Communication Server 1000M and Meridian 1

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

Avaya Communication Server 1000
Release 7.5

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New in this release

This chapter contains information about Avaya Communication Server 1000 Release 7.5 new features.

Features

There are no updates to the feature descriptions in this document.

Other

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

Revision history

March 2012

Standard 05.05. This document is up-issued to include updates to the Installing a Signaling Server chapter.

September 2011

Standard 05.04. This document is up-issued to support the removal of content for outdated features, hardware, and system types.

September 2011

Standard 05.03. This document is up-issued to support the removal of content for outdated features, hardware, and system types.

November 2010

Standard 05.02. This document is published to support Avaya Communication Server 1000 Release 7.5.

November 2010

Standard 05.01. This document is issued to support Avaya Communication Server 1000 Release 7.5.

June 2010

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

June 2010

Standard 04.01. This document is upissued to support Avaya 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 Communication Server 1000 Release 6.0.

May 2009

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

November 2007

Standard 02.01. This document is issued to support 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 is a new document 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).

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System information

This document is a global document. Contact your system supplier or your Avaya 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 7.5 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) document for software Release 24.

IMPORTANT!

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

Note on legacy products and releases

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

www.avaya.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 Option 61C

- Meridian 1 Option 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 7.5 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 Avaya CS 1000M systems

This Meridian 1 system...	Maps to this CS 1000M system
Meridian 1 Option 61C	CS 1000M Single Group
Meridian 1 Option 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 7.5:

- CP PM Signaling Server

- Common Processor Dual Core (CP DC)

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

For more information, see "lnstalling 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 document 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 Single Group (CS 1000M SG)

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

- Meridian 1 Option 51C

- Meridian 1 Option 61C

- Meridian 1 Option 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.

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.

Technical documents

The following technical documents are referenced in this document:

- *Product Compatibility* (NN43001-256)

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

- *Circuit Card Reference* (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 Reference - Administration* (NN43001-632)

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

- *Signaling Server IP Line Applications Fundamentals* (NN3001-125)

- *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 to NN43021-474)

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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	21
Upgrade Checklists	24
Preparing	24
Identifying the proper procedure	24
Connect a terminal	25
Printing site data	25
Performing a template audit	28

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

Procedure Step	Page
Backing up the database (data dump)	29
Transferring the database from floppy disk to CF (customer database media converter tool)	33

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 Avaya Alerts that impact the site.

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

- 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.

Avaya Communication Server 1000 task flow

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

For more information refer to the following documents, 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)

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

Figure 1
Communication Server 1000M task flow
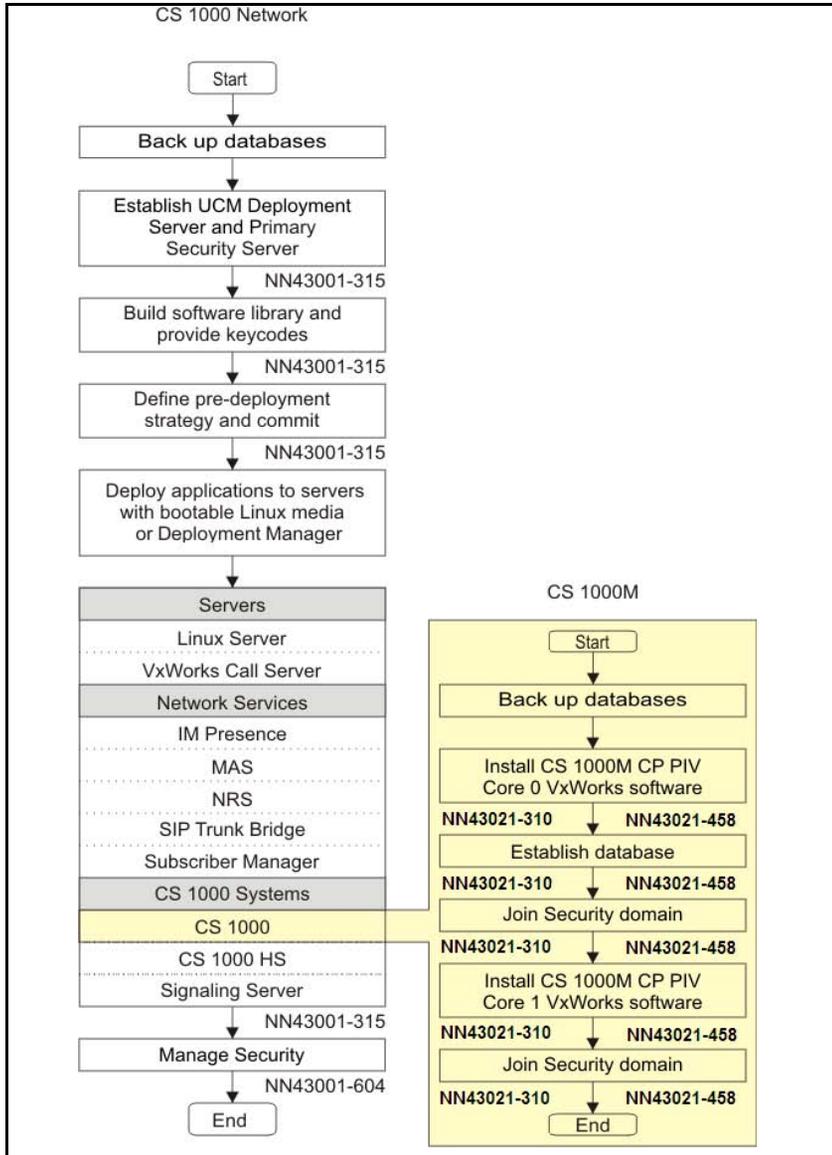
Upgrade Checklists

Upgrade checklists can be found in "Upgrade checklists" on . 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 page 26). 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 Avaya. 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
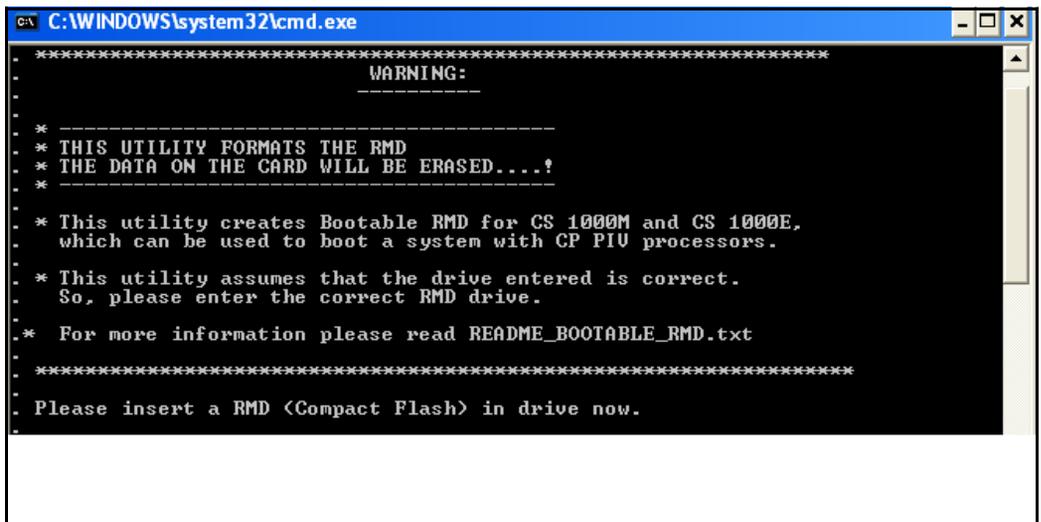

```
C:\WINDOWS\system32\cmd.exe                                      _ □ ✕

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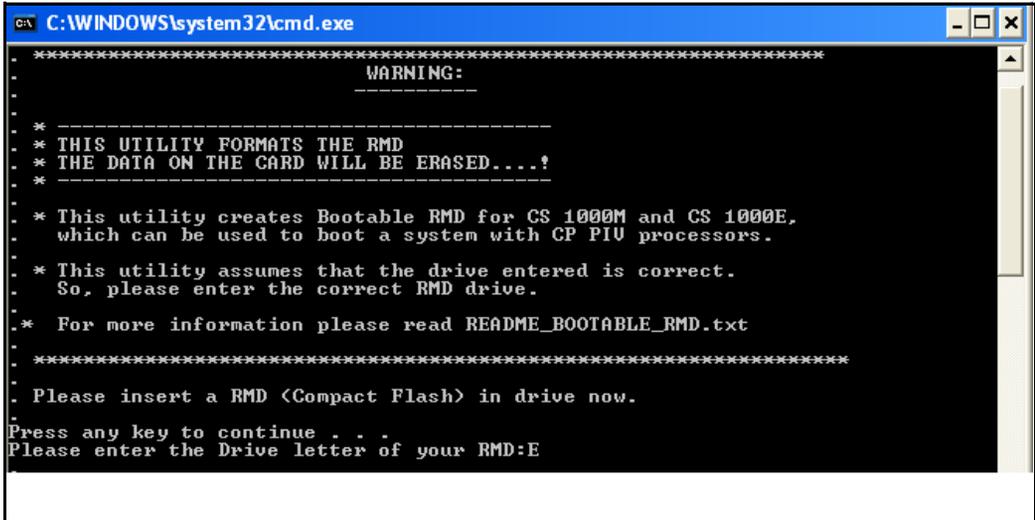
```
C:\WINDOWS\system32\cmd.exe                                                _ □ ×
****************************************************************
                          WARNING:
                          ---------

 * --------------------------------------------
 * 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.

