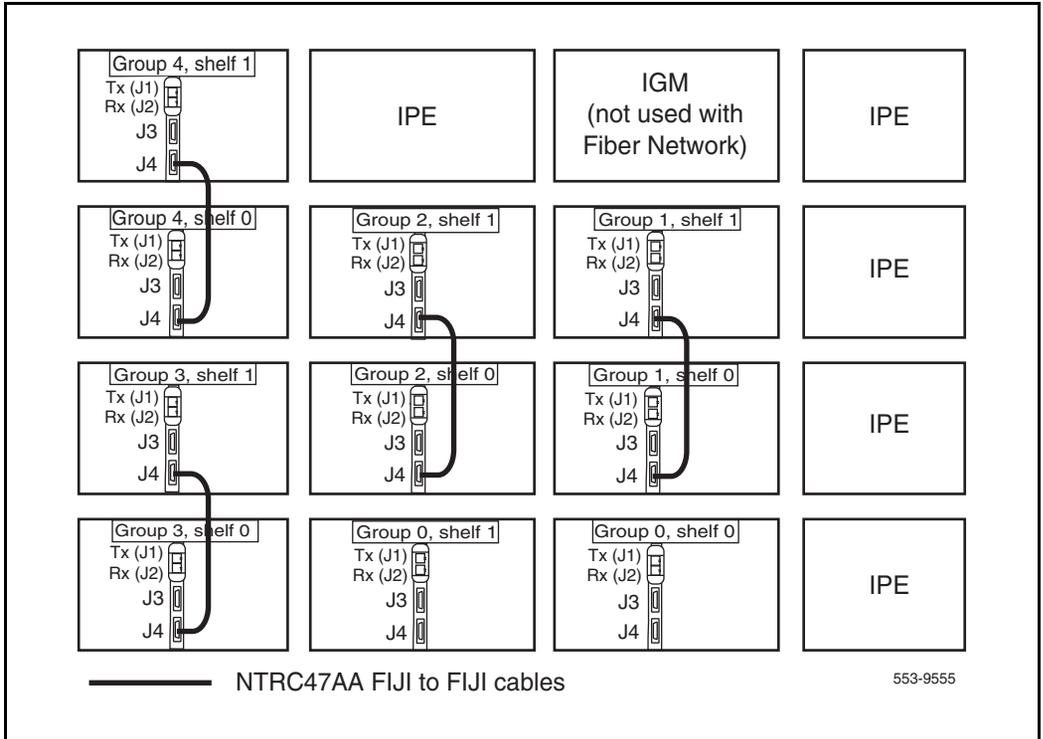
Procedure 26
Connecting the shelf 0 FIJI Ring cables (ascending)

Create Fiber Ring 0. Connect the FIJI cards in all Network shelves 0 in **ascending** order, from Tx to Rx ports (see Figure 25 on and Figure 26 on).

IMPORTANT!

The shortest Fiber Cable must always be used.

The cables from group 0 to group 1 must always be the same length as the cables from the last group back to group 0.

The distance between the lengths of each fiber ring from group 0 to any other group must not exceed 50'. Rings are directional. Ring 0 is ascending and ring 1 is descending.

Note: When adding an additional network group, fiber cables must be changed to adhere to the rules above.

Remove the black cap from the end of each cable before it is connected.

> *Note:* Each end of the NTRC48xx cable is labeled "Tx" or "Rx" in the factory.

1   Start with group 0, shelf 0.

2   Connect a NTRC48xx FIJI Fiber Ring cable of the appropriate length from the Tx (J1) port of the FIJI card in **Group 0, shelf 0** to the Rx (J2) port of the FIJI card in **Group 1, shelf 0**.

3   Connect a NTRC48xx FIJI Fiber Ring cable of the appropriate length from the Tx (J1) port of the FIJI card in **Group 1, shelf 0** to the Rx (J2) port of the FIJI card in **Group 2, shelf 0**.

4   Continue to connect NTRC48xx FIJI Fiber Ring cables of the appropriate length from the Tx (J1) port to the Rx (J2) port in shelf 0 of each Network group. Connect these cables in **ascending** order of Network groups.

Figure 25
Shelf 0 as*cending* fiber optic Ring (Meridian 1 Option 81C 2 group example)

Group 1, shelf 1
Tx (J1)
Rx (J2)

Group 1, shelf 0
Tx (J1)
Rx (J2)

Group 0, shelf 1
Tx (J1)
Rx (J2)

Group 0, shelf 0
Tx (J1)
Rx (J2)

NTRC48 fiber optic cable

553-9557a
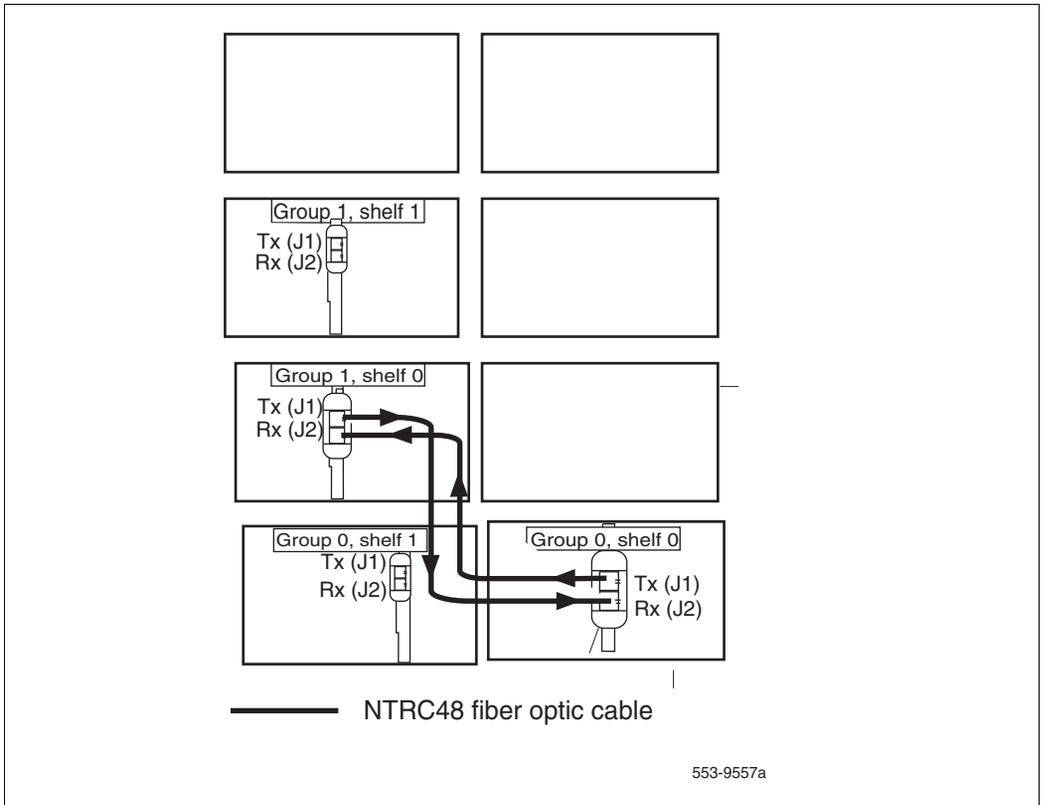
5   To complete the Ring, connect a final cable from the Tx (J1) port in the **highest number group** back to the Rx (J2) port in **Group 0, shelf 0.**

Table 7
FIJI Ring 0 connections

Groups X - 0 are cabled in ascending order		
Group/Shelf	**FIJI Connector**	**Tx/Rx**
0/0	P1	Tx
1/0	P2	Rx
1/0	P1	Tx
2/0	P2	Rx
2/0	P1	Tx
3/0	P2	Rx
3/0	P1	Tx
4/0	P2	Rx
4/0	P1	Tx
5/0	P2	Rx
5/0	P1	Tx
6/0	P2	Rx
6/0	P1	Tx
7/0	P2	Rx
7/0	P1	Tx
0/0	P2	Rx

—————— **End of Procedure** ——————

Figure 26
Shelf 0 *ascending* fiber optic Ring (Meridian 1 Option 81C 5 group example)

NTRC48xx fiber optic cable

553-9553
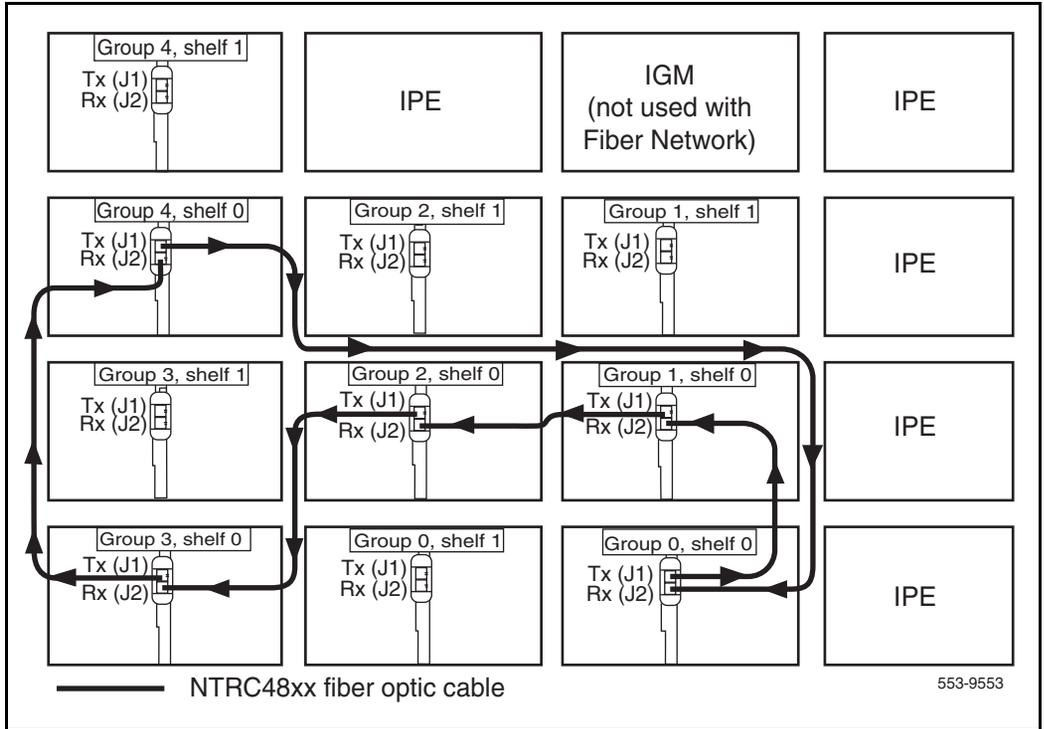
Procedure 27
Cabling the Clock Controllers to FIJI card

