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Maintenance

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Overview

This book, *LINCS Server Maintenance*, 585-313-126, contains information for component replacement procedures, base system software installation procedures, and installing optional feature software associated with the LINCS server and its hardware. Appendices contain a system configuration description, a list of component ordering numbers, a checklist for building a system, and checklists for disaster recovery.

Intended Audiences

This book is intended primarily for the:

- On-site service technicians
- System administrators.

A secondary audience includes field support personnel.

We assume that the primary users of this book have completed the LINCS server hardware installation and maintenance training course, see [Training \(page xxxviii\)](#).

How This Book is Organized

This book contains the following sections:

- [Chapter 1, Getting Inside the LINCS Server](#) — Provides the correct procedures for accessing the internal components of the server.
- [Chapter 2, Installing or Replacing Circuit Cards](#) — Provides general steps and procedures necessary to ensure that circuit cards are installed correctly and their resource options are set correctly.
- [Chapter 3, Replacing the Hard Disk Drive Assembly](#) — Provides information to identify a failed hard disk drive and to ensure that hard disk drives are installed in the proper manner.

- [Chapter 4, Replacing Other Components](#) — Provides information to ensure that correct procedures are used to replace internal components of the server.
- [Chapter 5, Installing Base System Software](#) — Provides the information necessary to reload the operating system on a server that has experienced a disk failure.
- [Chapter 6, Installing the LINCS Server Software](#) — Provides details of the installation procedures for the LINCS server software.
- [Chapter 7, Installing the Optional Feature Software](#) — Provides the information necessary to reload the optional feature software on a server which has experienced a disk failure.
- [Chapter 8, Installing ORACLE Packages](#) — Describes the procedures to install each optional ORACLE package.
- [Chapter 9, Installing LSPS II Optional Software Packages](#) — Provides information for installing the LSPS II optional software packages after the LSPS II circuit card is installed.
- [Appendix A, Component Ordering Numbers \(page 305\)](#) — Provides ordering numbers for replaceable components.
- [Appendix B, How to Build a System \(page 310\)](#) — Starting with a LINCS server shell, which has only the power supply and the backplanes, this appendix provides a checklist for having to build a system from scratch.

- [Appendix C, Disaster Recovery Checklists \(page 315\)](#) — Provides a checklist to follow for disaster recovery in the unlikely event a disaster occurs.
- [Glossary](#) — Defines the terms, abbreviations, and acronyms used in system documentation.
- [Index](#) — Alphabetically lists the principal subjects covered in the book.

Conventions Used in This Book

Note: Any screens shown in this book are examples only. The screens you see on your machine will be similar, but not exactly the same.

Terminology

- The word “type” means to press the key or sequence of keys specified. For example, an instruction to type the letter “y” is shown as
Type **y** to continue.
- The word “type” means to type a value and then press the **ENTER** key on the keyboard. For example, an instruction to type the letter “y” and press **ENTER** is shown as
Type **y** to continue.

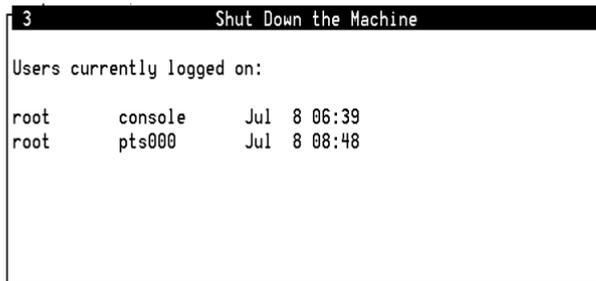
- The word “select” means to move the cursor to the desired menu item and then press **ENTER**. For example, an instruction to move the cursor to the start test option on the Network Loop-Around Test screen and then press **ENTER** is shown as

Select **Start Test**.

- The system displays *windows, screens, and menus* ([Figure 1](#) through [Figure 4 on page xxix](#)). Windows and screens both show and request system information. Menus ([Figure 5 on page xxx](#)) present options from which you can choose to view another menu, or a screen or window

Example of a Window Showing Information

Figure 1. Windows Showing Information



```
3 Shut Down the Machine
Users currently logged on:
root      console    Jul  8 06:39
root      pts000     Jul  8 08:48
```

**Example of a
Window Showing
Information****Figure 2. Window Showing Information**

UnixWare Installation Primary Hard Disk Partitioning

In order to install LINC S, you should reserve a UNIX system partition (a portion of your hard disk's space) containing 100% of the space on your primary hard disk. After you press 'ENTER' you will be shown a screen that will allow you to create new partitions, delete existing partitions or change the active partition of your primary hard disk (the partition that your computer will boot from).

WARNING: All files in any partition(s) you delete will be destroyed. If you wish to attempt to preserve any files from an existing UNIX system, do not delete its partitions(s).

The UNIX system partition that you intend to use on the primary hard disk must be at least 4200 MBs and labeled "ACTIVE."

Press 'ENTER' to continue

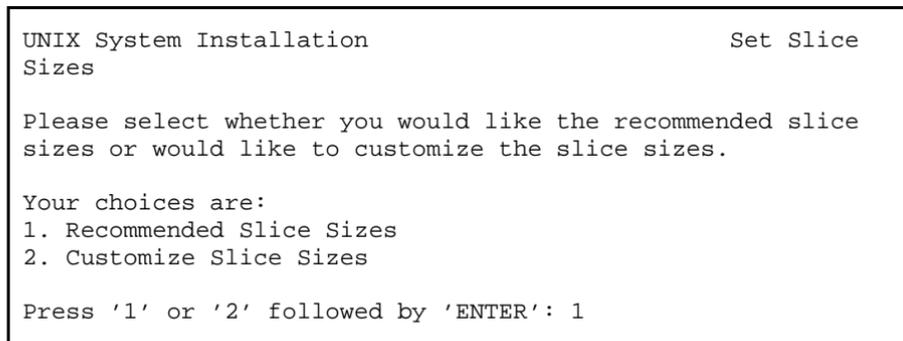
Example of a Window Requesting Information

Figure 3. Window Requesting Information



Example of a Screen Requesting Information

Figure 4. Screen Requesting Information



Example of a Menu Showing Information

Figure 5. Example of a Menu



Example of Terminal Keys

- Keys that you press on your terminal or PC are represented as small, capitalized **BOLD** text. For example, an instruction to press the enter key is shown as

Press **ENTER**.

- Two or three keys that you press at the same time on your terminal or PC (that is, you hold down the first key while pressing the second and/or third key) are represented as a series of small **capitalized** text separated by the + sign. For example, an instruction to press and hold **ALT** while typing the letter "d" is shown as

Press **ALT+ D**.

- Function keys on your terminal, PC, or system screens, also known as soft keys, are represented as small **capitalized** text followed by the function or value of that key enclosed in parentheses. For example, an instruction to press function key 3 is shown as

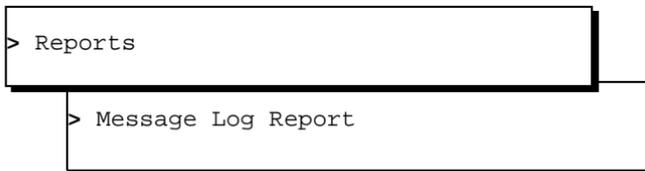
Press **F3** (Choices).

- Keys that you press on your telephone keypad are represented as **bold proportional** text. For example, an instruction to press the first key on your telephone keypad is shown as
Press **1** to record a message.

Screen Displays

- System messages, field names, and prompts that appear on the screen are shown in `type-writer text`, as shown in the following examples:
 - ~ Enter the number of ports to be dedicated to outbound traffic in the `Maximum Simultaneous Ports` field.
 - ~ Enter **y** in the `Message Transfer?` field.
 - ~ The system displays the following message:
`Installation in progress.`
- The sequence of menu options that you must select to display a specific screen or submenu appears in a series of boxes.
- The sequence of menu options that you must select to display a specific screen or submenu is shown as follows:

Start at the Voice System Administration menu and select:



In this example, you would access the Voice System Administration menu and select the Reports menu. From the Reports menu, you would then select the Message Log Report window.

Some Screen Simulations

Text in a simulated screen display appears in type-writer text.

Example:

```
QuickStart - Data Recovery Rescue
Copyright(c) 1997-1999 by Enhanced Software Technologies, Inc.
Serial# 8200-999                               Version: 1.3.13

Backup System  Verify System  Recover System  Duplicate Diskette  Configure QuickStart  Exit and Reboot
```

Items That May or May Not Appear

Grayed-out type represents optional items that may or may not appear in a given display.

Example:

Once the backup is complete, the system displays a message similar to the following:

The Differential UNIX backup is now complete. Please remove the tape and label it as "Differential UNIX Backup, created April 30, 1999."

Cross References and Hypertext

Blue, underlined type indicates a cross reference or hypertext link that will take you to another location in the document when you click on it.

Other Typography

Command Text

- Literal values, commands and text you type in or enter, appear in **bold type**, as in the following examples:

Example 1: Enter **pkgadd -d cdrom1 LINCSet** at the `Enter` command: prompt.

Example 2: Type **high** or **low** in the `Speed:` field.

- Command variables are shown in ***bold proportional italic*** type when they are part of what you must type in, and in italics when they are not part of the command line, for example:

Enter **restore card** *card_number*, where *card_number* is the name of number of the circuit card you want to restore to service.

- Command options are shown inside square brackets, for example:

Enter **connect** *switchname* [-c] [-b | -w]

Safety and Security Alert Labels

This book uses the following symbols to call your attention to potential problems that could cause personal injury, damage to equipment, loss of data, service interruptions, or breaches of toll fraud security:

 **CAUTION:**

Indicates the presence of a hazard that if not avoided *can* or *will* cause minor personal injury or property damage, including loss of data.

 **WARNING:**

Indicates the presence of a hazard that if not avoided *can* cause death or severe personal injury.

 **DANGER:**

Indicates the presence of a hazard that if not avoided *will* cause death or severe personal injury.

 **SECURITY ALERT:**

Indicates the presence of a toll fraud security hazard. Toll fraud is the unauthorized use of a telecommunications system by an unauthorized party.

Related Resources

Documentation

- System Description** A detailed description of all books included in the LINCS server documentation set is available in *LINCS Server System Description*, 585-313-209. Always refer to the appropriate book for specific information on planning, installing, administering, or maintaining a LINCS server.
- Troubleshooting Information** Basic troubleshooting information is available in “Troubleshooting” in *LINCS Server System Reference*, 585-313-210.
- Diagnostic Information** Instructions for conducting diagnostics are available in “Diagnostics” in *LINCS Server System Reference*, 585-313-210.
- Common System Procedures** Instructions for conducting common system procedures are available in “Common System Procedures” in *LINCS Server System Reference*, 585-313-210.
- Alarm and Log Messages** Instructions for interpreting alarm and log messages are available in “Alarms and Log Messages” in *LINCS Server System Reference*, 585-313-210.

Hardware Information

Instructions for replacing or installing hardware components of the LINCS server are available in "Getting Inside the LINCS Server," "Installing or Replacing Circuit Cards," "Replacing the Hard Disk Drive Assembly," and "Replacing Other Components," in *LINCS Server Maintenance*, 585-313-126.

Software Information

Instructions for replacing or installing software components of the LINCS server are available in "Installing Base System Software," "Installing the LINCS Server Software," and "Installing the Optional Feature Software" in *LINCS Server Maintenance*, 585-313-126.

Required for the System Maintenance

To repair or alter the configuration of your system, you must have a copy of:

- *LINCS Server Maintenance*, 585-313-126.
- *LINCS Server Administration*, 585-313-507.
- *LINCS Server System Reference*, 585-313-210.

Additional Suggested Documentation

It is suggested that you also obtain and use the following:

- *LINCS Server New System Installation*, 585-313-127.

Additional Reference Documentation

The following documentation will be useful when working with applications:

- *LINCS Server Communication Development*, 585-313-213.
- *LINCS Server Speech Development, Processing, and Recognition*, 585-313-212.
- *LINCS Server Application Development with Advanced Methods*, 585-313-214.

Training

For information on LINCS training, check the Lucent Message Institute website at: <http://www.octel.com/octelu/index.html>

Using the CD-ROM Documentation

Lucent Technologies ships the documentation in electronic form. Using the Adobe® Acrobat® Reader application, you can read these documents on a Windows PC, on a Sun Solaris workstation, or on an HP-UX workstation. Acrobat Reader displays high-quality, print-like graphics on both UNIX and Windows platforms. It provides scrolling, zoom, and extensive search capabilities, along with online help. A copy of Acrobat Reader is included with the documents.

Note: If viewing documents online, it is recommended that you use a separate platform and not the LINCS server.

Setting the Default Magnification

You can set your default magnification by selecting **File | Preferences | General**. We recommend the **Fit Page** option.

Adjusting the Window Size

On HP and Sun workstations, you can control the size of the reader window by using the **-geometry** argument. For example, the command string **acroread -geometry 900x900 mainmenu.pdf** opens the main menu with a window size of 900 pixels square.

Hiding and Displaying Bookmarks

By default, the document appears with bookmarks displayed on the left side of the screen. The bookmarks serve as a hypertext table of contents for the chapter you are viewing. You can control the appearance of bookmarks by selecting **View | Page Only** or **View | Bookmarks and Page**.

Using the Button Bar

The button bar can take you to the book's Index, table of contents, main menu, and glossary. It also lets you update your documents. Click the corresponding button to jump to the section you want to read.

Using Hypertext Links

Hypertext-linked text appears in blue, italics, and underlined. These links are shortcuts to other sections or books.

Navigating with Double Arrow Keys

The double right and double left arrows ( and ) at the top of the Acrobat Reader window are the go-back and go-forward functions. The go-back button takes you to the last page you visited prior to the current page. Typically, you use  to jump back to the main text from a cross reference or illustration.

Searching for Topics

Acrobat has a sophisticated search capability. From the main menu, select **Tools | Search**. Then choose the **Master Index**.

Displaying Figures

If lines in figures appear broken or absent, increase the magnification. You might also want to print a paper copy of the figure for better resolution.

Printing the Documentation

If you would like to read the documentation in paper form rather than on a computer monitor, you can print all or portions of the online screens.

You can also order the printed documents by calling 1-888-582-3688 or visiting the Customer Information Center (CIC) website at:

http://www.lucentdocs.com/cgi-bin/CIC_store.cgi

Printing an Entire Document

To print an entire document, do the following:

- 1 From the documentation main menu screen, select one of the print-optimized documents. Print-optimized documents print two-screens to a side, both sides of the sheet on 8.5x11-in or A4 paper.
- 2 Select **File | Print**.
- 3 Enter the page range you want to print, or select **All**. Note that the print page range is different from the page numbers on the documents (they print two to a page).

- 4 The document prints.
- 5 Close the file. Do not leave this file open while viewing the electronic documents.

Printing Part of a Document

To print a single page or a short section, you can print directly from the online version of the document.

- 1 Select **File | Print**.
- 2 Enter the page range you want to print, or select **Current**.

The document prints, one screen per side, two sides per sheet.

How to Comment on This Book

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Denver, Colorado 80234

You may also fax your comments to the attention of the Lucent Technologies LINC'S writing team at (303) 538-1741.

Please mention the name and order number of this book, *LINC'S Server Maintenance*, 585-313-126.

1 Getting Inside the LINCS Server

Overview

The purpose of this chapter is to provide the correct procedures for accessing the internal components of the LINCS server. This chapter describes:

- Proper electrostatic discharge protection procedures
- Power removal and restoration procedures
- Computer chassis access procedures

Protecting Against Damage from Electrostatic Discharge

CAUTION:

Read this section before unpacking the LINCS server. You *must* observe proper grounding techniques to prevent the discharge of static electricity from your body into ESD-sensitive components.

Circuit cards and packaging materials that contain ESD-sensitive components are usually marked with a yellow-and-black warning symbol, [Figure 6](#).

Note: Procedures in this book should be performed by personnel identified in [Intended Audiences \(page xxiv\)](#) in [About This Book](#).

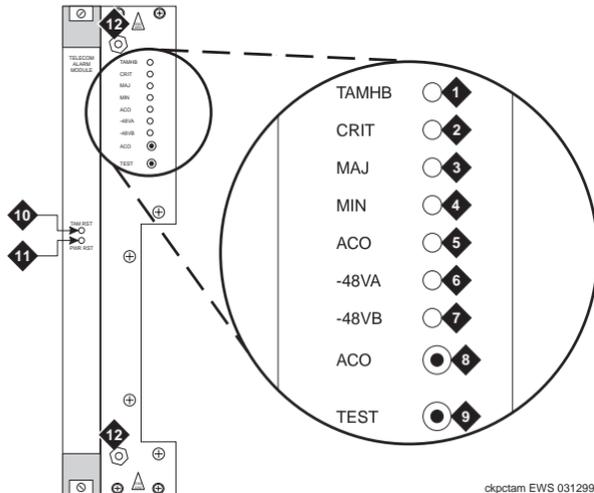
Figure 6. ESD Warning Symbol



To avoid damaging ESD-sensitive components, follow these rules:

- Handle ESD-sensitive circuit cards only after attaching a wrist strap to the bare wrist. Attach the other end of the wrist strap to a ground that terminates at the system ground, such as the ESD jacks on the front, [Figure 7](#), or rear of the Telecom Alarm Module (TAM) alarm panel.

Figure 7. TAM and Alarm Panel



1. TAMHMB indicator LED. On for normal operation.
2. Critical alarm indicator. Lights when active.
3. Major alarm indicator. Lights when active.
4. Minor alarm indicator. Lights when active.
5. Alarm cutoff indicator. Lights when an alarm is active.
6. -48VA failure indicator. Lights when a failure occurs.
7. -48VB failure indicator. Lights when a failure occurs.
8. Alarm cutoff button. Silences only the audible portion of an active alarm.
9. Test button for future use.
10. TAM reset button to reset only the TAM circuit card.
11. Power reset button to reset only the power to the TAM circuit card.
12. ESD jacks

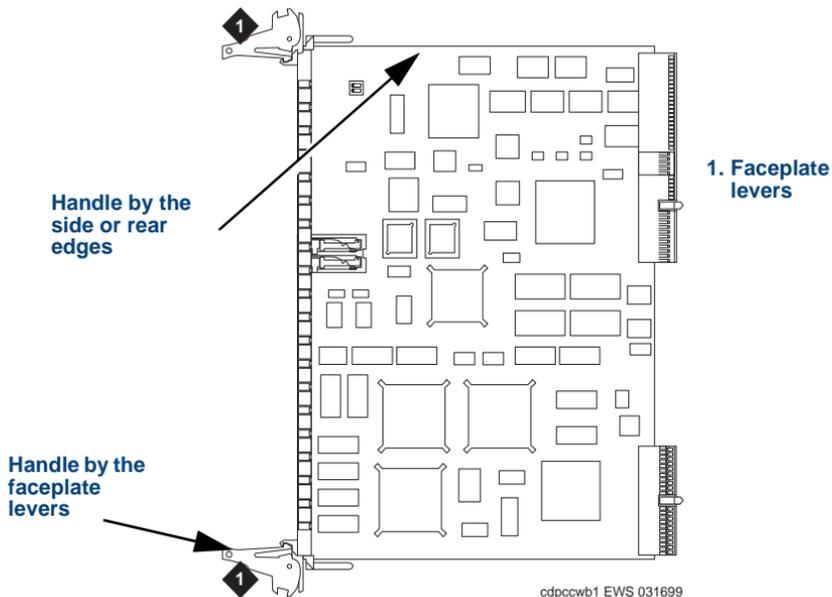
- Handle a circuit card by the faceplate or side edges only, [Figure 8 on page 5](#).
- Keep circuit cards away from plastics and other synthetic materials such as polyester clothing.
- Do not hand circuit cards to another person unless that person is grounded at the same potential level.
- Hold devices such as a hard disk or streaming tape in the same manner as a circuit card.



CAUTION:

Ensure that your palm is not in contact with the non-component side of the board.

Figure 8. How to Hold a Circuit Card

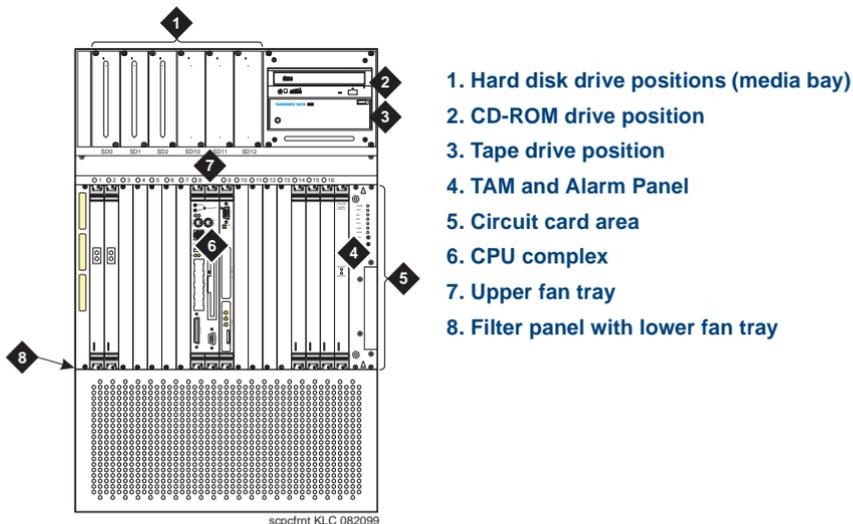


LINCS Server

Description

The LINCS server, [Figure 9](#), is a 16-slot server that accommodates 14 available CompactPCI slots and 2 slots dedicated to the CPU Complex. In addition, there are two positions on the DC-powered server that are dedicated to the TAM and the TAM Alarm Panel.

Figure 9. DC-Powered LINCS Server



1. Hard disk drive positions (media bay)
2. CD-ROM drive position
3. Tape drive position
4. TAM and Alarm Panel
5. Circuit card area
6. CPU complex
7. Upper fan tray
8. Filter panel with lower fan tray

Removing Power From the DC Server

DC Server Warnings

DANGER:

Shock hazard! Do not perform any maintenance on this equipment until you have turned off the power using the specified procedure. Failure to observe proper precautions could cause serious injury or death.

CAUTION:

Do Not Touch the Terminals on DC-powered servers! Before you remove or install the lower rear power panel on a DC-powered server, you must disconnect the incoming power at the source. In many cases, this may be a circuit breaker for a rack-mount arrangement or a switch on an external power supply. Please verify that your system's power source is off before proceeding.

The DC-powered server requires dedicated circuit breakers. Circuit breaker/power switches are located on the rear of the server at the point labeled *DC Input A 40A* and *DC Input B 40A*, [Figure 10 on page 8](#).

Removing DC Power Procedures

To remove power from the DC-powered server, do the following:

- 1 Stop the voice system. See "Administering the Voice System," in "Common System Procedures," in the *LINCS Server System Reference*, 585-313-210, for voice system administration.
- 2 Shut down the system. See "Administering the Operating System," in "Common System Procedures," in the *LINCS Server System Reference*, 585-313-210.
- 3 Place the two circuit breaker/power switches, [Figure 10 on page 8](#), in the off (down) position.

Note: The switches are located on the rear of the server and labeled *DC Input A 40A* and *DC Input B 40A*.

- 4 Remove power coming from the DC source.



CAUTION:

When working in the lower rear power panel area, the DC power must be removed at the source.

Restoring Power to the DC Server

Restoring DC Power Procedures

To restore power to the DC-powered server, do the following:

- 1 Restore power from the DC power source.
- 2 Place the two power switches, [Figure 10 on page 8](#), in the on (up) position.

Note: The switches are located on the rear of the server and labeled *DC Input A 40A* and *DC Input B 40A*.

The system automatically reboots. When completed, the system then displays `Console login:`

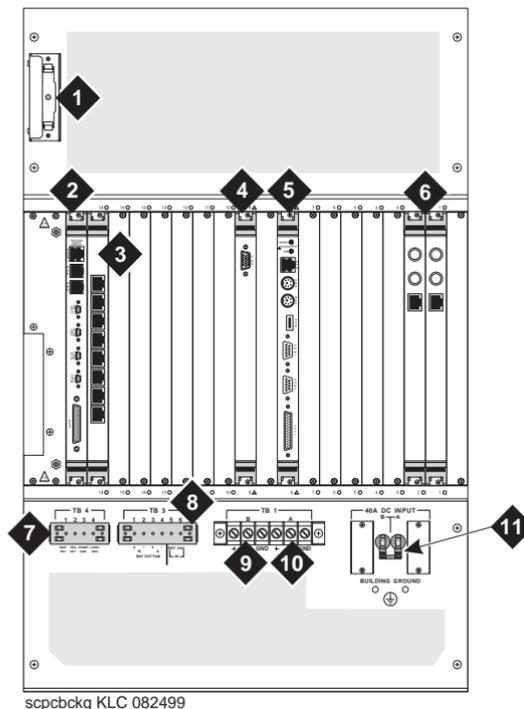
Removing the Upper Rear Exhaust Panel

Upper Rear Exhaust Panel Description

For DC-powered servers, removing the upper rear exhaust panel, [Figure 11 on page 11](#), provides access to items such as:

- the SCA backplane
- the SCSI cabling for the CD-ROM and cartridge tape drives
- power cabling for the CD-ROM and cartridge tape drives

Figure 11. DC-Powered Server Rear View



1. External SCSI terminator
2. TAM rear I/O transition card
3. 8-port asynchronous rear I/O transition card
4. IOB companion rear I/O transition card
5. SBC rear I/O transition card
6. CYD2 rear I/O transition card
7. Four-position terminal strip (Do not connect)
8. Six-position terminal strip
9. Incoming DC power source B connection
10. Incoming DC power source A connection
11. DC input A and B power switches

Removing Rear Upper Panel Procedures

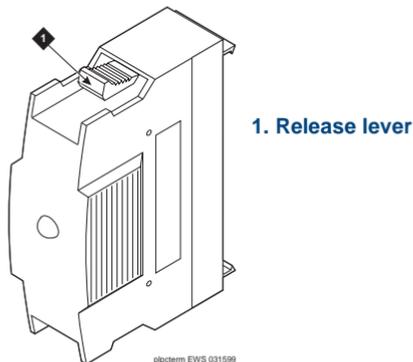
To access items from the rear exhaust panel, do the following:

- 1 Remove the power. See [Removing Power From the DC Server \(page 7\)](#) for DC-powered servers above for this procedure.
- 2 Remove the external SCSI terminator, [Figure 12 on page 13](#), by performing [step a](#) through [step c](#).

Note: If the terminator guard interferes it can be removed by removing the two (2) screws that secure it to the panel.

- a Squeeze the release levers at the top and bottom of the terminator
 - b Pull the SCSI terminator from the rear panel
 - c Once free, allow the terminator to drop into your hand
- 3 Remove the screws from each of the four corners of the panel.
 - 4 Pull the panel out and away from the LINCS server.

Figure 12. SCSI Terminator



Installing the Upper Rear Exhaust Panel

Installing Rear Upper Panel Procedures

To install the upper rear exhaust panel, do the following:

- 1 Push the upper part of the panel in place on the rear of the server.
- 2 Install the four (4) screws onto each corner of the upper rear panel.
- 3 Reattach the external SCSI terminator.

Note: Reattach the terminator guard if it was removed.

- 4 Restore power. See [Restoring Power to the DC Server \(page 10\)](#) for DC-powered servers above for this procedure.

Removing the Lower Rear Power Panel

CAUTION:

Do Not Touch the Terminals on DC-powered servers! Before you remove or install the lower rear power panel on a DC-powered server, you must disconnect the incoming power at the source. In many cases, this may be a circuit breaker for a rack-mount arrangement or a switch on an external power supply. Please verify that your system's power source is off before proceeding.

DANGER:

Shock hazard! Do not perform any maintenance on this equipment until you have turned off the power using the specified procedure. Failure to observe proper precautions could cause serious injury or death.

For DC-powered servers, [Figure 10 on page 8](#), removing the lower rear power panel provides access to items such as the cPCI backplane power cable assemblies (J3 to J2 and J4 to J3).

Items that are part of the lower rear power panel assembly are:

- Terminal blocks
- Power switches

Removing Lower Rear Panel Procedures

To access the lower rear power panel area, do the following:

- 1 Remove the power. See [Removing Power From the DC Server \(page 7\)](#) for DC-powered servers this procedure.
- 2 Verify the incoming DC power is turned off at the source.
- 3 Remove the terminal guard from the 6-position terminal strip by squeezing the snap tabs at each end and pulling.
- 4 Remove the TAM power connectors. Loosen the screws from terminals 1, 2, 3, and 4 and remove the connector wires.

Note: These terminals are labeled Bat Out Tam
+B, -B, +A, -A.

- 5 Remove the four (4) screws from each corner of the lower rear panel.
- 6 Rotate the top of the panel away from the server.
- 7 Pull the bottom of the panel up and away from the server.
- 8 Disconnect the P2 power connector from the power backplane. Grasp the connector, push up on the tab on the bottom of the connector, and pull out.

- 9 Disconnect the P1 power connector from the power backplane. Grasp the connector, push up on the tab on the bottom of the connector, and pull out.
- Note:** Removing the rear I/O circuit cards or cover panels at slots 15, 16, and 17 will make access easier to the P3 power connector, located below slot 17.
- 10 Disconnect the P3 connector from the cPCI backplane. Grasp the connector, push up on the tab on the bottom of the connector, and pull out.
- 11 Disconnect the green ground wire from the lower left side of the server.
- 12 Pull the panel out and away from the server.

Installing the Lower Rear Power Panel

CAUTION:

Before you remove or install the lower rear power panel you must disconnect the incoming power at its source. In many cases for DC-powered servers, this may be a circuit breaker for a rack-mount arrangement or a switch on an external power supply. Please verify that your system's power source is off before proceeding.

Installing Lower Rear Panel Procedures

To install the lower rear power panel, do the following:

- 1 Slip the bottom part of the panel onto the server chassis.
- 2 Connect the green ground wire to the lower left side of the server.
- 3 Insert the P3 connector into the cPCI backplane.
- 4 Insert the P2 connector into the power backplane.
- 5 Insert the P1 connector into the power backplane.
- 6 Push the upper part of the panel in place.
- 7 Install the four (4) screws onto each corner of the lower rear panel.
- 8 Connect the TAM power connector wires to terminals 1, 2, 3, and 4 on the 6-position terminal strip.

Note: These terminals are labeled Bat Out Tam
+B, -B, +A, -A.

- 9 Snap the 6-position terminal guard in place.

Note: Restore the rear I/O circuit cards or cover panels at slots 15, 16, and 17 if needed.

- 10 Restore the DC power from the power source.
- 11 Restore power. See [Restoring Power to the DC Server \(page 10\)](#) for this procedure.

2 Installing or Replacing Circuit Cards

Overview

The purpose of this chapter is to ensure that circuit cards are installed correctly and their resource options are set correctly. This chapter describes:

- General steps for circuit card installation
- Specific procedures for installation of standard and optional LINCS server circuit cards
- Resource options are set correctly

General Procedures for Hot Swap

Note: Procedures in this book should be performed by personnel identified in [Intended Audiences \(page xxiv\)](#) in [About This Book](#).