Press any key to continue . . .
Please enter the Drive letter of your RMD:E
```

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 7.5 software upgrade later in this section. Avaya 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
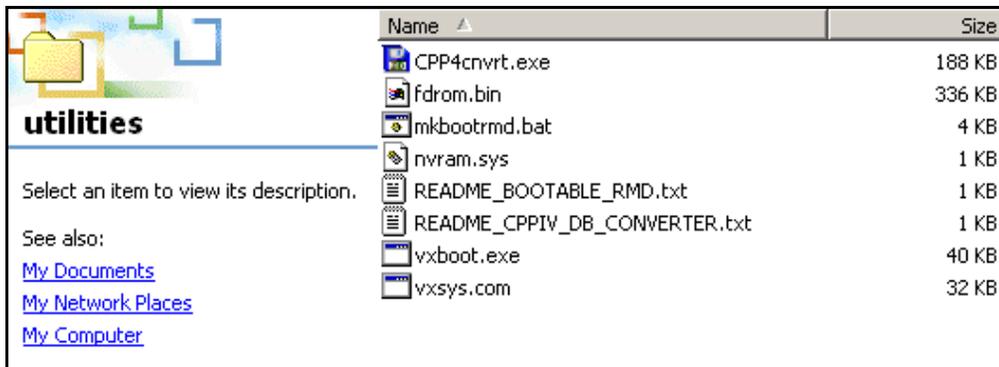
3   Insert the floppy disk containing the backed up customer database from Procedure 2 on page 29.

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
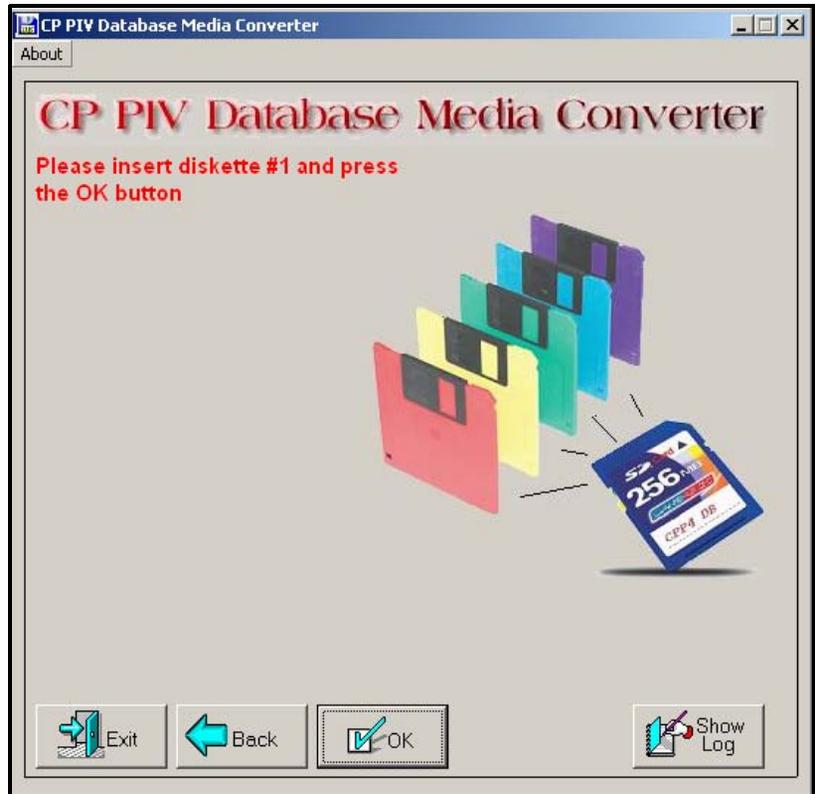
7   After verifying the database on the floppy disk, the utility prompts you to
select the CF drive (see Figure 8 on page 37).

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). 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
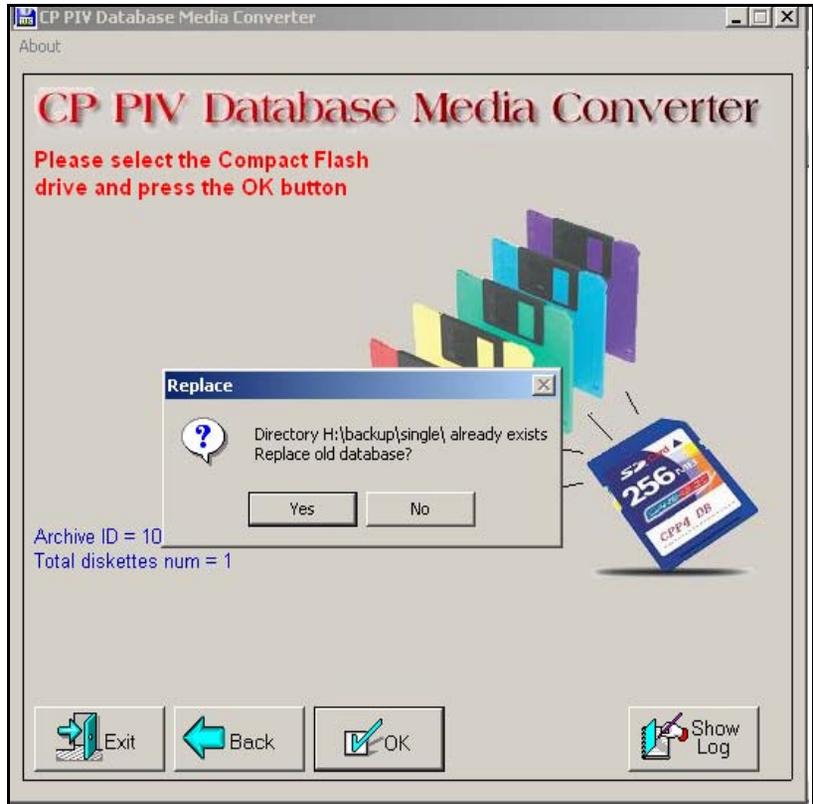
9 The utility completes the transfer to CF and prompts you to copy another or EXIT.

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 Avaya Communication Server 1000M

The upgrade to Avaya CS 1000M (installing a Signaling Server) occurs after completing the procedures in this section. See "lnstalling 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 7.5 software

    – Dep. Lists (PEPs)

    – Key code File

  — One blank CF card for database backup

  — An Avaya CS 1000 Release 7.5 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 Avaya 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)

NT8D84AA cable

Backplane connection for system monitor cable

J1

To external equipment

NT8D93 cable

N T 8 D 4 1

J1

J2

Module front

I/O panel

Backplane

NT8D46AG cable to connector J2 in the pedestal (see note)

Note: To connect J2 to external equipment, cable as shown for J1.

553-5381
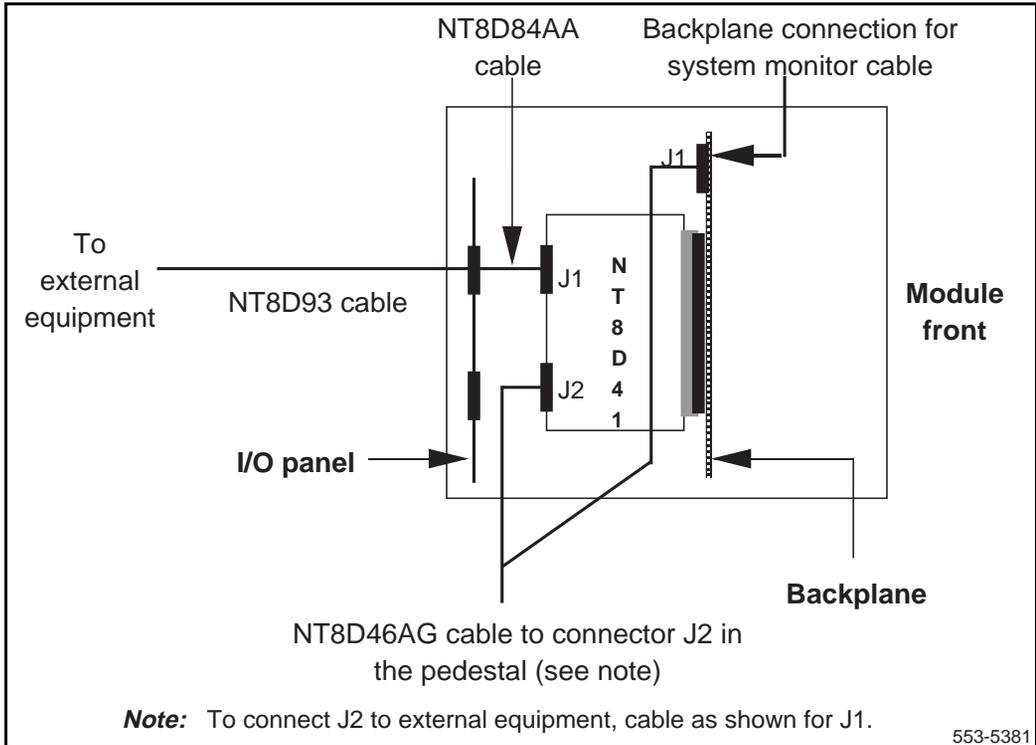
Figure 12
CP PIV call processor card (front)
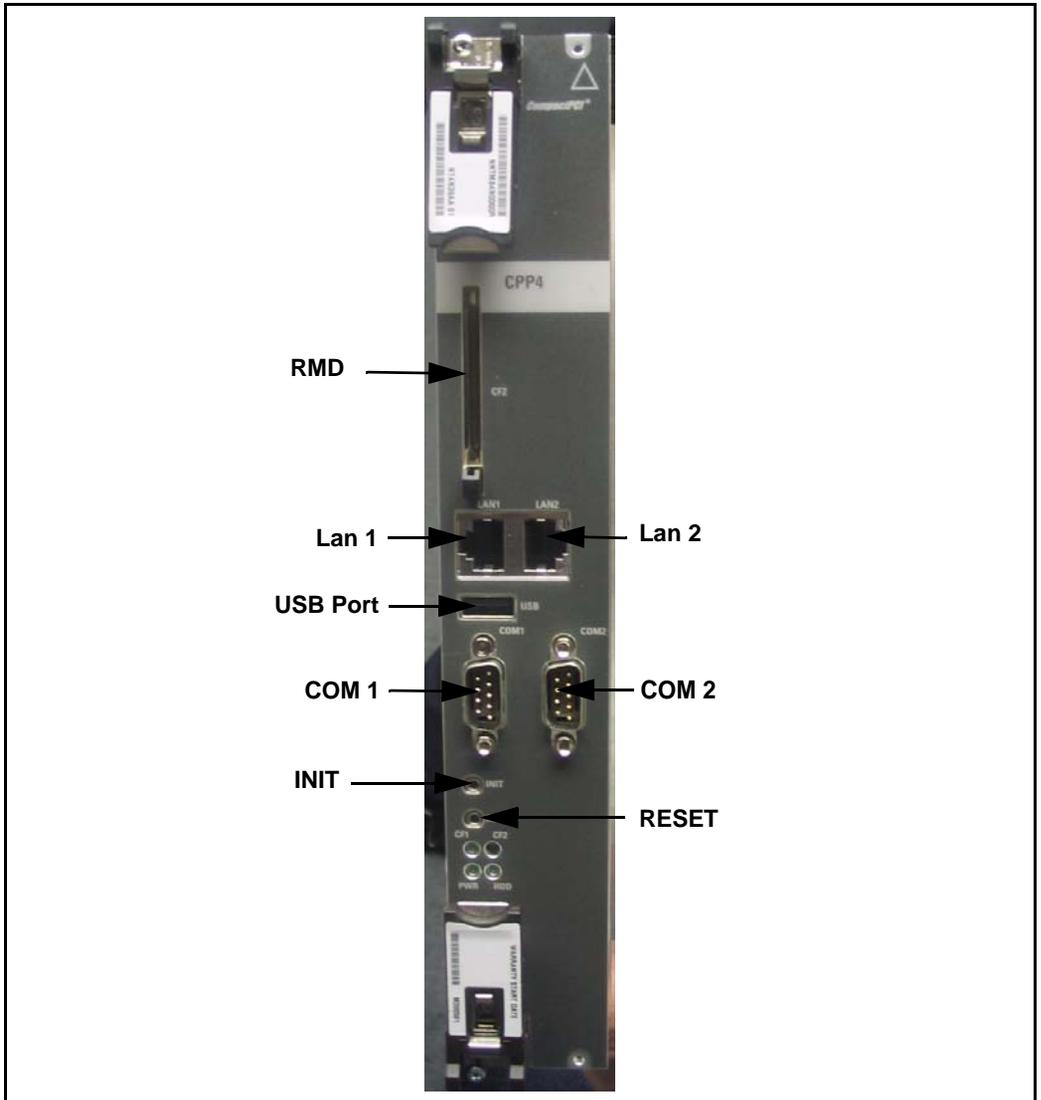
Figure 13
CP PIV NT4N41 Core/Net Module
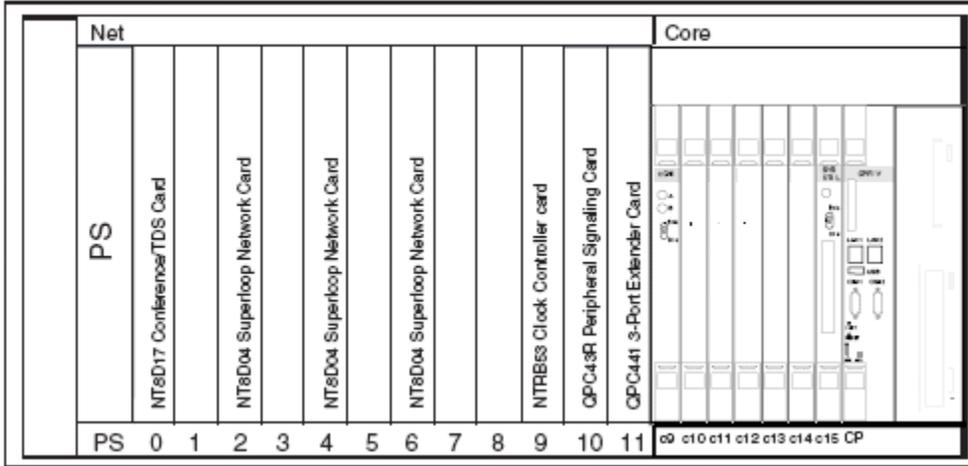
Verifying CP PIV hardware

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
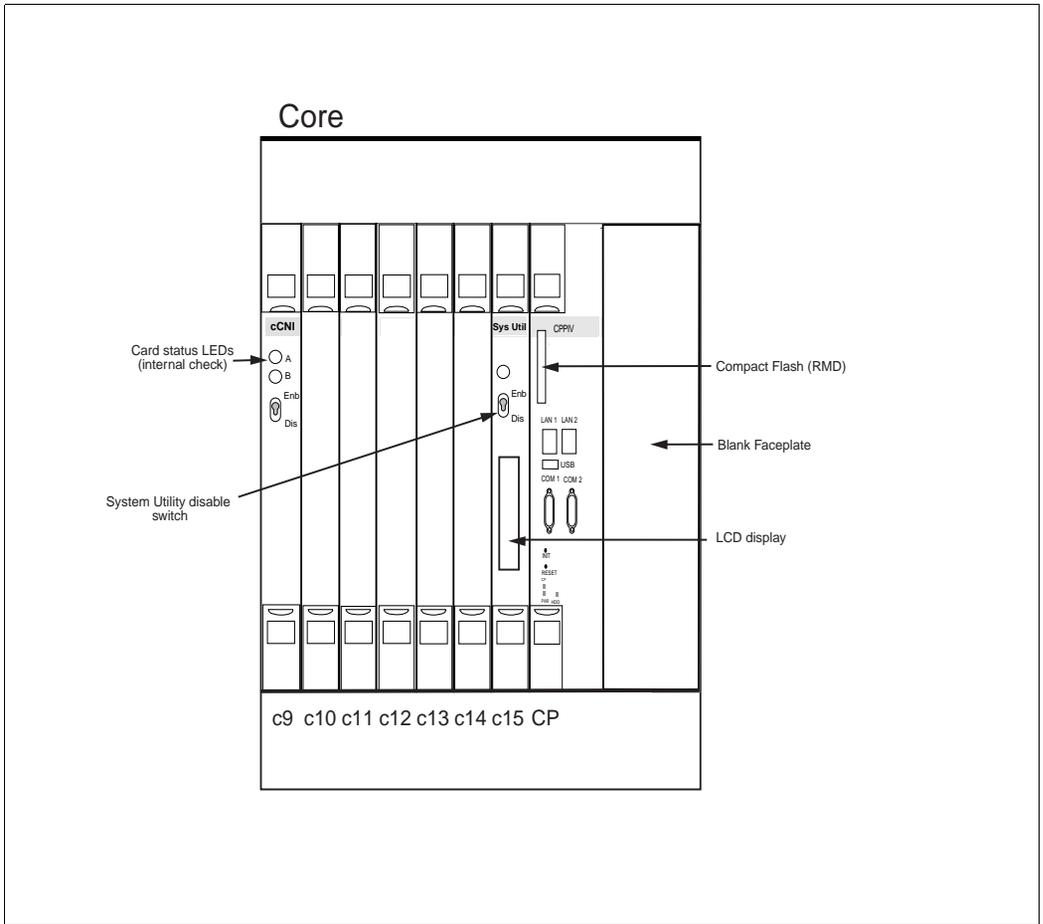
Upgrading Core 1

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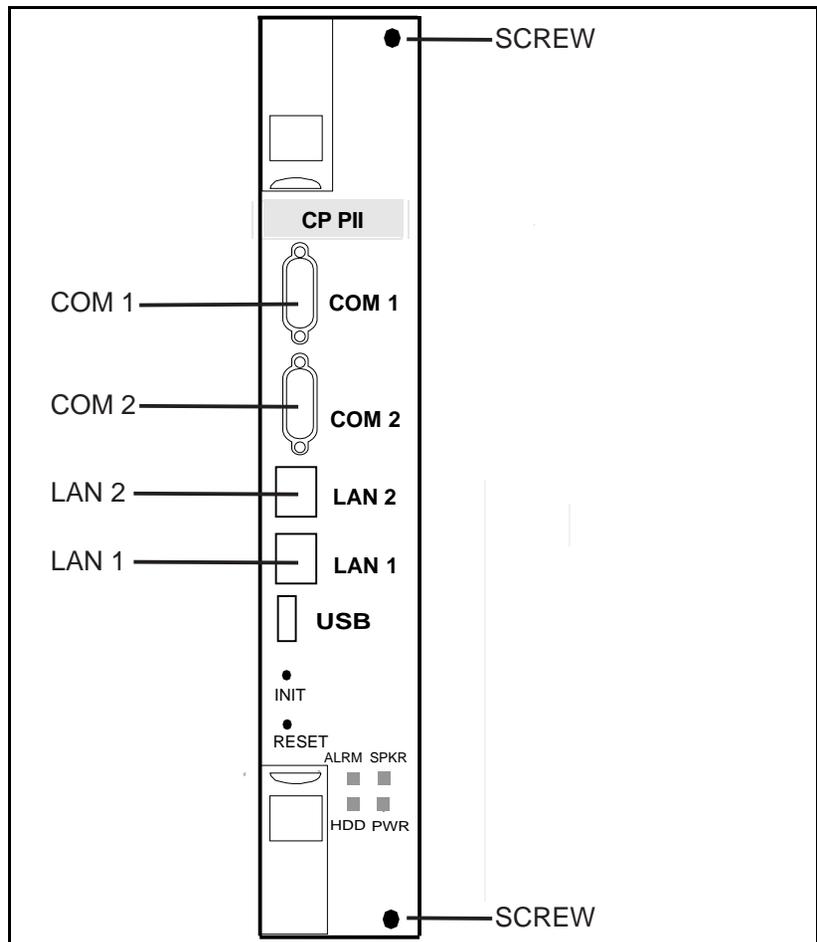
2   Disconnect and label the COM 1 and COM 2 cables from the Core 1 CP PII card faceplate. See Figure 16.

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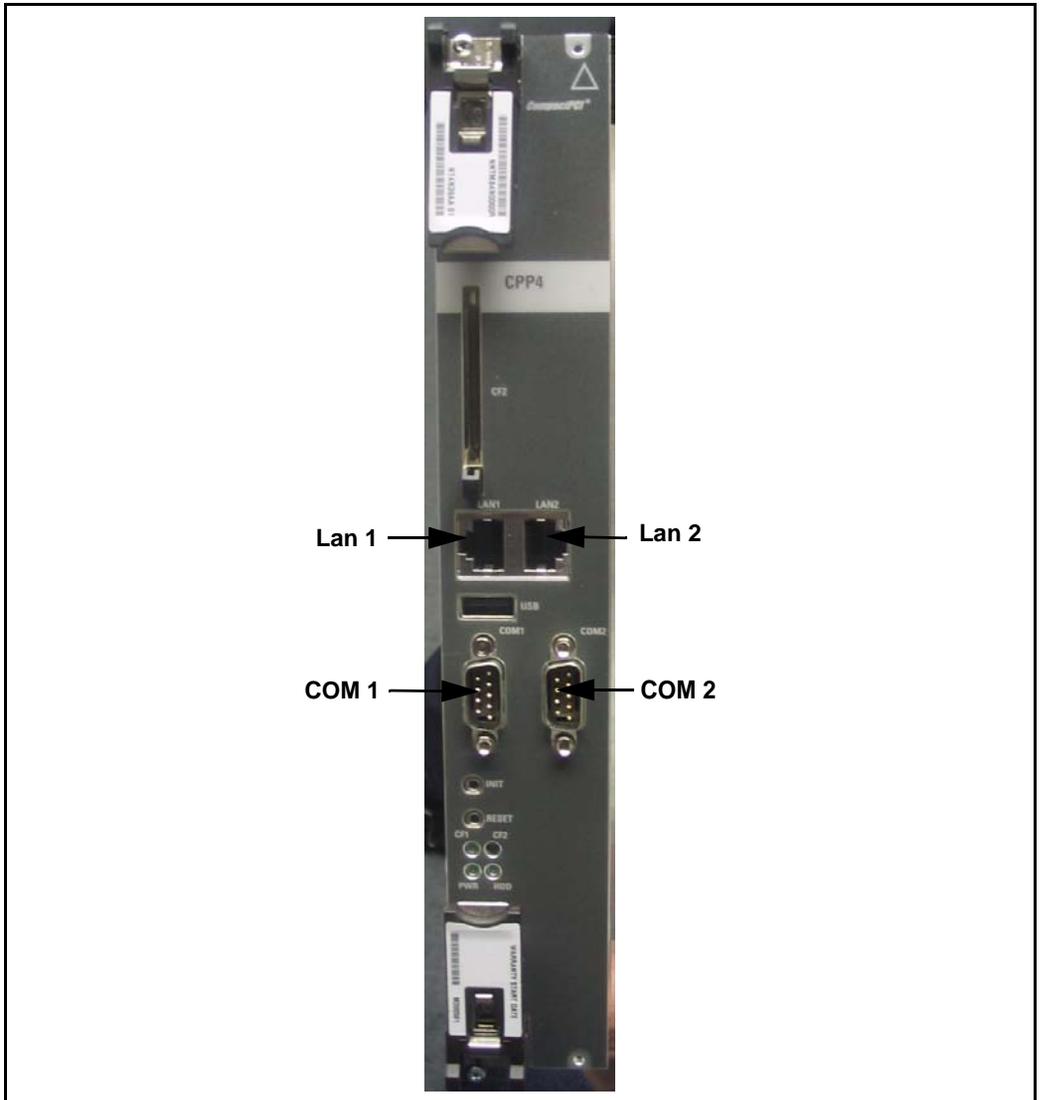
> **4** Attach the LAN 2 cable to the CP PIV faceplate connector on Core 1. Do not connect the LAN 1 cable at this point.

——————— **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 page 55.

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 page 55.

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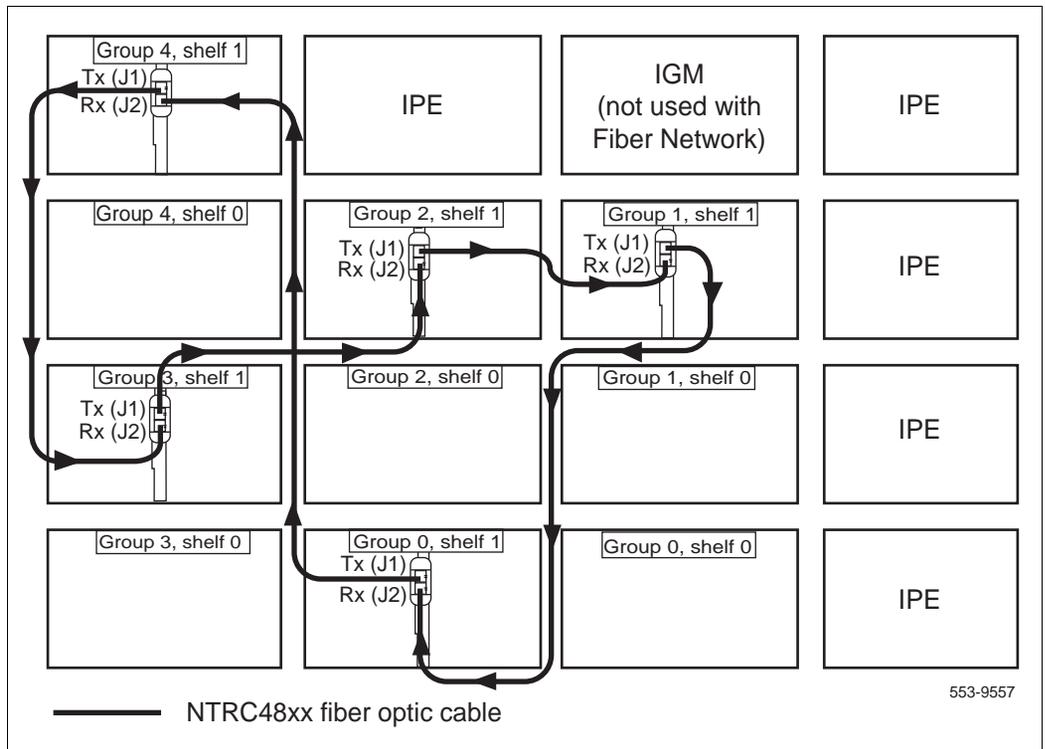
Remove the black cap from the end of each cable before it is connected.

> *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)

NTRC48 fiber optic cable

553-9557b
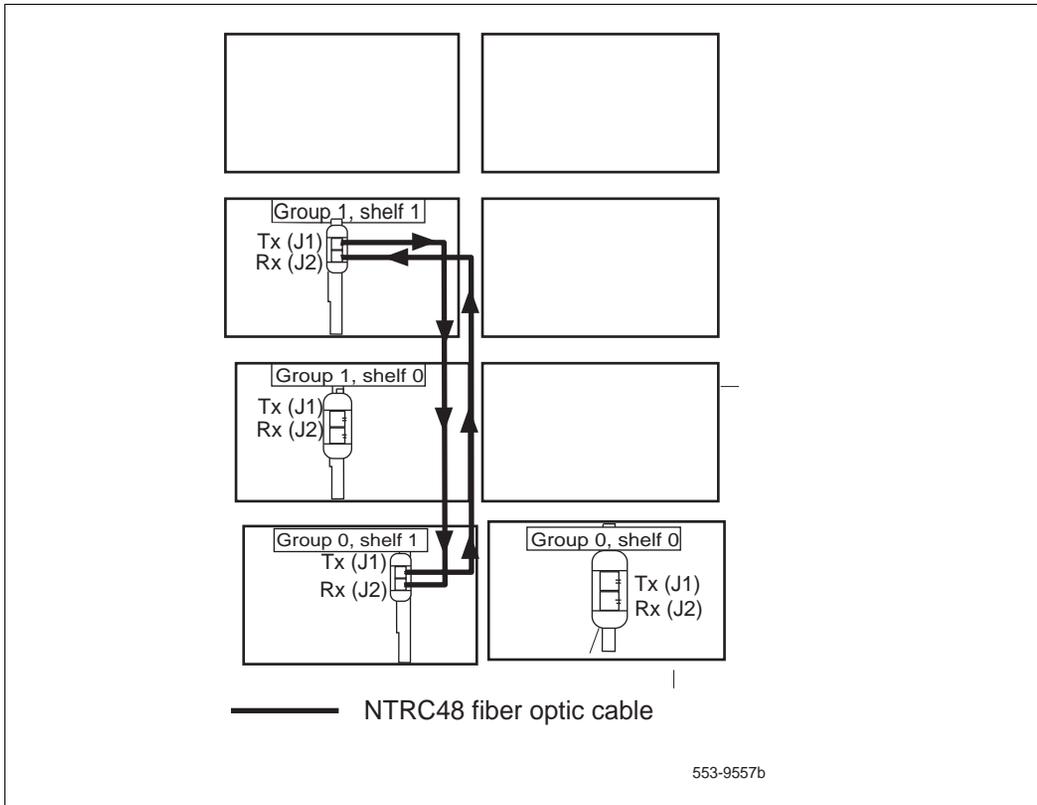
Figure 20
3PE Fanout Panel connections

553-9492
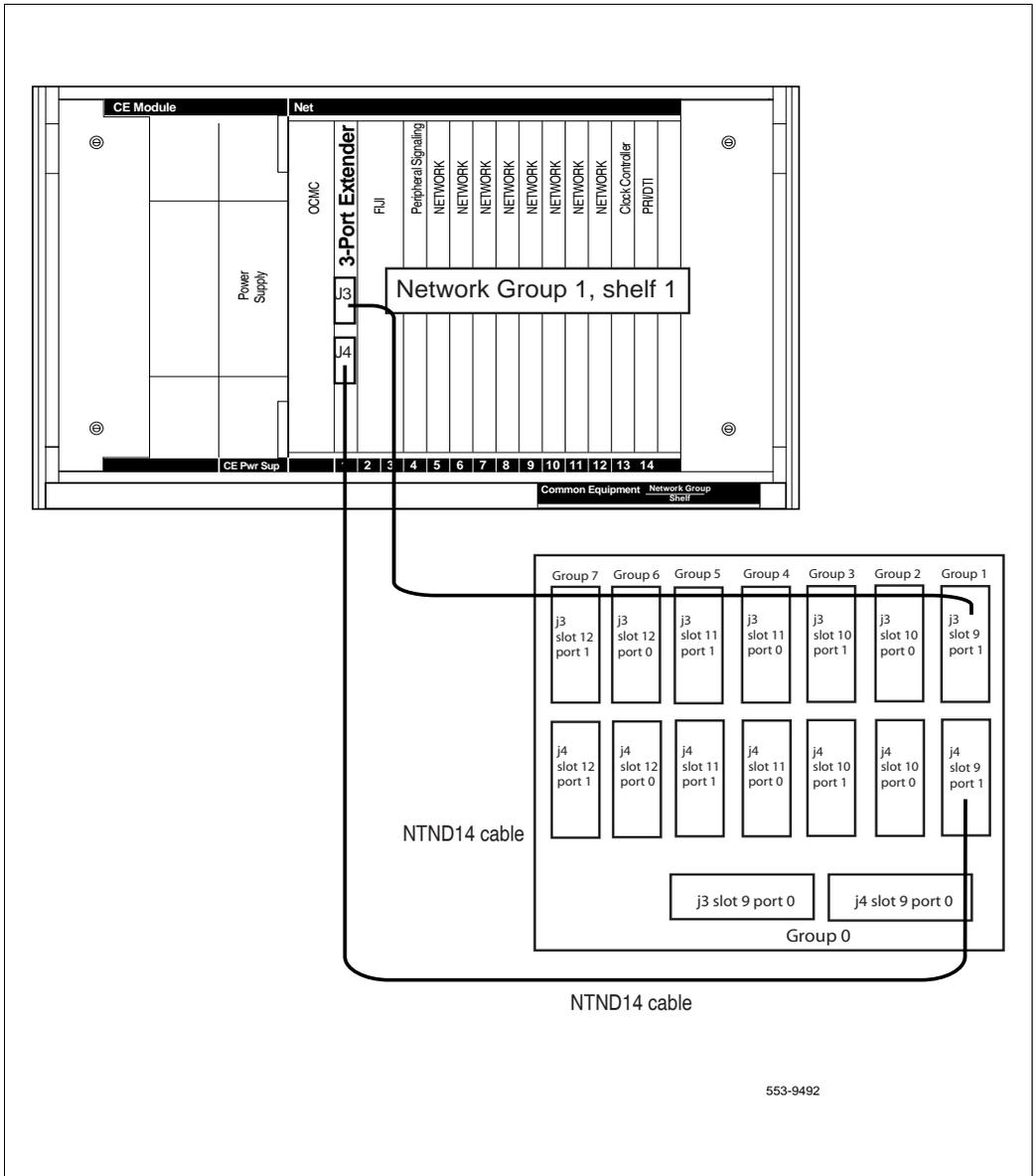
Procedure 12
Cable the Clock Controller 1 to FIJI hardware

IMPORTANT!

Both NTRC46 cables must be the same length.

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

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

553-9496
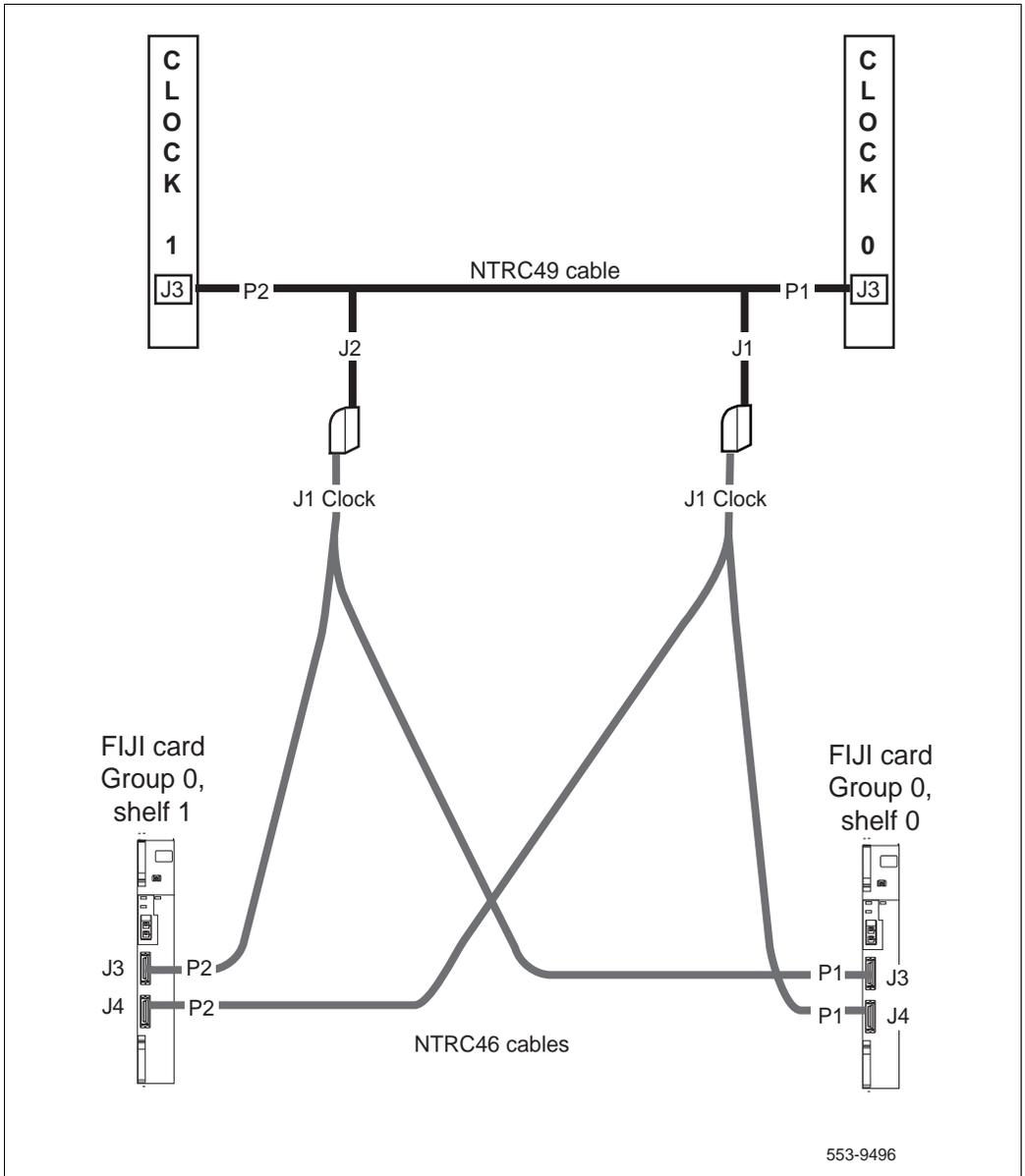
CS 1000 Release 7.5 upgrade

Upgrading the software