Connect the cables to the Clock Controllers as shown in Figure 27 on
page 105:

1 Connect the Clock 0 to FIJI cable:

    a. Connect P1 of the NTRC46 cable from Clock 0 to **J4** of the FIJI card
    in group 0, **shelf 0**.

    b. Connect P2 of the NTRC46 cable for Clock 0 to **J4** of the FIJI card in
    group 0, **shelf 1**

2 Connect the Clock 1 to FIJI cable:

a. Connect P1 of the NTRC46 cable from Clock 1 to **J3** of the FIJI card in group 0, **shelf 0.**

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

Figure 27
Clock Controller cable configuration

553-9496
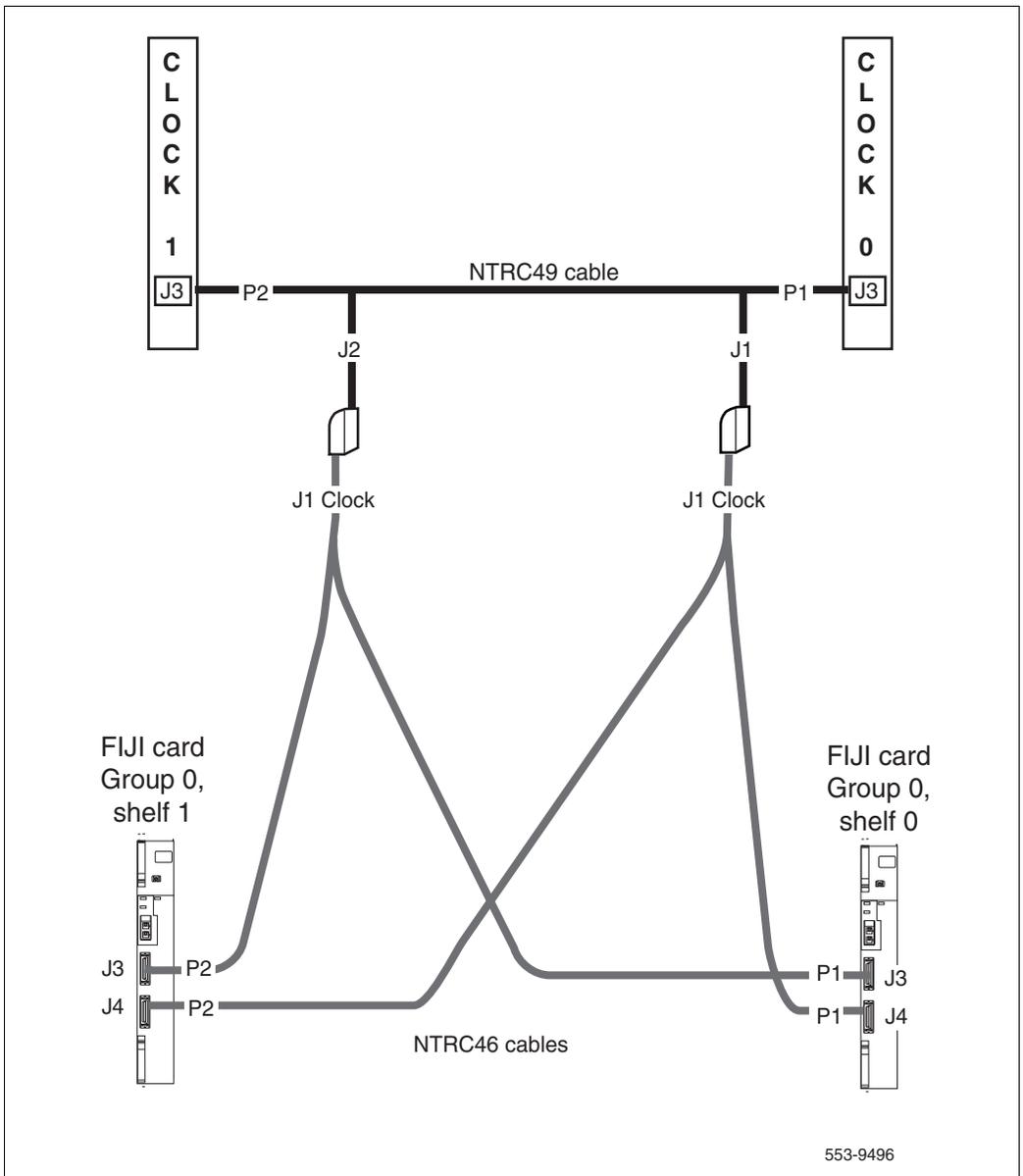
Procedure 28
Enabling Clock Controller 0 and Ring 0

1   Hardware enable FIJI cards in RIng 0 and hardware enable Clock
     Controller 0.

   a.   Check that the Fiber Rings operate correctly:

   LD 39   Load program

   ENL RING 0   Enable Ring 0

   STAT RING 0   Check the status of Ring 0 (HALF/HALF)

   STAT RING 1   Check the status of Ring 1 (HALF/HALF)

   b.   Restore the Rings to Normal State:

   RSET   Reset threshold for Ring switchover

   RSTR   Restore both Rings to HALF state

   ARCV ON   Turn Auto Recovery on

   c.   Check that the Rings operate correctly:

   STAT RING 0   Check status of Ring 0 (HALF/HALF)

   STAT RING 1   Check status of Ring 1 (HALF/HALF)

   ****   Exit program

   d.   Check the status of Clock Controller 0

   LD 60   Load program

   SSCK *x*   Obtain status of the clock controllers (*x* is "0" or
                        "1" for Clock 0 or Clock 1)

   ****   Exit program

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

CS 1000 Release 7.0 upgrade

Upgrading the software

Procedure 29 outlines the steps involved in installing CS 1000 Release 7.0 for the CP PIV processor.

Procedure 29
Upgrading the software

1   Check that a terminal is now connected to COM 1port in CP 1. The settings for the terminal are:

   a.   Terminal type: VT100

   b.   9600 Baud

   c.   Data bits: 8

   d.   Parity: none

   e.   Stop bits: 1

   f.   Flow control: none

2   Insert the RMD into the CF card slot on Call Processor 1 (inactive).

3   Perform a KDIF in LD 143.

4   Press the manual RESET button the Call Processor 1 (inactive) card faceplate.

5   Call up the Software Installation Program during a SYSLOAD. During SYSLOAD, the following prompt appears:

```
Read boot parameters from:

  F: Faceplate compact flash

  H: Hard Drive

  0 [H]
```

Press F to boot from the compact flash (which contains the software).

For the CP PIV upgrade, the **F** must be in uppercase.

6   Enter <CR> at the Install Tool Menu.

Note: Blank CF prompts begin here.

```
Mounting /cf2
Found /cf2/nvram.sys
Mounting /boot|
Found /boot/nvram.sys

                    Selecting nvram file from 2
sources

Read boot parameters from:
F: Faceplate compact flash
H: Hard Drive

 10 [F]

Press <CR> when ready

Reading boot parameters from /boot/nvram.sys

Press any key to stop auto-boot...
```

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

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

       Please press <CR> when ready ...

****
 WARNING:

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

 Proceed with the upgrade? (Y/N| y

****
 WARNING:

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

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

7   The system then enters the `Main Menu` for keycode authorization.

```
              M A I N   M E N U

The Software Installation Tool will install or
upgrade Communication Server 1000 Software,
Database and the CP-BOOTROM. You will be
prompted throughout the installation and given
the opportunity to quit at any time.

Please enter:

<CR> -> <u> - To Install menu

        <t> - To Tools menu.

        <q> - Quit.

        Enter Choice> <u>
```

The system searches for available keycode files in the "keycode" directory on the RMD. If no keycode file is found, the system displays the following menu:

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

No keycode files are available on the removable
media.

Please replace the RMD containing the keycode
file(s).

Please enter:

        <CR> -> <a> - RMD is now in the drive.

        <q> - Quit.

        Enter choice>
```

At this point, either replace the RMD or quit the installation. If you select option "<q> - Quit.", the system requires confirmation.

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

=================================================
====================

You selected to quit. Please confirm.

Please enter:

        <CR> -> <y> - Yes, quit.

        <n> - No, DON'T quit.

        Enter choice>
```

If "y" (quit) is selected, the system prints "INST0127 Keycode file is corrupted. Check Keycode file." and returns to the installation main menu.

After accessing the RMD containing the valid keycode(s), press <CR>. The system displays the keycode file(s) available as in the following example:

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

Name                      Size   Date      Time

--------------------    -------          -----

<CR> -> <1> -keycode.kcd 1114 mon-d-year hr:min

<2> - KCport60430m.kcd   1114 mon-d-year hr:min

<q> - Quit

Enter choice> 2
```

Note: A maximum of 20 keycode files can be stored under the "keycode" directory on the RMD. The keycode files must have the same extension ".kcd".

8   Select the keycode to be used on the system.The system validates the
selected keycode and displays the software release and machine type
authorized.

```
Validating keycode ...