For any work performed using the procedures in this chapter, observe the following warning:

 **WARNING:**

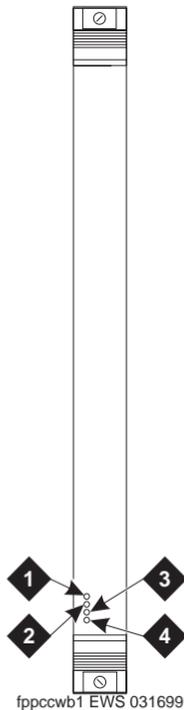
Observe proper electrostatic discharge precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground. See [Protecting Against Damage from Electrostatic Discharge](#), in [Chapter 1, Getting Inside the LINC Server](#) for detailed electrostatic discharge precautions.

Hot Swap Description

The LINC Server supports a manual like-for-like hot replacement (generally called "hot swap") for the E1/T1 (CWB2), SSP (CWB1), LSPS II (6UB5), and the 8-port asynchronous circuit cards. This means that the server remains operational but the particular circuit card being replaced must first be removed and/or detached from service.

[Figure 13 on page 20](#) shows an example of the LED locations on a circuit card faceplate.

Figure 13. Sample of a Circuit Card Faceplate LEDs



1. Red LED lights when broken
2. Yellow LED lights when out of service
3. Green LED lights when active and in service
4. Blue LED lights when it's OK to hot swap

[Table 1](#) contains the maintenance state of a circuit card when an LED is lit.

Table 1. Circuit Card LED Maintenance State

Circuit Card	Red	Yellow	Green	Blue	All LEDs Dark*
SSP (CWB1)	broken	MANOOS, Diagnostics	INSERV	Ready for Hot swap	broken
E1/T1 (CWB2)	broken	FOOS, MANOOS, Diagnostics†	INSERV	Ready for Hot swap	broken
LSPS II (6UB5)	broken	MANOOS, Diagnostics	INSERV	Ready for Hot swap	broken
Equinox (8-port asynchronous)	n/a	n/a	n/a	Ready for Hot swap	broken

* The voice system may also be down causing the LEDs to remain dark.

† NETOOS, when combined with Green.

Removing a Circuit Card

Removing Circuit Card Procedures

To remove a SSP, E1/T1, LSPS II, 8-port asynchronous circuit card, or the respective I/O rear transition card, do the following:

- 1 Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.

Note: If the circuit card being replaced is defective, note all symptoms of failure and include this information with the circuit card when it is returned.

Note: For complete information about the **remove**, **detach**, **eqn_detach**, and **eqn_attach** commands, see Appendix A, "Summary of Commands" in the *LINCS Server Administration*, 585-313-507.

- 2 Enter **remove card x**

Where *x* is the SSP, E1/T1, or LSPS II circuit card to be placed in MANOOS. This command is not required for the 8-port asynchronous circuit card.

3 Enter **detach card x**

Where *x* is the SSP, E1/T1, or LSPS II circuit card to be placed into the nonexistent (NONEX) state.

Enter **eqn_detach** for the 8-port asynchronous circuit card.

Note: When the blue LED lights on the faceplate, the circuit card is ready for hot swap and be removed from the server.

- 4 Locate the card to be replaced in the server. See [Figure 14 on page 24](#) for front panel circuit card locations or [Figure 15 on page 25](#) for rear I/O transition card locations.
- 5 Disconnect any attached cables, such as those that may be attached to the faceplate. Note the connectivity of each cable.
- 6 Loosen the screws that secure the circuit card to the server. The screws are located at the top and bottom of the faceplate.
- 7 Unlatch the circuit card from the backplane by gently pushing the faceplate levers outward until the circuit card releases.
- 8 Remove the circuit card from the backplane slot by gently pulling at the top and bottom corners of the circuit card.
- 9 Remove the circuit card from the server.

Figure 14. LINC Server Front View

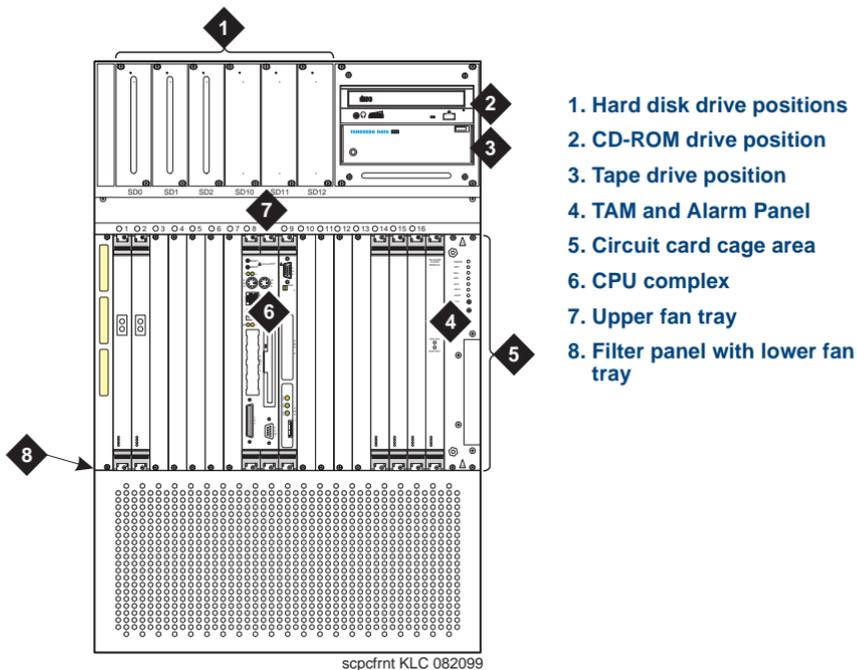
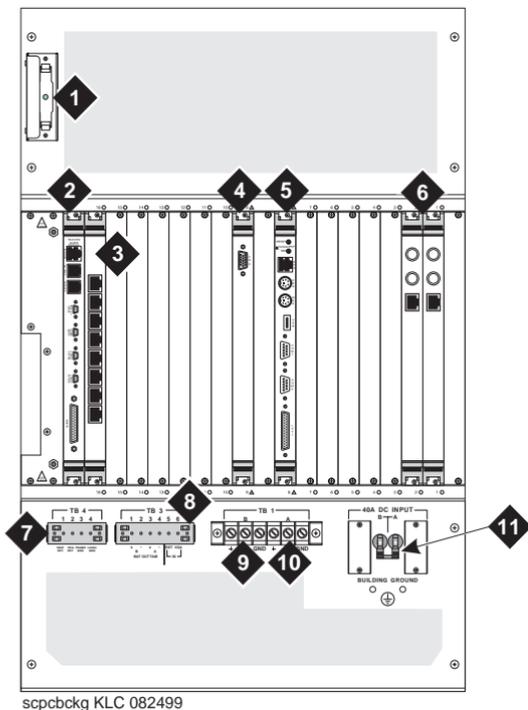


Figure 15. Rear View of the Server



1. External SCSI terminator
2. TAM rear I/O transition card
3. IOB companion rear I/O transition card
4. SBC rear I/O transition card
5. CYD2 rear I/O transition card
6. Four-position terminal strip (Do not connect)
7. Six-position terminal strip
8. Incoming DC power source B connection
9. Incoming DC power source A connection
10. DC input A and B power switches

Installing a Circuit Card

Installing a Rear I/O Transition Card

Misalignment of a rear I/O transition card can cause connector pins to bend. One cause of misalignment is allowing the bottom part of the card lead the top part of the card while inserting. Before installing a rear I/O transition card, observe the following:



CAUTION:

Insert the rear I/O transition card evenly into the slot. Keep the faceplate vertical and help guide the card by applying greater pressure to the top of the faceplate until the card fully engages the backplane connector. For example, a right-handed person would apply pressure to the top of the faceplate with the right hand and guide the bottom of the faceplate with the left hand.

Installing Circuit Card Procedures

To install an SSP, E1/T1, LSPS II, 8-port asynchronous circuit card, or the respective I/O rear transition card, do the following:

Note: The optional E1/T1 and 8-port asynchronous circuit cards require a rear I/O transition card.

- 1 Remove the new circuit card from its ESD protective wrapping.

CAUTION:

Hold the circuit card carefully by the edges and place it on a grounded mat. See [Protecting Against Damage from Electrostatic Discharge \(page 2\)](#) in [Chapter 1, Getting Inside the LINCS Server](#),” for detailed electrostatic discharge precautions.

Note: Keep the package and all ESD protective wrapping. If you must return a card for repair, reusing the replacement unit packaging is necessary to meet the manufacturer’s warranty. Be sure to include a description of the failure.

Verify circuit card switch and jumper settings to ensure they are set correctly. See the specific instructions, listed later in this chapter, for each type of circuit card being installed.

If replacing an existing circuit card the settings should match the old card.

CAUTION:

Do not force a circuit card into a slot. Forcing a circuit card into a slot will cause damage to the circuit card and/or the backplane.

Note: For new circuit card installations, the associated rear I/O transition card must first be installed and cabled.

- 2 Install the rear I/O transition card.

For example, the CYD2 rear I/O transition card that is associated with the E1/T1 (CWB2) circuit card.

- 3 Apply even pressure to the top and bottom of the rear I/O transition card until it engages the backplane.
- 4 Secure the rear I/O transition card to the server by tightening the screws located at the top and bottom of the faceplate.
- 5 Make any applicable cable connections to the rear I/O transition card.

Note: See the [WarningCaution on \(page 41\)](#) if installing a CYD2 rear I/O transition card and an E1/T1 (CWB2) circuit card.

- 6 Verify the front panel slot keying on the server. The front panel circuit card slot number corresponds to the slot number of its associated rear I/O transition card (if applicable).

Ensure the slot being keyed matches the type of circuit card being installed. See the specific instructions, listed later in this chapter, for each type of circuit card being installed then continue with [step 7](#).



WARNING:

Do not remove the front panel keying mechanism or attempt to defeat its purpose. Doing so may damage the equipment and cause injury to service personnel.

- 7 Holding the circuit card by its faceplate and the diagonal corner, slide the card into the backplane connector.
- 8 Apply even pressure to the top and bottom of the circuit card until it engages the backplane.

CAUTION:

If the circuit card does not engage the backplane with gentle pressure, verify that the circuit card and the front panel are properly keyed for the type of circuit card you are installing. See [TNV-1 Keying for the E1/T1 Circuit Card \(page 41\)](#) for the E1/T1 circuit card and [SELV Keying for the 8-Port Asynchronous Circuit Card \(page 52\)](#).

- 9 Secure the circuit card into position by gently pushing the faceplate levers into their locked position and tightening the screws located at the top and bottom of the faceplate.
- 10 Return all cables on the new card. Make sure these cables are attached to their proper terminations.

Note: For complete information about the **attach**, **restore**, and **eqn_attach** commands, see Appendix A, "Summary of Commands" in the *LINCS Server Administration*, 585-313-507.

11 Enter **attach card x**

Where *x* is the SSP, E1/T1, or LSPS II circuit card number just inserted into the server. This command is not required for the 8-port asynchronous circuit card.

Enter **eqn_attach** for the 8-port asynchronous circuit card.

12 Enter **restore card x**

Where *x* is the SSP, E1/T1, or LSPS II circuit card to be placed in service (INSERT).

Note: The green LED lights on the front of the circuit card and the blue LED goes dark.

Applying the CLEI Label

You will need to apply a CLEI label to the server when replacing or installing any of the following components:

- On the front of the server, apply the CLEI labels for:
 - ~ CPU Complex
 - ~ RAID controller PMC
 - ~ LAN PMC
- On the rear of the server, apply CLEI labels for the:
 - ~ CPU rear I/O transition card
 - ~ TAM rear I/O transition card

[Figure 16 on page 32](#) shows the positions of the CLEI labels that are to be applied to the front of the server.

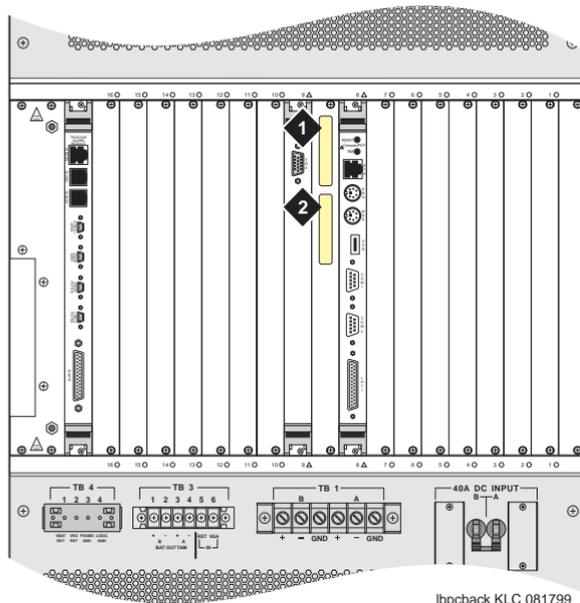
Figure 16. CLEI Labels—Front of Server



1. CLEI label for the CPU
2. CLEI label position for the RAID PMC
3. CLEI label position for the LAN PMC

[Figure 17](#) shows the positions of the CLEI labels that are to be applied to the rear of the server.

Figure 17. CLEI Labels—Rear of Server



1. CPU rear I/O transition card CLEI label
2. TAM rear I/O transition card CLEI label

Optional Circuit Cards

This section provides information on the optional feature circuit cards that require the following:

- Switch and jumper settings
- Circuit card slot keying on the front panel
- Other installation requirements that are specific to the particular circuit card you are installing

The optional circuit cards are the:

- E1/T1 (CWB2)
- SSP (CWB1)
- LSPS II (6UB5)
- 8-port asynchronous

In general, circuit cards are preset at the factory. However, you should verify the switches and jumpers (resource options) *before* you install the circuit cards. When you set the switches according to the instructions in this book, remember that OFF is equivalent to open and ON is equivalent to closed.

E1/T1 Circuit Card Settings

Description

The E1/T1 (CWB2) circuit card ([Figure 18 on page 36](#)) contains switches, jumpers, and faceplate key positions that you need to verify before you install the circuit card in the server.

If installing a new E1/T1 circuit card, you will need to change the front panel key positions on the server and verify the faceplate key positions on the E1/T1 circuit card before inserting it in the server.

Switch and Jumper Settings

Verifying E1/T1 Switch Settings

Verify that the switches for the new E1/T1 circuit card are set properly for your specific operation. [Figure 18 on page 36](#) displays the correct switch setting for T1 operation. [Figure 19 on page 37](#) displays the correct switch setting for E1 operation.

Figure 18. E1/T1 (CWB2) Circuit Card Set for T1 Operation

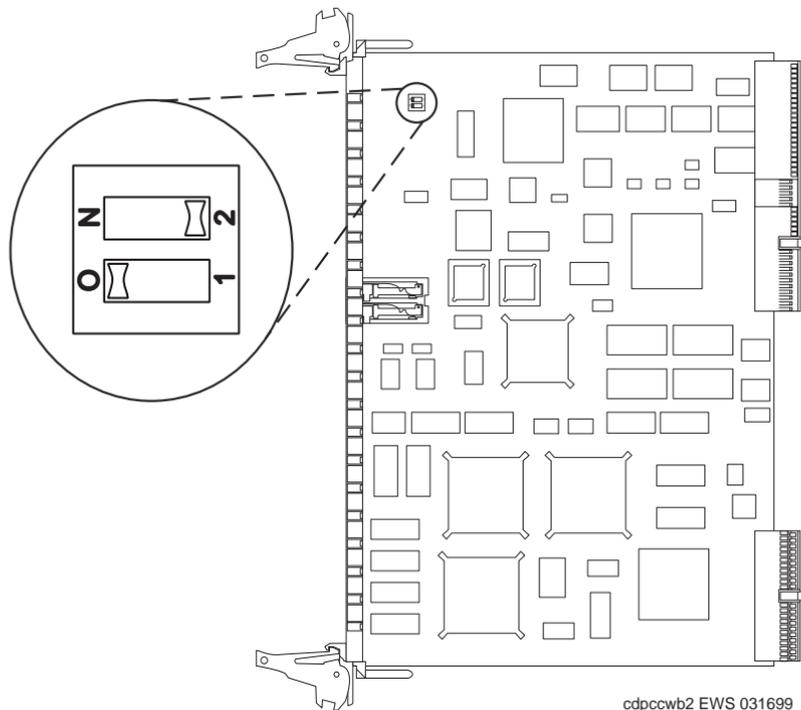
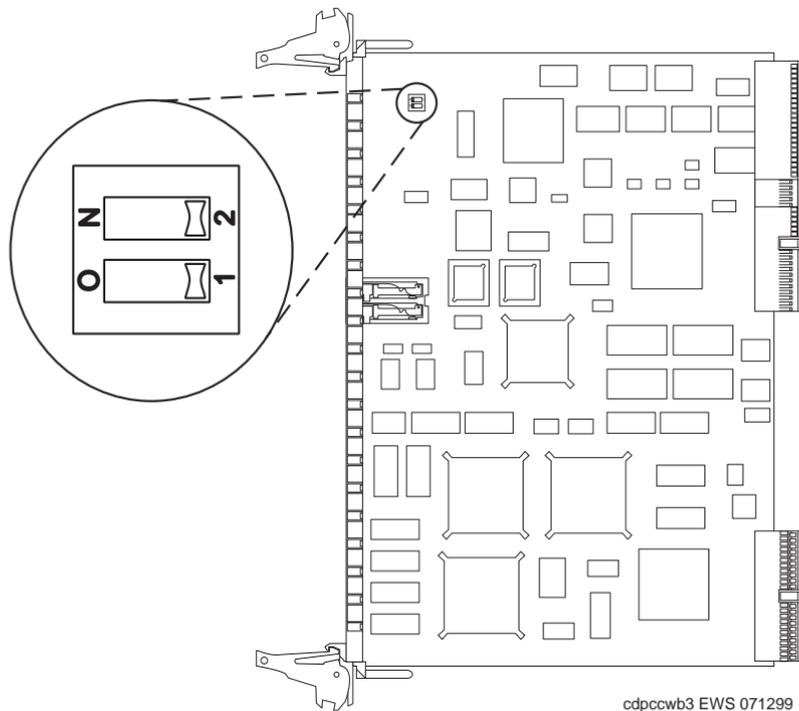
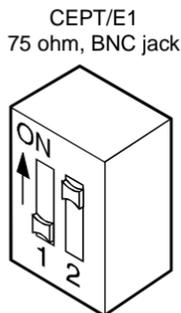


Figure 19. E1/T1 (CWB2) Circuit Card Set for E1 (120ohm) Operation



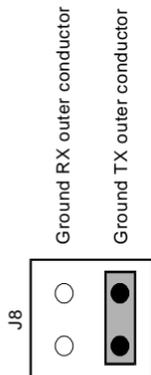
If your system uses 75ohms, the switch settings should be set to those shown in [Figure 20](#).

Figure 20. E1/T1 (CWB2) Circuit Card Set for E1 (75ohm) Operation



[Figure 21 on page 39](#) shows the jumper settings. The jumpers are located on the CYD2, [Figure 22 on page 40](#), rear I/O transition card.

Figure 21. E1 Coax Jumper Settings

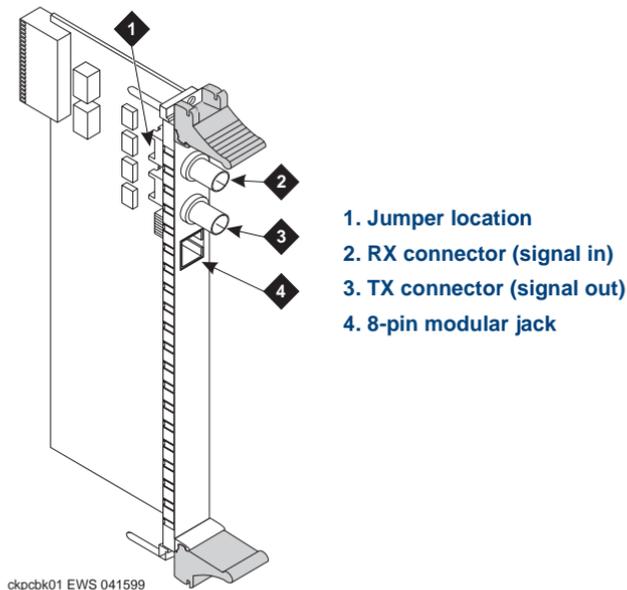


Verifying E1/T1 Jumper Settings

Each E1/T1 circuit card has a corresponding rear I/O transition card (CYD2, [Figure 22 on page 40](#)) that supports rear entry trunk connections. See Appendix C, "Pinouts" in *LINCS Server New System Installation*, 585-313-127 for the 8-pin modular jack pinout information.

For T1 mode, there are no applicable jumpers or switches on the CYD2.

Figure 22. CYD2 - Rear I/O Transition Card for the E1/T1 Circuit Card



TNV-1 Keying for the E1/T1 Circuit Card

CAUTION:

The E1/T1 circuit card is qualified to terminate TNV-1 level voltages only. When installing a new E1/T1 circuit card, do not connect wet (powered) or unprotected (outside premises wiring) T1 or E1 lines to the CYD2 rear I/O transition card. Doing so could damage the circuit card or cause harm to service personnel.

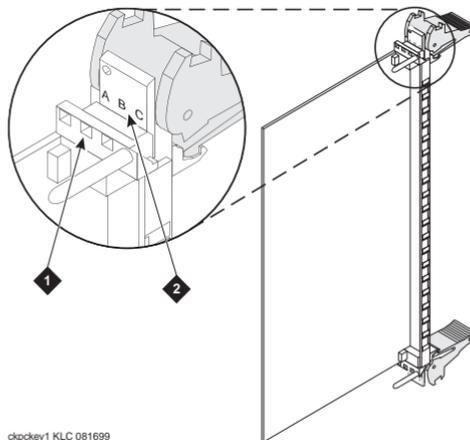
Front Panel Key Positions for E1/T1

The front panel for each circuit card slot on the server is keyed to a default setting at the factory. The factory default setting will not accept an E1/T1 circuit card.

Therefore, before installing a new E1/T1 circuit card, you will need to rekey the front panel key positions on the server and verify the circuit card faceplate key positions.

Note: If you are replacing an E1/T1 circuit card into an existing E1/T1 slot, you will need only to verify the circuit card faceplate key positions. See [Figure 23 on page 42](#) for general faceplate key locations.

Figure 23. Sample of Key Locations for a Circuit Card Faceplate



ckpckey1 KLC 081699

1. Upper faceplate key locations
2. Upper faceplate key lettering

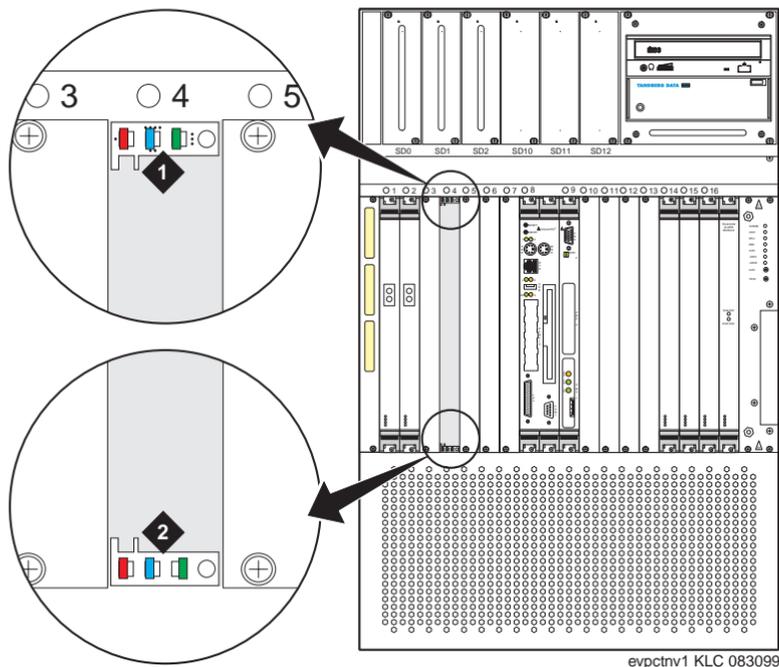
Keys D, E, and F are located behind the lower faceplate lever.

Verifying the Front Panel Key Positions for the E1/T1 Slot

The E1/T1 circuit card slot position in the server must be keyed at the front panel for TNV-1. This means that chambers A through F should look like those in [Figure 24 on page 43](#).

The front panel key chambers are located on the front of the circuit card cage area, at the top and bottom for each circuit card position on the server.

Figure 24. Front Panel TNV-1 Keying on the Server



1. Key positions for chambers A, B, and C.
2. Key positions for chambers D, E, and F.

To rekey or to verify that the front panel on the server is properly keyed for the E1/T1 circuit card, do the following:

- 1 If replacing an existing circuit card, remove the old E1/T1 circuit card from the server if not done so already. See [Removing a Circuit Card \(page 22\)](#).
- 2 View the front panel keys on the server to verify they are as shown in [Figure 24 on page 43](#). Ensure the front panel slot is the one for which an associated CYD2 rear I/O transition card has been installed.



WARNING:

Do not remove the front panel keying mechanism or attempt to defeat its purpose. Doing so may damage the equipment and cause injury to service personnel.

- 3 For a new circuit card installation, use a small needle-nosed pliers to change the default slot key to a TNV-1 slot as shown in [Figure 24 on page 43](#).
- 4 Verify the key positions on the E1/T1 circuit card.

Note: When keyed correctly the circuit card keys, located just behind the faceplate, should complement the front panel key chambers, [Figure 24 on page 43](#). If not, use a small needle-nosed pliers to make the keys on the E1/T1 circuit card faceplate complement what is shown in [Figure 24 on page 43](#).

- 5 Once the front panel keys have been verified for correct keying, the E1/T1 circuit card can be inserted. See [Installing Circuit Card Procedures \(page 26\)](#) and resume at [step 7](#).

Installing the E1/T1 Circuit Card Driver

The E1/T1 circuit card driver is part of the LINCS server base software set. For more information, see [Installing the LINCS Server Software \(page 227\)](#).

SSP Circuit Card Settings

SSP Description

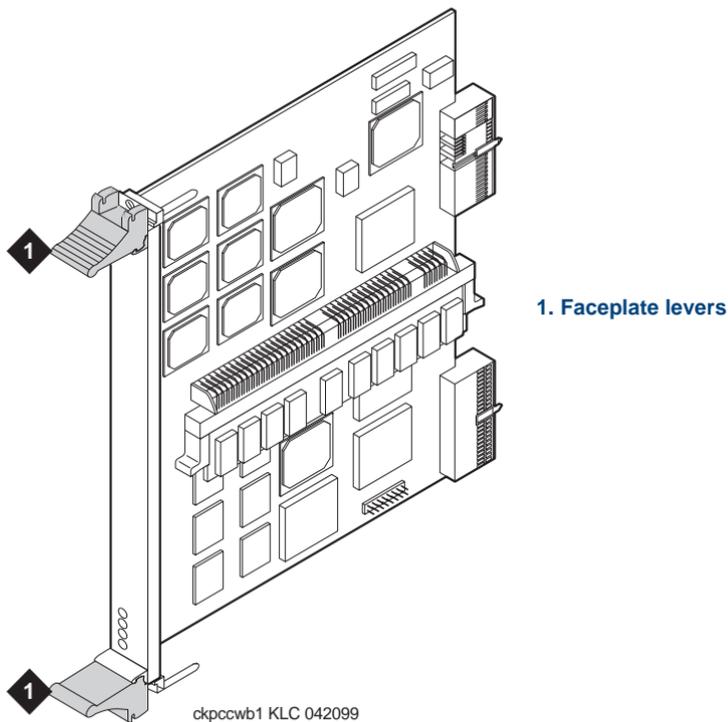
The Speech and Signal Processor (CWB1) circuit card ([Figure 25 on page 46](#)) is equipped with 32 Mbytes of memory and requires no switch or jumper settings.

Front Panel Keying

Since the SSP circuit card does not have external connections on its rear I/O transition card, it requires no specific front panel keys. The SSP circuit card can be plugged into any available front panel slot on the server.

Note: The SSP circuit card can be equipped in the same server with LSPS II (6UB5) circuit cards but can not be assigned to perform the same functions. For example, if text-to-speech is assigned to an SSP circuit card, the LSPS II circuit card can not be assigned the text-to-speech function.

Figure 25. SSP (CWB1) Circuit Card



LSPS II Circuit Card

Description

The LSPS II (Lucent Speech Processing Solutions) circuit card, [Figure 26 on page 48](#), is a high performance speech processing circuit card that can perform the following functions:

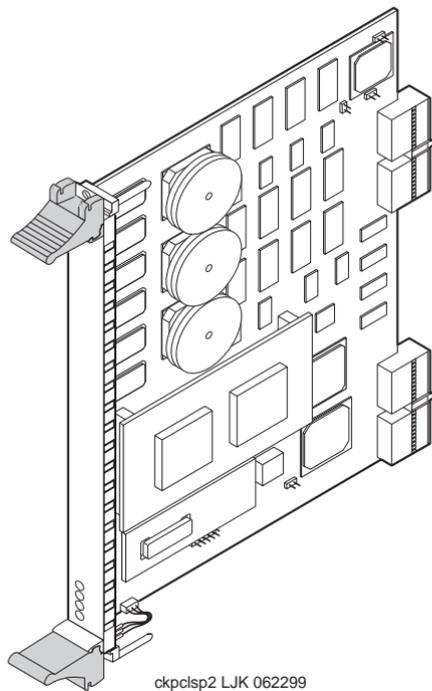
- Text-To-Speech
- WholeWord
- FlexWord
- Play and Code

Front Panel Keying

Since the LSPS II (6UB5) circuit card does not have external connections on its rear I/O transition card, it requires no specific front panel keys. The LSPS II circuit card can be plugged into any available front panel slot on the server.

Note: The LSPS II circuit card can be equipped in the same server with SSP circuit cards but can not be assigned to perform the same functions. For example, if text-to-speech is assigned to an LSPS II circuit card, the SSP (CWB1) circuit card can not be assigned the text-to-speech function.

Figure 26. LSPS II Circuit Card

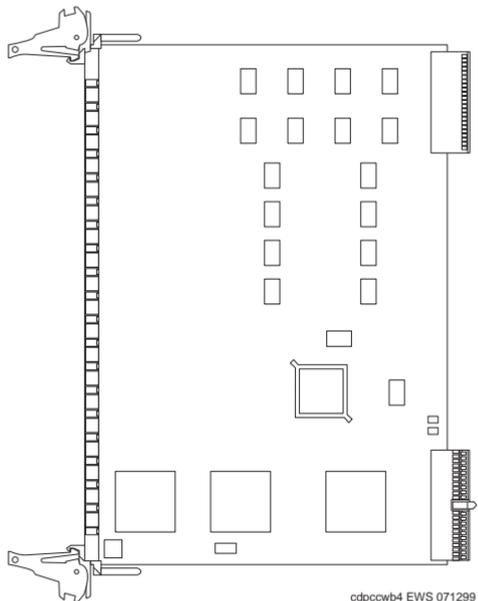


8-Port Asynchronous Circuit Card

Asynchronous Circuit Card Description

The LINC Server uses the Equinox SuperSerial Technology (SST) 8-port circuit card for its multiport asynchronous connections ([Figure 27](#)).