Procedure 13 outlines the steps involved in installing CS 1000 Release 7.5 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
====================================================================




                              Avaya
             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

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
 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 (Avaya 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 88.

2   Disconnect and label the COM 1 and COM 2 cables from the Core 0 CP PII card faceplate. See Figure 22 on page 88.

3   Unscrew and unlatch the Core 0 CP PII card. See Figure 22 on page 88.

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 88.

Figure 22
CP PII faceplate connections
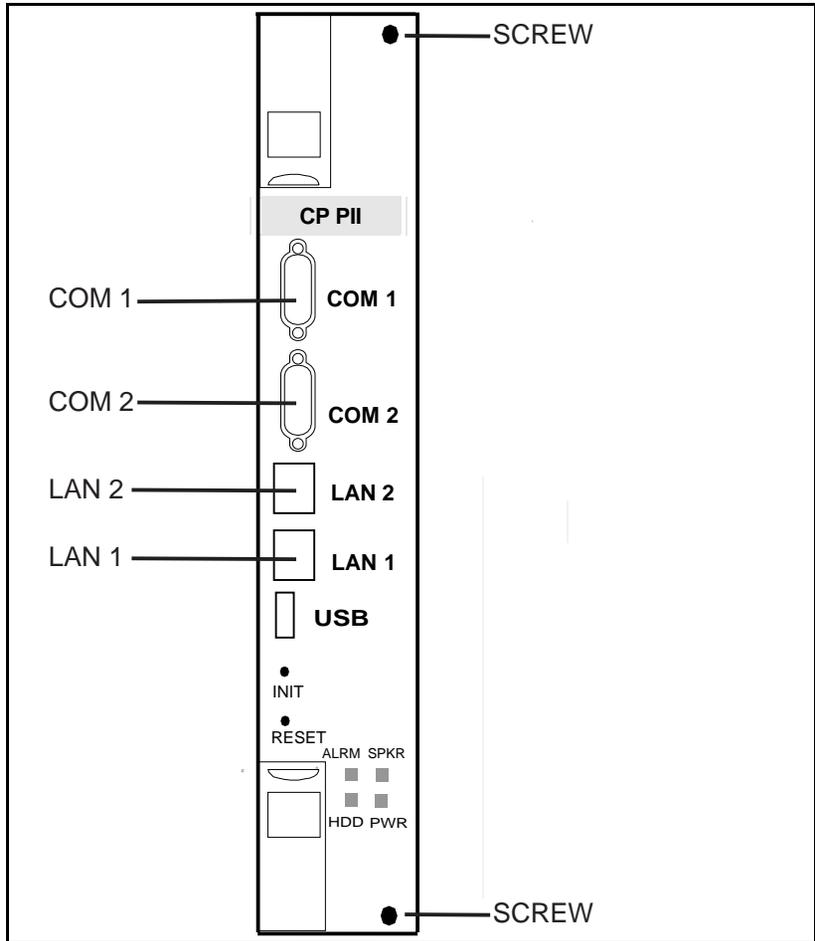
Figure 23
NT4N46 Core/Net module
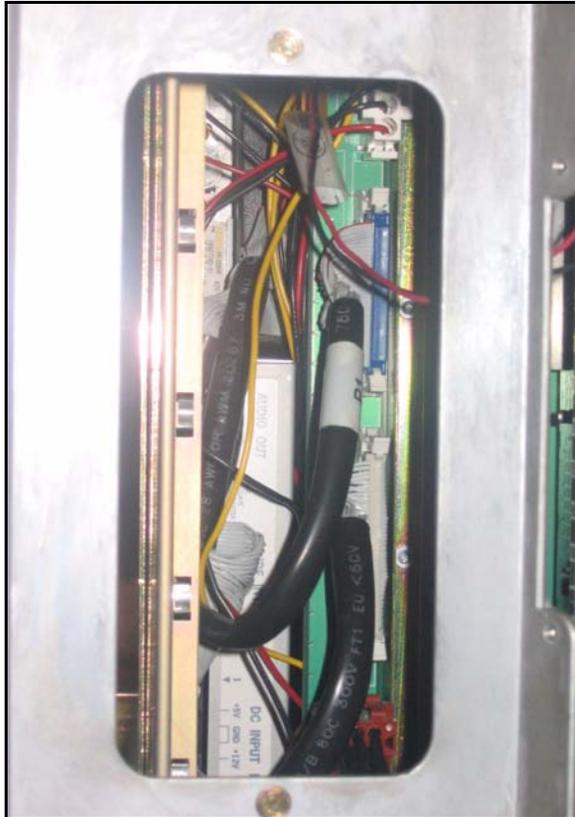
6 From the rear access point of the Core 0 shelf, remove the MMDU power cable from the backplane.

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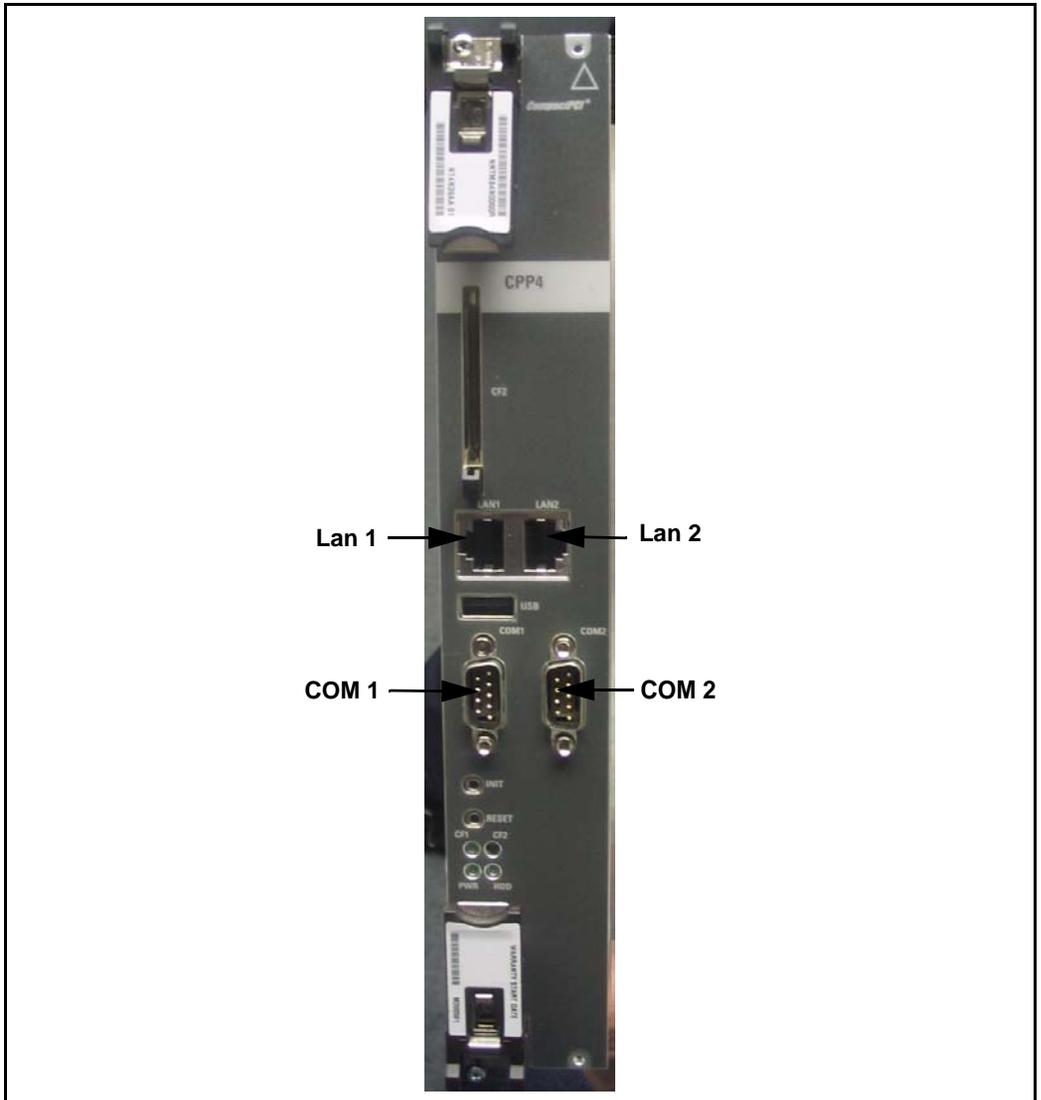
> **4**   Attach the LAN 2 cable to the CP PIV faceplate connector on Core 0. Do not connect the LAN 1 cable at this point.

———————————— **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

Group 4, shelf 1	IPE	IGM (not used with Fiber Network)	IPE
Group 4, shelf 0	Group 2, shelf 1	Group 1, shelf 1	IPE
Group 3, shelf 1	Group 2, shelf 0	Group 1, shelf 0	IPE
Group 3, shelf 0	Group 0, shelf 1	Group 0, shelf 0	IPE

NTRC47AA FIJI to FIJI cables

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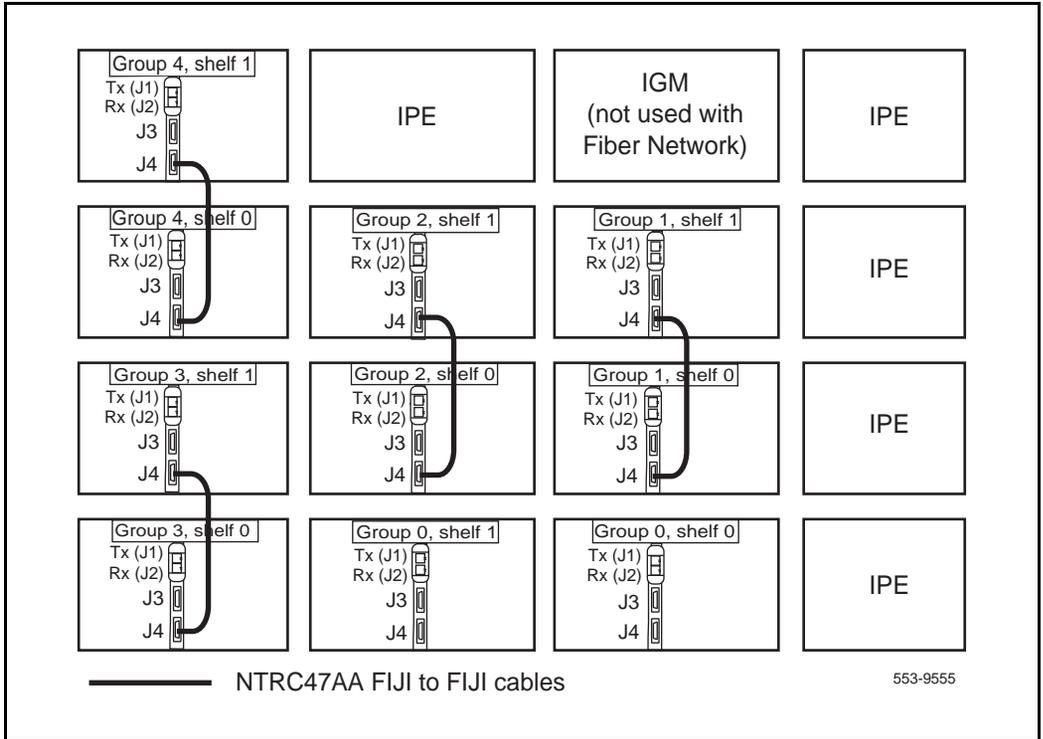
Procedure 26
Connecting the shelf 0 FIJI Ring cables (ascending)

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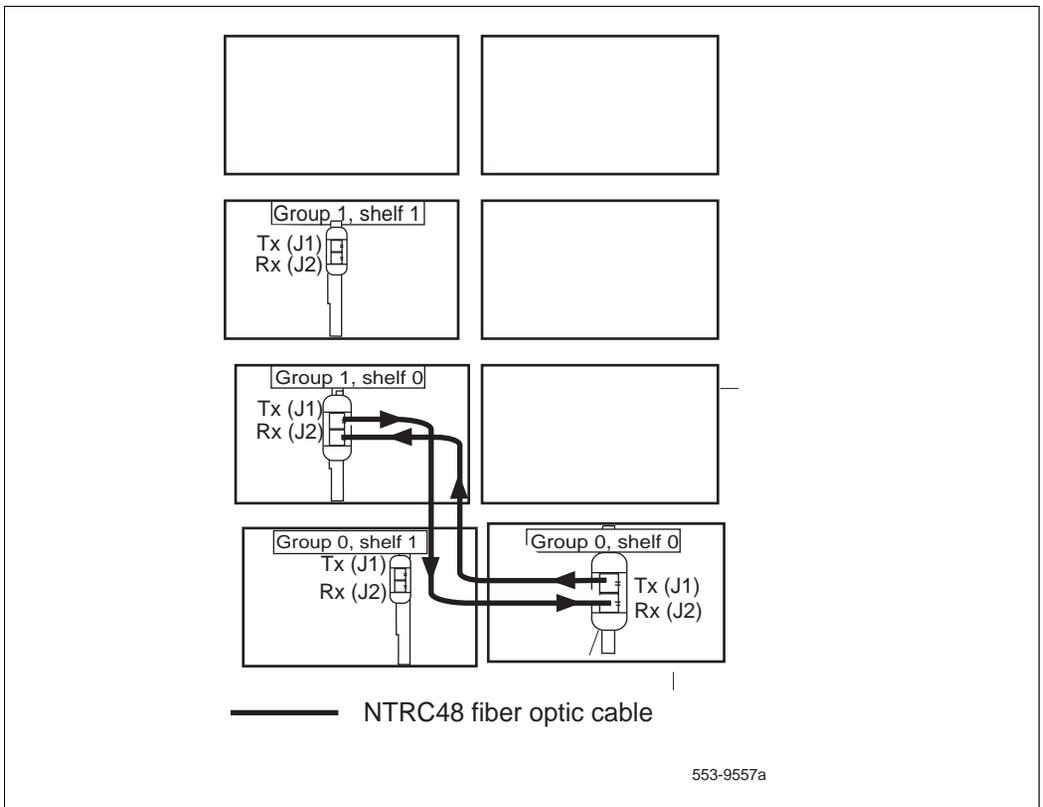
5   To complete the Ring, connect a final cable from the Tx (J1) port in the **highest number group** back to the Rx (J2) port in **Group 0, shelf 0.**

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
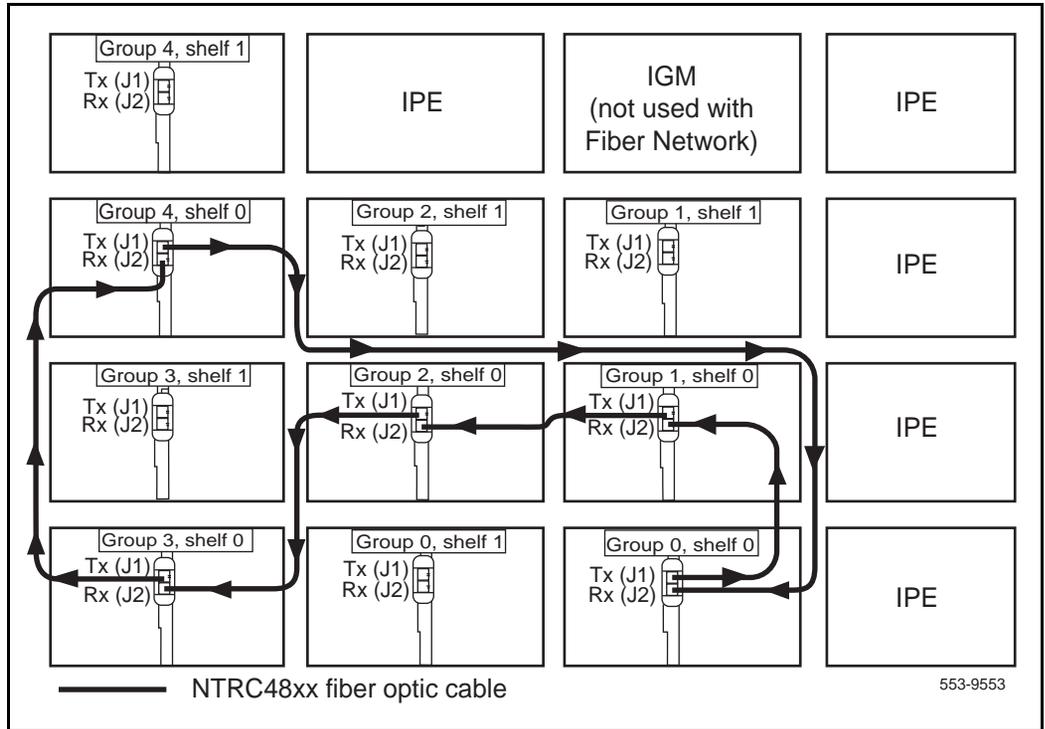
Procedure 27
Cabling the Clock Controllers to FIJI card

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

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:

Figure 27
Clock Controller cable configuration
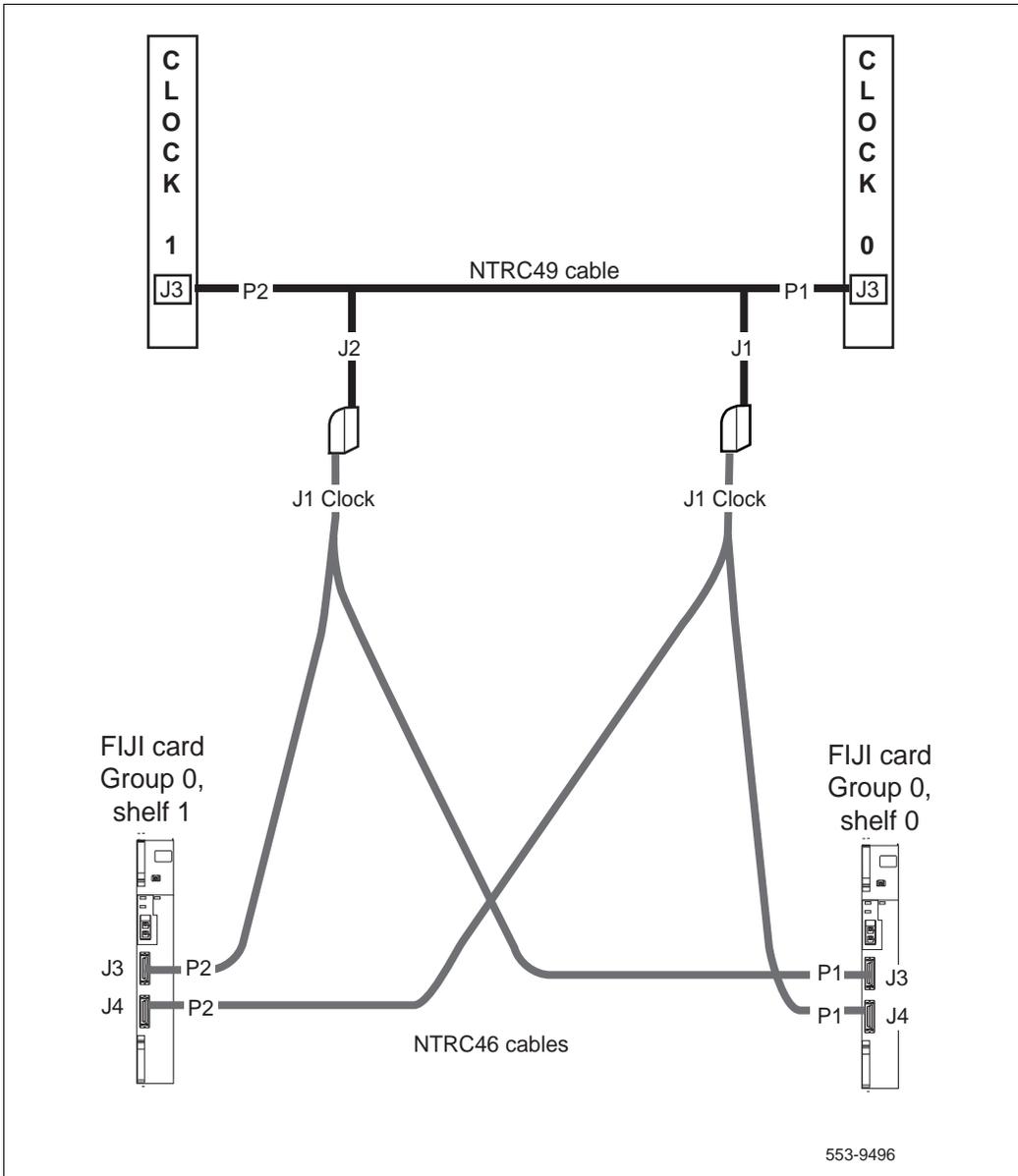
a.   Connect P1 of the NTRC46 cable from Clock 1 to **J3** of the FIJI card in group 0, **shelf 0.**

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

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 7.5 upgrade

Upgrading the software

Procedure 29 outlines the steps involved in installing CS 1000 Release 7.5 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
====================================================================



                           Avaya
             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 Avaya Communication Server 1000M (Avaya CS 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 CP PM, CP DC or COTS server that you deploy with Signaling Server applications is referred to as a Signaling Server. A 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 an Avaya Communication Server 1000 (Avaya CS 1000) system. The task flow indicates the recommended sequence of events to follow when configuring a system and provides the document number that contains the detailed procedures required for the task.