Copying "/cf2/keycode/KCport60430m.kcd" to "/u/
keycode" -

Copy OK: 1114 bytes copied

The provided keycode authorizes the install of
xxxx software (all subissues) for machine type
xxxx (CP PIV processor on <system>).
```

Note: The software release displayed depends on the keycode file
content. The system requests keycode validation.

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

===============================================

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

Please enter:

        <CR> -> <y> - Yes, the keycode matches.
Go on to Install Menu.

        <n> - No, the keycode does not match.
Try another keycode.

Enter choice>
```

9   If the keycode matches, enter <CR> to continue the installation. The system displays the Install Menu. Select option "<a>.

Note: Option A uses the existing db from the FMD. External database backup is Option B.

```
Communication Server 1000 Software/Database/
BOOTROM RMD Install Tool
=================================================
I N S T A L L    M E N U

        The Software Installation Tool will
install or upgrade Communication Server 1000
Software, Database and the CP-BOOTROM. You will be
prompted throughout the installation and given the
opportunity to quit at any time.

        Please enter:

<CR> -> <a> - To install Software, CP-BOOTROM.

        <b> - To install Software, Database,
CP-BOOTROM.

        <c> - To install Database only.

        <d> - To install CP-BOOTROM only.

        <t> - To go to the Tools menu.

        <k> - To install Keycode only.

             For Feature Expansion, use OVL143.

        <p> - To install 3900 set Languages.

        <q> - Quit.

        Enter Choice> <a>
```

10 The system requires the insertion of the RMD containing the software to be installed.

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

================================================
Please insert the Removable Media Device into the
drive on Core x.

Please enter:

        <CR> -> <a> - RMD is now in drive.
Continue with s/w checking.

        <q> - Quit.

Enter choice> <CR>
```

11 If the RMD containing the software is already in the drive, select option "<a> - RMD is now in drive. Continue with s/w checking." (or simply press <CR>) to continue. If the RMD is not yet in the drive, insert it and then press <CR>.

12 The system displays the release of the software found on RMD under the "swload" directory and requests confirmation to continue the installation.

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

=================================================
The RMD contains System S/W version xxxx.

Please enter:

        <CR> -> <y> - Yes, this is the correct
version. Continue.

        <n> - No, this is not the correct version.
Try another RMD or a different keycode.

Enter choice> <CR>
```

Note: If the RMD contains the correct software release, select option "<y> - Yes, this is the correct version. Continue." (or simply press <CR>) to continue. If the software release is not correct and you want to replace the RMD, insert the correct RMD in the drive and then press <CR>. If you want to replace the keycode, select option "<n> - No, this is not the correct version".

13 Choosing Yes for the Dependency Lists installation.

Note: If Dependency Lists are not installed on media, the following prompts do not appear. Proceed to step 14 on .

> Do you want to install Dependency Lists?
>
>   Please enter:
>
> <CR> -> <y> - Yes, Do the Dependency Lists installation
>
>   <n> - No, Continue without Dependency Lists installation
>
>   Enter choice>
>
>   The default choice is YES as shown in the prompt.
>
>   If the choice is no, then the following prompt will appear for the confirmation:
>
>   Are you sure?
>
>   Please enter:
>
> <CR> -> <n> - No, Go to the Dependency List menu
>
>   <y> - Yes, Go to the next menu
>
>   Enter choice>
>
>   The default choice is NO which will return the user to deplist menu.
>
> Enable Automatic Centralized Software Upgrade (CSU) Feature?
>
> Please enter:
>
> <CR> -> <y> - Yes
>
>   <n> - No
>
>   Enter choice>

14 Select to enable/disable CSU option.

Note: if Sequential is selected **<1>**, upgrades to the MG 1000Es are performed across the LAN in a sequential manner. One MG 1000E is upgraded at a time. No other MG 1000E upgrades are initiated until the current MG 1000E completes its installation.

If Simultaneous is selected **<2>**, upgrades to the MG 1000Es are performed simultaneously across the LAN. Up to eight MG 1000Es are upgraded at the same time. If there are more than eight MG 1000Es, the upgrade to the next MG 1000E begins after the upgrade of one MG 1000E is complete. The following warning is presented to the installer:

```
 WARNING:
Call Processing is not guaranteed to operate on the call server
during simultaneous upgrades.
Do you wish to proceed? (y/n)
```

```
 Set Automatic Centralized Software Upgrade Mode to:

              Please enter:

<CR> -> <1> - Sequential

        <2> - Simultaneous

         Enter choice>

>Processing the install control file ...

>Installing release 0600x
```

15 The PSDL files menu appears. Enter the appropriate choice for the site's geographic location.

```
*************************************************
PSDL INSTALLATION MENU

The PSDL contains the loadware for all
downloadable cards in the system and loadware for
M3900 series sets.

*************************************************
Select ONE of the SEVEN PSDL files:

1. Global 10 Languages
2. Western Europe 10 Languages
3. Eastern Europe 10 Languages
4. North America 6 Languages
5. Spare Group A
6. Spare Group B
7. Packaged Languages
[Q]uit, <CR> - default

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

>Copying new PSDL ...
```

16 The installation summary screen appears. Verify the parameters and enter <CR> when ready.

17 Enter <CR> to confirm and continue upgrade.

Note: After entering yes below, the system copies the software from RMD to FMD (the files copied are listed). This file copy takes between 5 and 10 minutes to complete.

```
 Please enter:

<CR> -> <y> - Yes, start upgrade.

        <n> - No, stop upgrade. Return to the Main
Menu.


         Enter choice>

>Checking system configuration

You selected to upgrade Software release: XXXX to
release: xxxx. This will erase all old system
files.

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

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

Please enter:

        <CR> -> <a> - Continue with upgrade.

        <q> - Quit.

        Enter choice>

```

18 Successful installation confirmation appears, enter <CR> to continue.

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

===============================================

Software release xxxx was installed successfully
on Core x.

All files were copied from RMD to FMD.


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

19 Press "Enter" after checking the Installation summary.

20 Upon returning to the main install menu, enter **q** to quit.

```
           I N S T A L L    M E N U

        The Software Installation Tool will
install or upgrade Succession Enterprise System
Software, Database and the CP-BOOTROM. You will be
prompted throughout the installation and given the
opportunity to quit at any time.

        Please enter:

<CR> -> <a> - To install Software, CP-BOOTROM.

        <b> - To install Software, Database,
CP-BOOTROM.

        <c> - To install Database only.

        <d> - To install CP-BOOTROM only.

        <t> - To go to the Tools menu.

        <k> - To install Keycode only.

              For Feature Expansion, use OVL143.

        <p> - To install 3900 set Languages.

        <q> - Quit.

        Enter Choice> q
```

21 The system then prompts you to confirm and reboot. Enter <CR> to quit.
Enter <CR> again to reboot.

```
You selected to quit. Please confirm.

    Please enter:

<CR> -> <y> - Yes, quit.

        <n> - No, DON'T quit.



        Enter choice> <CR>

You selected to quit the Install Tool.

You may reboot the system or return to the Main
Menu.




        -----------------------------

        DO NOT REBOOT USING RESET BUTTON!!!


        -----------------------------



        Please enter:

<CR> -> <a> - Reboot the system.

        <m> - Return to the Main menu.

        Enter Choice> <CR>

>Removing temporary file "/u/disk3521.sys"

>Removing temporary file "/u/disk3621.sys"

>Rebooting system ...
```

At this point the system reloads and initializes.

———— **End of Procedure** ————

Verify the upgraded database

Procedure 30
Verifying the upgraded database

1 Print ISSP (system software issue and patches)

LD 22	Load program
REQ	ISSP
****	Exit program

2 Print the system configuration record in LD 22 and compare the output with the preupgraded configuration record.

LD 22	Load program
REQ	PRT
TYPE	CFN
****	Exit program

3 Print the SLT in LD 22. This output provides used and unused ISM parameters. Compare with preupgrade SLT output.

LD 22	Load program
REQ	SLT
****	Exit program

4   Print the customer data block(s) in LD 21.

LD 21	Load program
REQ	PRT
TYPE	CDB
CUST	xx
****	Exit program

> ✔ Core 1 is now active, clock 1 is active, FIJI Rings are half/half, CNI is disabled in Core 0.

———— **End of Procedure** ————

Making the system redundant

At this point, Core/Net 0 is ready to be synchronized with Core/Net 1.

Procedure 31
Making the system redundant

1   Attach the LAN 1 cable to the CP PIV faceplate connector on Core 0.

2   Enable all CNI cards in Core 0.

3   **From Core 1 (the active Core)**, enter LD 135 and issue the JOIN command. The high speed pipe (HSP) status is now up. This begins the synchronization of the Call Servers.

LD 135	Load program
JOIN	Join the 2 CPUs together to become redundant

4   Once the synchronization of memories and drives is complete, STAT the
CPU and verify that the CPUs are in a true redundant state.

LD 135

STAT CPU   Obtain status of CPU and memory

****   Exit the program

```
.stat cpu


cp 0 16 PASS -- STDBY


TRUE REDUNDANT

DISK STATE = REDUNDANT

HEALTH  = 20

VERSION = Mar  3 2005, 16:26:40

 Side = 0, DRAM SIZE = 512 MBytes


cp 1 16 PASS -- ENBL


TRUE REDUNDANT

DISK STATE = REDUNDANT

HEALTH = 20

VERSION = Mar  3 2005, 16:26:40

 Side = 1, DRAM SIZE = 512 MBytes
```

5   Tier 1 and Tier 2 health of both Cores must be identical in order to successfully switch service from Core 1 to Core 0 CPUs.