Figure 27. Equinox SST 8-Port Asynchronous Circuit Card



There are two ways to connect the LINC S server to a terminal, modem, or other DTE or DCE devices via an asynchronous link:

- Using COM1, an asynchronous port on the rear of the LINC S server
- Using the additional asynchronous ports on the optional Equinox SST circuit card

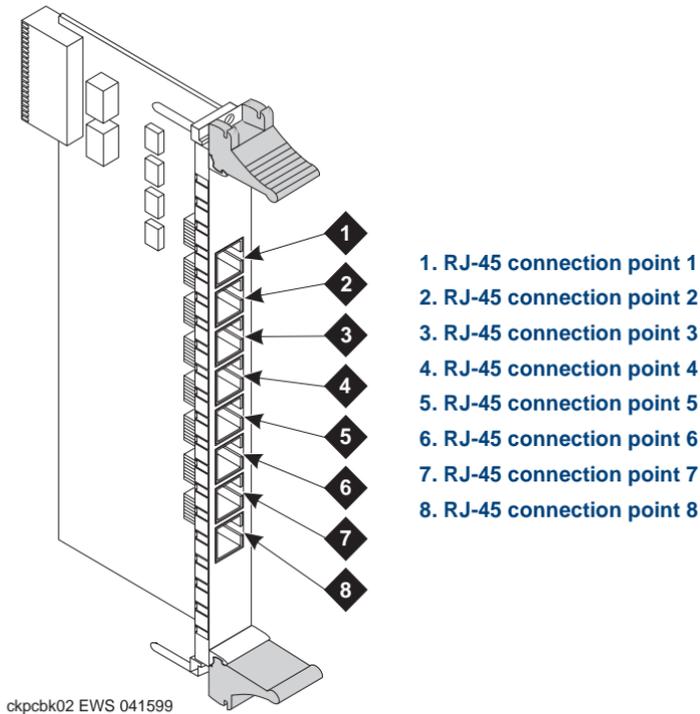
Note: The LINC S server provides two asynchronous ports, COM1 and COM2. However, the TAM is integrated into COM2 for alarm monitoring and reporting.

The optional Equinox SST circuit card provides eight additional asynchronous ports for connecting to modems, terminals, or switch integration devices. Each serial port supports data rates up to 920Kbits/sec.

External connections are made on the rear I/O transition card ([Figure 28 on page 51](#)).

Follow the instructions provided with the device(s) you are installing for connection and setup. See "Appendix D", "Cable Connectivity," in the *LINC S Server New System Installation*, 585-313-127, to determine how to cable these devices between the system and the switches or other peripherals. See "Appendix C", "Pinouts," in the *LINC S Server New System Installation*, 585-313-127, if you need pinout information.

Figure 28. Equinox SST Asynchronous Rear I/O Transition Card



SELV Keying for the 8-Port Asynchronous Circuit Card

CAUTION:

The 8-port asynchronous circuit card is qualified to terminate SELV level voltages only. When installing a new 8-port asynchronous circuit card, do not connect wet (powered) or unprotected (outside premises wiring) to the rear I/O transition card. Doing so could damage the circuit card or cause harm to service personnel.

Front Panel Key Positions for 8-port asynchronous

The front panel for each circuit card slot on the server is keyed to a default setting at the factory. The factory default setting will not accept an 8-port asynchronous circuit card.

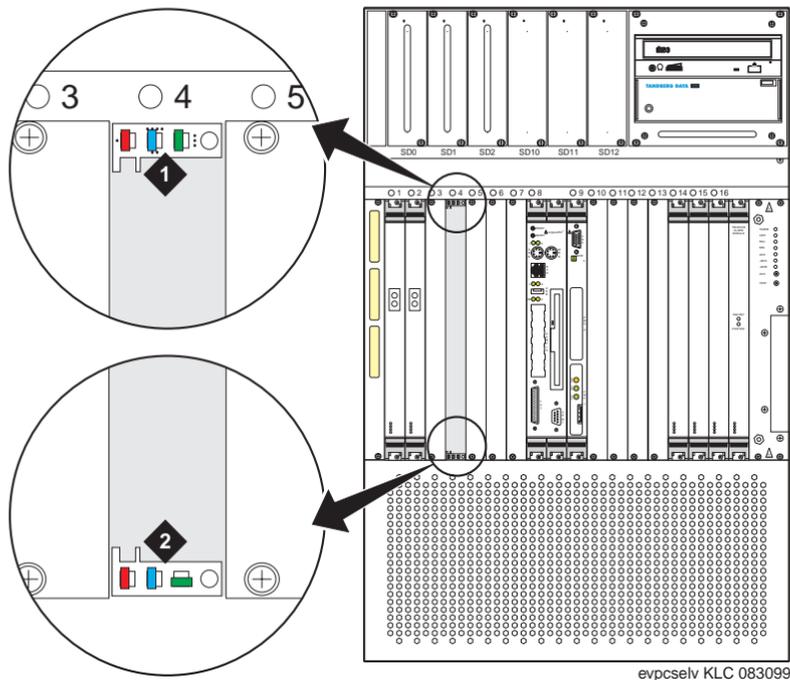
Therefore, before installing a new 8-port asynchronous circuit card, you will need to rekey the front panel key positions on the server and verify the circuit card faceplate key positions.

Note: If you are replacing an 8-port asynchronous circuit card into an existing slot, you will need only to verify the circuit card faceplate key positions. See [Figure 23 on page 42](#) for general faceplate key locations.

Verifying the Front Panel Key Positions for the 8-port asynchronous Slot

The 8-port asynchronous circuit card slot position in the server must be keyed at the front panel for SELV. This means that chambers A through F should look like those in [Figure 29 on page 53](#).

Figure 29. Front Panel SELV Keying on the Server



1. Key positions for chambers A, B, and C.
2. Key positions for chambers D, E, and F.

To rekey or to verify that the front panel on the server is properly keyed for the 8-port asynchronous circuit card, do the following:

- 1 If replacing an existing circuit card, remove the old 8-port asynchronous circuit card from the server if not done so already. See [Removing a Circuit Card \(page 22\)](#).
- 2 View the front panel keys on the server to verify they are as shown in [Figure 29 on page 53](#). Ensure the front panel slot is the one for which an associated rear I/O transition card has been installed.

**WARNING:**

Do not remove the front panel keying mechanism or attempt to defeat its purpose. Doing so may damage the equipment and cause injury to service personnel.

- 3 For a new circuit card installation, use a small needle-nosed pliers to change the default slot key to a SELV slot as shown in [Figure 29 on page 53](#).
- 4 Verify the key positions on the 8-port asynchronous circuit card.

Note: When keyed correctly the circuit card keys, located just behind the faceplate, should complement the front panel key chambers ([Figure 29 on page 53](#)). If not, use a small needle-nosed pliers to make the keys on the 8-port asynchronous circuit card faceplate complement what is shown in [Figure 29 on page 53](#).

- 5 Once the front panel keys have been verified for correct keying, the 8-port asynchronous circuit card can be inserted. See [Installing Circuit Card Procedures \(page 26\)](#) and resume at [step 7](#).

The TAM

Description

The Telecom Alarm Module (TAM), [Figure 30 on page 57](#), is an intelligent alarm module that provides critical, major, and minor alarm indicators.

The TAM is dedicated to slot 17, front and rear. Do not plug any other type of circuit card into this dedicated slot.

The TAM alarm panel has indicators that display visual alarms reported by the TAM and for alarms generated by system software.

The TAM also connects to COM2 by internal wiring.

Cautions

CAUTION:

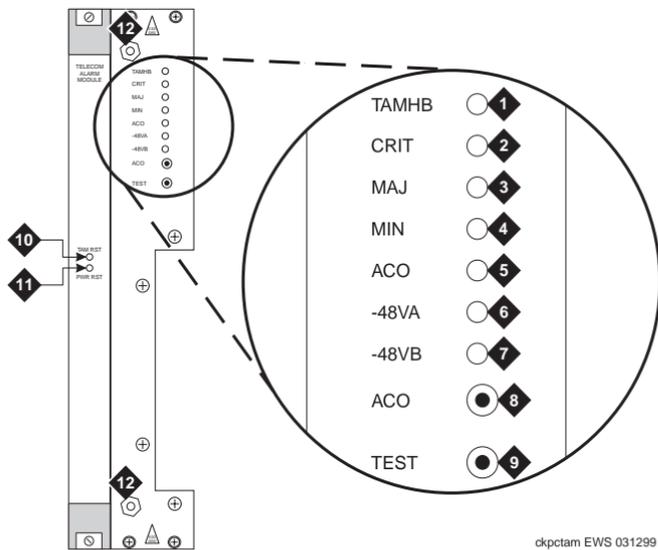
Do Not Connect to COM2. It is dedicated to the TAM and any external connection will interrupt the watchdog timer communication to the CPU and cause a system reboot.

Early versions of the TAM and its associated rear I/O transition card (comcode 408097459 and comcode 408097467, respectively) are considered a matched pair. If either circuit card fails and must be replaced, you must replace *both* circuit cards with either of the following:

- 1 Another early matched pair (comcode 408097459 and comcode 408097467), or
- 2 The front and rear of a later TAM (comcode 408224368 and 408224376).

The later TAMs are not considered a matched pair and thus can be individually replaced.

Figure 30. Telecom Alarm Module



1. TAM status. Green for normal operation; Red for fault.
2. Critical alarm indicator. Lights when alarm active.
3. Major alarm indicator. Lights when active.
4. Minor alarm indicator. Lights when active.
5. Alarm cutoff indicator. Lights when an alarm is active.
6. -48VA failure indicator. Lights when a failure occurs.
7. -48VB failure indicator. Lights when a failure occurs.
8. Alarm cutoff button. Silences only the audible of an active alarm.
9. Test button. Lights all LEDs when pressed.
10. TAM reset button to reset only the TAM circuit card
11. Power restore button.
12. ESD jacks

TAM Initiated Alarms

The TAM monitors the resources listed in [Table 2 on page 58](#). These alarms are then displayed through indicators on the alarm panel, [Figure 30](#).

Table 2. Alarms Initiated by the TAM

Alarm Resource	Alarm Indication	Reason
Temperature	Major	The temperature sensor has exceeded its first high temperature threshold
	Critical	The temperature sensor has exceeded its second high temperature threshold
Voltages	Critical	The low or high of an input or output voltage threshold has been exceeded
Power supplies	Major	A failure in one of the power supplies has occurred
Fan tray status	Major	A failure in the upper or lower fan tray has occurred
Watchdog timer	Critical	The watchdog timer has expired  CAUTION: The TAM will reboot the system

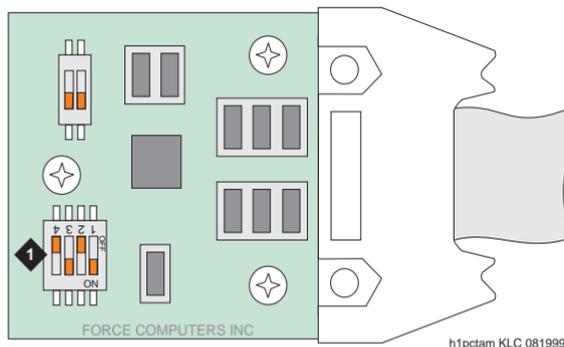
TAM Temperature Sensors

The server is equipped with two temperature sensors.

- Air Inlet sensor – located behind the lower front panel, just under the circuit card area.
- Air Outlet sensor – located at the rear upper exhaust area on the top panel.

[Figure 31](#) shows the Air Inlet temperature sensor.

Figure 31. TAM Temperature Sensor



1. Air inlet S2 switch settings

[Table 3](#) presents the S2 switch settings for the inlet and outlet air sensor. When replacing a sensor, verify the S2 switches on the new sensor are properly set. See [Replacing the Temperature Sensors](#) in [Chapter 4](#), [Replacing Other Components](#) for replacement procedures.

Table 3. Temperature Sensor S2 Switch Settings

Sensor	S2-4	S2-1	S2-2	S3-1
Air Outlet	Don't care	On	Off	Off
Air Inlet	Don't care	On	Off	On

CPU Complex

Description

The LINCS server uses a single board computer (SBC) circuit card and an I/O companion circuit card (IOB). These two circuit cards combine to form the CPU complex ([Figure 32 on page 62](#)). There is one CPU complex installed in the LINCS server at slot locations 8 and 9 ([Figure 14 on page 24](#)).

If there is an indication of a problem with either the single board computer (SBC) circuit card or the I/O companion circuit card (IOB), replace the CPU complex. Do not attempt to repair or replace a component on either the SBC or the IOB.

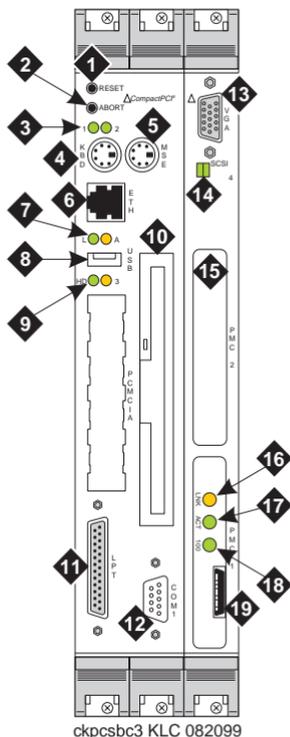


CAUTION:

Danger of explosion if battery is incorrectly replaced. This battery is not a field replaceable item. If battery fails, then replace the entire CPU complex and return the old CPU complex to Lucent for repair.

ATTENTION: Danger d'explosion si la batterie est mal insérée. Cette batterie ne doit pas être remplacée sur site. Si la batterie tombe en panne, alors, il faut remplacer l'unité centrale complète et retourner l'unité centrale défectueuse à Lucent pour réparation.

Figure 32. CPU Complex Front View



1. Reset button
2. Abort button
3. BIOS-specific LEDs
4. Keyboard connection
5. Mouse connection
6. Ethernet connection
(not used - rear I/O only)
7. Network connection and activity
indicator LEDs
8. USB connection
9. Hard disk drive access indicator LED
10. Floppy disk drive
11. LPT connection
12. COM1 connection
13. VGA monitor connection
14. SCSI access indicator LEDs
15. RAID PMC module
16. Network connection LED
17. Network connection activity LED
18. LAN PMC connector

SBC Connections The SBC consists of a 233 MHz CPU and is located in slot 8. The following connections are available on the SBC at both the front and rear unless otherwise indicated:

- Keyboard
- Mouse
- Integrated ethernet (rear only)
- Diskette drive (front only)
- COM1
- Line Parallel Port (LPT)
- COM2

 **CAUTION:**

Do Not Connect to COM2. It is dedicated to the TAM and any external connection will interrupt the watchdog timer communication to the CPU and cause a system reboot.

IOB Connections The IOB companion is located in slot 9. The following are available on the IOB:

- VGA monitor
- PMC modules (LAN, RAID)

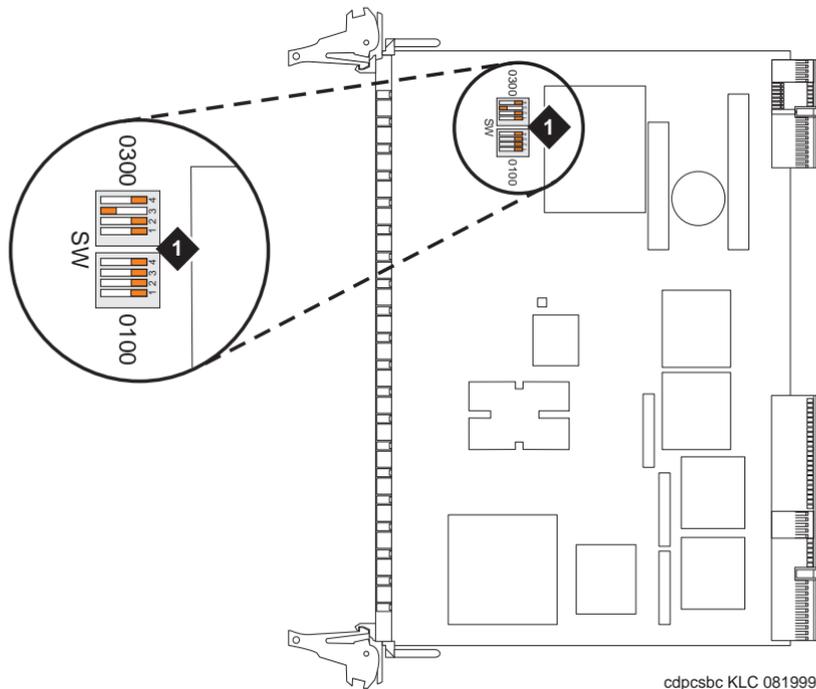
Setting the Resource Options

The resource options for the CPU complex are set by switches. The SBC has two 4-position switches and the IOB has one 4-position switch. The SW0100 and SW0300 switches are located on the inside surface of the SBC printed circuit board, [Figure 33 on page 65](#). [Figure 34 on page 66](#) shows the SW0100 switch settings and [Figure 35 on page 66](#) show the settings for the SW0300 switch.

The SW0900 switch is located on the outside surface of the IOB printed circuit board, [Figure 36 on page 67](#). [Figure 37 on page 68](#) shows the settings for the SW0900 switch.

These switches should be verified before you install a new complex.

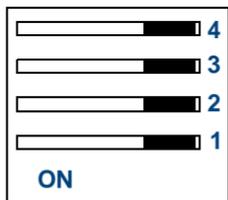
Figure 33. SW0100 and SW0300 Switch Locations on the SBC



cdpcsbk KLC 081999

1. SW0100 and SW0300 location

Figure 34. SW0100 Switch Setting for the SBC



OFF

1. The user flash is master of the primary IDE device.
2. Keyboard enabled
3. Reset key enabled
4. Abort key enabled

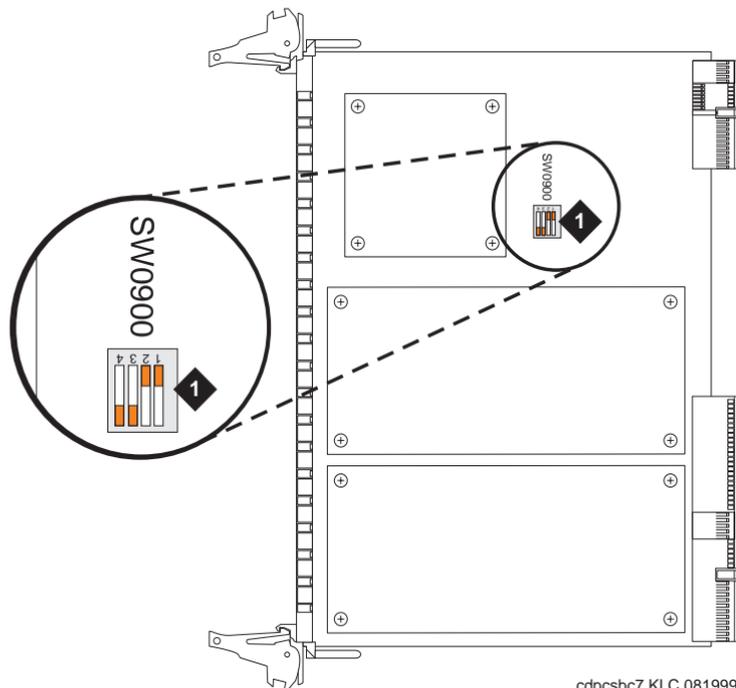
Figure 35. SW0300 Switch Setting for the SBC



OFF

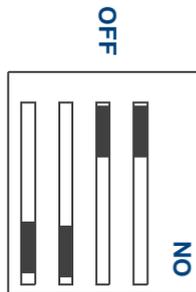
1. BIOS writing enabled
2. Reserved for future use
3. Ethernet connector via CompactPCI connection (rear I/O)
4. BIOS bootblock write protected

Figure 36. SW0900 Switch Location on the IOB



1. SW0100 and SW0300 location

Figure 37. SW0900 Switch Settings for the IOB



1. Reserved for future use
2. Reserved for future use
3. SCSI termination enable lower 8-bit termination
4. SCSI termination enable upper 8-bit termination

Removing the CPU Complex Procedures

To remove the CPU complex, do the following:

- 1 Verify that the replacement complex is on site and appears to be in usable condition, with no obvious shipping damage.

Note: If the complex being replaced is defective, note all symptoms of failure and include this information with the complex when it is returned.

- 2 Remove power from the LINCServer. See [Removing Power From the DC Server \(page 7\)](#) in [Chapter 1, Getting Inside the LINCServer](#) for the procedures.

- 3 Locate the complex to be replaced within the circuit card area. Disconnect any attached cables that may be externally connected to the complex. Note the connectivity of each cable.
- 4 Loosen the screws that secure the complex to the server. The screws are located at the top and bottom of the faceplate.
- 5 Unlatch the complex from the backplane by gently pushing the faceplate levers outward (away from the center of the circuit card) until the circuit card releases.
- 6 Remove the complex from the slot by gently pulling at the top and bottom corners of the complex.

Note: The CPU complex connects to slots 8 and 9. Make sure to install the replacement complex in the same location.

- 7 Remove the complex from the server.

Installing the CPU Complex Procedures

To install or replace the CPU complex, do the following:

CAUTION:

Hold the replacement complex carefully by the edges and place it on a grounded mat. See [Protecting Against Damage from Electrostatic Discharge \(page 2\)](#) in [Chapter 1, Getting Inside the LINC Server](#) for electrostatic discharge precautions.

- 1 If you are replacing the CPU complex, perform [Removing the CPU Complex Procedures \(page 68\)](#) then continue with [step 2](#).
If you are installing a new CPU complex, continue with [step 5](#).
- 2 Remove the LAN PMC from the IOB being replaced. See [Removing the LAN PMC Procedures \(page 74\)](#).
- 3 Remove the video module from the IOB being replaced. See [Removing the Video Controller Module Procedures \(page 77\)](#).
- 4 Remove the existing RAID PMC from the IOB. See [Removing the RAID Controller PMC Procedures \(page 76\)](#).
- 5 Install the LAN PMC. See [Installing LAN PMC Procedures \(page 73\)](#), if required.
- 6 Install the Video module. See [Installing the Video Controller Module Procedures \(page 77\)](#).

- 7 Install the RAID PMC. See [Installing the RAID Controller PMC Procedures \(page 75\)](#), if required.
- 8 Gently slide the CPU complex in slots 8 (SBC) and 9 (IOB).
- 9 Apply even pressure to the top and bottom of the CPU complex until it is locked into the backplane.
- 10 Secure the complex into position by gently pushing the faceplate levers into their locked position and tightening the screws.
- 11 Return all cables removed from other cards. Make sure these cables are attached to their proper terminations.
- 12 Power up the system. See [Restoring Power to the DC Server](#) in [Chapter 1, Getting Inside the LINC Server](#).

The system automatically reboots and displays `Console login:`

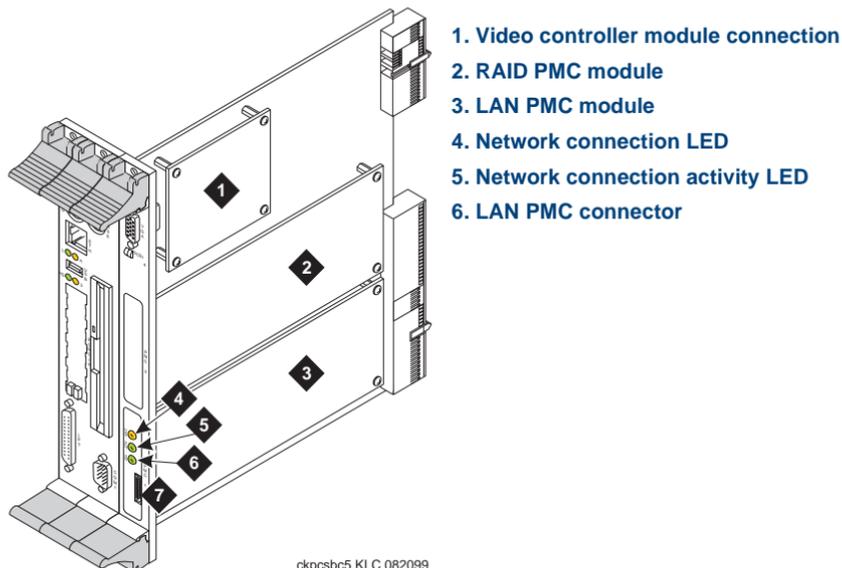
- 13 Apply any necessary CLEI labels. See [Applying the CLEI Label \(page 31\)](#) for more information.

The LAN PMC

Description

The LAN PMC allows access to a second local area network. The first LAN interface is integrated on the SBC (Figure 32 on page 62). If a LAN PMC is used, it plugs onto the IOB at the PMC1 connector location (Figure 38).

Figure 38. PMC Locations



Installing LAN PMC Procedures

Connecting a 10/100 Mbps LAN PMC involves

- ~ [Installing LAN PMC Procedures](#)
- ~ [Installing the LAN Driver Procedures](#)
- ~ [Verifying the LAN PMC Connection Procedures](#)

To connect a 10/100 Mbps LAN PMC, do the following:

- 1 Remove the CPU complex. See [Removing the CPU Complex Procedures \(page 68\)](#).
- 2 Insert the LAN PMC onto the IOB faceplate at the PMC1 location.
- 3 Connect the LAN PMC onto the IOB connectors.
- 4 Attach the LAN PMC onto the IOB standoffs using the two screws that accompanied the LAN PMC.

Note: Extra screws and standoffs are provided with the LAN PMC that are not used.

- 5 Insert the CPU complex. See [Installing the CPU Complex Procedures \(page 70\)](#).
- 6 Apply any necessary CLEI labels. See [Applying the CLEI Label \(page 31\)](#) for more information.

Removing the LAN PMC Procedures

To remove an existing LAN PMC, do the following:

- 1 Remove the CPU complex. See [Removing the CPU Complex Procedures \(page 68\)](#).
- 2 At the PMC1 position, loosen the four screws holding the LAN PMC to the IOB.
- 3 Remove the screws from the standoffs that secure the LAN PMC to the IOB.
- 4 Disconnect the LAN PMC from the IOB connectors.
- 5 Remove the LAN PMC from the IOB faceplate at the PMC1 location.

Installing the LAN Driver Procedures

Your LAN PMC driver should already reside on your server. If, during replacing a new LAN PMC, you must reinstall the driver, see [Installing the LAN PMC Driver \(page 212\)](#).

Verifying the LAN PMC Connection Procedures

To set the 10/100 Mbps LAN PMC connection, do the following:

- 1 Enter `/etc/inet/rc.restart`
- 2 Check the message log report for TCP/IP or LAN adapter errors. See Chapter 7, "Peripheral Administration," *LINCS Server Administration*, 585-313-507.
- 3 Verify that you have network connectivity using the **ping** command. See Appendix A, "Summary of Commands," in *LINCS Server Administration*, 585-313-507.

RAID PMC Module

The RAID controller PMC, [Figure 38 on page 72](#), is located on the IOB at the PMC2 position.

Installing the RAID Controller PMC Procedures

To install the RAID controller PMC, do the following:

- 1 Remove the CPU complex. See [Removing the CPU Complex Procedures \(page 68\)](#).
- 2 Insert the RAID controller PMC onto the IOB faceplate at the PMC2 location.
- 3 Connect the RAID controller PMC onto the IOB connectors.
- 4 Attach the RAID controller PMC onto the IOB standoffs using the two screws that accompanied the RAID controller PMC.

Note: Extra screws and standoffs are provided with the RAID controller PMC that are not used.

- 5 Insert the CPU complex. See [Installing the CPU Complex Procedures \(page 70\)](#).
- 6 Apply any necessary CLEI labels. See [Applying the CLEI Label \(page 31\)](#) for more information.

Removing the RAID Controller PMC Procedures

To remove an existing RAID controller PMC, do the following:

- 1 Remove the CPU complex. See [Removing the CPU Complex Procedures \(page 68\)](#).
- 2 At the PMC2 position, loosen the four screws holding the RAID controller PMC to the IOB.
- 3 Remove the screws from the standoffs that secure the RAID controller PMC to the IOB.
- 4 Disconnect the RAID controller PMC from the IOB connectors.
- 5 Remove the RAID controller PMC from the IOB faceplate at the PMC2 location.

Video Controller Module

Description

The video controller module ([Figure 38 on page 72](#)) is located on the IOB. It provides access to use a monitor on the server.

Removing the Video Controller Module Procedures

To remove the video controller module, do the following:

- 1 Remove the CPU complex. See [Removing the CPU Complex Procedures \(page 68\)](#).
- 2 At the VGA position, loosen the four screws holding the video controller module to the IOB.
- 3 Disconnect the video controller module from the connector at the rear of the IOB.
- 4 Remove the video controller module.

Installing the Video Controller Module Procedures

To connect the video controller module, do the following:

- 1 Remove the CPU complex. See [Removing the CPU Complex Procedures \(page 68\)](#).
- 2 Connect the video controller module onto the IOB at the VGA location.
- 3 Secure the module onto the IOB by tightening the retaining screws.
- 4 Insert the CPU complex into the server. See [Installing the CPU Complex Procedures \(page 70\)](#).

Verifying Parameter Settings

Verifying CPU CMOS Parameter Settings Procedure

To verify the CMOS parameter settings, do the following:

 **CAUTION:**

Do not change the settings if there is a mismatch. Contact your local technical support representative for assistance.

- 1 Perform a reboot of the system. See “Reboot the System,” in “Common System Procedures,” in the *LINCS Server System Reference*, 585-313-210.
- 2 During the POST, press **F2**.

The system displays the following message:

```
Please standby for SETUP Utility...
```

After the system has completed its POST, it displays the BIOS Setup Utility main menu.

- 3 Compare the 233 MHz CPU circuit card settings in the setup utility with the default parameters listed in [Table 4 on page 79](#) through [Table 21 on page 94](#).

Table 4. BIOS Setup Utility Option Settings

Option	Setting
System Time	<i>(current time)</i>
System Date	<i>(current date)</i>
Legacy Diskette A	1.44 MB 3 1/2"
Legacy Diskette B	Disabled
Primary Master	<i>4 MB</i>
Primary Slave	None
Secondary Master	None
Secondary Slave	None
System Memory *	<i>(displayed in KB)</i>
Extended Memory	<i>(displayed in KB)</i>

* The Power On Self Test will fail if the system memory or extended memory is incorrect.

4 Press the or key to select Primary Master and press ENTER.

The system displays the Primary Master sub menu. Compare the settings with those listed in [Table 5](#).

Table 5. Primary Master Option Settings

Option	Setting
Type	Auto
Cylinders	123
Heads:	2
Sectors:	32
Maximum Capacity	4MB
Multi-Sector Transfers	Disabled
LBA Mode Control	Enabled
32 Bit I/O	Disabled
Transfer Mode	Fast PIO 1

5 Press **ESC**.

The system displays the BIOS Setup Utility main menu.

6 Press the  key to select *Advanced*.

The system displays the Advanced main menu. Compare the settings with those listed in [Table 6](#).

Table 6. Advanced Option Settings

Options	Setting
Plug & Play O/S	No
Reset Configuration Data	No
PCI Configuration	
I/O Device Configuration	
Advanced Chipset Control	
Memory Cache	Enabled
Advanced Board Configuration	
POST Options	
Keyboard Features	

- 7 Press the **▲** or **▼** key to select **PCI Configuration** and press **ENTER**.
The system displays the **PCI Configuration** submenu.