For more information refer to the following documents, which are referenced in Figure 28 on :

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

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

- *Avaya Signaling Server IP Line Applications Fundamentals* (NN3001-125)

Figure 28
Signaling Server task flow
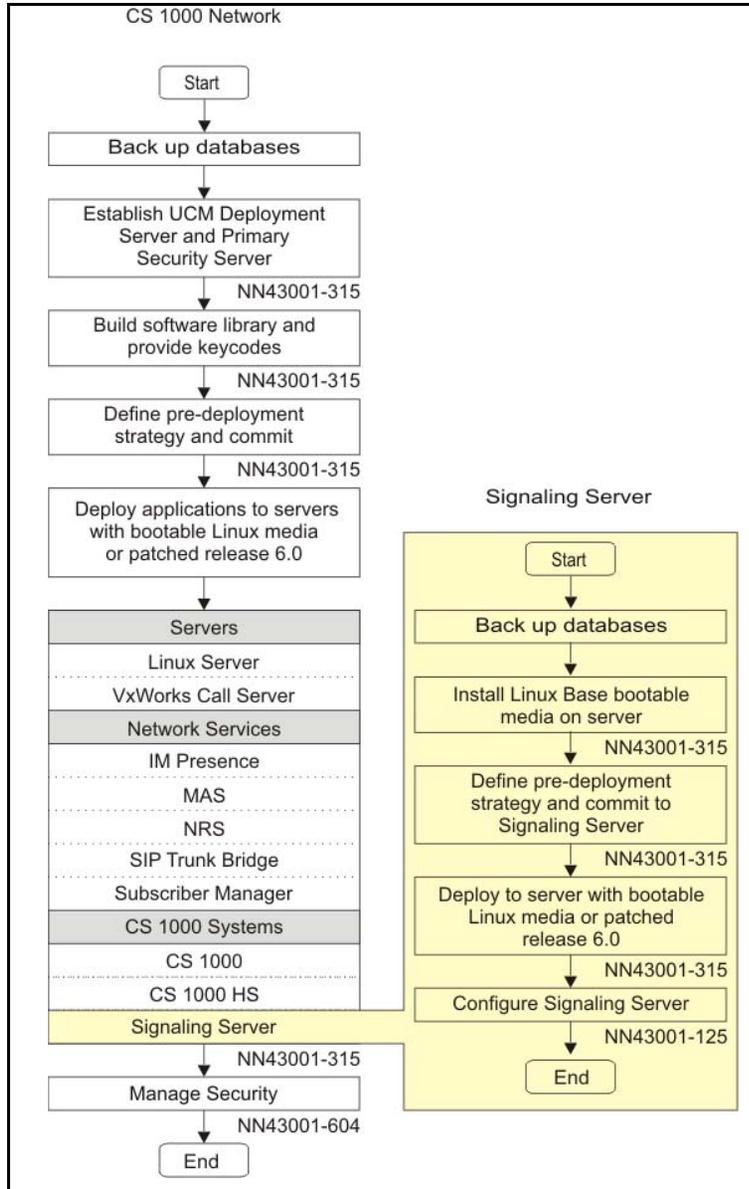
Readiness checklist

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)
 	
NTE90672: Linux Signaling Server software DVD for COTS servers
 	
For Server cards (NTDW66 CP PM, and NTDW54 CP DC)
 	
• (CP PM only) CP PM Signaling Server Linux Upgrade kit, which includes
 	
   — Linux OS preloaded hard drive kit (Optional, provided if required)
 	
   — 2 GB Compact Flash (CF) with Linux software, 2 GB blank CF
 	
   — 1 GB DDR SO-DIMM memory upgrade (Optional, provided if required)
 	
• 2 port SDI Cable assembly kit
 	
• Large System Cabling kit
 	
• 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.	

Confirmed the area meets all environmental requirements?	
Checked for all power requirements?	
Verified the CP PM 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:	
Checked for correct grounding facilities?	
Obtained the following • screwdrivers • an ECOS 1023 POW-R-MATE or similar type of multimeter • appropriate cable terminating tools • a computer (maintenance terminal) to connect directly to the Signaling Server, with — teletype terminal (ANSI-W emulation, serial port, 9600 bps) — a Web browser for Element Manager (configure cache settings to check for new Web pages every time the browser is invoked, and to empty the cache when the browser is closed)	
Prepared the network data as suggested in *Converging the Data Network with VoIP* (NN43001-260) 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 for installing a Server in a Communication Server 1000M system. The Communication Server 1000M system supports the NTDW66 CP PM card, NTDW54 CP DC card, and Comercial off-the-shelf (COTS) servers.

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

instructions, see *Avaya 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 *Avaya 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. When upgrading from a CS 1000M system to CS 1000E, the slot next to slot 7 is occupied by the External Peripheral Equipment Controller (XPEC). This prevents the CP PM or CP DC 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
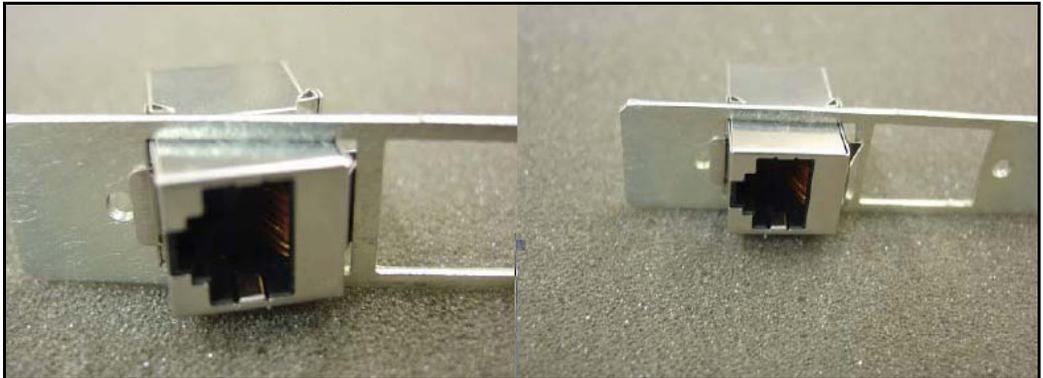
3   Insert the other Ethernet port coupler into the adapter plate. See Figure 31 on page 140.

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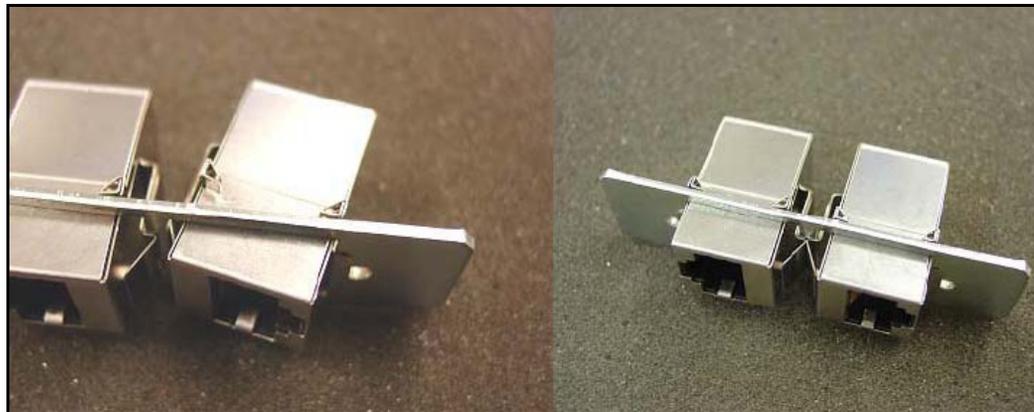
4   Loosely attach screws, washers, and nuts to the Ethernet port adapter plate. See Figure 32.

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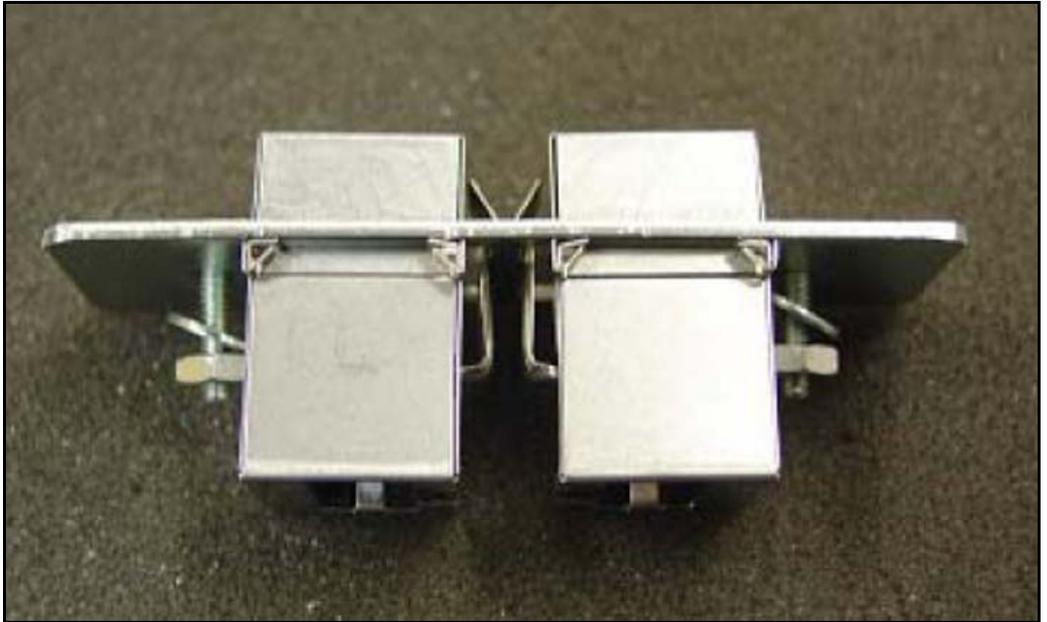
5 Switch off the UEM power supplies. See Figure 33.

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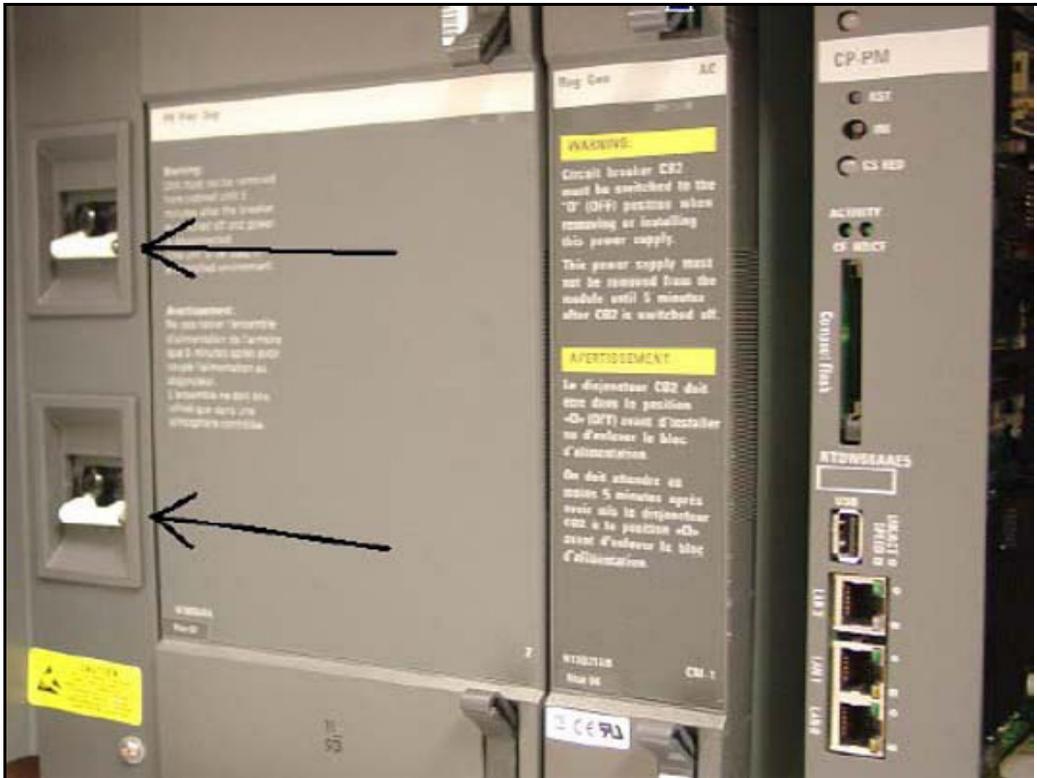
6   Select one of the J2-J5 knock-out plates on the back of the UEM. See
    Figure 34.

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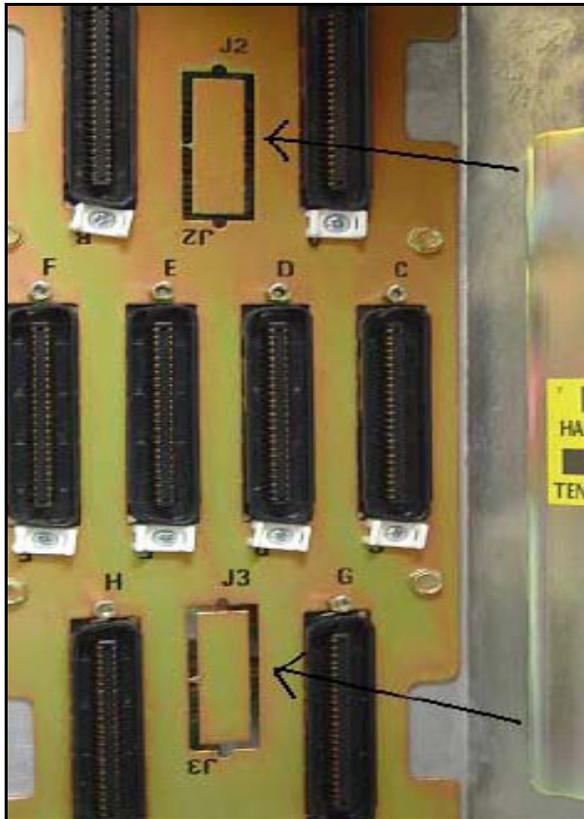
7   Knock out the metal plate from the selected J2-J5 location to provide a
     hole through which the Ethernet patch cables are routed and to which the
     Ethernet port adapter plate is attached. See Figure 35.