LD 135

STAT HEALTH   Obtain status of CPU and memory

****   Exit the program

```
.stat health
Local (Side 0, Active, Redundant):
Components without TIER 1 Health contribution:
================================================
     disp 0 15 1:In Service
     sio2 0 15 1:In Service
        cp 0 16:In Service
          ipb 0:In Service
TIER 1 Health Count Breakdown:
==================================
     sio8 0 16 1: 0002
     sio8 0 16 2: 0002
       sutl 0 15: 0002
       strn 0 15: 0002
     xsmp 0 15 1: 0002
     cmdu 0 16 1: 0008
       eth 0 16 0: 0002
Local TIER 1 Health Total: 20
```

```
TIER 2 Health Count Breakdown:

======================================

ELAN 16 IP : 47.11.138.150 Health = 2

ELAN 17 IP : 47.11.138.153 Health = 2


Local AML over ELAN Total Health:4

Local Total IPL Health = 6


IPL connection history:3 3 3 3 3 3 3 3 3 3 3 3 3 3
3 3 3 3 3 3


Local TIER 2 Health Total:10


Remote (Side 1, Inactive, Redundant):

Components without TIER 1 Health contribution:

     disp 1 15 1:In Service

     sio2 1 15 1:In Service

        cp 1 16:In Service

          ipb 1:In Service

TIER 1 Health Count Breakdown:

     sio8 1 16 1: 0002
     sio8 1 16 2: 0002
      sutl 1 15: 0002
      strn 1 15: 0002
      xsmp 1 15 1: 0002
      cmdu 1 16 1: 0008
       eth 1 16 0: 0002

Remote TIER 1 Health Total: 20
```

```
TIER 2 Health Count Breakdown:

=====================================

ELAN 16 IP : 47.11.138.150 Health = 2

ELAN 17 IP : 47.11.138.153 Health = 2


Remote AML over ELAN Total Health:4

Remote Total IPL health = 6


Remote TIER 2 Health Total:10
```

The system will now operate in full redundant mode with Core/Net 1 active.

Note: On FNF based systems after the INI:
A FIJI download will occur if the FIJI firmware on Bank 1 of the FIJI card is different from the firmware on the system hard drive (PSDL file). This is automatic and no attempt should be made to prevent the download. The system will switch full to one ring, downloading up to 4 FIJI cards on the opposite ring at a time. This process continues on both rings until all FIJI's have been downloaded. The rings will then reset and come into service with the highest firmware available. This process is not service affecting. Depending on the number of groups installed, this process may take up to 20 minutes per ring.

Note: The single slot FIJI packs (NTRB33BBE5) require a different firmware than double slot FIJI packs. The double slot and single slot firmware is available from the system hard drive. The FIJI card downloads the required firmware based on the FIJI card ID information.

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

Completing the CP PIV upgrade

LD 137

The CMDU/MMDU commands are not applicable to CP PIV. Instead, the following commands are used in LD 137.

- STAT FMD
  display text: **Status of Fixed Media Device (FMD)**
  command parameter: none

- STAT RMD
  display text: **Status of Removable Media Device(RMD)**
  command parameter: none

Testing the Cores

Procedure 32
Testing Core/Net 1

At this point in the upgrade, Core/Net 0 is tested from active Core/Net 1. Upon successful completion of these tests, call processing is switched and the same tests are performed on Core/Net 1 from active Core/Net 0. As a final step, call processing is then switched again to Core/Net 1.

From Core/Net 1, perform these tests:

1 Perform a redundancy sanity test:

LD 135	Load program
STAT CPU	Obtain status of CPU and memory
TEST CPU	Test CPU

2 Test the System Utility card and the cCNI cards:

LD 135	Load program
STAT SUTL	Obtain the status of the System Utility card
TEST SUTL	Test the System Utility card

	STAT CNI c s	Obtain status of cCNI cards (core, slot)
	TEST CNI c s	Test cCNI (core, slot)

3   Test system redundancy:

LD 137	Load program
TEST RDUN	Test redundancy
DATA RDUN	Test database integrity
STAT FMD	Status of one or both Fixed Media Devices (FMD)
STAT RMD	Status of one or both Removable Media Devices (RMD)

4   Install the two system monitors. Test that the system monitors are working:

LD 37	Load program
ENL TTY x	Enable the XMS, where x= system XMS
STAT XSM	Check the system monitors
****	Exit program

5   Clear the display and minor alarms on both Cores:

LD 135	Load program
CDSP	Clear displays on the cores
CMAJ	Clear major alarms
CMIN ALL	Clear minor alarms

6   Test the clocks:

   a.   Verify that the clock controller is assigned to the *active* Core:

LD 60	Load program
SSCK x	Obtain status of the clock controllers (x is "0" or "1" for Clock 0 or Clock 1)
SWCK	Switch the Clock (if necessary)
****	Exit program

   b.   Verify that the Clock Controllers are switching correctly:

SWCK	Switch Clock
	Note: You must wait a minimum of one minute for clocks to synchronize.
SWCK	Switch Clock again

7   Test the Fiber Rings:

See *Software Input/Output: Maintenance* (NN43001-711) for more information about LD 39 commands.

   a.   Check that the Fiber Rings operate correctly:

LD 39	Load program
STAT RING 0	Check the status of Ring 0 (HALF/HALF)
STAT RING 1	Check the status of Ring 1 (HALF/HALF)

   b.   If necessary, restore the Rings to Normal State:

RSTR	Restore both Rings to HALF state

   c.   Check that the Rings operate correctly:

STAT RING 0	Check the status of Ring 0 (HALF/HALF)
STAT RING 1	Check the status of Ring 1 (HALF/HALF)

8 Check the status of the FIJI alarms:

> **STAT ALRM** Query the alarm condition for all FIJI cards in all Network Groups

> ******** Exit program

9 Check applications.

10 Check dial tone.

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

Switch call processing

Procedure 33
Switching call processing

1 Enter LD 135 on Core/Net 1 and issue the SCPU command. Call processing switches to Core/Net 0.

> **LD 135**

> **SCPU** Transfer call processing from active Core/Net to standby Core/Net

> ******** Exit program

2 Log in to Core/Net 0 and verify that the switchover was successful and that all hardware is operational. Perform acceptance testing as required.

> ✔ Core/Net 0 is now the active call processor.

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

Procedure 34
Testing Core/Net 0

From active Core/Net 0, perform these tests on Core/Net 1:

1   Perform a redundancy sanity test:

LD 135   Load program

STAT CPU   Obtain status of CPU and memory

TEST CPU   Test the CPU

2   Test the System Utility card and the cCNI cards:

LD 135   Load program

STAT SUTL   Obtain the status of the System Utility card

TEST SUTL   Test the System Utility card

STAT CNI c s Obtain status of cCNI cards (core, slot)

TEST CNI c s Test cCNI (core, slot)

3   Test system redundancy and media devices:

LD 137   Load program

TEST RDUN   Test redundancy

DATA RDUN   Test database integrity

STAT FMD   Status of Fixed Media Device (FMD)

STAT RMD   Status of Removable Media Device (RMD)

****   Exit the program

4   Test that the system monitors are working:

LD 37   Load program

STAT XSM   Check the system monitors

****   Exit the program

5   Clear the display and minor alarms on both Cores:

> **LD 135**   Load program
>
> **CDSP**   Clear the displays on the cores
>
> **CMAJ**   Clear major alarms
>
> **CMIN ALL**   Clear minor alarms

6   Test the clocks:

a.   Verify that the clock controller is assigned to the *active* Core.

> **LD 60**   Load program
>
> **SSCK** *x*   Obtain the status of the clock controllers
> (*x* is "0" or "1" for Clock 0 or Clock 1)
>
> **SWCK**   Switch the Clock (if necessary)
>
> ****   Exit program

b.   Verify that the Clock Controllers are switching correctly.

> **SWCK**   Switch the Clock
>
> *Note:* You must wait a minimum of one minute for clocks to synchronize.
>
> **SWCK**   Switch the Clock again

7   Check dial tone.

8   Check applications.

End of Procedure

Perform a customer backup data dump (upgraded release)

Procedure 35
Performing a data dump to backup the customer database:

1   Log into the system.

2   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.

    .   EDD

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

    EDD   Begin the data dump.

> ⚠️ **CAUTION — Service Interruption**
>
> **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   When "DATADUMP COMPLETE" and "DATABASE BACKUP COMPLETE" appear on the terminal, enter:

    ****   Exit program

The Meridian 1 Option 61C CP PII upgrade to Meridian 1 Option 81C CP PIV with FNF is complete.

Installing a Signaling Server

Contents

This chapter contains the following topics:

Introduction

This chapter contains general instructions to install and connect Server card hardware. This chapter also contains general instructions to connect Commercial off-the-shelf (COTS) servers.

The Communication Server 1000M system supports the Common Processor Pentium Mobile (CP PM) card model NTDW66, the Common Processor Dual Core (CP DC) model NTDW54, and the Commercial off-the-shelf (COTS) servers.