- 8 Press the **▲** or **▼** key to select **PCI/PNP ISA UMB Region Exclusion** and press **ENTER**.

The system displays the **PCI/PNP ISA UMB Region Exclusion** screen. Compare the settings with those listed in [Table 7](#).

Table 7. PCI/PNP ISA UMB Region Exclusion Option Settings

Option	Setting
C800 - CBFF	Available
CC00 - CFFF	Available
D000 - D3FF	Available
D400 - D7FF	Available
D800 - DBFF	Available
DC00 - DFF	Available

- 9 Press **ESC**.

The system displays the **PCI Configuration** submenu.

- 10 Press the **▲** or **▼** key to select **PCI/PNP ISA IRQ Resource Exclusion** and press **ENTER**.

The system displays the PCI/PNP ISA IRQ Resource Exclusion screen. Compare the settings with those listed in [Table 8](#).

Table 8. PCI/PNP ISA IRQ Resource Exclusion Option Settings

Option	Setting
IRQ 3	Available
IRQ 4	Available
IRQ 5	Available
IRQ 7	Available
IRQ 9	Available
IRQ 10	Available
IRQ 11	Available
IRQ 15	Available

11 Press **ESC**.

The system displays the PCI Configuration submenu.

12 Press the **▲** or **▼** key to select **PCI IRQ Routing Control** and press **ENTER**.

The system displays the PCI IRQ Routing Control screen. Compare the settings with those listed in [Table 9](#).

Table 9. PCI IRQ Routing Control Option Settings

Option	Setting
PCI IRQ line 1	Auto Select
PCI IRQ line 2	Auto Select
PCI IRQ line 3	Auto Select
PCI IRQ line 4	Auto Select

- 13 Press **ESC** 2 times to return to Advanced main menu.
- 14 Press the **▲** or **▼** key to select `I/O Device Configuration` and press **ENTER**.

The system displays the I/O Device Configuration submenu. Compare the settings with those listed in [Table 10 on page 85](#).

Table 10. I/O Device Configuration Option Settings

Option	Setting
Local Bus IDE Adapter	Primary
Large Disk Access Mode	Other
Floppy Disk Controller	Enabled
PS/2 Mouse	Auto Detect
Serial Port A	Auto
Serial Port B	Auto
Parallel Port	Auto
Mode	ECP

- 15 Press **ESC** to return to Advanced main menu.
- 16 Press the **▲** or **▼** key to select `Advanced Chipset Control` and press **ENTER**.

The system displays the Advanced Chipset Control submenu. Compare the settings with those listed in [Table 11 on page 86](#).

Table 11. Advanced Chipset Control Option Settings

Option	Setting
ECC/Parity Config	ECC

- 17 Press **ESC** to return to Advanced main menu.
- 18 Press the **▲** or **▼** key to select **Advanced Board Configuration** and press **ENTER**.

The system displays the Advanced Board Configuration submenu. Compare the settings with those listed in [Table 12](#).

Table 12. Advanced Board Configuration Option Settings

Option	Setting
ABORT Switch	Enabled
Initialize Cardbus Controller	Disabled

- 19 Press **ESC** to return to Advanced main menu.
- 20 Press the **▲** or **▼** key to select **POST Options** and press **ENTER**.

The system displays the POST Options submenu. Compare the settings with those listed in [Table 13 on page 87](#).

Table 13. POST Options Settings

Option	Setting
Boot without VGA & Keyboard	Enabled
Delay after VGA BIOS	3 seconds
POST Delay	3 seconds
Summary screen	Enabled
POST Errors	Enabled

21 Press **ESC** to return to Advanced main menu.

22 Press the **▲** or **▼** key to select **Keyboard Features** and press **ENTER**.

The system displays the Keyboard Features submenu. Compare the settings with those listed in [Table 14 on page 88](#).

Table 14. Keyboard Features Option Settings

Option	Setting
Numlock	Auto
Key Click	Disabled
Keyboard auto-repeat rate	30/sec
Keyboard auto-repeat delay	1/2 sec

23 Press **ESC** to return to Advanced main menu.

24 Press the  key to select *Security*.

The system displays the Security main menu. Compare the settings with those listed in [Table 15](#).

Table 15. Security Option Settings

Option	Setting
Supervisor Password Is	Clear
User Password Is	Clear
Set Supervisor Password	Enter

1 of 2

Table 15. Security Option Settings

Option	Setting
Set User Password	Enter
Password on boot	Disabled
Fixed disk boot sector	Normal
Diskette access	Supervisor

2 of 2

- 25 Press the  key to select `Power`.

The system displays the Power main menu. Compare the settings with those listed in [Table 16](#).

Table 16. Power Option Settings

Option	Setting
Power Savings	Disabled
Standby Timeout	Off
Auto Suspend Timeout	Off

1 of 2

Table 16. Power Option Settings

Option	Setting
Hard Disk Timeout	Disabled
Video Timeout	Disabled
Advanced Options	

2 of 2

- 26 Press the  or  key to select **Advanced Options** and press **ENTER**.

The system displays the Power Advanced Options submenu. Compare the settings with those listed in [Table 17](#).

Table 17. Power Advanced Options Settings

Option	Setting
IRQ 1	Disabled
IRQ 3	Disabled
IRQ 4	Disabled
IRQ 5	Disabled
IRQ 6	Disabled

1 of 2

Table 17. Power Advanced Options Settings

Option	Setting
IRQ 7	Disabled
IRQ 8	Disabled
IRQ 9	Disabled
IRQ 10	Disabled
IRQ 11	Disabled
IRQ 12	Disabled
IRQ 13	Disabled
IRQ 14	Disabled
IRQ 15	Disabled
SMI	Disabled
NMI	Disabled

2 of 2

27 Press **ESC**.

28 Press the  key to select `Boot`.

The system displays the Boot main menu. Compare the settings with those listed in [Table 18 on page 92](#).

Table 18. Boot Menu Settings

Option	Settings
1.	Diskette Drive
2.	Hard Drive
3.	Removable Devices
4.	ATAPI CD-ROM Drive
Hard Drive	
Removable Devices	
Embedded OpRom Control	

- 29 Press the **▲** or **▼** key to select `Hard Drive` (under option) and press **ENTER**.

The system displays the Hard Drive boot options submenu. Compare the settings with those listed in [Table 19 on page 93](#).

- Note:** The settings listed for Options 2, 3, and 4 will vary depending on your configuration.

Table 19. Hard Drive Boot Options Settings

Option	Setting
1.	Bootable Add-In Card Note: This is the RAID Controller Circuit Card.
2.	Primary Master Note: This is the IDE flash disk.

30 Press **ESC**.

The system displays the Boot main menu.

31 Press the **▲** or **▼** key to select `Removable Devices` and press **ENTER**.

The system displays the Removable Devices options submenu. Compare the settings with those listed in [Table 20](#).

Table 20. Removable Devices Options Settings

Option	Setting
1.	Legacy Floppy Drives

32 Press **ESC**.

The system displays the Boot main menu.

33 Press the **▲** or **▼** key to select `Embedded OpRom Control` and press **ENTER**.

The system displays the Embedded OpRom Control options submenu. Compare the settings with those listed in [Table 21](#).

Table 21. Embedded OpROM Control Options Settings

Option	Setting
Execute SCSI Option ROM:	Disabled

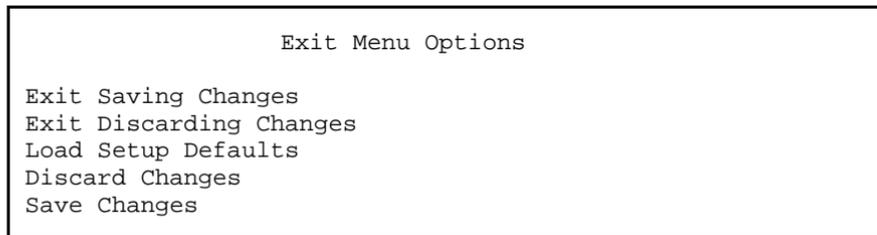
34 Press **ESC**.

The system displays the Boot main menu.

35 Press the **►** key to select `Exit`.

The system displays the Exit menu ([Table 39 on page 95](#)).

Figure 39. Exit Menu Options



- 36** Press the **▲** or **▼** key to select `Exit Discarding Changes` and press **ENTER**.

Note: If changes had been made, select `Exit Saving Changes` before pressing **ENTER**.

The system automatically reboots and displays `Console Login:`

Verifying RAID Controller BIOS and Configuration Options

To verify the options:

- 1 Reboot the system.
- 2 Wait for the Mylex DAC960 BIOS messages to appear.
- 3 Press **ALT+M** when prompted.

The system displays the DAC960 BIOS options submenu. Compare the settings with those listed in [Table 22](#).

Table 22. AC960 BIOS Options Settings

Option
BIOS enabled
CD-ROM boot disabled
2-Gbyte drive geometry

- 4 Press **ESC** to exit and reboot the system.
- 5 Wait for the Mylex DAC960 BIOS messages to appear.

- 6 Press **ALT+R** when prompted.

The system displays the Mylex Configuration Utility.

- 7 Choose option 09 *Advanced Functions*.

- 8 Verify that the parameters are set as shown in [Table 23](#) through [Table 26 on page 98](#).

Table 23. Hardware Parameter Settings

Option	Setting
Automatic Rebuild Management	Enabled
StorageWorks Fault Management	Disabled

Table 24. Physical Parameter Settings

Option	Setting
Rebuild/Add Capacity Rate	10
Segment Size	8
Stripe Size	64

Table 25. SCSI Xfr Parameters (Chanel 0) Settings

Option	Setting
Data transfer rate	20 Mhz
Command Tagging	Enabled
SCSI data bus width	16 bit

Table 26. Startup Parameter Settings

Option	Setting
Spin up option	Automatic
Number of devices per spin	1
Delay (seconds)	6

- 9 Press **ESC** to return to the main menu.
- 10 Press **ESC** to exit the Mylex Configuration Utility.

3 Replacing the Hard Disk Drive Assembly

Overview

The LINC Server is a RAID system. This means that the three, or more, physical hard disk drives are logically tied to each other to form a RAID array (also referred to as a pack). Typically, the RAID array is logically partitioned into two logical system drives.

Each logical system drive uses part of all the equipped physical drives. The operational system software is abstracted from the physical drives and is only aware of the logical system drives. The system software sees the RAID array's system drive 0 as the first hard disk drive. Your system remains fully functional in case of a single physical hard disk drive failure.

Note: In the unlikely event of a second physical hard disk drive failing before the first physical drive is replaced, all system drives will go off line, causing the system to crash.

The RAID system also supports the ability to hot swap a physical drive. This means that a failed physical hard disk drive can be removed and replaced without shutting down your system.

A system drive can be in one of the three states defined in [Table 27](#).

Table 27. States of the System Drives

State	Definition	Comment
On-Line (Normal)	In the normal operating state	Any single physical drive can fail and the system will continue to operate normally
Critical	One of the physical drives has failed	If a second drive fails, the system will crash. However, the system drive is still operating normally from the operating systems perspective. This is sometimes called a degraded mode.
Off-Line	Two or more physical drives have failed	The system drive can no longer provide service to the operating system. Note: At this state, the system will not boot.

The purpose of this chapter is to ensure that hard disk drives are installed in the proper manner by:

- Identifying a failed hard disk drive in a RAID system
- Performing hot swap replacement procedures of a hard disk drive
- Performing software procedures to prepare the system for a new hard disk drive
- Initializing a hard disk drive in a RAID system

Identifying a Failed Hard Disk Drive

Before a hard disk drive can be replaced you must identify which drive has failed. This section details how to identify a failed hard disk drive in a RAID server.

A system configured with the RAID optional feature is initially configured with at least three, 4.5GB disk drives.

Each disk activity LED intermittently lights green when that disk is accessed and active.

To identify a failed hard disk drive, verify the following:

- 1 The system displays the following message:

```
The SCSI device at address [chn#0:tgt#x] is DEAD
```

Where *x* is the SCSI device ID number. An alarm is generated and event is logged in the event log. If you can not view the console message, you can view the file [/etc/log/gamevlog.log](#) to identify the failed drive. See Chapter 4, "Alarms and Log Messages," in the *LINCS Server System Reference*, 585-313-210 for more information.

- 2 Typically, the LED for the failed hard disk drive remains off.

Performing a Hard Disk Drive Hot Swap

The following procedures detail performing a hot swap (removing and installing) of a hard disk drive in the server. [Figure 9 on page 6](#) shows the positions of the hard disk drives for the server.

Note: Procedures in this book should be performed by personnel identified in [Intended Audiences \(page xxiv\)](#) in [About This Book](#).



WARNING:

Observe proper electrostatic discharge precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground. See [Protecting Against Damage from Electrostatic Discharge](#) in [Chapter 1, Getting Inside the LINC Server](#) for the procedure.

Removing a Hard Disk Drive Procedures

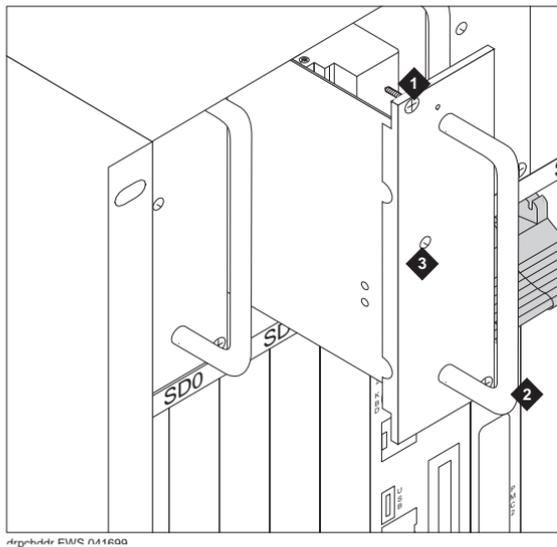
To remove a hard disk drive in a server, do the following:

- 1 Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
- 2 Use a grounded ESD wrist strap to protect the equipment from damage.

Note: [Figure 40 on page 105](#) shows the location of the hard disk drives and associated hardware.

- 3 Remove the appropriate hard disk drive by doing the following:
 - a Loosen the two screws located at the top and bottom of the hard drive faceplate.
 - b Grab the carrier assembly handle and gently pull the drive out of the server about one inch, just enough to break electrical contact with the SCA backplane.
 - c Wait for the drive to spin down, about 30 seconds.
 - d Remove the drive completely from the server.
- 4 Place the defective hard disk drive on an ESD-protected surface.

Figure 40. Hard Disk Drive



1. Retaining screw
2. Pull handle
3. Activity indicator LED

Installing a Hard Disk Drive Procedures

To install a hard disk drive in the server, do the following:

- 1 Align the hard disk drive carrier assembly with the top and bottom guides in the appropriate slot in the server.

Note: Be careful because the guides for the drive can be easily missed.

2 Gently slide the hard disk drive assembly in the server.

Note: Gradually inserting the drive allows time for the drive connector to align with the mating backplane connector.

3 Tighten the two retaining screws to secure the drive to the server.

The system displays the following message:

```
Rebuild in progress. Please wait.
```

Note: If the system does not initiate an automatic rebuild of the array within five minutes, insert the drive again.

Performing a Manual Rebuild of a RAID Array

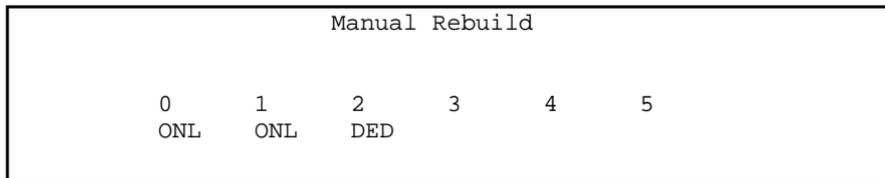
If the system does not automatically rebuild the array after you have re-inserted the drive, you will need to perform a manual rebuild.

To perform a manual rebuild, do the following:

1 Enter **rbldsh**

The system displays the Manual Rebuild screen [Figure 41 on page 107](#).

Figure 41. Sample Manual Rebuild Screen for a 3-Disk System



- 2 Press the left  or right  arrow to move to the drive marked **DED**

The system displays the following message:

```
Do you want to format?
```

```
Yes
```

```
No
```

- 3 Select **no** and press **ENTER**.

The system displays the following message:

```
Do you want to rebuild?
```

```
Yes
```

```
No
```

- 4 Select **yes** and press **ENTER**.

The system displays several progress messages. After several minutes, the system displays the following message:

```
Rebuild complete. Press ENTER to exit rebuild screen.
```

- 5 Press **ENTER**.

Adding a New Hard Disk Drive to a RAID System

This section details the procedures for adding a physical hard disk drive to provide additional storage for your system. If you are replacing an existing drive, see [Performing a Hard Disk Drive Hot Swap \(page 103\)](#) for the procedure.

Note: The hard disk drive must be at least 4.5GB.

Note: This procedure takes approximately one hour per logical system drive to complete.

Adding a New Hard Drive Procedures

To add a physical hard disk drive to the system with the RAID optional feature, do the following:

- 1 Perform a system backup. See “Backup the System,” in “Common System Procedures,” in the *LINCS Server System Reference*, 585-313-210, for the procedures.
- 2 Shut down the system. See “Shut Down the System,” in “Common System Procedures,” in the *LINCS Server System Reference*, 585-313-210, for the procedures.
- 3 Install the new/additional hard disk drive. See [Installing a Hard Disk Drive Procedures \(page 105\)](#).

Continue with [step 4](#) once the new drive is secured in the server.

- 4 Reboot the system.

Continue immediately with [Updating the Disk Array Configuration \(page 109\)](#).

Updating the Disk Array Configuration

To update the disk configuration, do the following:

- 1 During the reboot press **ALT+R** when prompted.

The system displays the RAID Controller Main Menu, [Figure 42](#).

Figure 42. RAID Controller Main Menu

```
Disk Array Controller                               Configuration Utility

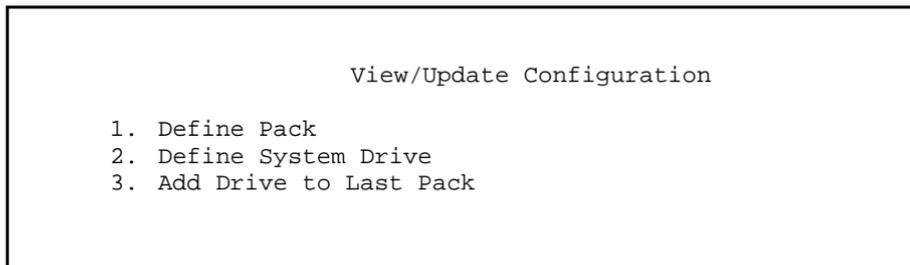
                                     Main Menu

01 Automatic Configuration
02 New Configuration
03 View/Update Configuration
04 Rebuild
05 Initialize System Drive
06 Consistency Check
07 Tools
08 Select DAC960
09 Advanced Functions
```

- 2 Press the down (▼) arrow to move select View/Update Configuration and press **ENTER**.

The system displays the View/Update Configuration screen, [Figure 43](#).

Figure 43. View/Update Configuration Screen



- 3 Select Add Drive to Last Pack and press **ENTER**.

The system displays the Add Capacity screen, [Figure 44 on page 111](#). This figure shows an example for a system that is adding a fourth physical hard disk drive.

Figure 44. Add Capacity Menu

Tgt ID	Channel Number
0	<input type="text" value="ONL"/>
1	<input type="text" value="ONL"/>
2	<input type="text" value="ONL"/>
3	<input type="text" value="TAP"/>
4	<input type="text" value="CDR"/>
5	<input type="text" value=""/>

- 4 Select the drive to be added.

The new drive is marked as either `RDY` or `SBY`.

- 5 Press **ENTER**.

The system displays the following message:

```
!!WARNING: This process is irreversible.  
Do you want to proceed?  
No  
Yes
```

6 Select `yes` and press **ENTER**.

The system displays the following message while also displaying a continuous status on each logical system drive:

```
Data migration in progress.
```

```
Data migration process completed successfully.  
Press any key to continue.
```

This process takes approximately one hour to complete for each logical system drive.

7 Press **ENTER**.

The system displays the View/Update Configuration screen, [Figure 43 on page 110](#).

8 Select:

```
>Define System Drive
```

```
>Create System Drive
```

The system displays the RAID Level screen, [Figure 45 on page 113](#).

Continue with [Defining the Logical System Drive \(page 113\)](#).

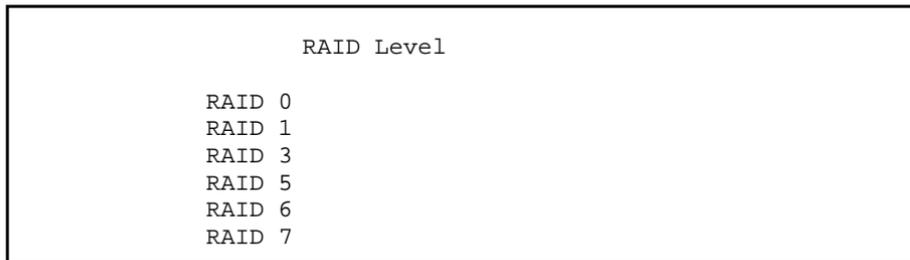
Defining the Logical System Drive

To define the logical system drive, do the following;

- 1 At the RAID Level screen, [Figure 45](#), select RAID 5.

The system displays the RAID Level Screen, [Figure 45](#).

Figure 45. RAID Level Screen



The system displays a pop-up box for entering the size for the new system drive.

- 2 Press **ENTER** to accept the default.

The system displays a summary for the new system drive in a message similar to the following:

```

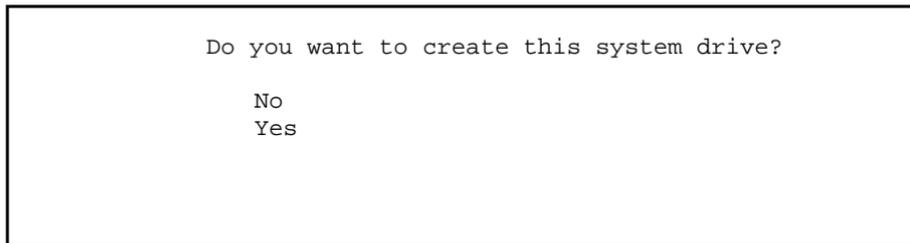
System Drive #x
RAID Level #  y
Capacity      z

```

Where x is the system drive number, y is the RAID level number, and z is the drive capacity.

The system displays the Create System Drive Screen, [Figure 46](#).

Figure 46. Create System Drive Screen



- 3 Select **YES**.

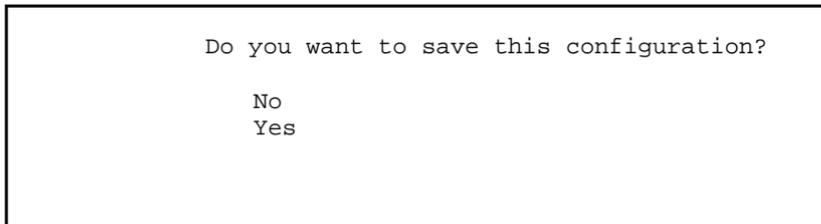
The system creates the logical system drive.

Verify that Write Mode for all system drives indicate `WRITE THRU`.

- 4 Press **ESC**.

- 5 Press **ESC**.

The system displays the Save Configuration screen, [Figure 47 on page 115](#).

Figure 47. Save Configuration Screen**6** Select **YES**.

The system displays the following message:

```
System drive x is available for immediate use. Press any key  
to continue.
```

Where *x* is the logical system drive number or numbers that are now available to your system.

7 Press **ENTER**.

The system displays the RAID Controller Main Menu, [Figure 42 on page 109](#).

8 Press **ESC**.

The system displays the following message:

```
Do you really want to exit configuration?  
    No  
    Yes
```

9 Select `Yes` and press **ENTER**.

- 10** Reboot the system. See “Reboot the System,” in “Common System Procedures,” in the *LINCS Server System Reference*, 585-313-210, for the procedures.

Continue with [Creating Additional Storage for Speech](#).

Creating Additional Storage for Speech

Once you've created a new system drive, you must add the disk to the system before you can use the added space for speech storage.

Note: Be sure to create a filesystem large enough to accommodate your speech/voice needs. Once the size of a file system has been created, it can not be changed.

Adding a System Drive for Speech Procedures

Note: Unixware 2.1.3 limits the size of any file system to 2GB. In order to fully use the entire 4.5GB disk space, at least three file systems will need to be created.

To add a system drive for speech, do the following:

- 1 Complete the procedures in [Adding a New Hard Disk Drive to a RAID System \(page 108\)](#).
- 2 Log in as root.
- 3 Enter `/mtce/bin/diskadd c0b0t0dx`

Where *x* is the logical system drive identification number of the new logical drive created as a result of adding the physical hard disk drive.

The system displays the following message:

```
Using device name c0b0t0d1
Do you wish to continue hit [y/n], and then hit Enter
```

4 Enter **y**.

5 Press **ENTER**.

The system displays the UNIX prompt.

6 Determine the number of disk blocks to allocate for the speech filesystem.

Note: Be sure to create enough space to accommodate present and future needs.

7 Enter **mtce/bin/createfs -D *drive number blocks* /home3 8192**

Where *drive number* is the identification number entered in [step 3](#) and *blocks* is the number of 512-byte blocks of information you need.

The system displays the following message, where **1** is the logical system drive identification number of the new logical drive created as a result of adding the physical hard disk drive and previously entered:

```
Using disk id 1
DEVICE c0b0t0d1s10
Created /home3 filesystem with type vxfs
Mounted /home3 filesystem
```

When the system prompt returns, an entry is automatically added to **/etc/vfstab** for the home3 volume, and the file system is mounted.

You have completed this procedure.

4 Replacing Other Components

Overview

The purpose of this chapter is to ensure that correct procedures are used to replace internal components of the LINCS server. This chapter describes the procedures for the following:

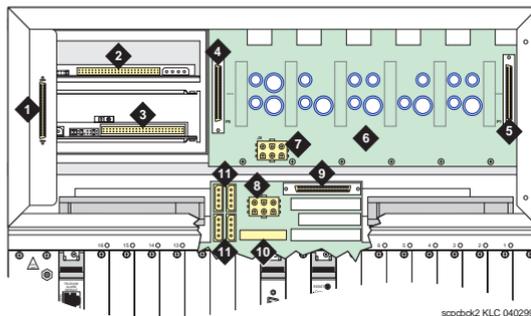
- [Removing the SCA Backplane \(page 120\)](#)
- [Installing the SCA Backplane \(page 123\)](#)
- [Removing the CD-ROM/Cartridge Tape Drive Mounting Unit \(page 124\)](#)
- [Installing the CD-ROM/Cartridge Tape Drive Mounting Unit \(page 133\)](#)
- [Replacing the TAM Alarm Panel \(page 134\)](#)
- [Replacing Cables \(page 139\)](#)
- [Replacing a Fan Tray \(page 146\)](#)
- [Replacing the Filter \(page 149\)](#)
- [Replacing the Power Supply \(page 151\)](#)

Removing the SCA Backplane

Description

The Single Connector Architecture (SCA) backplane, [Figure 48](#), is at the upper rear of the LINCS server.

Figure 48. SCA Backplane Locations



1. External SCSI connector
2. CD-ROM drive SCSI connection
3. Tape drive SCSI connection
4. SCA SCSI connection to the CD-ROM
5. SCA SCSI from cPCI backplane
6. SCA backplane
7. SCA backplane power connection
8. cPCI backplane power connection
9. cPCI backplane SCSI connection
10. Thermal sensor connection
11. Power connections to CD-ROM and cartridge tape drives

Removing the
Backplane
Procedures

To remove the SCA backplane, do the following:

 **WARNING:**

Observe proper electrostatic discharge precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground. See [Protecting Against Damage from Electrostatic Discharge](#) in [Chapter 1, Getting Inside the LINC Server](#).

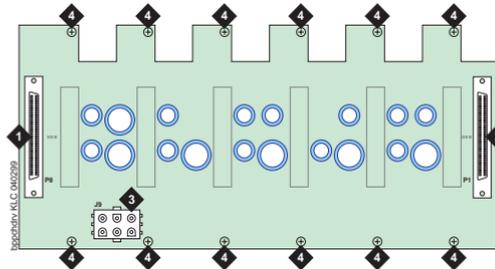
Note: Procedures in this book should be performed by personnel identified in [Intended Audiences \(page xxiv\)](#) in [About This Book](#).

- 1 Verify that the replacement equipment is on site and appears to be in usable condition with no obvious shipping damage.
- 2 Remove the incoming power. See [Removing Power From the DC Server \(page 7\)](#) for DC-powered servers in [Chapter 1, Getting Inside the LINC Server](#).
- 3 Remove the hard disk drives. See "[Removing a Hard Disk Drive Procedures](#)" on page 103 in [Chapter 3, Replacing the Hard Disk Drive Assembly](#) for the procedure.
- 4 Remove the upper rear exhaust panel. See [Removing the Upper Rear Exhaust Panel \(page 10\)](#) in [Chapter 1, Getting Inside the LINC Server](#).
- 5 Disconnect the power cable connector (labeled P9) from the SCA backplane ([Figure 48 on page 120](#)).

- 6 Disconnect the SCSI cable from the SCA backplane, [Figure 48 on page 120](#).
- 7 Remove the screws at the top and bottom of the disk, [Figure 49](#), area that secure the SCA backplane.

Note: Be careful that the SCA backplane screws do not drop into the server as they are not captive screws.

Figure 49. SCA Backplane Screw Locations



1. SCA SCSI connection to the CD-ROM
2. SCA SCSI from cPCI backplane
3. cPCI backplane power connection
4. Removable screws

- 8 Gently pull out the SCA backplane.

Installing the SCA Backplane

Installing the Backplane Procedures

To install the SCA backplane, do the following:

- 1 Gently insert the new SCA backplane into the LINCS server.
- 2 Secure the SCA backplane with the screws you removed earlier, [Figure 49 on page 122](#).
- 3 Connect the power cable, disconnected in [step 5](#), to the SCA backplane, [Figure 48 on page 120](#).
- 4 Connect the SCSI cable, disconnected in [step 6](#), to the SCA backplane, [Figure 48 on page 120](#).
- 5 Replace the hard disk drives. See [Installing a Hard Disk Drive Procedures \(page 105\)](#) in [Chapter 3, Replacing the Hard Disk Drive Assembly](#) for the procedure.
- 6 Replace the upper rear exhaust panel. See [Installing the Upper Rear Exhaust Panel \(page 13\)](#) in [Chapter 1, Getting Inside the LINCS Server](#).
- 7 Apply power to the LINCS server. See [Restoring Power to the DC Server \(page 10\)](#) for DC-powered servers in [Chapter 1, Getting Inside the LINCS Server](#).

Removing the CD-ROM/Cartridge Tape Drive Mounting Unit

The CD-ROM and Cartridge Tape drives, [Figure 50 on page 126](#), are located at the upper right corner on the front of the LINCS server. See [Figure 9 on page 6](#) for the location. These drives are contained within a single peripheral mounting unit.