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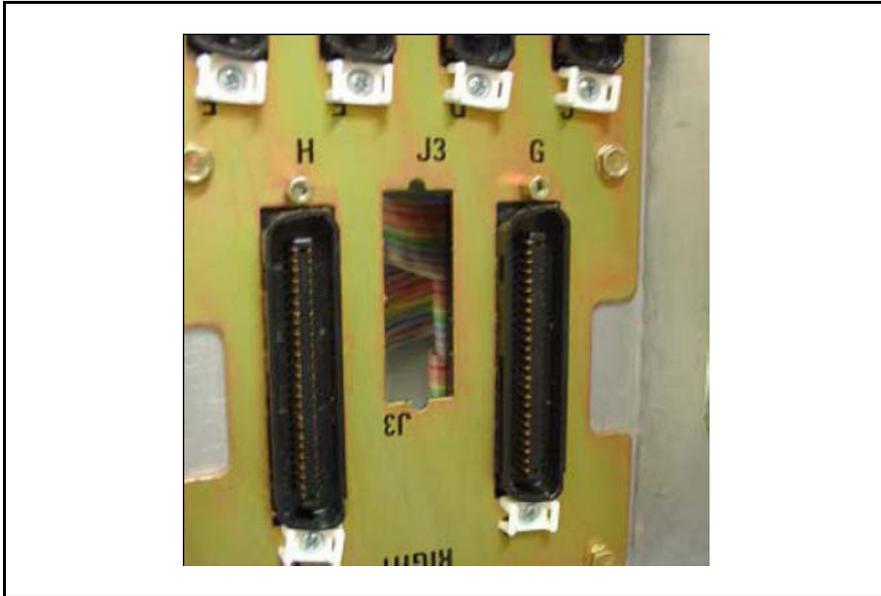
8   Establish an ELAN port on the back panel of the UEM.

  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 CP PM faceplate
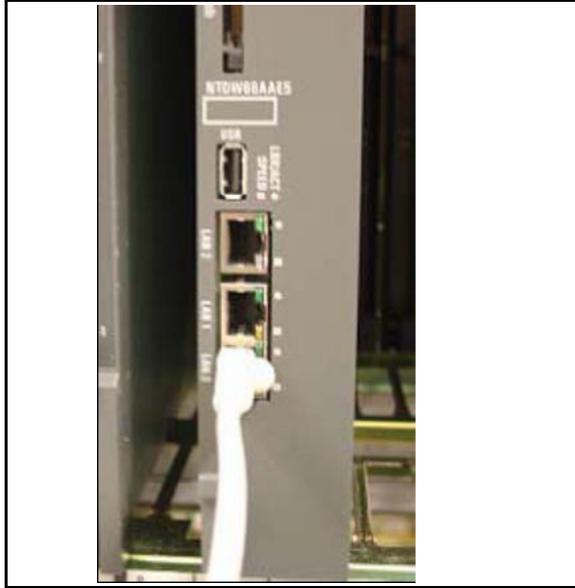
Figure 37
ELAN connection on Ethernet port coupler

      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 CP PM faceplate

Figure 39
TLAN connection on Ethernet port coupler
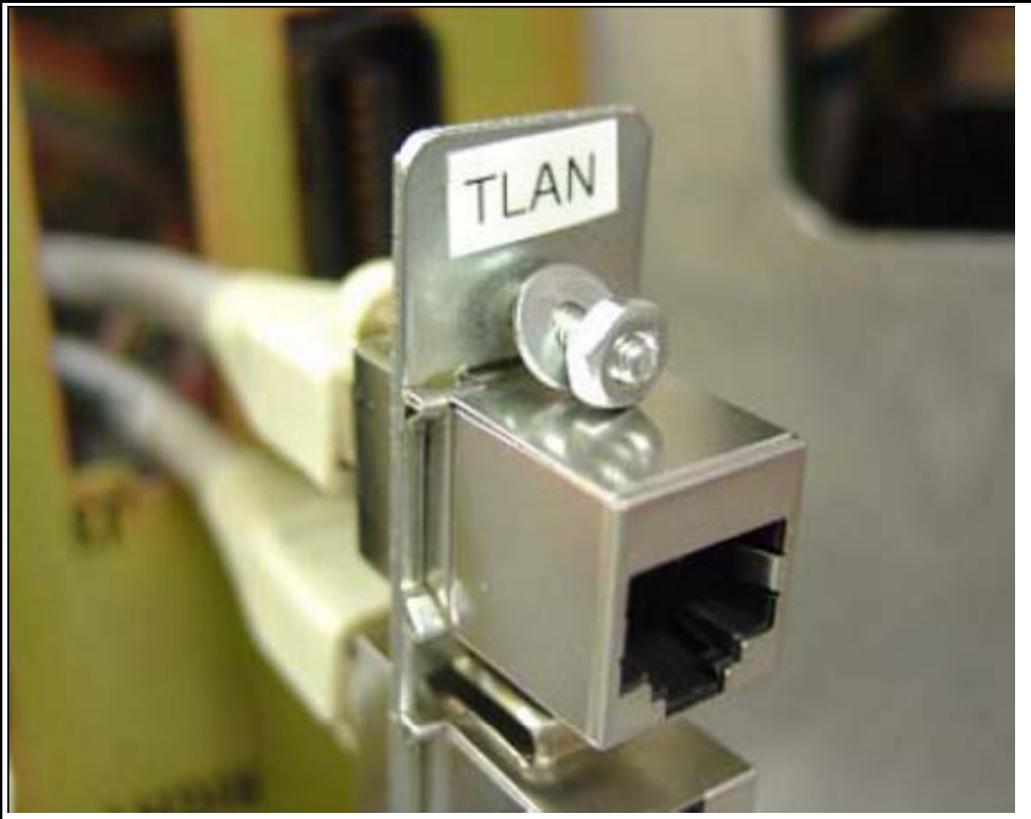
      10   Fit the Ethernet port adapter plate into the hole on the back of the UEM and tighten the screws. See Figure 40.

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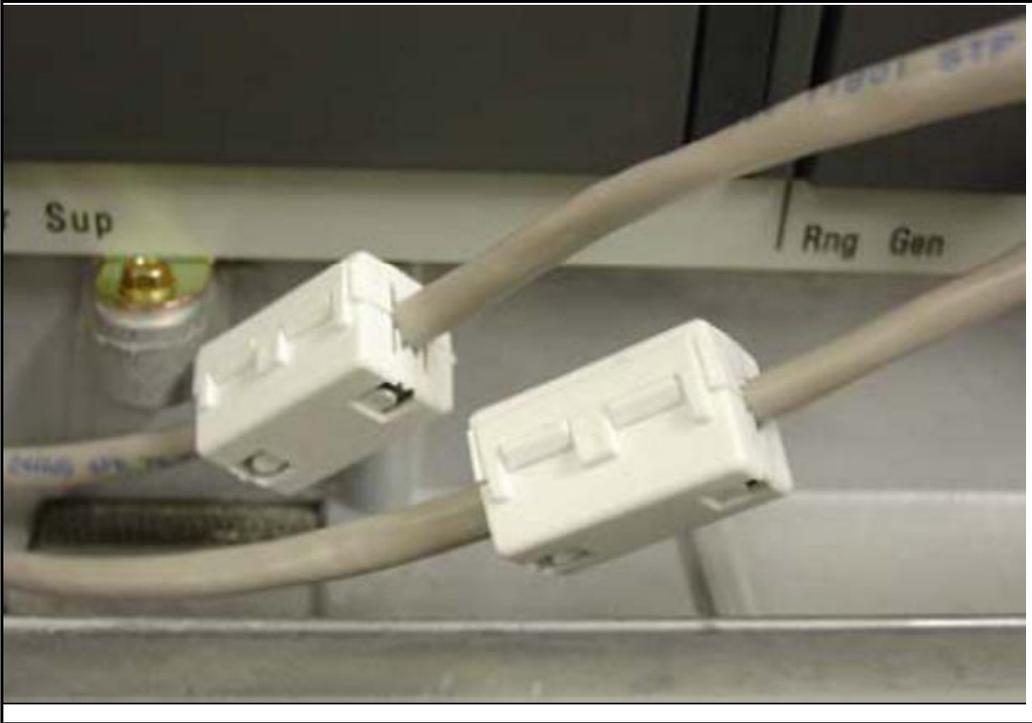
———————— **End of Procedure** ————————

Connections

This section contains information about server connections.

Connection checklist

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

IMPORTANT! Server cards are powered through the backplane of the Media Gateway, Universal Equipment Module, or Media Gateway 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.	
An NTAK19EC cable for each CP PM or CP DC card? If you are using a Media Gateway or Universal Equipment Module to host the cards, this cable adapts the 50-pin MDF connector on the back of the shelf 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 for connecting a Server to the ELAN and TLAN subnet of a CS 1000M system. It also contains instructions for connecting 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 Signaling Server 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 an Avaya CP PM Signaling Server, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Connecting an IBM COTS server

In geographic regions that are susceptible to electrical storms, Avaya 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)
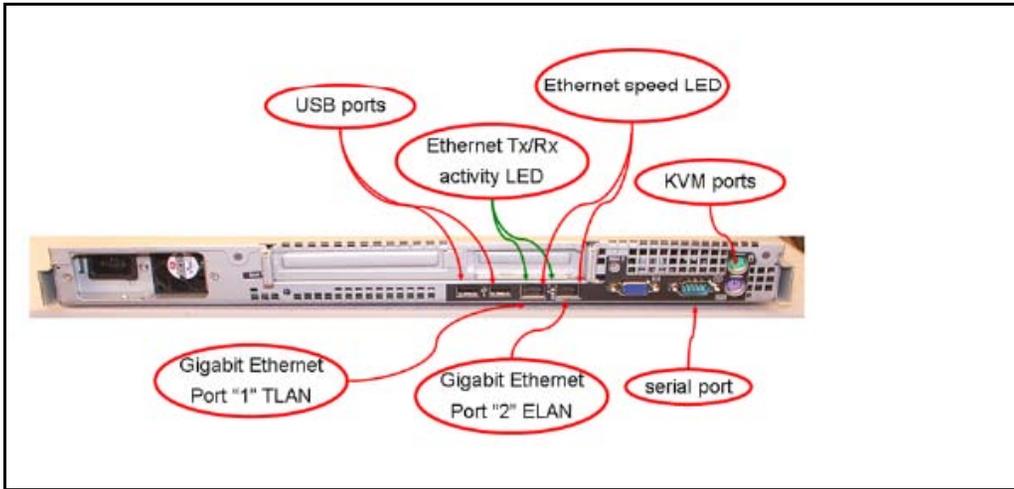
Figure 43 shows the rear view of the IBM x3350 server.

Figure 43
IBM x3350 (rear view)
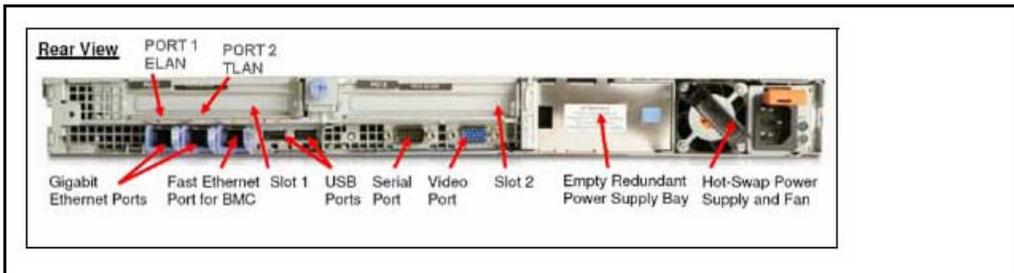
Note: When you perform Procedure 38, "Connecting an IBM COTS server," on , see Figure 42 or Figure 43.

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 *Avaya 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 *Avaya 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 for your IBM server.

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

Connecting an HP COTS server

In geographic regions that are susceptible to electrical storms, Avaya 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)
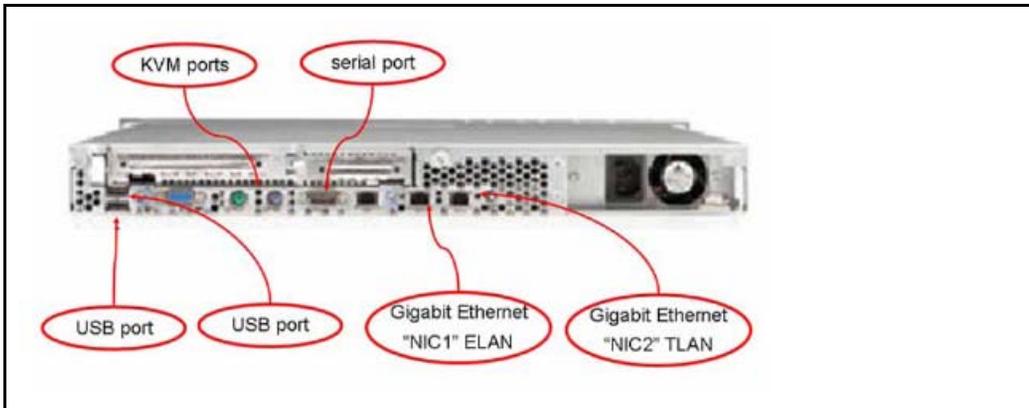
Note: When you perform Procedure 39, "Connecting an HP COTS server," on page 156, see Figure 44.

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

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

6 Configure the connected maintenance terminal. See *Avaya 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, Avaya 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)
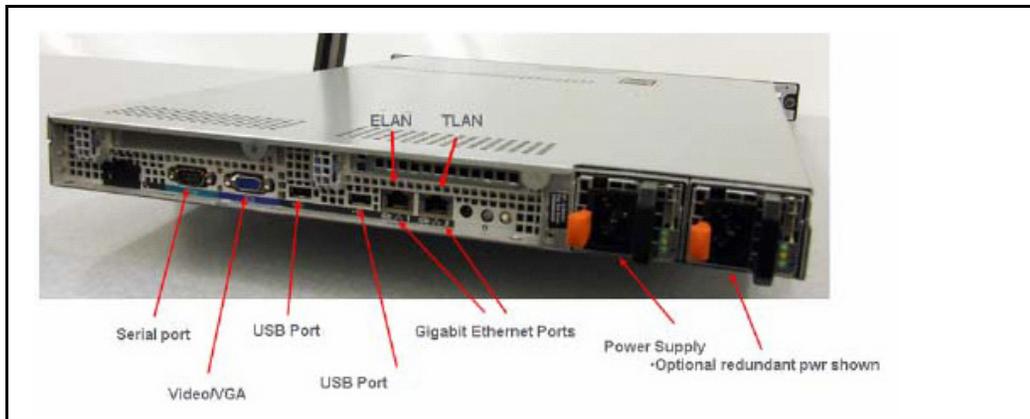
Note: When you perform Procedure 40, "Connecting a Dell COTS server," on , see Figure 45.

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

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

IP subnet configuration