A Nortel CP PM, CP DC or COTS server that you deploy with Signaling Server applications is referred to as a Signaling Server. A Nortel CP PM or

COTS server that you deploy with SIP Line 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 CS 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 28 on :

- *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 28
Signaling Server task flow
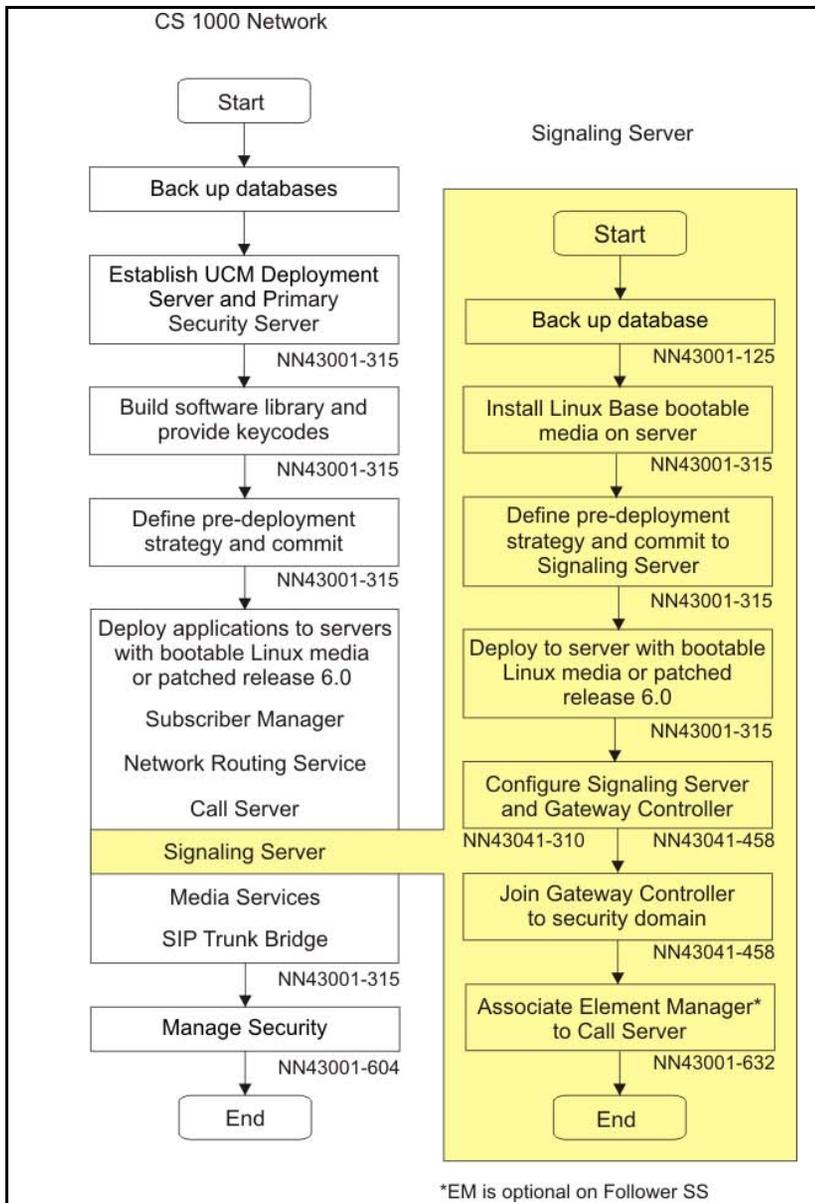
Readiness checklist

Before installing a Signaling 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 you install and use the Signaling Server. Be sure to replace the cord with the correct type.

Table 8
Readiness checklist (Part 1 of 2)

Have you:	
Read all safety instructions in *Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310), as appropriate for your Communication Server 1000 system?	

Do you have all equipment and peripherals?
 	
For COTS servers:
 	
• installation accessories for rack-mounting the server
 	
• AC-power cord
 	
• a DTE-DTE null modem cable (supplied)
 	
• Linux Signaling Server software DVD for COTS servers
 	
For a Server cards (NTDW66 CP PM, and NTDW54 CP DC)
 	
• (CP PM only) 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
 	
• NTDW69AAE5: CP PM Signaling Server Large System Cabling kit
 	
• N0106745: CP PM Signaling Large System Cabling
 	
• a DTE-DTE null modem cable (supplied)
 	
Note: Save the packaging container and packing materials in case you must ship the product.	

Make sure the area meets all environmental requirements?	
Check for all power requirements?	
Verify the CP PM or COTS hardware meets all required specifications (2GB ram, 40GB hard drive, NTDW66AAE6 CP PM BIOS version 18 or higher)?	

Table 8
Readiness checklist (Part 2 of 2)

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

Server card hardware installation

This section contains instructions to install a Server card in a Communication Server 1000M system. The Communication Server 1000M system supports the NTDW66 CP PM card and the NTDW54 CP DC card.

This section contains only general instructions to install the CP PM circuit card in Communication Server 1000M systems. For more detailed installation

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

IMPORTANT!

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

Installation in a Communication Server 1000M system

For CP PM cards, the first task that you must perform is to install the hard drive shipped with the server or Linux upgrade kit. For instructions, see *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

The NTDW66 CP PM card and NTDW54 CP DC card are double wide faceplate cards designed for use in a CS 1000M Universal Equipment Module (UEM). You can insert the double wide CP PM or CP DC card into any slot of a CS 1000M UEM except slot 7. The External Peripheral Equipment Controller (XPEC) is next to slot 7 and prevents the double wide faceplate from seating into slot 7.

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

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

IMPORTANT!

Installing ELAN and TLAN Ethernet ports on the back of a Communication Server 1000M Universal Equipment Module (UEM) disrupts service. You must turn off power to the shelf during this procedure.

Procedure 36
Installing ELAN and TLAN Ethernet ports on the back of a
Communication Server 1000M UEM

1   Obtain the special cabling kit (NTDW69AAE5). The NTDW69AAE5
     cabling kit includes the items shown in Figure 29.

Figure 29
NTDW69AAE5 Cabling Kit contents

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

- two RJ-45 CAT5 Ethernet patch cables

- two Ethernet port couplers

- one Ethernet port adapter plate

- two screws

- two nuts

- two washers

- two ferrite beads

2   Insert an Ethernet port coupler into the adapter plate. See Figure 30.

Figure 30
One Ethernet port coupler in adapter plate
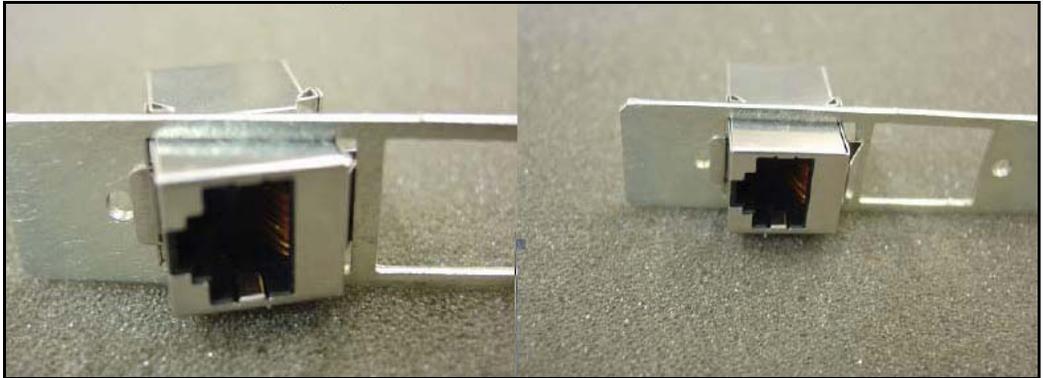
3   Insert the other Ethernet port coupler into the adapter plate. See Figure 31 on page 145.

Figure 31
Two Ethernet port couplers in adapter plate
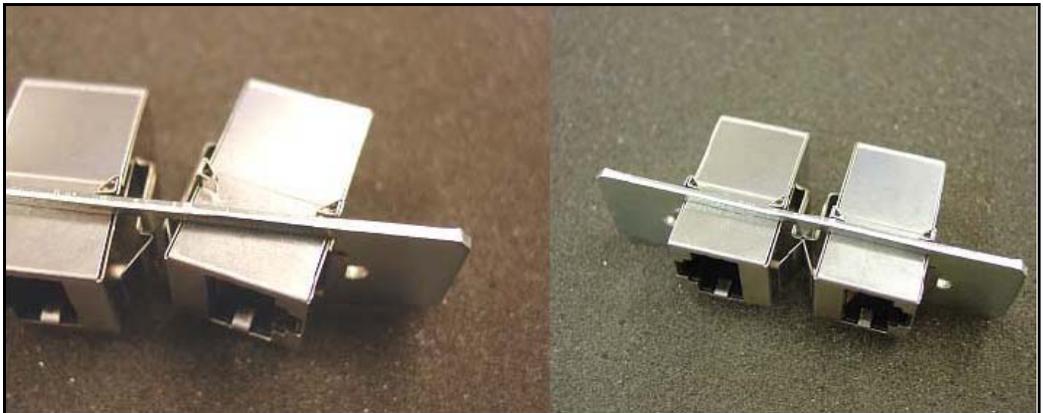
4   Loosely attach screws, washers, and nuts to the Ethernet port adapter plate. See Figure 32.

Figure 32
One Ethernet port coupler in adapter plate
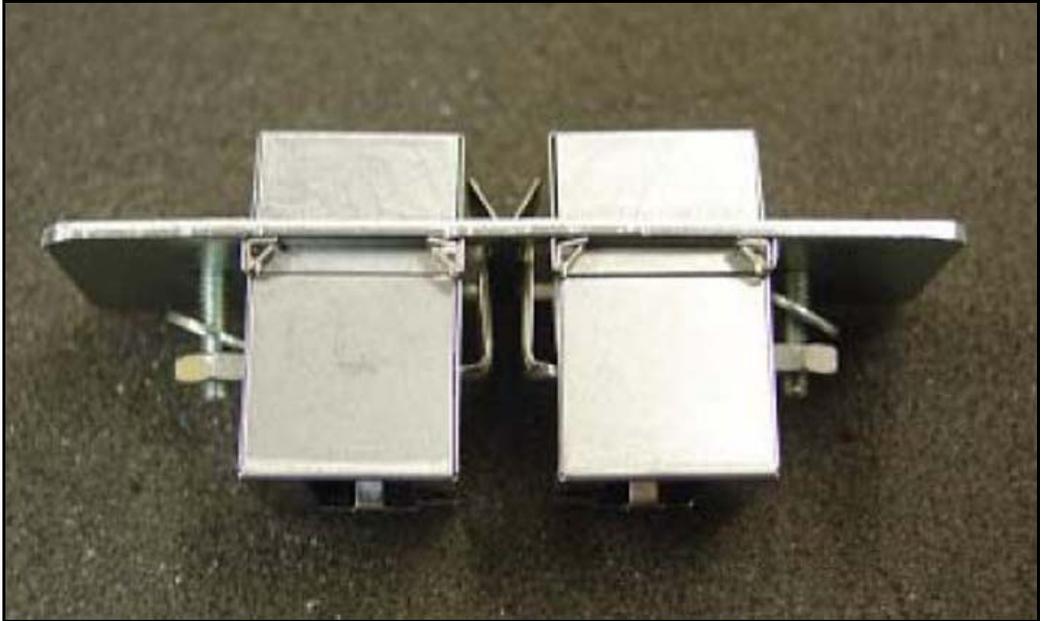
5   Switch off the UEM power supplies. See Figure 33.