Removing the CD-ROM/Tape Drive Unit Procedures

To remove the CD-ROM/Tape drive unit, do the following:

- 1 Verify that the replacement part is on site and appears to be in usable condition with no obvious shipping damage.
- 2 Remove the incoming power. See [Removing Power From the DC Server \(page 7\)](#) in [Chapter 1, Getting Inside the LINCS Server](#) for this procedure.
- 3 Remove the upper rear exhaust panel. See [Removing the Upper Rear Exhaust Panel \(page 10\)](#) in [Chapter 1, Getting Inside the LINCS Server](#).
- 4 Unplug the power cables from the rear of the CD-ROM and Tape drives. See [Removing the CD-ROM/Tape Drive Power Supply Cable Procedures \(page 140\)](#), [step 3](#) through [step 4](#).

- 5 Unplug the SCSI cable connections from the rear of the CD-ROM and Cartridge Tape drives, [Figure 57 on page 144](#).

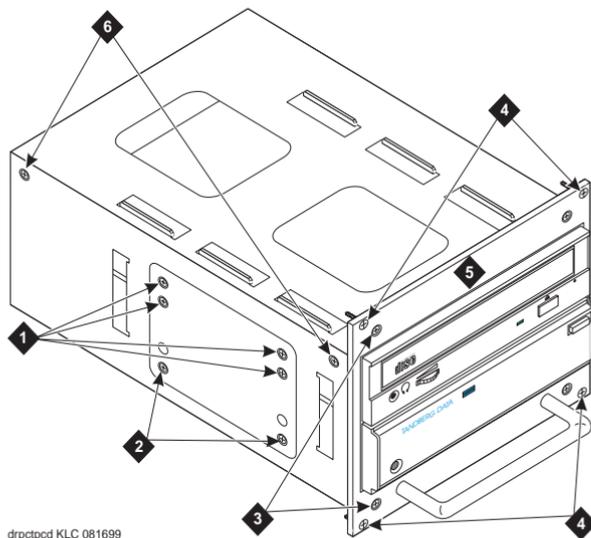
Note: The SCSI cable has an adapter attached to it that allows it to connect to the cartridge tape drive and the CD-ROM drive. Make sure the adapter remains attached to the SCSI cable.

- 6 Loosen the four retaining screws from the faceplate of the CD-ROM/Cartridge Tape drive mounting unit, [Figure 50 on page 126](#).

Note: It is not necessary to remove or loosen the four flathead screws on the faceplate.

- 7 Grab the handle on the lower part of the faceplate and pull the CD-ROM/Cartridge Tape drive unit out of the server, [Figure 50 on page 126](#).

Figure 50. CD-ROM/Cartridge Tape Drive Unit



drpcpcd KLC 081699

1. CD-ROM drive mounting screws
2. Cartridge tape drive mounting screws
3. CD-ROM/cartridge tape drive mounting unit faceplate flathead screws
4. CD-ROM/cartridge tape drive mounting unit retaining screws
5. CD-ROM/cartridge tape drive mounting unit faceplate with pull handle on lower part
6. CD-ROM/cartridge tape drive mounting unit housing flathead screws.

Removing Only the CD-ROM Drive

Removing the CD-ROM Drive Procedures

To remove only the CD-ROM drive from the mounting unit, do the following:

- 1 Verify that the replacement part is on site and appears to be in usable condition with no obvious shipping damage.
- 2 Remove the mounting unit. See [Removing the CD-ROM/Cartridge Tape Drive Mounting Unit \(page 124\)](#).
- 3 Remove the eight screws, four on each side of the mounting unit, that secure the CD-ROM drive to the housing unit.

Note: Keep these screws. Using any of the other screws associated with the LINC Server may damage the threads in the drive mounting hardware.

- 4 Gently slide the CD-ROM drive out of the mounting unit.

Note: The CD-ROM fits snugly in the housing unit. It may be necessary to loosen the faceplate and housing flathead screws on both sides of the mounting unit, [Figure 50 on page 126](#), in order to remove the CD-ROM drive.

Removing Only the Cartridge Tape Drive

Removing the Tape Drive Procedures

To remove only the tape drive from the mounting unit, do the following:

- 1 Verify that the replacement part is on site and appears to be in usable condition with no obvious shipping damage.
- 2 Remove the mounting unit. See [Removing the CD-ROM/Cartridge Tape Drive Mounting Unit \(page 124\)](#).
- 3 Remove the four screws, two on each side of the mounting unit, that secure the tape drive to the unit.

Note: Keep these screws. Using any of the other screws associated with the server may damage the threads in the drive mounting hardware.

- 4 Gently slide the tape drive out of the mounting unit.

Note: The cartridge tape drive fits snugly in the housing unit. It may be necessary to loosen the faceplate and housing flathead screws on one side of the mounting unit, [Figure 50 on page 126](#), in order to remove the cartridge tape drive.

Installing Only the Cartridge Tape Drive

Installing the Tape Drive Procedures

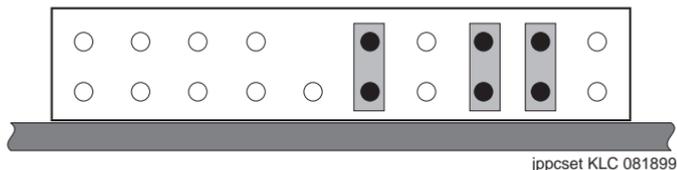
To install the cartridge tape drive in the mounting unit, do the following:

- 1 Remove the new cartridge tape drive from its ESD-protective wrapping.

Note: Keep the package and all ESD-protective wrapping to return the defective unit. Re-use of the original replacement unit packaging is necessary to meet the manufacturer's warranty.

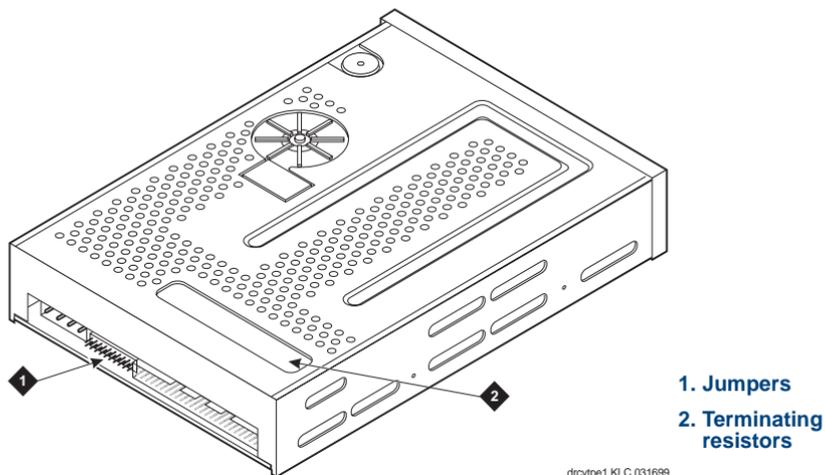
- 2 Verify that these settings are correct, [Figure 51](#) for SCSI ID 3.

Figure 51. Jumper Settings for the Cartridge Tape Drive (comcode: 408097418)



- 3 Remove the terminating resistors, [Figure 52 on page 130](#).

Figure 52. Cartridge Tape Drive



- 4 Gently slide the new drive into the mounting unit.
- 5 Secure the new drive to the mounting unit. Use the four screws removed earlier to secure the drive to the mounting unit.
- 6 Retighten the housing screws if they were loosened to remove the tape drive.
- 7 Retighten the faceplate screws if they were loosened to remove the tape drive.

Installing Only the CD-ROM Drive

Installing the CD-ROM Drive Procedures

To install the CD-ROM drive in the mounting unit, do the following:

- 1 Remove the new CD-ROM drive from its ESD-protective wrapping.

Note: Keep the package and all ESD-protective wrapping to return the defective unit. Re-use of the original replacement unit packaging is necessary to meet the manufacturer's warranty.

- 2 Verify that these settings are correct, [Figure 53 on page 132](#), for SCSI ID 4.

- 4 Secure the new drive to the peripheral housing unit. Use the eight screws removed earlier to secure the drive to the mounting unit.
- 5 Retighten the housing screws if they were loosened to remove the CD-ROM drive.
- 6 Retighten the faceplate screws if they were loosened to remove the CD-ROM drive.

Installing the CD-ROM/Cartridge Tape Drive Mounting Unit

Installing the CD-ROM/Tape Drive Unit Procedures

To install the CD-ROM/Tape drive mounting unit in the server, do the following:

- 1 Align the CD-ROM/Cartridge Tape drive mounting unit with the top and bottom guides on the front of the server.
- 2 Gently slide the housing unit into the server.

Note: If the unit will not slide in completely, tilt the front of the unit down slightly and push the unit in completely.

- 3 Retighten the four retaining screws, [Figure 50 on page 126](#), on the faceplate of the CD-ROM/Cartridge Tape drive peripheral mounting unit to secure it to the server.

- 4 Attach the SCSI cables to the rear of the CD-ROM/Cartridge Tape drive mounting unit, [Figure 57 on page 144](#).
- 5 Attach the power cables to the rear of the CD-ROM/Cartridge Tape drive housing unit. See [Removing the CD-ROM/Tape Drive Power Supply Cable Procedures \(page 140\)](#), [step 3](#) through [step 4](#).
- 6 Restore the incoming power. See [Restoring Power to the DC Server \(page 10\)](#) in [Chapter 1, Getting Inside the LINC Server](#) for this procedure.

Replacing the TAM Alarm Panel

Description

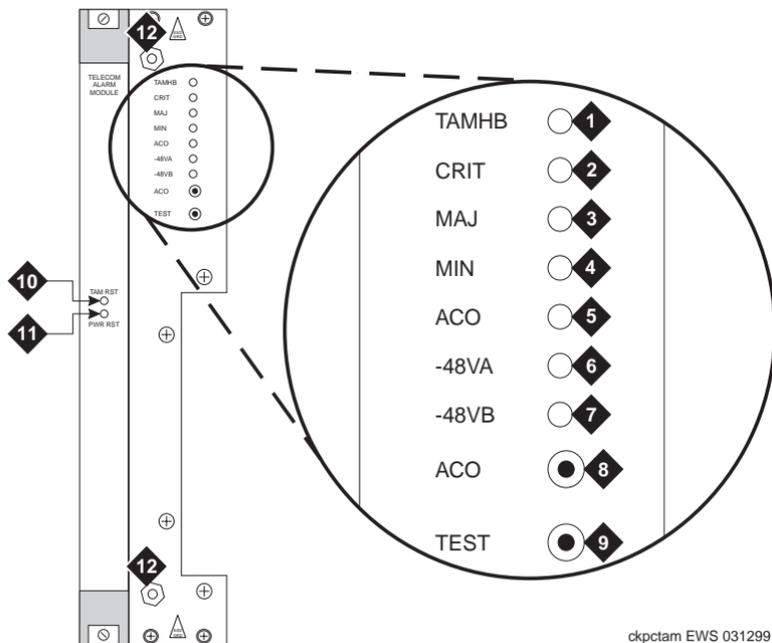
The alarm panel has indicators that display critical, major, and minor alarms reported by the Telecom Alarm Module, [Figure 54 on page 135](#), as well as alarms generated by system software.



WARNING:

Observe proper electrostatic discharge precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground. See [Protecting Against Damage from Electrostatic Discharge](#), in [Chapter 1, Getting Inside the LINC Server](#) for detailed electrostatic discharge precautions.

Figure 54. TAM Alarm Indicators



1. TAM status. Green for normal operation; Red for fault.
2. Critical alarm indicator. Lights when active.
3. Major alarm indicator. Lights when active.
4. Minor alarm indicator. Lights when active.
5. Alarm cutoff indicator. Lights when an alarm is active.
6. -48VA failure indicator. Lights when a failure occurs.
7. -48VB failure indicator. Lights when a failure occurs.
8. Alarm cutoff button. Silences only the audible of an active alarm.
9. Test button. Lights all LEDs when pressed.
10. TAM reset button to reset only the TAM circuit card
11. Power restore button.
12. ESD jacks

Removing the Alarm Panel Procedures

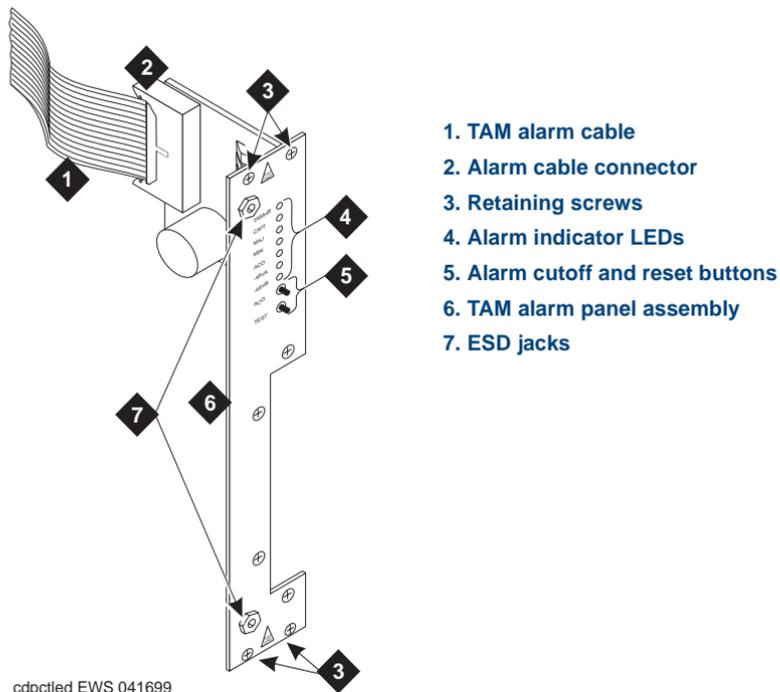
To remove the alarm panel, do the following:

- 1 Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
- 2 Remove the incoming power. See [Removing Power From the DC Server \(page 7\)](#) in [Chapter 1, Getting Inside the LINCS Server](#) for this procedure.
- 3 Remove the TAM circuit card. See [Removing a Circuit Card \(page 22\)](#) in [Chapter 2, Installing or Replacing Circuit Cards](#) for the procedure.

Note: Removing adjacent circuit cards or slot covers will provide additional room for movement. See [Removing a Circuit Card \(page 22\)](#) in [Chapter 2, Installing or Replacing Circuit Cards](#) for the procedure.

- 4 Remove the alarm cable from the rear of the TAM alarm panel assembly, [Figure 55 on page 137](#).
- 5 Remove the alarm panel by removing the eight screws that secure it to the LINCS server, [Figure 55 on page 137](#).

Figure 55. TAM Alarm Panel and Cable



Installing the Alarm Panel Procedures

To install the alarm panel, do the following:

- 1 Attach the alarm panel to the LINCS server, [Figure 55 on page 137](#). Use the eight screws that were removed earlier.
- 2 Connect the loose end of the alarm cable to the TAM alarm panel assembly, [Figure 55 on page 137](#).

Note: The other end of the alarm cable connects to the backplane.

- 3 Replace any circuit cards or slot covers that may have been removed to provide additional movement space. See [Installing a Circuit Card \(page 26\)](#) in [Chapter 2, Installing or Replacing Circuit Cards](#) for the procedure.
- 4 Replace the TAM. See [Installing a Circuit Card \(page 26\)](#) in [Chapter 2, Installing or Replacing Circuit Cards](#) for the procedure.
- 5 Restore the incoming power. See [Restoring Power to the DC Server \(page 10\)](#) in [Chapter 1, Getting Inside the LINCS Server](#) for this procedure.

Replacing Cables

Replacing the TAM Alarm Panel Cable

**WARNING:**

Observe proper electrostatic discharge precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground. See [Protecting Against Damage from Electrostatic Discharge](#), in [Chapter 1, Getting Inside the LINC Server](#) for detailed electrostatic discharge precautions.

Removing the TAM Alarm Panel Cable

To remove the alarm panel cable, do the following:

- 1 Verify that the replacement cable is on site and appears to be in usable condition, with no obvious shipping damage.
- 2 Remove the TAM alarm panel. See [Removing the Alarm Panel Procedures \(page 136\)](#).
- 3 Remove the alarm cable from the cPCI backplane.

Installing the Alarm Panel Cable

To install the alarm panel cable, do the following:

- 1 Verify that the replacement cable is on site and appears to be in usable condition, with no obvious shipping damage.
- 2 Connect the new alarm cable to the cPCI backplane, [Figure 55 on page 137](#).
- 3 Install the alarm panel. See [Installing the Alarm Panel Procedures \(page 138\)](#).

Replacing the Power Cables

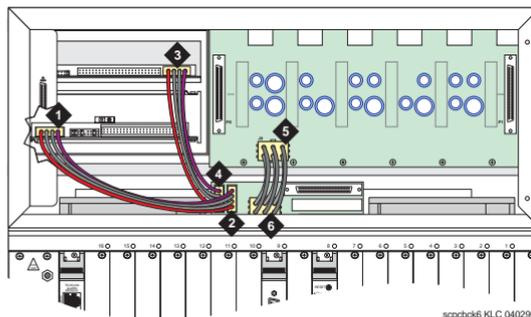
The LINC S server has cables which supply power to the:

- Cartridge tape drive
- CD-ROM drive
- SCA backplane
- cPCI backplane

Removing the CD-ROM/Tape Drive Power Supply Cable Procedures

The power supply cables for the cartridge tape and CD-ROM drives connect to the power supply on the cPCI backplane from both the cartridge tape and CD-ROM drives, [Figure 56 on page 141](#).

Figure 56. CD-ROM and Cartridge Tape Drive Power Connections



1. Cartridge tape drive power connection
2. cPCI backplane power connection to cartridge tape drive
3. CD-ROM power connection
4. cPCI backplane power connection to CD-ROM drive
5. SCA backplane power connection
6. cPCI backplane power connection to SCA backplane

To remove the cartridge tape and CD-ROM drive power supply cable, do the following:

- 1 Verify that the replacement cable is on site and appears to be in usable condition, with no obvious shipping damage.
- 2 Remove the incoming power. See [Removing Power From the DC Server \(page 7\)](#) in [Chapter 1. Getting Inside the LINC Server](#) for this procedure.

- 3 Remove the upper rear exhaust panel. See [Removing the Upper Rear Exhaust Panel \(page 10\)](#) in [Chapter 1, Getting Inside the LINCS Server](#) for the procedure.
- 4 Remove the power supply cable from the back of the respective cartridge tape drive or the CD-ROM drive, [Figure 56 on page 141](#).
- 5 Remove the other end of the cartridge tape or CD-ROM drive power supply cable from the backplane.

Note: The tape drive power cable connects to the cPCI backplane at connector location labeled J14.
The CD-ROM drive power cable connects to the cPCI backplane at connector location J13.

- 6 Remove the cartridge tape or CD-ROM drive power supply cable from the LINCS server.

Installing CD-ROM and Cartridge Tape Drive Power Supply Cable

To install the power cable for the cartridge tape and CD-ROM drive, do the following:

- 1 Verify that the replacement cable is on site and appears to be in usable condition, with no obvious shipping damage.
- 2 Attach the cartridge tape or CD-ROM drive power cable to the backplane.

- 3 Attach the power cable for the cartridge tape drive or CD-ROM drive to the rear of their respective drives, [Figure 56 on page 141](#).

Note: The tape drive power cable connects to the cPCI backplane at connector location labeled J14. The CD-ROM drive power cable connects to the cPCI backplane at connector location J13.

- 4 Restore the upper rear exhaust panel. See [Installing the Upper Rear Exhaust Panel](#) for the procedure.
- 5 Apply power to the server. See [Restoring Power to the DC Server \(page 10\)](#) in [Chapter 1, Getting Inside the LINCS Server](#) for this procedure.

Replacing the SCSI Cable

The SCSI cable is a ribbon cable that connects the SCA backplane, the cartridge tape drive and the CD-ROM drive to the external SCSI connector.

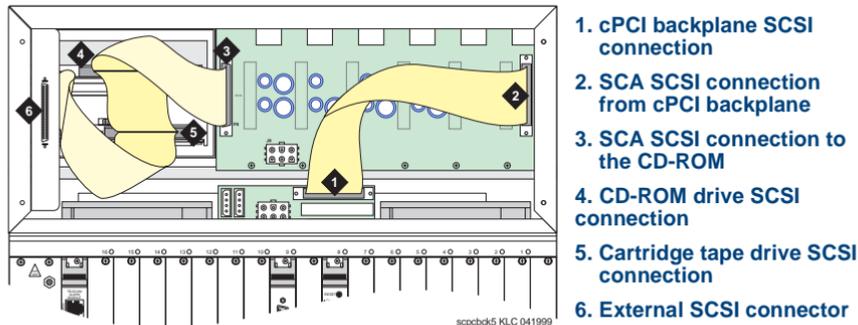
Removing the SCSI Cable Procedures

To remove the SCSI cable, do the following:

- 1 Verify that the replacement cable is on site and appears to be in usable condition, with no obvious shipping damage.
- 2 Remove the incoming power. See [Removing Power From the DC Server \(page 7\)](#) in [Chapter 1, Getting Inside the LINCS Server](#) for this procedure.
- 3 Remove the upper rear exhaust panel. See [Removing the Upper Rear Exhaust Panel \(page 10\)](#) for the procedure.

- 4 Remove the SCSI cable from the back of the SCA backplane (Figure 57 on page 144, callouts 2 and 3).

Figure 57. SCA SCSI Backplane Connections



- 5 Remove the SCSI cable from the back of the CD-ROM drive (Figure 57, callout 4).
- 6 Remove the SCSI cable from the back of the cartridge tape drive (Figure 57, callout 5).
- 7 Remove the SCSI cable and external terminator connector from the server by removing the two screws and the top and bottom of the external connector (Figure 57, callout 6).

Installing the SCSI Cable Procedure

To install the SCSI cable, do the following:

- 1 Verify that the replacement cable is on site and appears to be in usable condition, with no obvious shipping damage.
- 2 Attach the SCSI cable and external terminator connector to the server by installing the two screws in the top and bottom of the external connector ([Figure 57 on page 144](#), callout 6).
- 3 Attach the SCSI cable to the back of the cartridge tape drive ([Figure 57 on page 144](#), callout 5).
- 4 Attach the SCSI cable to the back of the CD-ROM drive ([Figure 57 on page 144](#), callout 4).
- 5 Attach the SCSI cable to the back of the SCA backplane ([Figure 57 on page 144](#), callouts 2 and 3).
- 6 Replace the rear exhaust panel. See [Installing the Upper Rear Exhaust Panel \(page 13\)](#) for the procedures.
- 7 Apply power to the LINCOS server. See [Restoring Power to the DC Server \(page 10\)](#) in [Chapter 1, Getting Inside the LINCOS Server](#) for this procedure.

Replacing a Fan Tray

Description

The LINCS server contains eight fans that provide forced-air cooling for the unit. The lower fan unit contains three fans that are located just above the power supplies, [Figure 58 on page 148](#). The upper fan unit has five fans that are located just below the hard disk drives. If a fan is defective, the associated Fan Fault LED will be lit. A major alarm is indicated by the TAM and will clear only after the fan tray is replaced.

Replacing a Fan Tray Procedure

The fan trays are a hot-swap item. This means the tray can be replaced without removing power from or turning down the system.



CAUTION:

Do not leave the LINCS server powered up for any length of time without a fan tray installed and fully operational.

To replace a fan tray, do the following:

- 1 Verify that the replacement fan tray is on site and appears to be in usable condition, with no obvious shipping damage.



CAUTION:

If your system has a sticker on the fan trays that reads, "Do Not Hot Swap," you must first remove incoming power. Perform [step 1](#) through [step 3](#) of [Removing Power From the DC Server \(page 7\)](#) in [Chapter 1, Getting Inside the LINCS Server](#).

Note: Three (3) fans for the lower tray, five (5) fans for the upper tray.

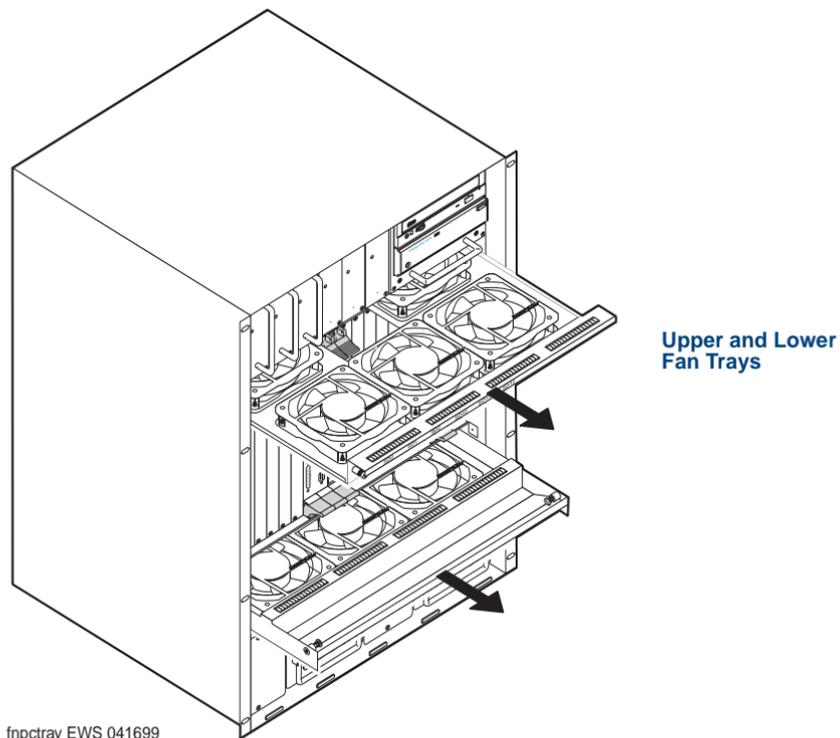
- 2 If replacing the lower fan tray, swing the cable trough up and out of the way to the locked position.
- 3 Loosen the screws on the fan tray, [Figure 58 on page 148](#).

Note: The screws are located on the front of the upper fan tray and behind the top edge of the lower front panel for the lower fan tray.

- 4 Remove the lower filter panel.
- 5 Slide the fan tray out of the LINCS server.
- 6 Immediately insert a new fan tray into the LINCS server.
- 7 Tighten the screws on the fan tray to secure it to the server.
- 8 If replacing the lower fan tray, return the cable trough to its original position.
- 9 Secure the lower front panel to the server by tightening the screws.
- 10 Verify that the fans are working by observing the alarm panel, [Figure 54 on page 135](#).

Restore power if necessary. See [Restoring Power to the DC Server \(page 10\)](#) in [Chapter 1, Getting Inside the LINCS Server](#).

Figure 58. Fan Tray Locations



Replacing the Filter

Description

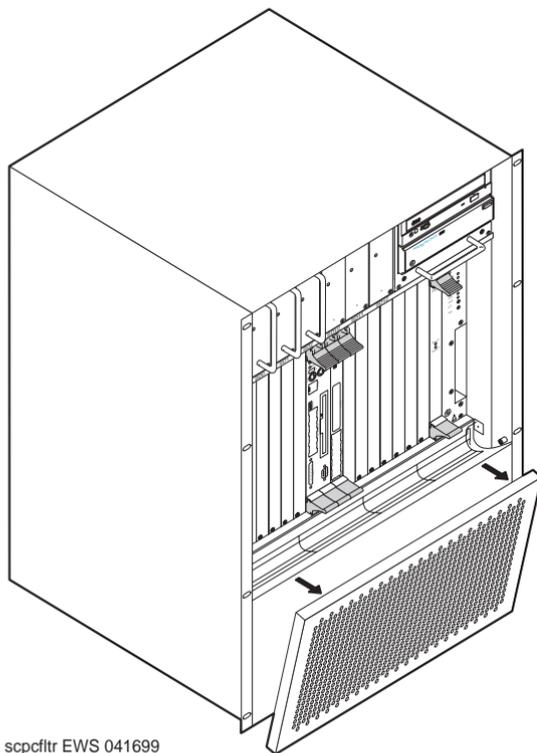
The LINCS server is equipped with one filter located behind the lower front panel, [Figure 59 on page 150](#). The filter should be checked on at least once a month to determine its condition.

Replacing Filter Procedures

To replace the filter, do the following:

- 1 Verify that the replacement filter is on site and appears to be in usable condition, with no obvious shipping damage.
- 2 Swing the cable trough up and out of the way to the locked position.
- 3 Loosen the two screws behind the top edge of the lower front panel.
- 4 Remove the lower front panel, [Figure 59 on page 150](#).
- 5 Detach the old filter from the panel.
- 6 Insert the replacement filter inside the lower front panel.
- 7 Secure the lower front panel to the server by tightening the screws.
- 8 Return the cable trough to its original position.

Figure 59. The Filter Panel



scpcftr EWS 041699

**Lower Filter is
located inside
the panel.**

Replacing the Power Supply

Description

The LINCS server is equipped with two power supplies that are located at the bottom of the server behind the lower front panel. These two power supplies operate in a load-share mode and are hot swappable.



CAUTION:

Do not operate the LINCS server without both positions being equipped with a power supply. A power supply alarm fault occurs when a power supply is removed.

There are no manual adjustments necessary to prepare the power supply for the incoming voltage.

The power supplies attach to a backplane in the LINCS server using a male connector and a backplane receptacle.

Note: Ensure the connector pins are straight before installing the replacement power supply.

The power supply is a hot-swap item. This means the power supply can be replaced without removing power from or turning down the system.

Replacing Power Supply Procedures

To replace a power supply, do the following:

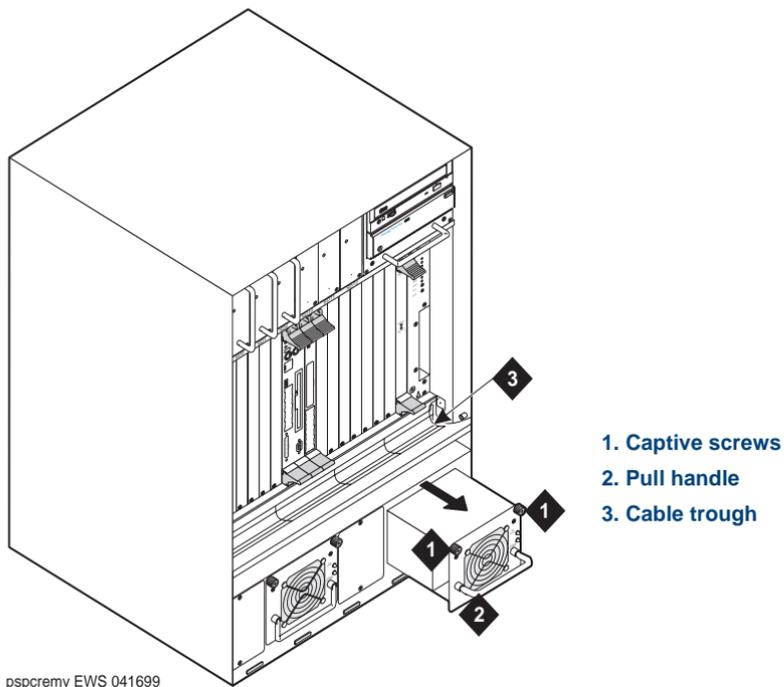
- 1 Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
- 2 Swing the cable trough up and out of the way to the locked position.
- 3 Loosen the two screws behind the top edge of the lower front panel.
- 4 Remove the lower front panel.