CS 1000 Release 7.5 Signaling Servers support IPv6 and IPv4 addresses. If the Signaling Server and Call Server reside in different IP subnets, you must manually add a route from Base Manager in order for Element Manager to communicate and interact with the Call Server. For more information, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Upgrading and reconfiguring the software

This section contains information and references for upgrading the Signaling Server software from a previous release to CS 1000 Release 7.5. Signaling Server applications in CS 1000 Release 7.5 require Linux. You must install

CS 1000 Linux Base on your CP PM, CP DC or COTS server before you can install any Signaling Server applications.

CS 1000 Release 7.5 supports the following Signaling Server hardware:

- CP PM server

- CP DC server

- IBM X306m server

- IBM x3350 server

- HP DL320-G4 server

- Dell R300 server

IMPORTANT!

Avaya CS 1000 Release 7.5 does not support the ISP1100 Signaling Server. You must replace the ISP1100 with a CP PM, CP DC, or COTS Signaling Server.

If you are upgrading from a Vxworks Signaling Server, Avaya recommends that you backup your IP Phone database and Network Routing Service (NRS) database on your current software release before upgrading to CS 1000 Linux Base and installing applications. You can restore your IP Phone database and NRS backups after you complete the Signaling Server upgrade.

CS 1000 Release 7.5 requires a Signaling Server to have at least 2 GB of RAM memory, and at least 40 GB of hard drive capacity. You must upgrade Signaling Servers with less than 2GB of RAM before installing CS 1000 Release 7.5 Linux Base and Signaling Server software. For detailed instructions on performing this memory upgrade, see *Avaya Circuit Card: Description and Installation* (NN43001-311).

You can upgrade a CP PM Signaling Server to support the CS 1000 Linux Base and applications for Communication Server 1000 with a CP PM Signaling Server Linux upgrade kit. The upgrade kit includes the following components.

- Linux OS preloaded hard drive kit (optional, provided if required)

- 2 GB Compact Flash (CF) with Linux software, 2 GB blank CF
- 1 GB DDR SO-DIMM memory upgrade (optional, provided if required)

Overview

An upgrade of the Signaling Server software consists of the following steps:

- Back up application databases using Element Manager
- Install CS 1000 Linux Base and configure parameters
- Use Centralized Deployment manager to deploy and install Signaling Server applications
- Configure the system or import backup node files in Element Manager
- Use Element Manager to restore backups of application databases

Avaya recommends that you back up the application databases before performing the upgrade. The application databases consist of the IP Phone database and the NRS database.

If you do not know whether the Signaling Server being upgraded has an NRS, use Procedure 41, "Verifying the presence of an NRS," on to make this determination.

If you have an NRS database on the Signaling Server and want to back it up before performing the upgrade, you must use the backup tool in NRS Manager. After the Signaling Server is upgraded, use NRS Manager to restore the NRS database (from your local PC) and activate it for use by the NRS.

For instructions on backing up and restoring an NRS database, see *Avaya Network Routing Service Fundamentals* (NN43001-130).