Figure 33
Shut down UEM power supplies
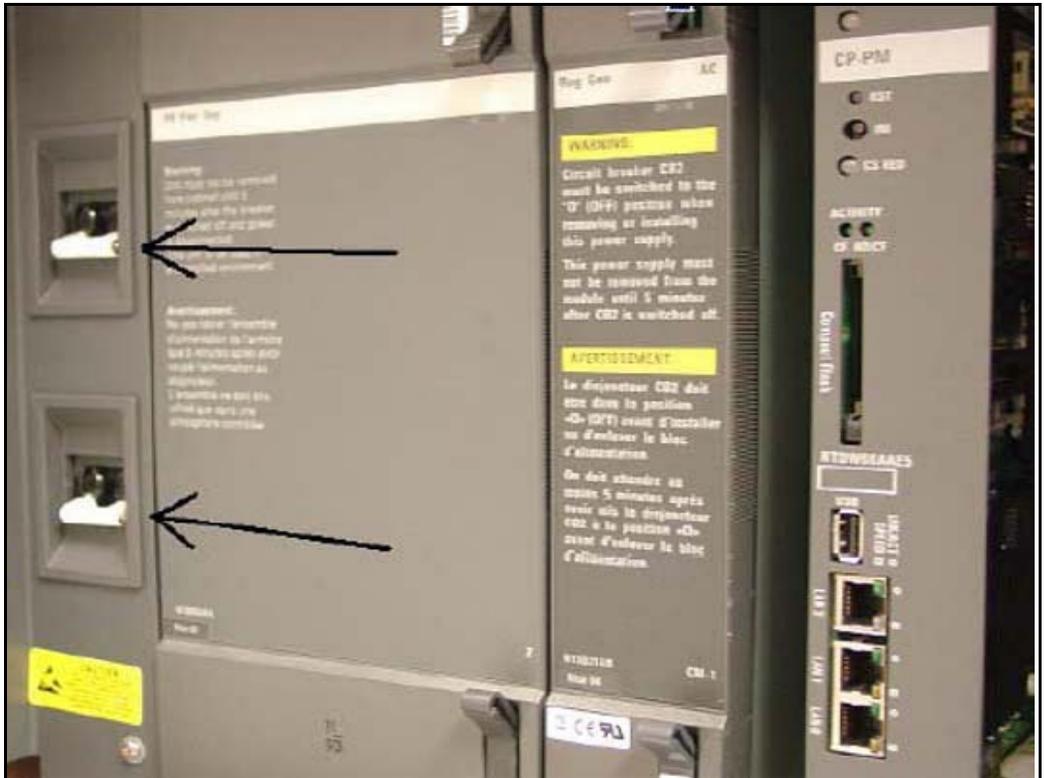
6. Select one of the J2-J5 knock-out plates on the back of the UEM. See Figure 34.

   Note: For DC powered systems, turn off the breakers in the pedestal not on the shelf.

Figure 34
J2-J5 plates on back panel of UEM
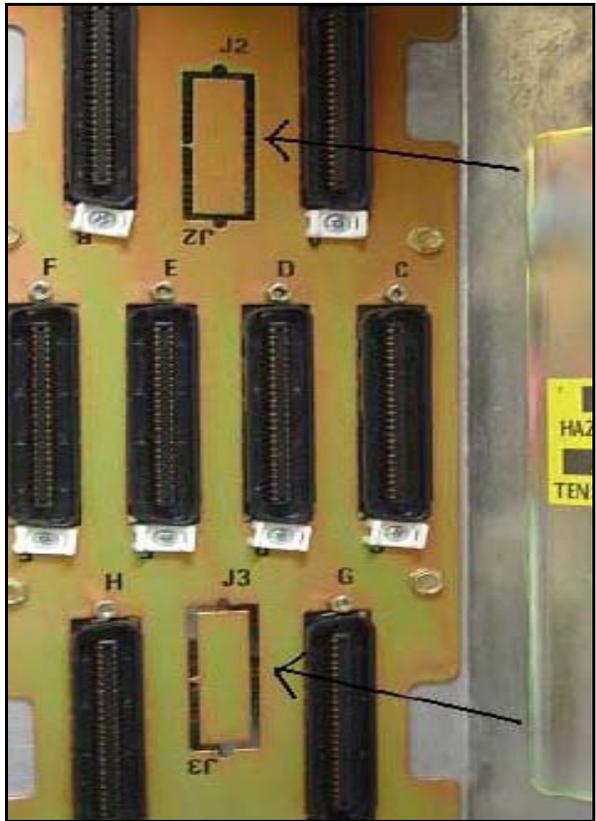
7   Knock out the metal plate from the selected J2-J5 location to provide a
hole through which the Ethernet patch cables are routed and to which the
Ethernet port adapter plate is attached. See Figure 35.

Figure 35
Selected J2-J5 plate on back panel of UEM
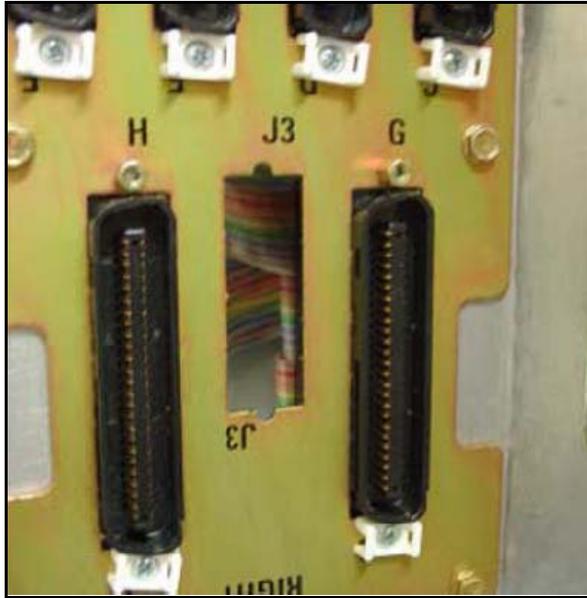
8 Establish an ELAN port on the back panel of the UEM.

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

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

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

    d. Label the Ethernet port coupler as ELAN.

See Figure 36 and Figure 37.

Figure 36
ELAN connection on the CP PM faceplate

Figure 37
ELAN connection on Ethernet port coupler

9   Connect the server to the TLAN subnet.

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

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

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

   d.   Label the Ethernet port coupler as TLAN.

See Figure 38 and Figure 39.

Figure 38
TLAN connection on the CP PM faceplate

Figure 39
TLAN connection on Ethernet port coupler

10 Fit the Ethernet port adapter plate into the hole on the back of the UEM and tighten the screws. See Figure 40.

Figure 40
Installed Ethernet port adapter plate

11 Attach the ferrite beads to the Ethernet patch cables.See Figure 41.

Figure 41
Attached Ethernet patch cable ferrite beads

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

Connections

This section contains connection information.

Connection checklist

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

> **IMPORTANT!**
>
> Nortel CP PM servers are powered through the backplane of the Media Gateway, Universal Equipment Module, or 11C cabinet into which they are installed and do not require a power cord.

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

Table 9
Connections checklist

Do you have:	
A serial cable (DTE-DTE null modem cable) to connect the server to a maintenance terminal? The IBM x3350 requires a NTRX26NPE6 9 pin female to 9 pin female null modem cable.	
NTAK19EC cable for each CP PM or CP DC card. This cable adapts the 50-pin MDF connector on the back of the shelf of the Media Gateway, Universal Equipment Module, or 11C cabinet to a 25-pin DB connector.	
Shielded CAT5 cables (or better) to connect the server to the ELAN and TLAN subnets?	

Connecting a Signaling Server

This section contains instructions to connect a Server to the ELAN and TLAN subnet of a CS 1000M system. It also contains instructions to connect a maintenance terminal to the Server.

A Server card is inserted into a slot of a Universal Equipment Module (UEM). UEMs do not have built-in ELAN and TLAN Ethernet ports. You must install Ethernet ports on the back of the UEM to enable the Server to connect to the ELAN and TLAN subnets of your Communication Server 1000 system (see Procedure 36: "Installing ELAN and TLAN Ethernet ports on the back of a Communication Server 1000M UEM" on .)

Perform Procedure 37 to connect a Server card to the ELAN and TLAN subnets of a Communication Server 1000M system.

IMPORTANT!

Connecting a Server card to the ELAN and TLAN subnets of a CS 1000M system causes a service disruption.

Procedure 37
Connecting a Server card to the ELAN and TLAN subnets of a Communication Server 1000M system

1   Insert the end of an RJ-45 CAT5 Ethernet cable (not supplied) into the ELAN network interface port (ELAN port) on the back of the Communication Server 1000M UEM. (You installed this ELAN port at the back of the UEM when you installed the Signaling Server in the UEM. For more information, see Procedure 36: "Installing ELAN and TLAN Ethernet ports on the back of a Communication Server 1000M UEM" on .

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

3   Insert the end of another RJ-45 CAT5 Ethernet cable (not supplied) into the TLAN network interface port (TLAN port) on the back of the Communication Server 1000M UEM. (You installed this TLAN port at the back of the UEM when you installed the Signaling Server in the UEM. For more information, see Procedure 36: "Installing ELAN and TLAN Ethernet ports on the back of a Communication Server 1000M UEM" on .

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

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

Verify or change the baud rate

To verify or change the baud rate on a Nortel CP PM Signaling Server, see *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 42 shows the rear view of the IBM X306m server.

Figure 42
IBM X306m (rear view)

Figure 43 shows the rear view of the IBM x3350 server.