Note: A defective power supply will have its indicator LEDs out (dark).

- 5 Loosen the two captive thumbscrews that hold the power supply to the server, [Figure 60 on page 153](#).
- 6 Grasp the power supply pull handle and pull the power supply from the server, [Figure 60 on page 153](#).

Note: The power supply is heavy. Hold on to the bottom edge of the power supply while pulling it from the server.

Figure 60. Removing a Power Supply



7 Place the power supply to the side.

 **CAUTION:**

It is important that the defective power supply be returned to the in the same condition as it was when in the system. If the power supply is damaged during removal, packaging, or shipping adequate failure analysis can not be conducted.

8 Align the replacement power supply with the slot in the server.

9 Slide the power supply into the server until it locks.

10 Apply pressure to ensure that the power supply is seated properly.

11 Tighten the two captive thumbscrews on the power supply.

Note: Use a screwdriver to ensure that the thumbscrews are tight enough to properly seat the power supply.

12 Make sure the status indicator LEDs on the power supply light.

13 Secure the lower front panel to the server by tightening the screws.

14 Return the cable trough to its original position.

Replacing the Temperature Sensors

Description

The LINCS server comes equipped with two temperature sensors. The Air Inlet sensor is located behind the lower front filter panel, just under the lower fan tray. The Air Outlet sensor is located at the rear upper exhaust area on the top panel.

Replacing the Inlet Sensor Procedures

To replace the inlet temperature sensor, located behind the lower front filter panel, do the following:

- 1 Verify that the replacement sensor is on site and appears to be in usable condition, with no obvious shipping damage.
- 2 Verify the S2 switch settings match those listed in [Table 3 on page 60](#) of [Chapter 2, Installing or Replacing Circuit Cards](#).
- 3 Remove the incoming power. See [Removing Power From the DC Server \(page 7\)](#) in [Chapter 1, Getting Inside the LINCS Server](#) for this procedure.
- 4 Remove the lower filter panel, [Figure 59 on page 150](#).
- 5 Remove the lower fan tray, [Figure 58 on page 148](#).
- 6 Remove the inlet temperature sensor from its standoffs by holding opposite edges between thumb and forefinger and rocking the sensor.

Note: Do not pry the sensor from its standoffs.

- 7 Disconnect the TAM temperature sensor cable from the Inlet sensor.
- 8 Attach the TAM temperature sensor cable to the new sensor.
- 9 Attach the new sensor to its standoffs by doing the following:
 - a hold opposite edges of the sensor between thumb and forefinger
 - b align the 3 holes in the sensor with the 3 standoffs
 - c firmly push the sensor onto the standoffs until it locks in place.
- 10 Check that the sensor is locked in place by gently pulling the sensor away from the standoffs. Sensors should not move.
- 11 Replace the lower fan tray and the lower filter panel.
- 12 Restore the incoming power. See [Restoring Power to the DC Server \(page 10\)](#) in [Chapter 1, Getting Inside the LINC Server](#) for this procedure.

Replacing the Outlet Sensor Procedures

To replace the outlet temperature sensor, located at the rear upper exhaust area on the top panel, do the following:

- 1 Verify that the replacement sensor is on site and appears to be in usable condition, with no obvious shipping damage.
- 2 Verify the S2 switch settings match those listed in [Table 3 on page 60](#) of [Chapter 2, Installing or Replacing Circuit Cards](#).

- 3 Remove the incoming power. See [Removing Power From the DC Server \(page 7\)](#) in [Chapter 1, Getting Inside the LINC Server](#) for this procedure.
 - 4 Remove the upper rear exhaust panel. See [Removing the Upper Rear Exhaust Panel \(page 10\)](#) in [Chapter 1, Getting Inside the LINC Server](#).
 - 5 Remove the outlet temperature sensor from its standoffs by holding opposite edges between thumb and forefinger and rocking the sensor.
- Note:** Do not pry the sensor from its standoffs.
- 6 Disconnect the TAM temperature sensor cable from the outlet sensor.
 - 7 Attach the TAM temperature sensor cable to the new sensor.
 - 8 Attach the new sensor to its standoffs by doing the following:
 - a hold opposite edges of the sensor between thumb and forefinger
 - b align the 3 holes in the sensor with the 3 standoffs
 - c firmly push the sensor onto the standoff until it locks in place.
 - 9 Check that the sensor is locked in place by gently pulling the sensor away from the standoffs. Sensors should not move.
 - 10 Replace the upper rear exhaust panel. See [Installing the Upper Rear Exhaust Panel \(page 13\)](#) in [Chapter 1, Getting Inside the LINC Server](#).
 - 11 Restore the incoming power. See [Restoring Power to the DC Server \(page 10\)](#) in [Chapter 1, Getting Inside the LINC Server](#) for this procedure.

5 Installing Base System Software

Overview

This purpose of this chapter is to provide the information necessary to reload the operating system on a server that has experienced a disk failure. Use this chapter in conjunction with [Appendix C. Disaster Recovery Checklists \(page 315\)](#). This chapter describes the installation procedures for the UnixWare operating system software.

Note: The installer must have the root password to complete this procedure.

Installing Base System Software

Configuring the RAID System

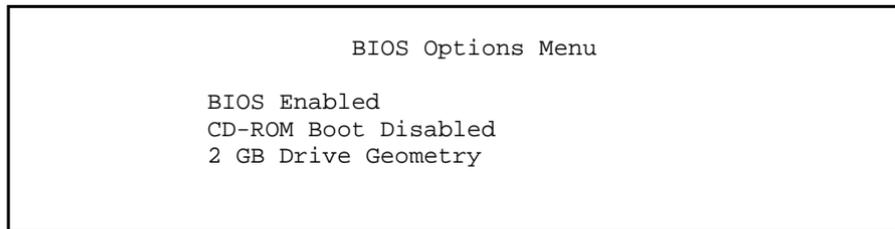
Note: If your system has the RAID optional feature, these procedures must be performed *before* performing the procedures for [Beginning the UnixWare Installation \(page 176\)](#).

Verifying the BIOS To verify the BIOS options, do the following:

- 1 Power up the system.
- 2 After the power on self test (POST) but before the system boots press **ALT+M** when prompted.

The system displays the BIOS Options Menu, [Figure 61](#).

Figure 61. BIOS Options Menu



- 3 Verify that the first three lines are:
 - BIOS enabled
 - Cd-ROM boot disabled
 - 2 GB drive geometry
- 4 Press the up  arrow key or the down  arrow key to highlight the appropriate field then press **ENTER** to change it.

If you changed any of the fields, complete [step 1](#) through [step 3](#) again.
- 5 Press **ESC** to exit and reboot the system.

Continue with [Verifying RAID Hardware Parameters](#).

Verifying RAID Hardware Parameters

To verify the RAID system drive, do the following:

- 1 During the reboot press **ALT+R** when prompted.

The system displays the RAID Controller Main Menu, [Figure 62 on page 161](#).

Figure 62. RAID Controller Main Menu

```
Disk Array Controller                               Configuration Utility

                                     Main Menu

01 Automatic Configuration
02 New Configuration
03 View/Update configuration
04 Rebuild
05 Initialize System Drive
06 Consistency Check
07 Tools
08 Select DAC960
09 Advanced Functions
```

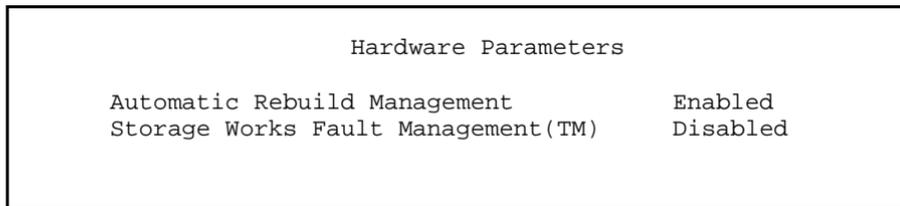
2 Select:

```
>Advanced Functions
```

```
>Hardware Parameters
```

The system displays the Hardware Parameters screen, [Figure 63](#).

Figure 63. Hardware Parameters



- 3 Verify that the settings displayed on the screen match those in [Figure 63](#).
- 4 If a setting differs, press the up arrow (▲) key or the down arrow (▼) key to highlight the appropriate field then press **ENTER** to change it.
- 5 Press **ESC**.

The system displays the Edit/View Parameters Menu, [Figure 64 on page 163](#).

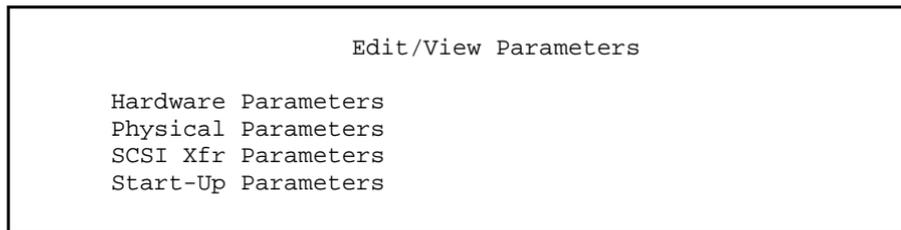
Continue with [Verifying the Physical Parameters](#).

Verifying the Physical Parameters

To verify the physical parameters, do the following:

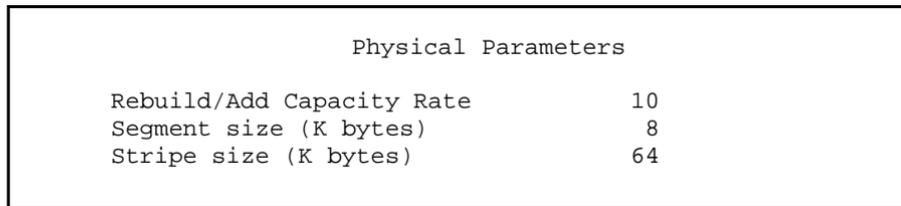
- 1 From the Edit/View Parameters Menu, [Figure 64](#), select `Physical Parameters`.

Figure 64. Edit/View Parameters Menu



The system displays the Physical Parameters screen, [Figure 65](#).

Figure 65. Physical Parameters



- 2 Verify that the settings displayed on the screen match those in [Figure 65](#).

3 If a setting differs, press the up  arrow key or the down  arrow key to highlight the appropriate field then press **ENTER** to change it.

4 Press **ESC**.

The system displays the Edit/View Parameters Menu, [Figure 64 on page 163](#).

Continue with [Verifying the SCSI Transfer Parameters \(Channel 0\)](#).

Verifying the SCSI Transfer Parameters (Channel 0)

To verify the SCSI transfer parameters, do the following:

1 From the Edit/View Parameters Menu, select `SCSI Xfr Parameters`.

The system displays the following message:

```
Enter Channel #
```

2 Enter **0**.

The system displays the SCSI Transfer Parameters screen, [Figure 66](#).

Figure 66. SCSI Transfer Parameters

SCSI Transfer Parameters of Channel 0	
Data Transfer Rate (MHz)	20 MHz
Command Tagging	Enabled
SCSI Data Bus Width	16 bit

- 3 Verify that the settings displayed on the screen match those in [Figure 66 on page 164](#).
- 4 If a setting differs, press the up  arrow key or the down  arrow key to highlight the appropriate field then press **ENTER** to change it.
- 5 Press **ESC**.

The system displays the Advanced Functions Menu, [Figure 64 on page 163](#).

Continue with [Verifying the Startup Parameters](#).

Verifying the Startup Parameters

To verify the startup parameters, do the following:

- 1 From the Edit/View Parameters Menu select `Startup Parameters`.

The system displays the Startup Parameters screen, [Figure 67](#).

Figure 67. Startup Parameters

Startup Parameters	
Spin Up Option	Automatic
Number of Devices Per Spin	1
Delay (seconds)	6

- 2 Verify that the settings displayed on the screen match those in [Figure 67](#).

3 If a setting differs, press the up  arrow key or the down  arrow key to highlight the appropriate field then press **ENTER** to change it.

4 Press **ESC**.

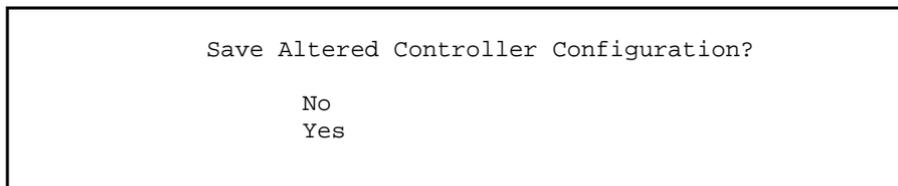
The system displays the Edit/View Parameters Menu, [Figure 64 on page 163](#).

5 Press **ESC**.

If you have made no changes, the system displays the RAID Controller Main Menu, [Figure 62 on page 161](#).

If you did make changes, the system displays the Save Controller Configuration screen, [Figure 68](#).

Figure 68. Save Controller Configuration



a Select **yes**.

The system displays the RAID Controller Main Menu, [Figure 62 on page 161](#).

Continue with [Configuring the Array \(page 167\)](#).

Configuring the Array

To configure the disk array, do the following:

- 1 From the RAID Controller Main Menu, [Figure 62 on page 161](#), select:

```
>New Configuration
```

```
>Define Pack
```

```
>Create Pack
```

The system displays the Channel Ready screen, [Figure 69 on page 168](#), which shows an example having all 6 physical hard disk drives installed.

Figure 69. Channel Ready

Tgt ID	Channel Number
0	<input type="checkbox"/> RDY <input type="checkbox"/>
1	<input type="checkbox"/> RDY <input type="checkbox"/>
2	<input type="checkbox"/> RDY <input type="checkbox"/>
3	<input type="checkbox"/> TAP <input type="checkbox"/>
4	<input type="checkbox"/> CDR <input type="checkbox"/>
5	<input type="checkbox"/> <input type="checkbox"/>
6	<input type="checkbox"/> <input type="checkbox"/>

2 Press **ENTER** for all hard disk drives marked as **RDY**. This places the drives in the pack.

Note: The system does not allow the **CDR** and **TAP** to be placed in a pack.

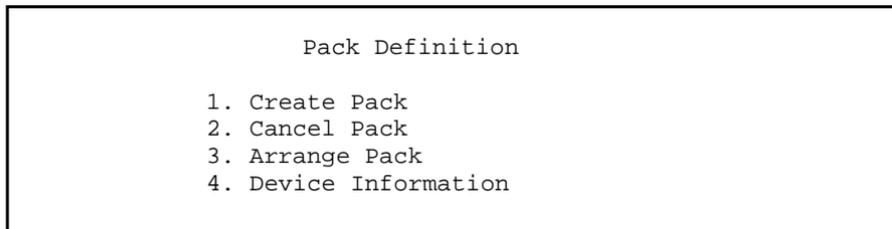
The system displays the Channel Ready screen and shows the drives on line with their pack assignment, [Figure 70](#).

Figure 70. Channel Ready

Tgt ID	Channel Number
0	<input type="checkbox"/> ONL <input checked="" type="checkbox"/> A-0
1	<input type="checkbox"/> ONL <input checked="" type="checkbox"/> A-1
2	<input type="checkbox"/> ONL <input checked="" type="checkbox"/> A-2
3	<input type="checkbox"/> TAP
4	<input type="checkbox"/> CDR
5	<input type="checkbox"/>
6	<input type="checkbox"/>

The system displays the Pack Definition Menu, [Figure 71](#).

Figure 71. Pack Definition Menu

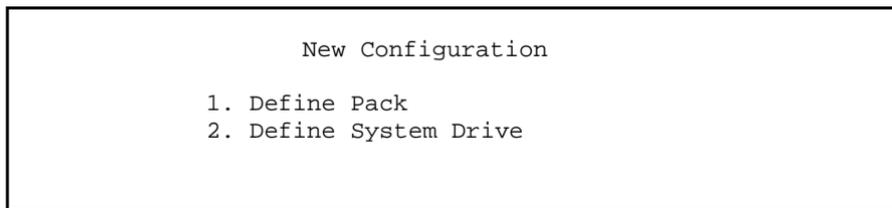


3 Select Arrange Pack.

4 Press **ENTER**.

The system displays the New Configuration Menu, [Figure 72](#).

Figure 72. New Configuration Menu



Continue with [Defining the Logical System Drive \(page 171\)](#).

Defining the Logical System Drive

To define the logical system drive, do the following;

- 1 From the New Configuration Menu, [Figure 72 on page 170](#), select:

```
>Define System Drive
>Create System Drive
```

The system displays the RAID Level Screen, [Figure 73](#).

Figure 73. RAID Level Screen

```
RAID Level
RAID 0
RAID 1
RAID 3
RAID 5
RAID 6
RAID 7
```

- 2 Select RAID 5.

The system displays a pop-up box for entering the size for the new system drive.

- 3 Enter the size from [Table 28](#) that corresponds to the number of physical drives in your system. For example, if your system has a total of 6 physical drives, you would enter 5400.

Table 28. Hard Disk Drive Capacity

For systems with a total of	Enter this size
3 physical hard disk drives	6750
4 physical hard disk drives	6000
5 physical hard disk drives	5625
6 physical hard disk drives	5400

The system displays a summary for the new system drive in a message similar to the following:

```
System Drive #0  
RAID Level # 5  
Capacity      x
```

Where *x* is the drive capacity.

The system displays the Create System Drive screen, [Figure 74 on page 173](#).

Note: Once the value is entered, the system will subtract the amount needed for the RAID overhead and display the actual size of logical system drive 0. The remaining physical drive space is available for logical system drive 1. The size for system drive 0 should be equal to or slightly larger than 4500 MB after RAID 5.

Figure 74. Create System Drive

```
Do you want to create this system drive?  
  
No  
Yes
```

4 Select YES.

The system creates logical system drive 0 then displays the System Drive Definition Menu, [Figure 75](#).

Figure 75. System Drive Definition Menu

```
System Drive Definition  
  
1. Create System Drive  
2. Toggle Write Policy
```

5 Select:

```
>Create System Drive
```

The system displays the RAID Level screen, [Figure 73 on page 171](#).

6 Select `RAID 5`.**7** Press **ENTER** to accept the default size.

The system displays the Create System Drive screen, [Figure 74 on page 173](#).

8 Select `YES` to create system drive 1.

The system displays a summary for the new system drive in a message similar to the following:

```
System Drive #1  
RAID Level # 5  
Capacity      x
```

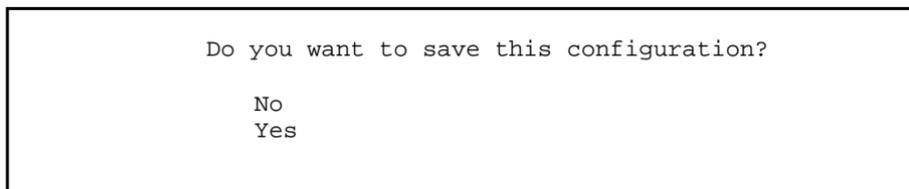
Where *x* is the drive capacity.

The system displays the System Drive Definition Menu, [Figure 75 on page 173](#).

9 Press **ESC**.

10 Press **ESC**.

The system displays the Save Configuration screen, [Figure 76](#).

Figure 76. Save Configuration**11** Select **YES**.

The system displays the following message:

```
System drive x is available for immediate use. Press any key  
to continue.
```

Where *x* is the logical system drive number or numbers that are available to your system.

12 Press **ENTER**.

The system displays the RAID Controller Main Menu, [Figure 62 on page 161](#) and the following message:

```
Remember to save your configuration to a floppy disk before
exiting. Do you really want to exit Configuration Utility?
```

```
Yes
```

```
No
```

13 Select `Yes`

The system automatically reboots.

14 Proceed with [Beginning the UnixWare Installation](#).

Beginning the UnixWare Installation

Note: Installing the UnixWare operating system unmounts file systems. If this software is being loaded onto a system that has clean hard disks that have not been previously loaded, the system will not detect file systems. If this is a recovery installation, the system will detect previously loaded file systems.

Installing UnixWare
Procedures

To load UnixWare, do the following:

- 1 Insert the diskette labeled “Intuity UnixWare 2.1.3 Boot Floppy 1” into the diskette drive.
- 2 Boot the system. Follow one of the suggestions in [Table 29](#).

Table 29. Initial Boot

If	Then
starting from the DOS prompt	enter CONTROL+ ALT + DELETE
the system is off	turn it on using the power switch on the back of the LINCServer
the system is on	reboot the system. See “Reboot the System,” in “Common System Procedures,” in the <i>LINCServer System Reference</i> , 585-313-210, for the procedure

The system displays the SCO trademark screen as it begins to load the base system software. When the system has loaded the first boot floppy it displays the following message:

```
Insert the second floppy and Press ENTER
```

- 3 Remove the diskette labeled “Intuity UnixWare 2.1.3 Boot Floppy 1” from the diskette drive.
- 4 Insert the diskette labeled “Intuity UnixWare 2.1.3 Boot Floppy 2” into the diskette drive.
- 5 Press **ENTER**.

The system displays the following message:

```
Please wait while the system software drivers are loaded.
```

After several minutes the system displays the SCO UnixWare 2.1 Menu, [Figure 77](#).

Figure 77. UnixWare Menu

```
SCO UnixWare 2.1 Menu

      Install/Upgrade UnixWare 2.1
      Access UnixWare Shell
      Reboot

Use up/down arrow keys and ENTER to select; F1 for help
```

- 6 Press the down (▼) arrow to select `Install/Upgrade UnixWare 2.1` and then press **ENTER**.

The system displays the Remove Floppy screen, [Figure 78](#).

Figure 78. Remove Floppy

```
UnixWare Installation                                Remove Floppy

                Please remove the Floppy from the floppy drive

Press 'ENTER' to continue
```

- 7 Remove the diskette labeled “Intuity UnixWare 2.1.3 Boot Floppy 2” from the diskette drive.

8 Press ENTER.

The system displays the Introduction screen, [Figure 79](#).

Figure 79. Introduction

```
UnixWare Installation                               Introduction

                Welcome to the UnixWare installation process!

If you have never installed UnixWare before, it is recommended
that you press the 'F1' (or '?') key now to learn more about
the installation process and the hardware requirements of
UnixWare.

-Pressing the 'F1' (or '?') key at any time during
  installation will display more information or help.
-Pressing the 'Del' key at any time cancels the
  installation.

Press the 'F1' (or '?') key for more information or 'ENTER' to
continue.
```

 **CAUTION:**

If you use the **DELETE** key to stop the UnixWare installation at any time during this process, you will have to restart the software installation process at [step 1](#).

- 9** Continue with the next procedure, [Setting Up the UnixWare Environment Procedures \(page 181\)](#).

Setting Up the UnixWare Environment

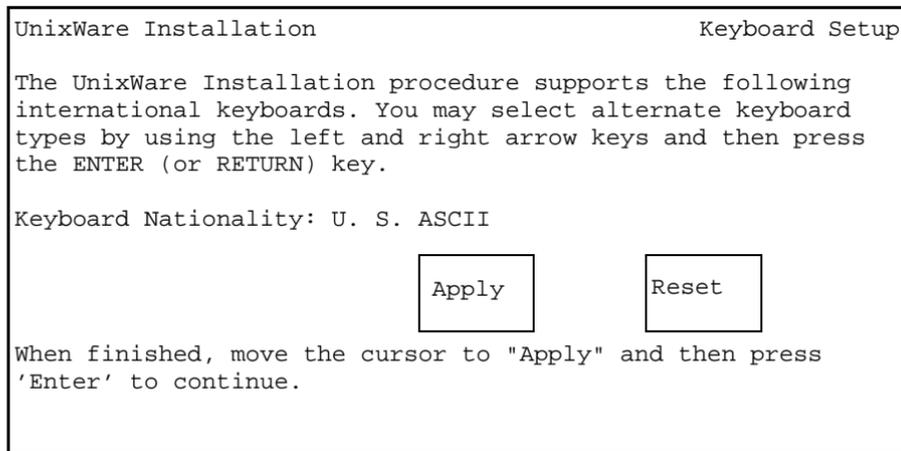
Setting Up the UnixWare Environment Procedures

To set up the UnixWare environment, complete the following:

- 1 Starting at the Introduction Screen, press **ENTER**.

The system displays the Keyboard Setup screen, [Figure 80](#).

Figure 80. Keyboard Setup



- 2 Press the left  and right  arrows on your keyboard to move through the field selections and select U.S. ASCII.

3 Press **TAB** to move to the `Apply` field and then press **ENTER**.

The system displays the Configure Date and Time screen, [Figure 81](#).

Figure 81. Configure Date and Time

```
UnixWare Installation                               Configure Date and Time

On this screen, you will check the current date and time that
is set on your computer and change them if necessary. You also
select what timezone configuration you require. Either set a
continent(s) which will lead you onto a further screen with
locations or Manual Entry for a custom timezone.

The current date:
The current time:
Enter the current year:
Enter the month of the year (1-12):
Enter the day of the month (1-31):
Enter the hour of the day (0-23):
Enter the minute of the hour (0-59):
Timezone configuration:

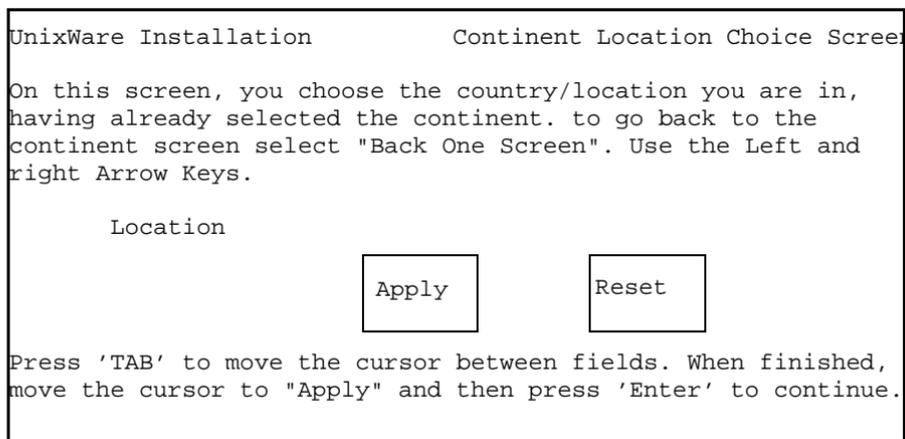
Apply                                             Reset

Press 'TAB' to move the cursor between fields. When finished,
move the cursor to "Apply" and then press 'Enter' to continue.
```

- 4 Use the left  and right  arrows on your keyboard to move through the field selections. Use **TAB** to move to the next field.
- 5 Select the appropriate data for each field.
- 6 Press **TAB** to move to the `Apply` field and press **ENTER**.

The system displays the Continent Location Choice screen, [Figure 82](#).

Figure 82. Continent Location Choice Screen



- 7 Use the left  and right  arrows on your keyboard to move through the field selections.

- 8 Select the appropriate data for each field.
- 9 Press **TAB** to move to the `Apply` field and press **ENTER**.

The system displays the Installation Type Selection screen, [Figure 83 on page 185](#). Use the data listed in [Table 30](#) to enter in the appropriate fields for either RAID or non-RAID systems on the Installation Type Selection screen and the CPU Configuration screen, [Figure 84 on page 186](#).

Table 30. Installation Type Selection Screen Entries

Field	Non-RAID Setting	RAID Setting
Platform type:	16-Slot CPCI Server	16-Slot CPCI Server
Offer type:	LINCS	LINCS
CPU Configuration:	Pentium/SCSI/Non-RAID	Pentium/SCSI/RAID

Figure 83. Installation Type Selection

UnixWare System Installation Installation Type Selection

You must choose a system type. The system type you choose will determine the default file system sizes you will specify on the next screen.

Press the 'F1' or '?' key to see more information about these different system types.

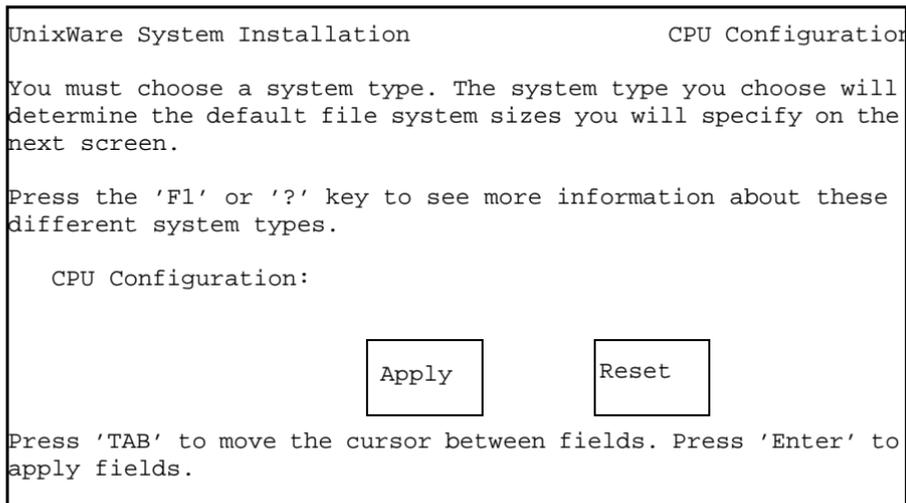
Platform Type:
Offer Type:

Press 'TAB' to move the cursor between fields. Press 'Enter' to apply fields.

- 10 Use the left  and right  arrows on your keyboard to move through the field selections. Use **TAB** to move to the next field.

The system then displays the CPU Configuration screen, [Figure 84](#).

Figure 84. CPU Configuration



- 11 Use the left  and right  arrows on your keyboard to move through the field selections. Use **TAB** to move to the next field.

12 Press **TAB** to move to the `Apply` field and press **ENTER**.

The system displays the LINC S Install Type screen, [Figure 85](#).

Figure 85. LINC S Install Type

```
Unix System Installation                                LINC S Install Type

You must select whether you are performing a new
installation which configure both disk 0 and disk 1 (if
installed), or are restoring a system from a previously
created mkimage.

Your choices are:

1. New Installation

2. Restore from mkimage
```

13 Enter 1

Note: If you are restoring a system from a mkimage tape, use the procedures in Chapter 3, "Common System Procedures," in *LINCS Server Reference*, 585-313-210.

The system displays the Set Disk Partitions screen, [Figure 86](#).

Figure 86. Set Disk Partition

```
Unix System Installation                               Set Disk Partition

Please select whether you would like the recommended disk
partitions or would like to customize the disk partitions.

The recommended disk partitions are 100% UNIX partitions for
all the disks on the system.

WARNING:  PROCEEDING PAST THIS SCREEN MAY DESTROY ALL THE DATA
CURRENTLY ON THE DISKS!

Your choices are:
1. Recommended Disk Partitions (100% UNIX partitions)
2. Customize Disk Partitions

Press '1' or '2' followed by 'ENTER': 1
```

Note: Continue with one of the steps in the following decision table, [Table 31 on page 189](#).

Table 31. Set Disk Partition Options

If you choose	Enter	Then proceed to
14 the Recommended Disk Partition	1	Selecting the Recommended Disk Partitions (page 207)
15 to Customize Disk Partitions	2	Initializing the Hard Disk Drives (page 190)

Initializing the Hard Disk Drives

Customize Disk Partitions

As a result of choosing Customize Disk Partitions from the Set Disk Partitions menu, the system displays the Primary Hard Disk Partitioning screen, [Figure 87](#).