For instructions on backing up and restoring the IP Phone database, see *Avaya Signaling Server IP Line Applications Fundamentals* (NN3001-125).

Procedure 41
Verifying the presence of an NRS

1 Open Internet Explorer.

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

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

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

The Element Manager logon web page appears.

Figure 46
Element Manager logon page
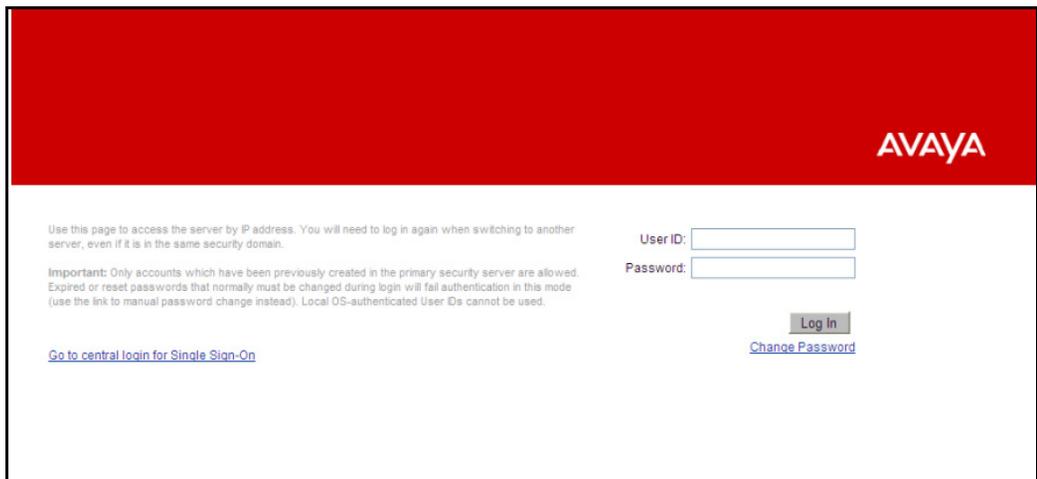
Initially, you can be prompted to enter the Call Server IP address, because the Call Server is used for web logon authorization. The Call Server IP address is a requirement, because unless you entered additional configuration parameters during the Signaling Server installation, the node configuration data file containing the Call Server IP address does not yet exist.

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

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

If the logon is successful, the Element Manager "Home - System Overview" screen appears (see Figure 47 on).

Figure 47
Element manager: Home - System Overview
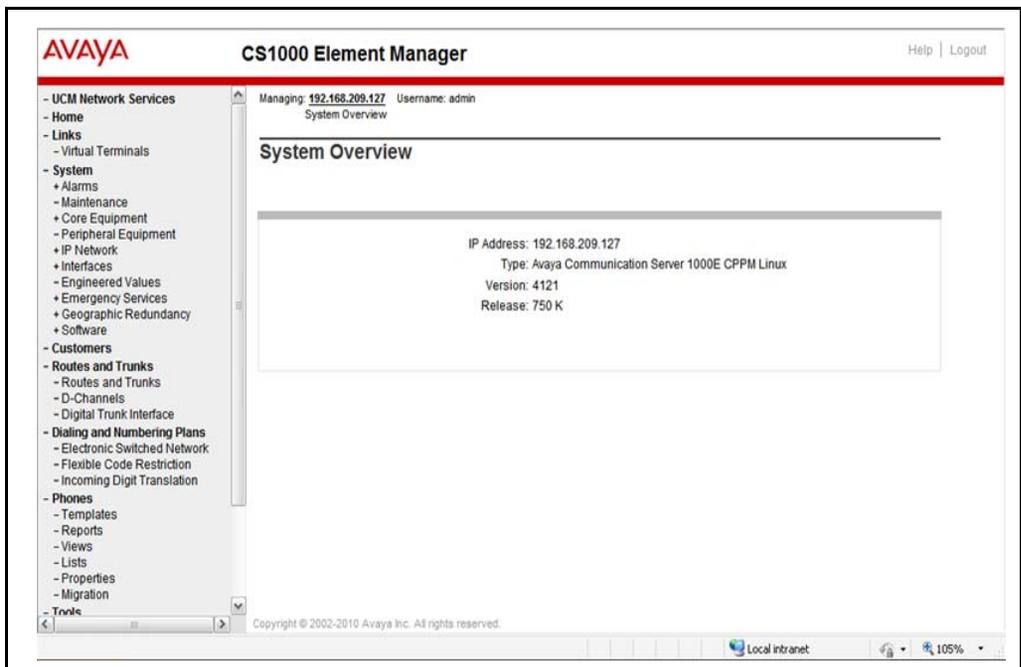
This screen identifies the components of your CS 1000 system.

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

The Signaling Server component expands to display the properties of the Signaling Server (see Figure 48 on).

Figure 48
Signaling Server properties
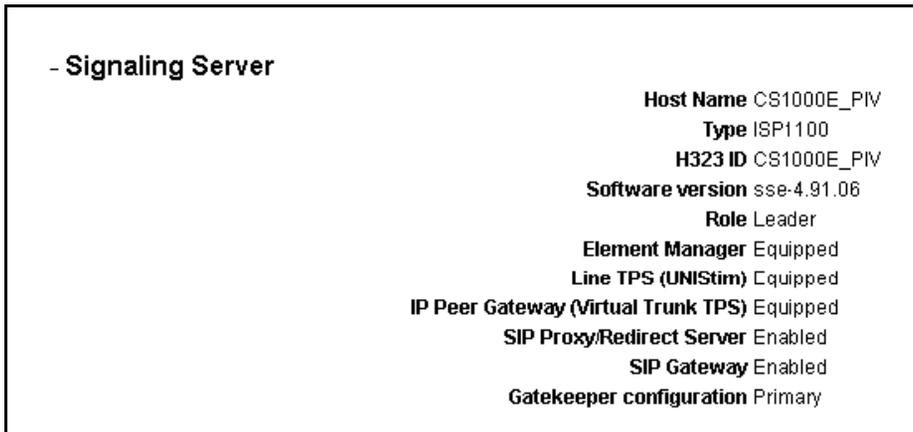
5 View the contents of the "Gatekeeper configuration" property.

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

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

Before you begin

Before upgrading the software, you must do the following:

- Connect the Signaling Server. For details, see "Connections" on page 151 or refer to *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

- Take a precautionary backup of the IP Phones application database.

- Take a precautionary backup of the NRS database.

- Obtain the CS 1000 Release 7.5 version of the Signaling Server Software Install media. For details, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

- Ensure that there is 2 GB of RAM and at least 40 GB of hard drive capacity on your CP PM or COTS Signaling Server.

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) might require a BIOS upgrade to support Linux.

The Communication Server 1000 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 42 to upgrade the CP PM BIOS to version 18.

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

Procedure 42
Upgrading the CP PM BIOS with the CS 1000 Linux Base installer

1   Connect to serial port 1 on the CP PM.

2   Insert the CS 1000 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 49 appears. Press the **F** key to boot from the CS 1000 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 49
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     : 03F8 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 50 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 50
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 51 appears. Select **Reset CMOS to factory defaults** from the menu.

Figure 51
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
```
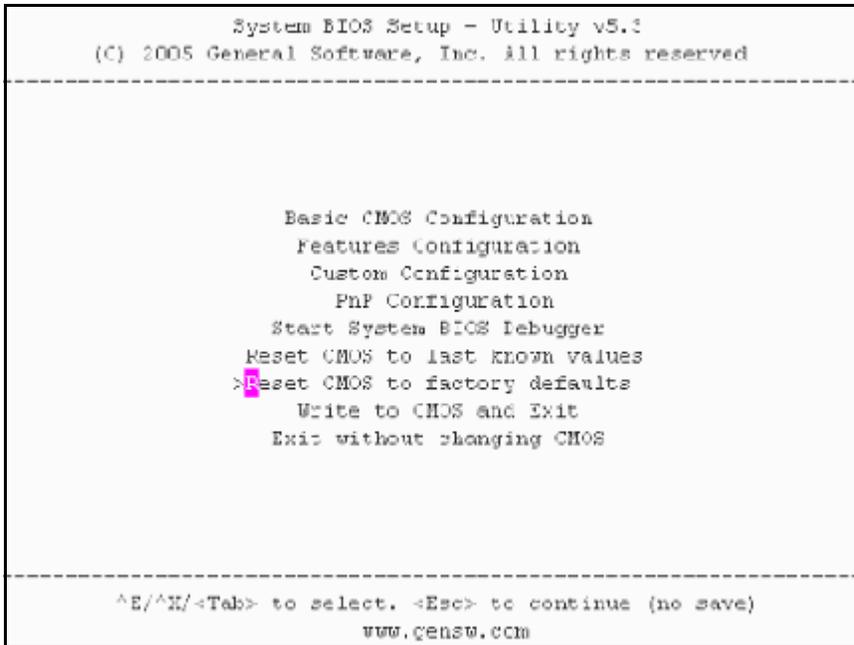
10   Figure 52 appears. Press **y** to reset CMOS to factory defaults.