Figure 43
IBM x3350 (rear view)
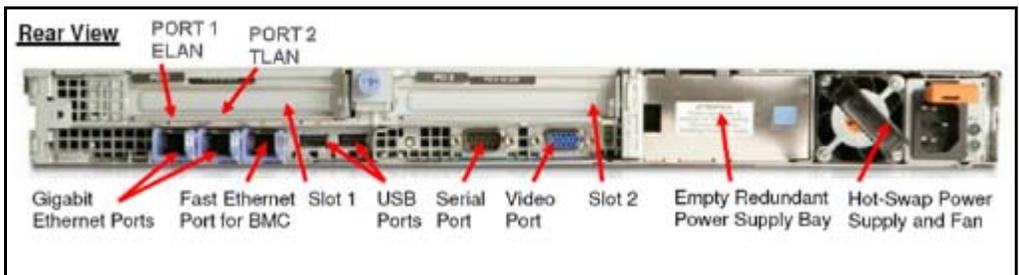
Note: When you perform Procedure 1, "Connect the IBM server to the TLAN subnet. Insert the RJ-45 CAT5 (or better) cable into the TLAN Ethernet port on the back of the server. Insert the other end of the cable into the TLAN subnet of the Layer 2 switch.," on , see Figure 42 or Figure 43.

Procedure 38
Connecting an IBM COTS server

1   Connect the IBM server to the TLAN subnet. Insert the RJ-45 CAT5 (or better) cable into the TLAN Ethernet port on the back of the server. Insert the other end of the cable into the TLAN subnet of the Layer 2 switch.

2   Connect the IBM server to the ELAN subnet. Insert the RJ-45 CAT5 (or better) cable into the ELAN Ethernet port on the back of the server. Insert the other end of the cable into the ELAN subnet of the Layer 2 switch.

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 you use the server. 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   Set the baud rate for the serial port on the server to 9600 b/ps. See *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

    Note: The IBM X306m Signaling Server ships with the serial port configured 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: For more information about operating information, see the IBM User Guide on the CD-ROM shipped with your IBM server.

—————————————— **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 44 shows the rear view of the HP DL320-G4 server.
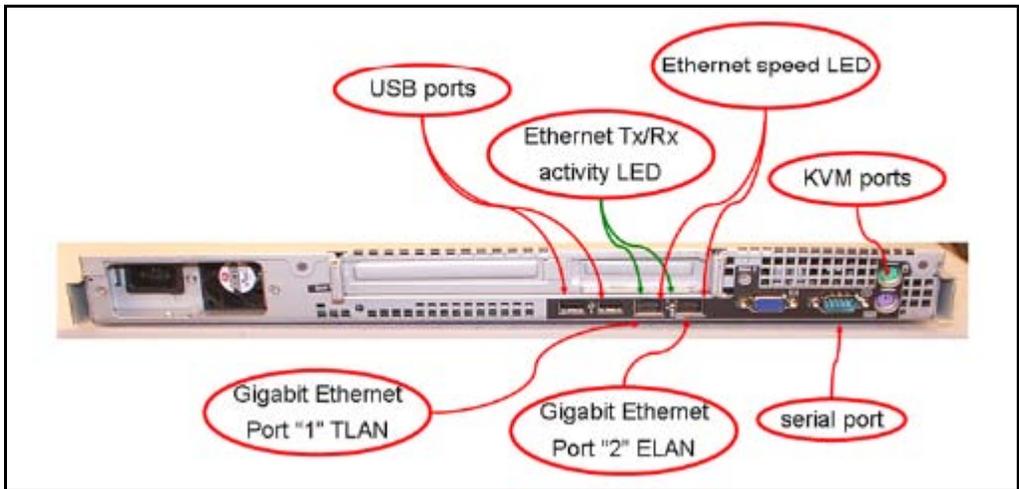
Figure 44
HP DL320-G4 (rear view)
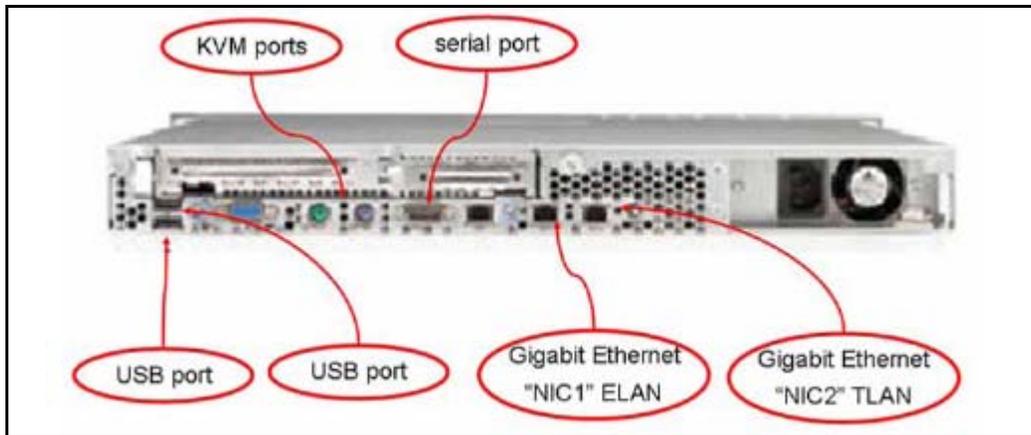
Note: When you perform Procedure 39, "Connecting an HP COTS server," on , see Figure 44.

Procedure 39
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 you use the server. 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. Configure the COM 1 baud rate for the serial port on the server to 9600 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 45 shows the rear view of the Dell R300 server.

Figure 45
Dell R300 server (rear view)
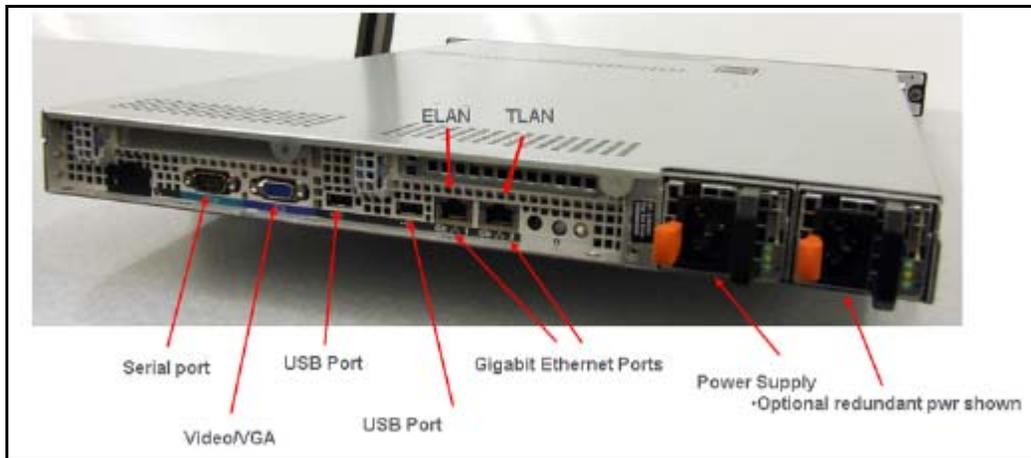
Note: When you perform Procedure 40, "Connecting a Dell COTS server," on , see Figure 45.

Procedure 40
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. Insert the other end of the cable into the TLAN subnet of the Layer 2 switch.

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. Insert the other end of the cable into the ELAN subnet of the Layer 2 switch.

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 you use the server. 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. Configure the COM 1 baud rate for the serial port on the server to 9600 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 CS 1000 Linux Base and application software a Server.

> **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 7.0 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 .

- For CP PM cards, ensure that Switch S5 is in position 2 (to support the internal hard drive)

- Obtain the CS 1000 Release 7.0 Linux Base installation media.

- For CP PM cards, Nortel advises that you remove the wire on the CF card clip before you insert a CP PM card into the slot. The clip can fall open and cause an electrical short.

Upgrade the CP PM BIOS

The NTDW66CAE6 CP PM card (CP PM version 2) does not require a BIOS upgrade. The CP PM version 2 uses an updated design, BIOS, and boot manager. Older NTDW66 CP PM cards (CP PM version 1) can require a BIOS upgrade to support Linux.

The Communication Server 1000 Release 7.0 Linux Platform Base installer requires that a CP PM version 1 card runs BIOS version 18 or higher. 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 41 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 41
Upgrading the CP PM BIOS with the Linux Base installer

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 for a CP PM version 1 card, Figure 46 appears. Press the **F** key to boot from the Linux Base installation faceplate CF card.

   Note: For CP PM version 2 cards, press the **F** key to enter the boot menu, select Faceplate RMD, and press **Enter** to boot from the faceplate CF card.

Figure 46
CP PM faceplate drive boot

```
+---------------------------------------+---------------------------------------
| System CPU          : Pentium M       | Low Memory            : 632KB
| Coprocessor         : Enabled         | Extended Memory       : 1011MB
| Ide 0 Type          : 3               | Serial Ports 1-2      : O3F8 02F8
| Ide 1 Type          : 3               | ROM Shadowing         : Enabled
| Ide 2 Type          : 3               | BIOS Version          : NTDU74AA 14
+---------------------------------------+---------------------------------------

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

Attempting to boot from faceplate drive.


CPU Frequency = 1400 MHz

V1.6a+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++█
```

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

6   Figure 47 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 47
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 48 appears. Select **Reset CMOS to factory defaults** from the menu.