Figure 87. Primary Hard Disk Partitioning

```
UnixWare Installation           Primary Hard Disk Partitioning

In order to install LINC S, you should reserve a UNIX system
partition (a portion of your hard disk's space) containing
100% of the space on your primary hard disk. After you press
'ENTER' you will be shown a screen that will allow you to
create new partitions, delete existing partitions or change
the active partition of your primary hard disk (the partition
that your computer will boot from).

WARNING: All files in any partition(s) you delete will be
destroyed. If you wish to attempt to preserve any files from an
existing UNIX system, do not delete its partitions(s).

The UNIX system partition that you intend to use on the primary
hard disk must be at lease 4200 MBs and labeled "ACTIVE.'"

Press 'ENTER' to continue
```

To partition the hard disk drives, do the following:

- 1 Starting at the Primary Hard Disk Partitioning screen, press **ENTER**.

The system displays the Hard Disk Partition 1 screen, [Figure 88](#).

Figure 88. Delete Partition Disk 1

```
UnixWare Installation                Hard Disk Partiton - Disk 1
                                     Total disk size is 4340 cylinders (4340.0MB)

Partition Status Type Start End Length % Approx MB
-----
 1 Active Unix 0.00 4339 4340 100 4339.98
   System

1. Overwrite system master boot code
2. Delete a partition
3. Exit (Update disk configuration and exit)
4. Cancel (Exit without updating disk configuration)

Enter selection:
```

2 Enter 2

The system displays the Delete A Partition screen, [Figure 89](#).

Figure 89. Delete A Partition

```
UnixWare Installation                               Delete A Partition
                                                    Total disk size is 4340 cylinders (4340.0MB)

Partition Status Type Start End Length % Approx MB
-----
1 Active Unix System 0.00 4339 4340 100 4339.98

1. Partition 1

Enter the number of partition to delete: 1
```

3 Press ENTER.

The system displays the Hard Disk Partitioning, Disk 1 screen, [Figure 90](#).

Figure 90. Hard Disk Partitioning Disk 1

```
UnixWare Installation                Hard Disk Partiton - Disk 1
                                     Total disk size is 4340 cylinders (4340.0MB)

Partition Status Type Start End Length % Approx MB
  1
                                     0.00

1. Overwrite system master boot code
2. Create a partition
3. Exit (Update disk configuration and exit)
4. Cancel (Exit without updating disk configuration)

Enter selection:
```

4 Enter 2

The system displays the Create a Partition screen, [Figure 91](#).

Figure 91. Create a Partition

```
UnixWare Installation                               Create A
Partition                                           Partition

                Total disk size is 4340 cylinders (4340.0MB)

Partition  Status  Type  Start  End  Length  %  Approx MB
-----
1

                Partition Type
                Percentage of Disk

                Apply                Reset
```

- 5 Use the left  and right  arrows on your keyboard to move through the field selections. Use **TAB** to move to the next field.

- 6 Select the appropriate data for each field as specified in [Table 32](#).

Table 32. Create a Partition Screen Entries

Field	Setting
Partition type:	UNIX System
Percentage of Disk:	100

- 7 Press **TAB** to move to the `Apply` field and press **ENTER**.

The system displays the Hard Disk Partitioning, Disk 1 screen, [Figure 92 on page 196](#).

Figure 92. Hard Disk Partitioning

```
UnixWare Installation                Hard Disk Partitoning - Disk 1

      Total disk size is 4340 cylinders (4340.0MB)

                                Cylinders

Partition Status Type Start End Length % Approx MB
  1          Unix   System  0.00

1. Overwrite system master boot code
2. Change Active (Boot from) partition
3. Delete a partition
4. Cancel (Exit without updating disk configuration)

Enter selection:
```

8 Press ENTER.

The system displays the Hard Disk Partitioning, Disk 1 screen, [Figure 92](#).

9 Enter 2

The system displays the Change Active Partition screen, [Figure 93](#).

Figure 93. Change Active Partition

```
UnixWare Installation                               Change Active Partition
                                                    Total disk size is 4340 cylinders (4340.0MB)

Partition Status Type Start End Length % Approx MB
  1          Unix System 0.00

1. Partition 1

Enter the number of partition you want to boot from:
```

10 Press ENTER.

The system displays the Hard Disk Partitioning, Disk 1 screen, [Figure 94](#).

Figure 94. Hard Disk Partitioning Disk 1

```
UnixWare Installation                Hard Disk Partiton - Disk 1
                                     Total disk size is 4340 cylinders (4340.0MB)
                                     Cylinders
Partition Status Type Start End Length % Approx MB
  1         Active Unix  0.00  4339  4340    100  4339.98
                System

1. Do not overwrite system master boot code
2. Delete a partition
3. Exit (update disk configuration and exit)
4. Cancel (Exit without updating disk configuration)

Enter selection:

System master boot code will be overwritten
```

11 Enter 3

The system displays the Secondary Hard Disk Partitioning screen, [Figure 95](#).

Figure 95. Secondary Hard Disk Partitioning

```
UnixWare Installation                Second Hard Disk
Partitioning

In order to install LINC S, you should reserve a UNIX system
partition (a portion of your hard disk's space) containing 100%
of the space on your secondary hard disk. After you press
'ENTER' you will be shown a screen that will allow you to
create new partitions, delete existing partitions or change the
active partition of your secondary hard disk (the partition
that your computer will boot from).

WARNING: All files in any partition(s) you delete will be
destroyed. If you wish to attempt to preserve any files from an
existing UNIX system, do not delete its partitions(s).

The UNIX system partition that you intend to use on the
secondary hard disk must be at least 40 MBs and labeled
"ACTIVE.'"

Press 'ENTER' to continue
```

12 Press ENTER.

The system displays the Hard Disk Partitioning, Disk 2 screen, [Figure 96](#).

Figure 96. Hard Disk Partitioning Disk 2

```
UnixWare Installation                Hard Disk Partiton - Disk

          Total disk size is 4340 cylinders (4340.0MB)

                                Cylinders
Partition Status Type Start End Length % Approx MB
  1         Active Unix  0.00  4339  4340    100   4339.98
                System

1. Do not overwrite system master boot code
2. Delete a partition
3. Exit (update disk configuration and exit)
4. Cancel (Exit without updating disk configuration)

Enter selection:

System master boot code will be overwritten
```

13 Enter 3

The system displays the Set Slice Sizes selection screen, [Figure 97](#).

Figure 97. Set Slice Sizes

```

UNIX System Installation                               Set Slice Sizes

Please select whether you would like the recommended slice
sizes or would like to customize the slice sizes.

Your choices are:
1. Recommended Slice Sizes
2. Customize Slice Sizes

Press '1' or '2' followed by 'ENTER': 1

```

Continue with one of the steps in the [Table 33](#).

Table 33. Set Slice Size Options

If you choose	Enter	Then proceed to
14 the Recommended Slice Sizes	1	Installing the LINC S Image (page 208)
15 to Customize Slice Sizes	2	Selecting to Customize Slice Sizes (page 202)

Selecting to Customize Slice Sizes

Customizing Slice Sizes

After choosing the Customize Size Slices, the system displays the UnixWare Installation Set Custom Slice Sizes screen, [Figure 98 on page 205](#) and [Figure 99 on page 206](#).

- 1 Enter the appropriate number of megabytes of space needed for each slice as specified in [Table 34](#).

Note: The sizes listed in [Table 34](#) are the recommended default sizes. If you are loading a system using a mkimage tape, use the sizes on the tape label. If there are no sizes, use the recommended size. If you are loading a new system, without a mkimage tape, use the recommended sizes.

Table 34. Recommended Default Space Requirements for the LINC Server

Slice	Space Requirements (MBytes)
/	900
/stand	20
/dev/dump	129 (memory size + 1 [*])
/dev/swap	257 ([2 x memory size] + 1 = size [†])

1 of 3

Table 34. Recommended Default Space Requirements for the LINC Server

Slice	Space Requirements (MBytes)
/mtce	50
/update	0
/vs	200
/swin	0
/voxem	0
/var	0
/html	0
/vm	0
/ldap	0
/VM	0
/netw	0
/voice1	500
/oracle	700
/tmp	200

2 of 3

Table 34. Recommended Default Space Requirements for the LINCS Server

Slice	Space Requirements (MBytes)
/backup1	0
/backup2	0
/add-on1	1541 Note: This number may vary.
/add-on2	0
/add-on3	0

3 of 3

* For LINCS 0, /dev/dump = 128 + 1

† For LINCS0, /dev/swap = 256 + 1

Figure 98. Set Custom Slice Sizes

```
UNIX System Installation                               Set Slice Sizes

Please specify the sizes of the filesystem slice. The size of
disk 1 is 4337MB.

Size of / in MB:
Size of /stand in MB:
Size of /dev/dump in MB:
Size of /dev/swap in MB:
Size of /mtce in MB:
Size of /update in MB:
Size of /vs in MB:
Size of /swin in MB:
Size of /voxem in MB:
Size of /var in MB:
Size of /html in MB:

Continue                                             Reset

Consult software installation manual for correct sizes.
Megabytes in active partition: Disk 1 - 4337
```

- 2 Use the left  and right  arrows on your keyboard to move through the field selections. Use **TAB** to move to the next field.
- 3 Press **TAB** to move to the `Continue` field and press **ENTER**.

Figure 99. Set Custom Slice Sizes

UNIX System Installation	Set Slice Sizes
Please specify the sizes of the filesystem slice. The size of disk 1 is 4337MB.	
Size of /vm in MB:	
Size of /ldap in MB:	
Size of /VM in MB:	
Size of /netw in MB:	
Size of /voicel in MB:	
Size of /oracle in MB:	
Size of /tmp in MB:	
Size of /backup1 in MB:	
Size of /backup2 in MB:	
Size of /add-on1 in MB:	
Size of /add-on2 in MB:	
Size of /add-on3 in MB:	
<input type="button" value="Apply"/>	<input type="button" value="Reset"/>
Consult software installation manual for correct sizes. Megabytes in active partition: Disk 1 - 4337	

- 4 Use the left  and right  arrows on your keyboard to move through the field selections. Use **TAB** to move to the next field.
- 5 Press **TAB** to move to the `Apply` field and press **ENTER**.

The system continues with [Installing the LINCS Image \(page 208\)](#) and displays the LINCS Device Type screen.

Selecting the Recommended Disk Partitions

Recommended Disk Partitions As a result of choosing Recommended Disk Partitions, the system displays the Set Slice Sizes screen, [Figure 100](#).

Figure 100. Set Slice Sizes

```
UNIX System Installation                               Set Slice Sizes

Please select whether you would like the recommended slice
sizes or would like to customize the slice sizes.

Your choices are:
1. Recommended Slice Sizes
2. Customize Slice Sizes

Press '1' or '2' followed by 'ENTER': 1
```

Continue with the steps in [Table 35](#).

Table 35. Set Slice Size Options

If you choose	Enter	Then proceed to
1 the Recommended Slice Sizes	1	Installing the LINCS Image
2 to Customize Slice Sizes	2	Selecting to Customize Slice Sizes (page 202)

Installing the LINCS Image

Selecting the Recommended Slice Sizes

As a result of choosing Recommended Slice Sizes from the Set Disk Partitions menu or after completing the customize slice sizes, the system displays the LINCS Device Type screen, [Figure 101 on page 209](#).

Figure 101. LINC S Device Type

```
UnixWare Installation                               LINC S Device Type
Please select the device you wish to install from.

Your choices are:
1. CD-ROM
2. Tape

Press a number between 1 and 2 followed by 'ENTER': 1
```

1 Press **ENTER**.

The system displays the Insert LINC S CD-ROM screen, [Figure 102](#).

Figure 102. LINC S CD-ROM

```
UnixWare Installation                               Insert LINC S CD-ROM
Please insert the LINC S CD-ROM into the CD-ROM drive and press
'ENTER'.

Your choices are:
1. The CD-ROM has been inserted in the CD-ROM drive
2. Go back to previous menu

Press '1' or '2' followed by 'ENTER': 1
```

- 2 Insert the CD labeled "LINCS Base" into the CD-ROM drive then press **ENTER**.

The system verifies that the CD-ROM is inserted correctly then displays the Continue Installation screen, [Figure 103](#).

Figure 103. Continue Installation

```
UnixWare Installation                               Continue Installatio
The LINCS CD-ROM has been inserted correctly.
Next the hard disk will be checked for defects and the file
systems will be created. Then the LINCS Image will be copies
to the hard disk and the system will be rebooted.
Do not remove the LINCS CD-ROM until prompted to do so.
This will take at least one hour. Please wait.
Press 'ENTER' to continue
```

Note: The process will take at least an hour.

- 3 Press **ENTER**.

The system displays a continuous status screen while checking the hard disks for defects and creating file systems.

The system then displays the Copying Files screen, [Figure 104](#).

Figure 104. Copying Files

```
UnixWare Installation                               Copying Files
Copying LINCS Image to the hard disk.
Do Not remove the LINCS CD-ROM until prompted to do so.
```

After several minutes the system displays the following message:

```
Please remove the CD-ROM from the drive.
```

```
Press 'ENTER' to continue.
```

4 Press ENTER.

The system displays the following message:

```
The UNIX System is now being rebuilt to reflect your
selections. This will not require any user input.
```

```
Please wait
```

The system automatically reboots and displays `Console Login:`

The procedure is now complete and the LINCS base system software is installed. Continue with [Installing the LAN PMC Driver \(page 212\)](#) or [Setting up the Monitor \(page 217\)](#).

Installing the LAN PMC Driver

Installing the LAN Driver Procedures

To install the LAN driver, do the following:

- 1 From the network administrator, determine the following:
 - ~ The machine IP address
 - ~ The machine node name
 - ~ The system name
- 2 If you are not already logged in as root, do so now.
- 3 Enter **setuname -n *name*** where *name* is the machine node name.

The system displays the following message:

```
WARNING: Changing will affect the system's feature license.  
The feature provided by these license will be unavailable.  
Please refer to System User documentation for more  
information.
```

```
Do you really want to change the system's node name? [y/n] y
```

- 4 Press **ENTER**.
- 5 Enter **setuname -s *name*** where *name* is the system name.

6 Enter `pkgadd -d /var/spool/pkg d21x`

The system displays the readme information then the following message:

```
Read text again (default: n) [yes,no,?]
```

7 Press **ENTER**.

The system displays the following message:

```
Continue with installation (default = y) {yes,no,?}
```

8 Press **ENTER**.

The system displays the following message:

```
These are the device(s) available on your system:
```

```
1      d21x_0
```

```
Type the number of device(s) to be configured with inet  
[?,?,quit]:
```

9 Press **ENTER**.

The system displays the following message:

```
Please enter the IP hostname for device d21x_0  
(default:hostname):
```

10 Enter the machine node name identified in [step 3](#).

The system displays the following message:

```
Please initialize the IP address for host
```

11 Enter the IP address.

The system displays the following message:

```
Configure <host name> with default Ethernet ifconfig options?  
Info message is long. (yes,no,ClassC Berkeley, etc.)
```

12 Enter **ClassC**

The system displays the following message:

```
Installation of DEC21143 Ethernet(d21x) was successful.
```

If you are using dual LAN, continue with [step 13](#).

If you are not using dual LAN, continue with [step 21](#).

13 For dual LAN systems, use the vi editor to edit `/etc/confnet.d/netdrivers`**14** Add `d21x_1 inet` to the end of the `netdrivers` file.**15** Write and exit the `netdrivers` file.**16** Enter `/etc/confnet.d/configure -i`

The system displays the following message:

```
These are the device(s) available on your system:
```

```
1      d21x_0
```

```
2      d21x_1
```

```
Type the number of device(s) to be configured with inet
```

```
[?,??,quit]:
```

- 17 Enter **2** for the second LAN.

The system displays the following message:

```
Please enter the IP hostname for device d21x_1
(default:hostname):
```

- 18 Enter a name, other than the host name, that is unique for your secondary interface.

The system displays the following message:

```
Please initialize the IP address for host
```

- 19 Enter the secondary IP address.

The system displays the following message:

```
Configure <host name> with default Ethernet ifonfig options?
Info message is long. (yes,no,ClassC Berkeley, etc.)
```

- 20 Enter **ClassC**

The system displays the following message:

```
Installation of DEC21143 Ethernet(d21x) was successful.
```

- 21 Enter **cd /etc/net**

22 Use the vi editor and enter the machine node name to the *hosts* file in each of the following directories:

- ~ ticlts
- ~ ticots
- ~ ticotsord

Note: The machine node name must be entered two times on the same line, separated by a tab.

23 Enter **cd /etc/confnet.d/inet**

24 Use the vi editor to verify the contents of the *interface* file.

25 Verify the *interface* file contains the following lines:

Note: For single LAN, only the first line will appear.
For dual LAN, both lines will display.

```
d21x:0::/dev/d21x_0:netmask 0xffffffff broadcast a.b.c.255 -trailers  
d21x:1::/dev/d21x_1:netmask 0xffffffff broadcast a.b.c.255 -trailers
```

where *a.b.c* are the first three parts of your machine IP address. For example, IP address 135.7.50.201 would be changed to 135.7.50.255.

26 Copy the *hosts* files that contains all the IP addresses of your machine and of the machines to which you want to connect into the */etc/inet/* directory.

27 Enter **cd /etc/inet**

28 Use the vi editor to edit the *config* file.

29 Change the following line:

```
###4c:/usr/sbin/route::n:add default default_router 1
```

to this:

```
4c:/usr/sbin/route::y:add default a.b.c.254 1
```

where *a.b.c* are the first three parts of your machine IP address. For example, IP address 135.7.50.201 would be changed to 135.7.50.254 1.

30 Write and exit the file.

Setting up the Monitor

Setting up the Monitor Procedures

To set up the monitor, do the following:

1 Login as root.

The system displays the system prompt #.

In order to use the graphical user interfaces (GUI) with the video controller card installed in your system, perform the following video setup operations:

2 Enter **/usr/X/lib/display/setvideomode**

The system displays a menu listing the different video chipset options.

3 Enter **3**

This is the number corresponding to the video controller circuit card installed on your system.

The system displays a menu listing monitor mode numbers for video resolution.

4 Enter **13**

Note: The mode number corresponds to the video controller circuit card installed on your system. The resolution must be 640 x 480 and the color must be 256.

The system displays the following message:

```
Video RAM: 2048K
```

```
Do you want to change this value? (y/n) [n]:
```

5 Press **ENTER**.

The system displays the following message:

```
Default Monitor Size, 17 inches(y/n) [y]:
```

6 Enter n

The system displays the Monitor Size screen, [Figure 105](#).

Figure 105. Monitor Size

```

                                     Monitor Size
                                     =====
12 inches
13 inches
14 inches
15 inches
16 inches
17 inches
19 inches
20 inches
21 inches
other

Enter Monitor Size =>
```

7 Enter 14

The system displays a screen similar to the Monitor Test screen, [Figure 106](#).

Figure 106. Monitor Test

```
You have selected the following

VENDOR.....: Generic s3 Virge-VS
CHIPSET.....: VIRGE-VX
VIDEO RAM.....: 2048K
MONITOR.....: MULTISYNC 60 Hz
RESOLUTION.....: 640x480
COLORS.....: 256

Do you want to test this mode? (y/n) [y]:
```

8 Press ENTER.

The system displays the Test Pattern screen, [Figure 107](#).

Figure 107. Test Pattern

```
A TEST PATTERN WILL BE DRAWN ON YOUR SCREEN. AFTER A FEW
SECONDS, YOU WILL RETURN TO THIS SCREEN. IF THE PATTERN
DOESN'T LOOK RIGHT, YOU CANNOT USE THIS MODE. YOU SHOULD TRY
ANOTHER MODE. IF THE PATTERN IS NOT EVEN STABLE, PRESS 'DEL'
IMMEDIATELY TO AVOID DAMAGE TO YOUT HARDWARE.
```

```
Do you want to continue (y/n) [y]:
```

9 Press ENTER.

After the test pattern is drawn, the system displays the following message:

```
Do you want to try the test again? (y/n) [n]:
```

10 Press ENTER to stop the test.

The system displays the following message:

```
Accept(y), Quit(q), Try another mode(anykey):
```

11 Enter y to accept the setup.

The system displays the Current Selection screen, [Figure 108](#).

Figure 108. Current Selection

```
Current Selection:
```

```
ENTRY.....: Generic s3 Virge-VX
RESOLUTION.....: 640x480
VISUAL.....: PseudoColor
MONITOR.....: MULTISYNC 60Hz
```

Initializing the Mouse

If you want to initialize the mouse, do the following:

- 1 Enter **mouseadmin** at the system prompt and press **ENTER**.

The system displays the Mouse Main Menu, [Figure 109](#).

Figure 109. Mouse Main Menu

```
There are no mice assigned.

Select one of the following:

    B) Bus mouse add
    P) PS2 mouse add
    S) Serial mouse add
    T) Test your mouse configuration
    U) Update mouse configuration and quit
    E) Exit (no update)

Enter selection:
```

- 2 If you are not installing a mouse, enter **e**

If you are installing a mouse, enter **s**

The system displays the following message:

```
There are no mice assigned.
```

```
Enter the display terminal that will be using  
the mouse, or strike the ENTER key to return to  
the main menu.
```

```
Display terminal (i.e., console, s0vt00, etc):
```

3 Enter `console` and press `ENTER`.

The system displays the following message:

```
Enter the device that the mouse will be attached to  
or strike the ENTER key to return to the main menu.
```

```
Mouse device: (i.e., tty00, tty01):
```

4 Enter the appropriate data for the serial port your mouse is connected to as listed in [Table 36](#).

Table 36. Serial Mouse Installation Entries

Serial Port Connection	Screen Entry
COM1 port	TTY00
COM2 port	TTY01

 **CAUTION:**

Do not assign the mouse to COM2 as it is dedicated to the TAM.

5 Press **ENTER**.

The system displays the following message:

```
Is your mouse configured to Mouse Systems  
(MSC compatible) mode? [y or n]:
```

6 Enter **y** and press **ENTER**.

Note: Enter **n** if administering the Agiler serial mouse.

The system displays the Mouse Main Menu, [Figure 110 on page 225](#).
TTY00 reflects the port selected in [step 4](#).

Figure 110. Mouse Main Menu

```
The following terminals have mice assigned:
```

<u>Display Terminal</u>	<u>Mouse Device</u>
Console	Serial Mouse on TTY00

```
Select one of the following:
```

- B) Bus mouse add
- P) PS2 mouse add
- S) Serial mouse add
- T) Test your mouse configuration
- U) Update mouse configuration and quit
- E) Exit (no update)

```
Enter selection:
```

7 Enter u

8 Continue with [Testing the Mouse](#).

Testing the Mouse To test the mouse, do the following:

- 1 Enter **mouseadmin** at the system prompt and press **ENTER**.

The system displays the Mouse Main Menu, [Figure 110 on page 225](#).

- 2 Enter **t**

The system displays the following message:

```
Please try using your mouse when the next
screen appears.
```

Strike the **ENTER** key when ready:

- 3 Press **ENTER**.

The system displays the following message:

```
Press a mouse button to stop test.
Test will be cancelled automatically in 15 seconds.
```

The system displays the Mouse Main Menu.

- 4 Enter **e** and press **ENTER**.

You have now installed all the required software for your UnixWare operating system.

6 Installing the LINC Server Software

Overview

This chapter details installation procedures for the LINC server software. Its purpose is to provide the information necessary to reload the server after a disk failure. The base software set includes:

- Intuity Utilities Package
- Intuity Runtime Processing Package
- Intuity Maintenance Package
- Intuity Logger/Alerter Package
- Intuity AUDIX Logger Package
- Intuity Administration Screens Package
- Intuity Backup/Restore Utilities
- Intuity Transaction State Machine Package
- Intuity License Modification Package
- Intuity T1/E1 Board Driver

- Intuity Unix Management Screens Package
- Telecom Alarms Package
- Lucent Integrated Network Call Server Tuning
- Global Array Manager
- Intuity Hardware RAID Integration

Note: All of the packages included in the LINCS server base software set are required for the operation of the LINCS server.

Installing the Base Software Set Procedures

To install the LINCS server base software set, do the following:

- 1 Log in as root.
- 2 Insert the CD-ROM labeled “LINCS Base CD” into the CD-ROM drive.
- 3 Enter **pkgadd -d cdrom1 LINCSet**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

4 Press **ENTER**.

The system displays the following message:

```
Installation in progress. Do not remove the CD.
```

```
PROCESSING:
```

```
Set: Lucent Integrated Network Call Server Set (LINCSet)
from <cdrom1>
```

```
Lucent Integrated Network Call Server Set
(i586) 4.0-3
```

```
Using </> as the package base directory.
```

```
Do you want to run the default set installation?
```

5 Enter **y**

The system automatically installs each package listed at the beginning of this chapter. After approximately 20 minutes the system displays the following message:

```
Processing of packages for set <LINCSet> is completed.
```

```
***IMPORTANT NOTICE***
```

```
If installation of all desired packages is
complete, the machine should be rebooted in order
to ensure sane operation. Execute the shutdown
command with the appropriate options.
```

The system displays the UNIX prompt.

- 6 If not installing additional optional packages, enter **shutdown -i6 -g0 -y**

When the boot is complete, the system displays `Console Login:` then the following message:

```
TERM=[AT386]?
```

- 7 Press **ENTER**.

7 Installing the Optional Feature Software

Overview

This purpose of this chapter is to provide the information necessary to reload the optional feature software on a server which has experienced a disk failure.

This chapter describes the procedures to install all the software that was not included as part of the LINCS server software. This software is called *optional* software since it is not required for the basic system to function.

Optional software is contained on the CD-ROM labeled "LINCS Base CD".

The organization of this chapter is not to imply that you will not necessarily install all of these packages nor will you install them in the order documented. Packages that are order-specific are identified as such.

This chapter also describes the general procedure for removing software packages.

Note: All of the procedures in this chapter must be performed with root permission.

Installing All Packages

To install all of the optional feature software packages, do the following:

- 1 Login as root if not already done so.
- 2 Insert the CD-ROM labeled, "LINCS Base CD" into the CD-ROM drive.
- 3 At the UNIX prompt, enter **pkgadd -d cdrom1 *pkgname pkgname***

where ***pkgname*** is the name of the software package listed in this document that you want to install. Each software package name is separated with a space.

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

- 4 Press **ENTER**.

The system displays the following message:

```
Installation in progress. Do not remove the CD.
```

The system installs each software package identified in the **pkgadd** command. After the last package is successfully installed, the system displays the UNIX prompt.

- 5 If you are finished installing the optional feature software, remove the CD-ROM labeled "LINCS Base CD" from the CD-ROM drive.
- 6 Reboot the system. See "Reboot the System," in "Common System Procedures," in the *LINCS Server System Reference*, 585-313-210.

Installing the ASP Driver

To install the ASP circuit card driver, do the following:

- 1 Stop the voice system. See "Administer the Voice System," in "Common System Procedures," in the *LINCS Server System Reference*, 585-313-210.
- 2 Insert the CD-ROM labeled, "LINCS Base CD" into the CD-ROM drive.
- 3 At the UNIX prompt, enter **pkgadd -d cdrom1 asp**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

4 Press **ENTER**.

The system displays the following message:

```
Installation in progress.  Do not remove the CD.  
PROCESSING:  
Set: INTUITY ASP Driver Package (asp) from <cdrom1>  
  
INTUITY ASP Driver Package  
(i486) 4.0-3  
Using </> as the package base directory.
```

If you did not stop the voice system, the system displays the following message at this point:

```
The voice system is currently running and must be stopped in  
order to install this package.  
  
Please perform a stop_vs and then try again.
```

The system exits the package installation.

If the voice system was stopped, the system continues and displays the following message:

```
The UNIX Operating System kernel will be rebuilt to include  
your configuration changes during the next system reboot.  
  
Installation of INTUITY ASP Driver Package (asp) was  
successful.
```

The system displays the UNIX prompt.

- 5 If you are finished installing the optional feature software, remove the CD-ROM labeled “LINCS Base CD” from the CD-ROM drive.
- 6 Reboot the system. See “Reboot the System,” in “Common System Procedures,” in the *LINCS Server System Reference*, 585-313-210.

Installing the Asynchronous Host Toolkit

To install this optional feature package, do the following:

- 1 If you are not already logged in as root, do so now.
- 2 Insert the CD-ROM labeled “LINCS Base CD” into the CD-ROM drive.
- 3 At the UNIX prompt, enter **pkgadd -d cdrom1 asynchost**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

- 4 Press **ENTER**.

The system displays the following message:

```
Installation in progress. Do not remove the CD.
```

```
PROCESSING:
```

```
Set: INTUITY CSG Asynchronous Host Toolkit (asynchost) from  
<cdrom1>
```

```
INTUITY CSG Asynchronous Host Toolkit  
(i486) 4.0-3
```

```
Using </> as the package base directory.
```

```
Lucent Technologies Inc.
```

```
Enter number of host lines to be configured, 1 or 2:
```

5 Enter the number of lines to be configured.

This is the number of lines your system will be using to communicate with the host.

If you entered **1**, the system displays the following message:

```
Enter asynchronous request function number, 1 or 2:
```

- Note:** Entering **1** will turn on the DIP for hostreq1 host line only.
Entering **2** will turn on the DIP for hostreq2 host line only

If you entered **2**, the system displays the following message:

```
Enter asynchronous request function number, S or D:
```

- Note:** Entering **S** will turn on both host DIPs and they will work independently of each other.
Entering **D** will turn on both host DIPs and they will work in conjunction with each other.

- 6 Enter the request number function.

The system displays the following message:

```
Enter tty port for the single line (e.g., ttys02):
```

The tty port number is assigned to the port on the asynchronous circuit card to which you are connecting. You can determine the available tty addresses by viewing the */dev* file.

Note: Do not assign to COM2 as it is dedicated to the TAM.

- 7 Enter the tty port number you will be using.

The system displays the following message:

```
Installation of INTUITY CGS Asynchronous Host Toolkit  
(asynchost) was successful.
```

The system displays the UNIX prompt.

- 8 If you are finished installing the optional feature software, remove the CD-ROM labeled "LINUX Base CD" from the CD-ROM drive.
- 9 Reboot the system. See "Reboot the System," in "Common System Procedures," in the *LINUX Server System Reference*, 585-313-210.

Installing the Call Bridge Application Package

To install this optional feature package, do the following:

- 1 If you are not already logged in as root, do so now.
- 2 Insert the CD-ROM labeled “LINCS Base CD” into the CD-ROM drive.
- 3 At the UNIX prompt, enter **pkgadd -d cdrom1 xferdip**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

- 4 Press **ENTER**.

The system displays the following message:

```
Installation in progress. Do not remove the CD.  
  
PROCESSING:  
Set: INTUITY Call Bridge Application Package (xferdip) from  
<CD-ROM>  
  
INTUITY Call Bridge Application Package  
(i486) 4.0-3  
Using </> as the package base directory.  
Lucent Technologies Inc.
```

Installation of INTUITY Call Bridge Application Package (xferdip) was successful.

The system displays the UNIX prompt.

- 5 If you are finished installing the optional feature software, remove the CD-ROM labeled "LINCS Base CD" from the CD-ROM drive.
- 6 Reboot the system. See "Reboot the System," in "Common System Procedures," in the *LINCS Server System Reference*, 585-313-210.