Figure 52
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 the initial boot, Figure 49 appears and the new BIOS version displays. Verify the 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 CS 1000 Linux Base

You must install CS 1000 Linux Base if your Signaling Server is not running the latest CS 1000 Linux Base software release. The CP PM Linux upgrade kit contains a hard drive with CS 1000 Linux Base preloaded. You can install CS 1000 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 CS 1000 Linux Base installation.

For information about installing or upgrading CS 1000 Linux Base, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Installing Linux applications

Avaya CS 1000 Release 7.5 Signaling Server and SIP line software are Linux applications. Linux applications install on CS 1000 Linux Base and interact with the CS 1000 Linux Base application framework. You can deploy and install Linux applications with the CS 1000 Linux Base Centralized Deployment Manager. You can configure and deploy SIP Line with Element Manager (EM).

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

For information about Element Manager, see *Avaya Element Manager: System Administration* (NN43001-632).

Joining the UCM security domain

The UCM Primary Security Server acts as the RADIUS server that CS 1000 devices use to obtain authentication and access control parameters for CLI access. The UCM Primary Security Server sends RADIUS related parameters to CS 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 CS 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 *Avaya 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

Avaya 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 documents 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	10	0
2	1	1	2	9	2	9	TOP	J15	11	1
2	1	0	3	8	2	9	BOTTOM	J20	9	
3	0	0	3	8	2	9	BOTTOM	J4	12	
3	0	1	2	9	2	9	TOP	J9	14	0
3	1	1	2	9	2	9	TOP	J14	15	1
3	1	0	3	8	2	9	BOTTOM	J19	13	
4	0	0	3	8	2	9	BOTTOM	J5	16	
4	0	1	2	9	2	9	TOP	J10	18	0
4	1	1	2	9	2	9	TOP	J14	19	1
4	1	0	3	8	2	9	BOTTOM	J18	17	

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	P S	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 off on on on	off on on off off on on on
4	1	9	144-159	4 1	off on on off on on off	off on on off off on on off
5	0	1 0	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

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