Figure 48
CP PM BIOS setup


```
              System BIOS Setup - Utility v5.3
        (C) 2005 General Software, Inc. All rights reserved
--------------------------------------------------------------------



                    Basic CMOS Configuration
                   Features Configuration
                    Custom Configuration
                     PnP Configuration
                 Start System BIOS Debugger
               Reset CMOS to last known values
             > Reset CMOS to factory defaults
                  Write to CMOS and Exit
                 Exit without changing CMOS




--------------------------------------------------------------------
        ^E/^X/<Tab> to select. <Esc> to continue (no save)
                       www.gensw.com
```
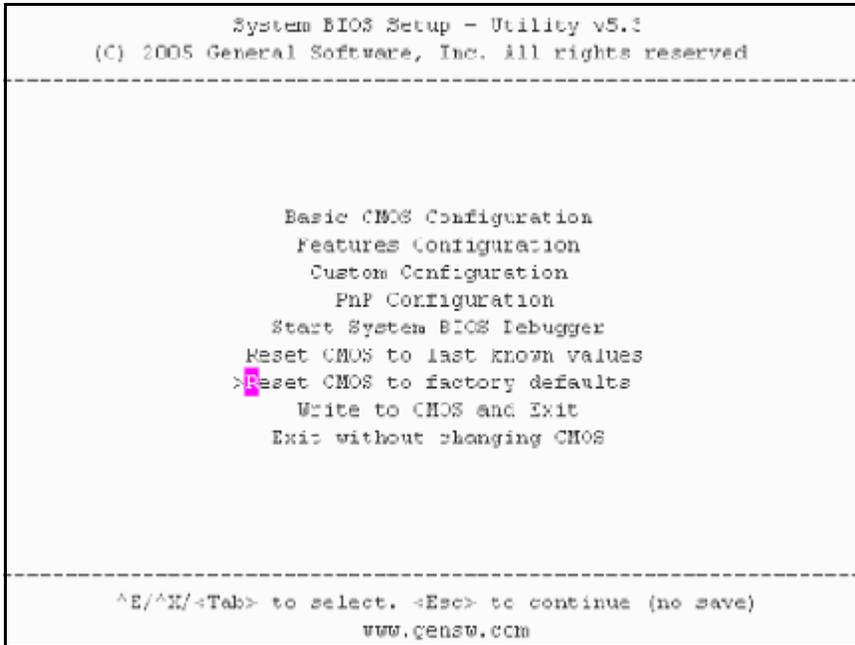
10   Figure 49 appears. Press **y** to reset CMOS to factory defaults.

Figure 49
CP PM BIOS reset

```
              System BIOS Setup - Utility v5.3
     (C) 2005 General Software, Inc. All rights reserved
---------------------------------------------------------------




                    Basic CMOS Configuration
                    Features Configuration
        +---------------------------------------------+
        |  Reset CMOS to factory defaults? (Y/N): y   |
        |                                             |
                 Reset CMOS to last known values
                 Reset CMOS to factory defaults
                     Write to CMOS and Exit
                 Exit without changing CMOS




---------------------------------------------------------------
     ^E/^X/<Tab> to select. <Esc> to continue (no save)
                      www.gensw.com
```

11 The system reboots. After initial boot Figure 46 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 7.0. 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).

Installing Linux applications

Nortel Communication Server 1000 Release 7.0 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* (NN43001-604).

Appendix A: Upgrade checklists

Contents

This chapter contains the following topics:

Introduction

The following section provides Large System upgrade checklists.

Technical Support

Nortel can provide an Installation and Upgrade Support team to assist with PBX upgrades on a scheduled bases. 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 10
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 11
Upgrade details

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

Preupgrade checklists

Software Upgrade

Software audit

Table 12
Software audit

Software Audit		
Perform the software audit prior to the scheduled upgrade.		
Take corrective action if answer is no		
	Yes	No
Software CD 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 13
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		

Conversion Required

Table 14
Conversion Procedures

Conversion Procedures	
Upgrades between different machine types require some type of conversion.	
If the disk media is changing the database must be physically transferred	
between storage devices. Please select source and target media.	

Table 15
Typical Storage Media Changes Between machine Types (Part 1 of 2)

Typical Storage Media Changes Between machine Types		
Source	Target	Procedure Required
CMDU	IODUC	4M - 2M media transfer

Table 15
Typical Storage Media Changes Between machine Types (Part 2 of 2)

IODUC	MMDU	Disk to new Drive both use 2M Floppy Drives
MMDU	MMDU	Disk to new Drive

Hardware Upgrade

Hardware audit

Table 16
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		

Preconversion steps

Table 17
Preconversion 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 96 STAT DCH
LD 48 STAT AML
LD 32 STAT
LD 60 STAT

Table 17
Preconversion steps (Part 2 of 2)

LD 30 LDIS (Verify what Is disabled if any)
Obtain Software Information from LD 22
ISSP - Patches in service - Future Reference if required
LD 143 - MDP ISSP -Prints all inservice patches and patch handle numbers (includes all DepList patches)
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

Postconversion checks

Table 18
Postconversion checks

Post Conversion Checks
Perform these checks after a successful INI.
Test for dial tone
Stat D Channels for proper operation
Ensure that all XPEC's are in service via visual inspection
Ensure that all AUX applications are working
LD 30 LDIS (Verify that output is the same prior to upgrade)

Quick reference

IGS Cabling Chart - MultiGroup PBX - Opt 81/81C/CPP (5 Groups Maximum)

Table 19
IGS cabling chart (Part 1 of 2)

Net Group	Net Shelf	IGS Connector	IGS Net	Slot	Net	DIGS	Slot Connector	Intergroup connector	I G S	Clock
0	0	0	3	8	2	9	BOTTOM	J1	0	
0	0	1	2	9	2	9	TOP	J6	2	0
0	1	1	2	9	2	9	TOP	J17	3	1
0	1	0	3	8	2	9	BOTTOM	J22	1	
1	0	0	3	8	2	9	BOTTOM	J2	4	

Table 19
IGS cabling chart (Part 2 of 2)

1	0	1	2	9	2	9	TOP	J7	6	0
1	1	1	2	9	2	9	TOP	J16	7	1
1	1	0	3	8	2	9	BOTTOM	J21	5	
2	0	0	3	8	2	9	BOTTOM	J3	8	
2	0	1	2	9	2	9	TOP	J8	1 0	0
2	1	1	2	9	2	9	TOP	J15	1 1	1
2	1	0	3	8	2	9	BOTTOM	J20	9	
3	0	0	3	8	2	9	BOTTOM	J4	1 2	
3	0	1	2	9	2	9	TOP	J9	1 4	0
3	1	1	2	9	2	9	TOP	J14	1 5	1
3	1	0	3	8	2	9	BOTTOM	J19	1 3	
4	0	0	3	8	2	9	BOTTOM	J5	1 6	
4	0	1	2	9	2	9	TOP	J10	1 8	0
4	1	1	2	9	2	9	TOP	J14	1 9	1
4	1	0	3	8	2	9	BOTTOM	J18	1 7	

Note: A DIGS Card is located in the card slot position for IGS 1 in all network shelves. The IGS 1 slot detects the clock signals from the active clock controller and distributes the clock to the entire group. Three out of four IGS cards can be disabled at any given time via LD 39, the IGS 1 that is associated with the active clock cannot be disabled via software, e.g. if clock 1 is active then IGS's 3,7,11,15 and 19 can never be disabled as they are providing clock for their respective network groups.

Group/Loop/PS/FIJI/3PE Switch Settings

Table 20
Switch settings (Part 1 of 2)

Group	Shelf	PS	Loops	FIJI*	3PE NT8D35 Net**	3PE NT5D21 Core Net**
0	0	0	0-16	0 0	off on on on on on on on	off on on off on on on on
0	1	1	16-31	0 1	off on on on on on on off	off on on off on on on off
1	0	2	32-47	1 0	off on on on on on off on	off on on off on on off on
1	1	3	48-63	1 1	off on on on on on off off	off on on off on on off off
2	0	4	64-79	2 0	off on on on on off on on	off on on off on off on on
2	1	5	80-95	2 1	off on on on on off on off	off on on off on off on off
3	0	6	96-111	3 0	off on on on off off on	off on on off on off off on
3	1	7	112-127	3 1	off on on on off off off	off on on off on off off off
4	0	8	128-143	4 0	off on on on off on on on	off on on off off on on on
4	1	9	144-159	4 1	off on on on off on on off	off on on off off on on off
5	0	10	160-175	5 0	off on on on off on off on	off on on off off on off on

Table 20
Switch settings (Part 2 of 2)

5	1	1 1	176-19 1	5 1	off on on on off on off off	off on on off off on off off
6	0	1 2	192-20 7	6 0	off on on on off off on on	off on on off off off on on
6	1	1 3	208-23 3	6 1	off on on on off off on off	off on on off off off on off
7	0	1 4	224-23 9	7 0	off on on on off off off on	off on on off off off off on
7	1	1 5	240-25 5	7 1	off on on on off off off off	off on on off off off off off

Appendix B: Technical Assistance service

Contents

This chapter contains the following topics:

Nortel Technical Assistance Centers

To help customers obtain maximum benefit, reliability, and satisfaction from their CS 1000E systems, Nortel provides technical assistance in resolving system problems. Table 21 on lists the centers that provide this service.

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

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

Table 21
Customer Technical Services (Part 1 of 2)

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

Table 21
Customer Technical Services (Part 2 of 2)

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

Services available

Services available through the Technical Assistance Centers include:

- diagnosing and resolving software problems not covered by support documentation

- diagnosing and resolving hardware problems not covered by support documentation

- assisting in diagnosing and resolving problems caused by local conditions

There are several classes of service available. Emergency requests (Class E1 and E2) receive an immediate response. Service for emergency requests is continuous until normal system operation is restored. Non-emergency

requests (Class S1, S2, and NS) are serviced during normal working hours. Tables 22 and 23 describe the service classifications.

Table 22
Technical service emergency classifications

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

Table 23
Technical services non-emergency classifications

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

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

Requesting assistance

Collect the information listed in Table 24 before you call for service.

Table 24
Checklist for service requests

Name of person requesting service	
Company represented	
Telephone number	
System number/identification	
Installed software generic and issue (located on data disk)	
Modem telephone number and password (if applicable)	
Seriousness of request (see Tables 22 and 23)	
Description of assistance required	

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Nortel Communication Server 1000

Communication Server 1000M and Meridian 1

61C CP PII to CS 1000M MG CP PIV FNF Upgrade

NORTEL