Installing the Call Classification Analysis Package

Note: If you are installing the package and `feature_tst` is already installed on your system, once you have finished installing all others desired, you must remove `feature_tst` and reinstall it in order to select the CCA test.

To install this optional feature package, do the following:

- 1 Make sure the ASP driver has been installed by entering **pkginfo | pg**

If the ASP driver has been installed there will be a line similar to the following:

```
intuity    asp          INTUITY ASP Driver Package
```

Continue with [step 2](#).

If the ASP driver has not been installed, see [Installing the ASP Driver \(page 233\)](#) above for the procedure.

- 2 Insert the CD-ROM labeled “LINCS Base CD” into the CD-ROM drive.
- 3 At the UNIX prompt, enter **pkgadd -d cdrom1 cca**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

- 4 Press **ENTER**.

The system displays the following message:

```
Installation in progress. Do not remove the CD.  
  
PROCESSING:  
Set: INTUITY Call Classification Analysis Package (cca) from  
<CD-ROM>  
  
INTUITY Call Classification Analysis Package  
(i486) 4.0-3  
Using </> as the package base directory.  
Lucent Technologies Inc.
```

The system displays several status messages and then the following message:

```
Installation of INTUITY Call Classification Analysis Package  
(cca) was successful.
```

The system displays the UNIX prompt.

- 5 If you are finished installing the optional feature software, remove the CD-ROM labeled "LINCS Base CD" from CD-ROM from the drive.
- 6 Reboot the system. See "Reboot the System," in "Common System Procedures," in the *LINCS Server System Reference*, 585-313-210.
For more information on this feature package, see *LINCS Server Communication Development*, 585-313-213.

Installing the CDH Stub Package

Note: You must install the CDH Stub optional software package if you are not installing ORACLE.

To install this optional feature, do the following:

- 1 Insert the CD-ROM labeled "LINCS Base CD" into the CD-ROM drive.
- 2 At the UNIX prompt, enter **pkgadd -d cdrom1 cdhstub**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

3 Press **ENTER**.

The system displays the following message:

```
Installation in progress.   Do not remove the CD.  
PROCESSING:  
Set: INTUITY CDH Stub Package (cdhstub) from <cdrom1>  
  
INTUITY CDH Stub Package  
(i486) 4.0-3  
Using </> as the package base directory.  
Lucent Technologies Inc.
```

The system displays several status messages and then the following message:

```
Installation of INTUITY CDH Stub Package (cdhstub) was  
successful.
```

The system displays the UNIX prompt.

- 4 If you are finished installing the optional feature software, remove the CD-ROM labeled “LINCS Base CD” from the CD-ROM drive.
- 5 Reboot the system. See “Reboot the System,” in “Common System Procedures,” in the *LINCS Server System Reference*, 585-313-210.

For more information on this feature package, see “Back Up the System,” in “Common System Procedures,” in the *LINCS Server System Reference*, 585-313-210, for the procedure.

Installing the Data Collection Toolkit

To install this optional feature package, do the following:

- 1 If you are not already logged in as root, do so now.
- 2 Insert the CD-ROM labeled “LINCS Base CD” into the CD-ROM drive.
- 3 At the UNIX prompt, enter **pkgadd -d cdrom1 dctoolkit**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

- 4 Press **ENTER**.

The system displays the following message:

```
Installation in progress. Do not remove the CD.  
  
PROCESSING:  
Set: INTUITY Data Collection Toolkit (dctoolkit) from  
<cdrom1>  
  
INTUITY Data Collection Toolkit  
(i486) 4.0-3  
Using </> as the package base directory.  
Lucent Technologies Inc.
```

The system displays several status messages and then the following message:

```
Installation of INTUITY Data Collection Toolkit (dctoolkit)
was successful.
```

The system displays the UNIX prompt.

- 5 If you are finished installing the optional feature software, remove the CD-ROM labeled “LINCS Base CD” from the CD-ROM drive.
- 6 Reboot the system. See “Reboot the System,” in “Common System Procedures,” in the *LINCS Server System Reference*, 585-313-210.

Installing the Dial Pulse Recognition Package

To install this optional feature package, do the following:

- 1 If you are not already logged in as root, do so now.
- 2 Insert the CD-ROM labeled “LINCS Base CD” into the CD-ROM drive.
- 3 At the UNIX prompt, enter **pkgadd -d cdrom1 dpr**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.
Type [go] when ready,
or [q] to quit: (default: go)
```

4 Press **ENTER**.

The system displays the following message:

```
Installation in progress.   Do not remove the CD.
```

```
PROCESSING:
```

```
Set: INTUITY Dial-Pulse Recognition Package (dpr) from  
<cdrom1>
```

```
INTUITY Dial-Pulse Recognition Package  
(i486) 4.0-3
```

```
Using </> as the package base directory.  
Lucent Technologies Inc.
```

The system displays several status messages and then the following message:

```
Installation of INTUITY Dial-Pulse Recognition Package (dpr)  
was successful.
```

The system displays the UNIX prompt.

- 5 If you are finished installing the optional feature software, remove the CD-ROM labeled "LINCS Base CD" from the CD-ROM drive.
- 6 Reboot the system. See "Reboot the System," in "Common System Procedures," in the *LINCS Server System Reference*, 585-313-210.

Installing the E1 CAS Interface Package

To install this optional feature, do the following:

- 1 Insert the CD-ROM labeled “LINCS Base CD” into the CD-ROM drive.
- 2 At the UNIX prompt, enter **pkgadd -d cdrom1 r2mex**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

- 3 Press **ENTER**.

The system displays the following message:

```
Installation in progress. Do not remove the CD.  
  
PROCESSING:  
Set: INTUITY E1 CAS R2 MFC Interface Package - Mexico (r2mex)  
from <cdrom1>  
  
INTUITY E1 CAS R2 MFC Interface Package - Mexico  
(i486) 4.0-3  
Using </> as the package base directory.  
Lucent Technologies Inc.
```

The system displays several status messages and then the following message:

```
Installation of INTUITY E1 CAS Package (r2mex) was  
successful.
```

The system displays the UNIX prompt.

- 4 If you are finished installing the optional feature software, remove the CD-ROM labeled "LINCS Base CD" from the CD-ROM drive.
- 5 Reboot the system. See "Reboot the System," in "Common System Procedures," in the *LINCS Server System Reference*, 585-313-210.

For more information on this feature package, see "Back Up the System," in "Common System Procedures," in the *LINCS Server System Reference*, 585-313-210, for the procedure.

Installing the Equinox SuperSerial Circuit Card Driver

To install the asynchronous SuperSerial circuit card driver, do the following:

- 1 If you are not already logged in as root, do so now.
- 2 Insert the CD-ROM labeled "LINCS Base CD" into the CD-ROM drive.

3 At the UNIX prompt, enter **pkgadd -d cdrom1 eqn**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

4 Press **ENTER**.

The system displays the following message:

```
Installation in progress. Do not remove the CD.
```

```
PROCESSING:
```

```
Set: Equinox SST Loadable STREAMS Device  
Driver(EISA/ISA/MCA/PCI) (eqn) from <cdrom1>
```

```
Equinox SST Loadable STREAMS Device Driver(EISA/ISA/MCA/PCI)  
(i486) 4.0-3
```

```
Using </> as the package base directory.  
Lucent Technologies Inc.
```

The system displays several status messages and then the following message:

```
Please enter the system type. ISA/PCI?
```

5 Enter PCI

The system displays the following message:

```
Installing for pci bus system.
```

The system displays the following message:

```
The unix kernel will be rebuilt to include your  
configuration changes during the next system reboot.
```

```
A system rebuild has been requested when the system is  
shutdown. System tunables have been modified.
```

```
Please request a reboot using the "init 6" command to use the  
driver.
```

```
If you desire the default set of port monitors and port  
services to be installed, execute "/etc/equportsetup" after  
the system has rebooted.
```

```
Installation of Equinox SST Loadable STREAMS Device Driver  
(EISA/ISA/MCA/PCI) (eqn) was successful.
```

The system displays the UNIX prompt.

- 6 If you are finished installing the optional feature software, remove the CD-ROM labeled "LINUX Base CD" from the CD-ROM drive.
- 7 Reboot the system. See "Reboot the System," in "Common System Procedures," in the *LINUX Server System Reference*, 585-313-210.

Installing the FlexWord Speech Recognition Package

Installing the FlexWord™ Speech Recognition Package requires installing the following packages in the order shown:

- ASP Driver package. See [Installing the ASP Driver \(page 233\)](#).
- FlexWord Recognition - Base. See [Installing FlexWord Recognition - Base \(page 250\)](#).
- FlexWord Recognition - U.S. English. See [Installing FlexWord Recognition - U.S. English \(page 252\)](#).

Installing FlexWord Recognition - Base

To install the FlexWord Recognition - Base package, do the following:

- 1 Stop the voice system. See “Administer the Voice System,” in “Common System Procedures,” in the *LINCS Server System Reference*, 585-313-210, for the procedure.
- 2 Ensure that the ASP Driver package has been installed.
- 3 Insert the CD-ROM labeled “LINCS Base CD” into the CD-ROM drive.

4 At the UNIX prompt, enter **pkgadd -d cdrom1 flexrecog**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

5 Press **ENTER**.

Note: If you did not stop the voice system, the system displays the following message at this point:

```
The voice system is currently running and must be  
stopped in order to install this package.
```

```
Please perform a stop_vs and then try again.
```

The system exits the package installation.

If the voice system was stopped, the system continues and displays the following message:

```
Installation in progress. Do not remove the CD.
```

```
PROCESSING:
```

```
Set: INTUITY FlexWord Recognition - Base (flexrecog) from  
<cdrom1>
```

```
INTUITY FlexWord Recognition - Base
(i486) 4.0-3
Using </> as the package base directory.
```

The system displays several status messages and then the following message:

```
Installation of INTUITY FlexWord Recognition - Base
(flexrecog) was successful.
```

The system displays the UNIX prompt.

- 6 If you are finished installing the optional feature software, remove the CD labeled "LINCS Base CD" from the CD-ROM from the drive.
- 7 Reboot the system. See "Reboot the System," in "Common System Procedures," in the *LINCS Server System Reference*, 585-313-210.

Installing FlexWord Recognition - U.S. English

To install the FlexWord Recognition - U.S. English package, do the following:

- 1 Stop the voice system. See "Administer the Voice System," in "Common System Procedures," in the *LINCS Server System Reference*, 585-313-210, for the procedure.
- 2 Ensure that the ASP Driver package has been installed.
- 3 Ensure the FlexWord Recognition - Base package has been installed.

4 Insert the CD-ROM labeled “LINCS Base CD” into the CD-ROM drive.

5 At the UNIX prompt, enter **pkgadd -d cdrom1 usflex**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

6 Press **ENTER**.

Note: If you did not stop the voice system, the system displays the following message at this point:

```
The voice system is currently running and must be  
stopped in order to install this package.
```

```
The voice system is currently running and must be  
stopped in order to install this package.
```

```
Please perform a stop_vs and then try again.
```

The system exits the package installation.

If the voice system was stopped, the system continues and displays the following message:

```
Installation in progress.   Do not remove the CD.
```

```
PROCESSING:
```

```
Set: INTUITY FlexWord Recognition - US English (usflex) from  
<cdrom1>
```

```
INTUITY FlexWord Recognition - US English  
(i486) 4.0-3
```

```
Using </> as the package base directory.
```

```
READY TO PROCESS:
```

```
The system displays several status messages and then the  
following message:
```

```
Installation of INTUITY FlexWord Recognition - US English  
(usflex) was successful.
```

The system displays the UNIX prompt.

- 7 If you are finished installing the optional feature software, remove the CD-ROM labeled "LINCS Base CD" from the CD-ROM drive.
- 8 Reboot the system. See "Reboot the System," in "Common System Procedures," in the *LINCS Server System Reference*, 585-313-210.

For more information on this feature package, see *LINCS Server Speech Development, Processing, and Recognition*, 585-313-212.

Installing the FlexWord Toolkit Package

To install the FlexWord Toolkit package, do the following:

- 1 Insert the CD-ROM labeled “LINCS Base CD” into the CD-ROM drive.
- 2 At the UNIX prompt, enter **pkgadd -d cdrom1 FlexTool**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

- 3 Press **ENTER**.

The system displays the following message:

```
Installation in progress. Do not remove the CD.  
PROCESSING:  
Set: INTUITY FlexWord Toolkit (FlexTool) from <cdrom1>  
INTUITY FlexWord Toolkit  
(i486) 4.0-3  
Using </> as the package base directory.
```

The system displays several status messages, then the following message:

```
Installation of the INTUITY FlexWord Toolkit (FlexTool) was
successful.
```

The system displays the UNIX prompt.

- 4 If you are finished installing the optional feature software, remove the CD-ROM labeled "LINUX Base CD" from the CD-ROM drive.
- 5 Reboot the system. See "Reboot the System," in "Common System Procedures," in the *LINUX Server System Reference*, 585-313-210.

For more information on this feature package, see *LINUX Server Speech Development, Processing, and Recognition*, 585-313-212.

Installing the LAN PMC Driver

See [Installing the LAN PMC Driver \(page 212\)](#) in [Chapter 5, Installing Base System Software](#).

Installing the NGFax Feature Package

Note: This feature requires that you have at least one SSP (CWB1) circuit card installed in the system.

To install this optional feature, do the following:

- 1 Insert the CD-ROM labeled "LINCS Base CD" into the CD-ROM drive.
- 2 At the UNIX prompt, enter **pkgadd -d cdrom1 csfax**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

- 3 Press **ENTER**.

The system displays the following message:

```
Installation in progress. Do not remove the CD.  
  
PROCESSING:  
Set: INTUITY Next Generation FAX Interface Package (csfax)  
from <cdrom1>  
  
INTUITY Next Generation FAX Interface Package  
(i486) 4.0-3  
Using </> as the package base directory.  
Lucent Technologies Inc.
```

The system displays several status messages and then the following message:

```
Installation of INTUITY Next Generation FAX Package (csfax)
was successful.
```

The system displays the UNIX prompt.

- 4 If you are finished installing the optional feature software, remove the CD-ROM labeled "LINCS Base CD" from the CD-ROM drive.
- 5 Reboot the system. See "Reboot the System," in "Common System Procedures," in the *LINCS Server System Reference*, 585-313-210.

For more information on this feature package, see "Back Up the System," in "Common System Procedures," in the *LINCS Server System Reference*, 585-313-210, for the procedure.

Installing the Primary Rate Interface Packages

The primary rate interface packages include:

- ISDN primary rate interface
- Advanced primary rate interface (restricted availability)

The ISDN primary rate interface package must be installed first.

Installing the ISDN Primary Rate Interface Package

To install this optional feature package, do the following:

- 1 If you are not already logged in as root, do so now.
- 2 Insert the CD-ROM labeled “LINCS Base CD” into the CD-ROM drive.
- 3 At the UNIX prompt, enter **pkgadd -d cdrom1 pri**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

- 4 Press **ENTER**.

The system displays the following message:

```
Installation in progress. Do not remove the CD.  
  
PROCESSING:  
Set: INTUITY ISDN Primary Rate Interface Package (pri) from  
<cdrom1>  
  
INTUITY ISDN Primary Rate Interface Package  
(i486) 4.0-3  
Using </> as the package base directory.  
Lucent Technologies Inc.
```

The system displays several status messages and then the following message:

```
The UNIX kernel will be rebuilt now. This will take some
time. Please wait.
```

```
The UNIX kernel has been rebuilt.
```

```
RM PROFILE_SIZE has been changed.
Reboot before attempting to use this PRI package.
```

The system displays several status messages and then the following message:

```
This concludes the steps required to install the 'ISDN
Primary Rate Interface' feature. However, additional steps
are required to activate the feature. Consult the INTUITY VIS
Operations guide for the steps required. Administration must
also be done at the connecting end (PBX, ACD, or other
switch) to properly configure the T1 or E1 channels.
```

```
Installation of INTUITY ISDN Primary Rate Interface Package
(pri) was successful.
```

The system displays the UNIX prompt.

- 5 If you are finished installing the optional feature software, remove the CD-ROM labeled "LINCS Base CD" from the CD-ROM drive.

- 6 Reboot the system. See “Reboot the System,” in “Common System Procedures,” in the *LINCS Server System Reference*, 585-313-210.

For more information on this feature, see: Chapter 3, “Digital Telephony Interfaces,” of *LINCS Server Communication Development*, 585-313-213, and Chapter 6, “Switch Interfaces,” of *LINCS Server Administration*, 585-313-507.

Installing the Advanced Primary Rate Interface Package

To install this optional feature package, do the following:

- 1 If you are not already logged in as root, do so now.
- 2 Insert the CD-ROM labeled “LINCS Base CD” into the CD-ROM drive.
- 3 At the UNIX prompt, enter **pkgadd -d cdrom1 npri**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

4 Press **ENTER**.

The system displays the following message:

```
Installation in progress.   Do not remove the CD.  
  
PROCESSING:  
Set: INTUITY Advanced PRI Package (npri) from <cdrom1>  
  
INTUITY Advanced PRI Package  
(i486) 4.0-3  
Using </> as the package base directory.  
Lucent Technologies Inc.
```

The system displays several status messages and then the following message:

```
This concludes the steps required to install the 'Advanced  
PRI' feature.
```

```
Installation of INTUITY Advanced PRI Package (npri) was  
successful.
```

The system displays the UNIX prompt.

- 5 If you are finished installing the optional feature software, remove the CD-ROM labeled "LINUX Base CD" from the CD-ROM drive.
- 6 Reboot the system. See "Reboot the System," in "Common System Procedures," in the *LINUX Server System Reference*, 585-313-210.

Installing the Nortel ISDN PRI Package

Installing the Nortel Primary Rate Interface Package

To install this optional feature package, do the following:

- 1 If you are not already logged in as root, do so now.
- 2 Insert the CD-ROM labeled "LINCS Base CD" into the CD-ROM drive.
- 3 At the UNIX prompt, enter **pkgadd -d cdrom1 nortelpri**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

- 4 Press **ENTER**.

The system displays the following message:

```
Installation in progress. Do not remove the CD.
```

```
PROCESSING:
```

```
Set: INTUITY Nortel ISDN PRI Package (nortelpri) from  
<cdrom1>
```

```
INTUITY Nortel ISDN PRI Package  
(i486) 4.0-3
```

```
Using </> as the package base directory.  
Lucent Technologies Inc.
```

The system displays several status messages and then the following message:

```
Installation of INTUITY Nortel ISDN PRI Package (nortelpri)
was successful.
```

The system displays the UNIX prompt.

- 5 If you are finished installing the optional feature software, remove the CD-ROM labeled "LINCS Base CD" from the CD-ROM drive.
- 6 Reboot the system. See "Reboot the System," in "Common System Procedures," in the *LINCS Server System Reference*, 585-313-210.

Installing the T1 E&M Package

To install this optional feature package, do the following:

- 1 If you are not already logged in as root, do so now.
- 2 Ensure that the T1 driver package has been installed.
- 3 Insert the CD-ROM labeled "LINCS Base CD" into the CD-ROM drive.
- 4 At the UNIX prompt, enter **pkgadd -d cdrom1 t1em**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.
Type [go] when ready,
or [q] to quit: (default: go)
```

5 Press ENTER.

The system displays the following message:

```
Installation in progress.   Do not remove the CD.  
PROCESSING:  
Set: INTUITY T1 E&M Interface Package (t1em) from <cdrom1>  
  
INTUITY T1 E&M Interface Package  
(i486) 4.0-3  
Using </> as the package base directory.  
Lucent Technologies Inc.
```

The system displays several status messages and then the following message:

```
This concludes the steps required to install the 'T1 E&M  
Interface Package' feature. However, additional steps are  
required to activate the feature. Consult the INTUITY VIS  
Operations guide for the steps required. Administration must  
also be done at the connecting end (PBX, ACD, or other  
switch) to properly configure the T1 channels.
```

```
Installation of INTUITY T1 E&M Interface Package (t1em) was  
successful.
```

The system displays the UNIX prompt.

- 6 If you are finished installing the optional feature software, remove the CD-ROM labeled "LINCS Base CD" from the CD-ROM drive.
- 7 Reboot the system. See "Reboot the System," in "Common System Procedures," in the *LINCS Server System Reference*, 585-313-210.

Installing the Text To Speech Package

Note: If you are installing the TTS package and `feature_tst` is already installed on your system, once you have finished installing all others desired, you must remove `feature_tst` and reinstall it in order to select the TTS test.

To install the TTS package, do the following:

- 1 If you are not already logged in as root, do so now.
- 2 Insert the CD-ROM labeled "LINCS Base CD" into the CD-ROM drive.
- 3 At the UNIX prompt, enter **`pkgadd -d cdrom1 tts`**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

4 Press **ENTER**.

The system displays the following message:

```
Installation in progress.   Do not remove the CD.  
PROCESSING:  
Set: INTUITY Text To Speech Package (tts) from <cdrom1>  
  
INTUITY Text To Speech Package  
(i486) 4.0-3  
Using </> as the package base directory.  
Lucent Technologies Inc.
```

The system displays several status messages and then the following message:

```
Installation of INTUITY Text To Speech Package (tts) was  
successful.
```

The system displays the UNIX prompt.

- 5 If you are finished installing the optional feature software, remove the CD labeled “LINCS Base CD” from the CD-ROM drive.
- 6 Reboot the system. See “Reboot the System,” in “Common System Procedures,” in the *LINCS Server System Reference*, 585-313-210.

For more information on this feature package, see *LINCS Server Speech Development, Processing, and Recognition*, 585-313-212.

Installing the WholeWord Recognition Packages

The WholeWord recognition packages include the *WholeWord Recognition - Base* and the *WholeWord Recognition - Language*.

Installing the WholeWord Recognition - Base Package

Note: If you are installing the WholeWord Recognition - Base package and `feature_tst` is already installed on your system, once you have finished installing all others desired, you must remove `feature_tst` and reinstall it in order to select the ASR test.

To install the WholeWord Recognition - Base feature package, do the following:

- 1 If you are not already logged in as root, do so now.
- 2 Insert the CD-ROM labeled "LINCS Base CD" into the CD-ROM drive.
- 3 At the UNIX prompt, enter **`pkgadd -d cdrom1 asr`**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

4 Press **ENTER**.

The system displays the following message:

```
Installation in progress.  Do not remove the CD.
PROCESSING:
Set: INTUITY WholeWord Recognition - Base (asr) from
<cdrom1>

INTUITY WholeWord Recognition - Base
(i486) 4.0-3
Using </> as the package base directory.
Lucent Technologies Inc.
```

The system displays several status messages and then the following message:

```
Installation of INTUITY WholeWord Recognition - Base (asr)
was successful.
```

The system displays the UNIX prompt.

Continue with [Installing the WholeWord Recognition - Language Package](#).

Installing the WholeWord Recognition - Language Package

To install this optional feature package, do the following:

- 1 If you are not already logged in as root, do so now.
- 2 Insert the CD-ROM labeled "LINCS Base CD" into the CD-ROM drive.

3 At the UNIX prompt, enter **pkgadd -d cdrom1 usrecog**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

4 Press **ENTER**.

The system displays the following message:

```
Installation in progress. Do not remove the CD.  
  
PROCESSING:  
Set: INTUITY WholeWord Recognition - US English (usrecog)  
from <cdrom1>  
  
INTUITY WholeWord Recognition - US English  
(i486) 4.0-3  
Using </> as the package base directory.  
Lucent Technologies Inc.
```

The system displays several status messages and then the following message:

```
Installation of INTUITY WholeWord Recognition - US English  
(usrecog) was successful.
```

The system displays the UNIX prompt.

- 5 If you are finished installing the optional feature software, remove the CD-ROM labeled "LINCS Base CD" from the CD-ROM drive.
- 6 Reboot the system. See "Reboot the System," in "Common System Procedures," in the *LINCS Server System Reference*, 585-313-210.

For more information on this feature package, see *LINCS Server Speech Development, Processing, and Recognition*, 585-313-212.

Installing the Feature Test Script Package

Use the following procedure to install this optional feature package *only after* all the other optional feature packages have been installed:

- 1 Insert the CD-ROM labeled "LINCS Base CD" into the CD-ROM drive.
- 2 At the UNIX prompt, enter **pkgadd -d cdrom1 ftst**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

3 Press ENTER.

The system displays the following message:

```
Installation in progress. Do not remove the CD.  
PROCESSING:  
Set: INTUITY Feature Test Script Package (ftst) from  
<cdrom1>  
  
INTUITY Feature Test Script Package  
(i486) 4.0-3  
  
Using </> as the package base directory.  
Lucent Technologies Inc.
```

The system displays several status messages and then the following message:

```
Do you want to include the Speech Recognition Test? (y/n)
```

4 Enter y

The system displays the following message:

```
Do you want to include the Simple CCA test? (y/n)
```

Note: If you answer **y** and that package has not been installed on your system, you are given an opportunity to cancel the installation. The following is an example for Full CCA:

```
Displaypkg shows that Full CCA is not installed.  
You will not be able to test Full CCA with this script.  
Type q to quit or return to continue.
```

5 Enter y

The system displays the following message:

```
Do you want to include the Full CCA test? (y/n)
```

6 Enter y

The system displays the following message:

```
Do you want to include the Playback and Coding test? (y/n)
```

7 Enter y

The system displays the following message:

```
Do you want to include the Chantst test? (y/n)
```

8 Enter y

The system displays the following message:

```
Do you want to include the Transfer Test test? (y/n)
```

9 Enter y

The system displays the following message:

```
Do you want to include the Text to Speech test? (y/n)
```

10 Enter y

The system displays the following message:

```
Do you want to include the Dial Pulse Recognition test? (y/n)
```

11 Enter `y`

The system displays several status messages and then the following messages:

```
Installing feature_tst application scripts.
```

```
Adding phrases to talkfile2.
```

```
The feature test script is now installed.
```

```
Installation of INTUITY Feature Test Script Package (ftst)  
was successful.
```

The system displays the UNIX prompt.

- 12** If you are finished installing the optional feature software, remove the CD-ROM labeled "LINCS Base CD" from the CD-ROM drive.
- 13** Reboot the system. See "Reboot the System," in "Common System Procedures," in the *LINCS Server System Reference*, 585-313-210.

Installing the SNMP Emanate Agent Package

To install the SNMP Emanate Agent package, do the following:

- 1 If you are not already logged in as root, do so now.
- 2 Insert the CD-ROM labeled "LINUX Base CD" into the CD-ROM drive.
- 3 At the UNIX prompt, enter **pkgadd -d cdrom1 snmp**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

- 4 Press **ENTER**.

The system displays the following message:

```
Installation in progress. Do not remove the CD.  
  
PROCESSING:  
Set: INTUITY SNMP Emanate Agent (snmp) from <cdrom1>  
  
INTUITY SNMP Emanate Agent Package  
(i486) 4.0-3  
Using </> as the package base directory.  
Lucent Technologies Inc.
```

The system displays several status messages and then the following message:

```
Installation of INTUITY SNMP Emanate Agent Package (snmp)
was successful.
```

The system displays the UNIX prompt.

- 5 If you are finished installing the optional feature software, remove the CD-ROM labeled “LINUX Base CD” from the CD-ROM drive.
- 6 Reboot the system. See “Reboot the System,” in “Common System Procedures,” in the *LINUX Server System Reference*, 585-313-210.

Removing Software Packages

Software packages can be removed using the *command line* or by using the *administration screens*.

Use the **pkgrm** commands to remove a software package from your system. See the *LINUX Server Administration*, 585-313-507, book for more information on these commands.

There are some *important* issues you need to be aware of when removing software from your system:

- If you are finished installing the optional feature software, remove all services, functions, or card assignments before removing any software packages.
- When removing the Application software, you are asked if you want to remove speech file systems. Answer *no* to this prompt.
- During an initial installation of the Base ORACLE RDBMS package, a user called “oracle” is created. This user is NOT removed when the Base ORACLE RDBMS package is removed. Once all the base and add-on ORACLE packages have been removed, if you want to remove the “oracle” user, do so through **SYSADM**. See Appendix A, “System Administration Features,” in *LINCS Server Administration*, 585-313-507.

To remove software packages using the command line, do the following:

- 1 Enter **pkgrm**
- 2 At the prompt, enter the number (as it appears on the screen) beside the package you want to remove.
- 3 Repeat [step 2](#) for each package you want to remove.

 **CAUTION:**

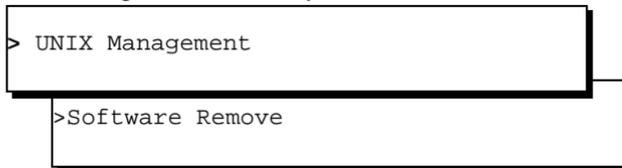
After you have removed packages from a UnixWare system, you *must* reboot the system before reinstalling packages. You can remove more than one package before rebooting, but you must reboot before reinstalling any packages.

Using the
Administration
Screens

Note: Your system must have the Unix Management Screens Package installed in order to use this procedure.

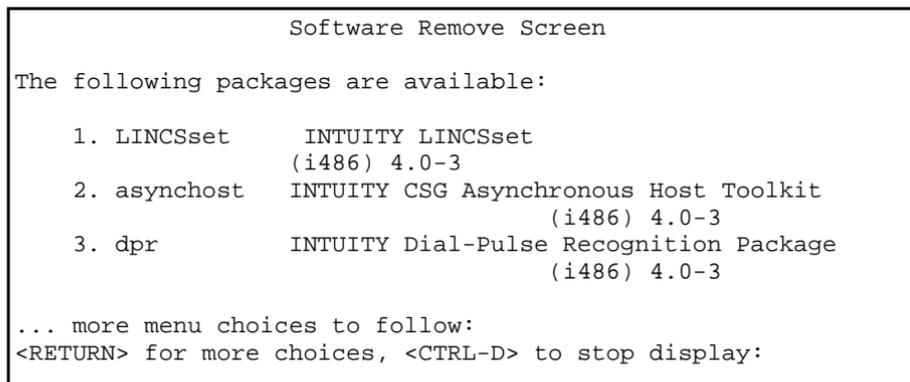
To remove software using the Intuity screens, do the following:

- 1 Starting at the Voice System Administration menu, select:



The system displays the Software Remove screen, [Figure 111](#), which lists the software installed on the system.

Figure 111. Software Remove Screen



- 2 Locate the package you wish to remove.
- 3 Note the number of the package given in the first column.
- 4 Press **Control+D**

The system displays the following message:

```
Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]
```

- 5 Enter the number of the package.

The system displays the name and version number for the package selected.

- 6 Enter **y**

The system removes the package.

Note: If the system displays any messages warning of dependencies, enter **y** again to continue with the software removal.

- 7 Press **ENTER**.

8 Installing ORACLE Packages

Overview

ORACLE provides many packages, referred to as *ORACLE add-on* packages, that are not required to support LINCServer operation. This section describes the procedures to install each package. Each ORACLE CD and its contents is listed in [Table 37](#):

Table 37. ORACLE Packaging

LINCServer Oracle Base CD	LINCServer Oracle Tools CD	LINCServer Oracle Pro*C CD
ora7base	Oracle 7 Developer 2000 includes: <ul style="list-style-type: none">• Oracle Forms• Oracle Reports	pro*c
ora7int		
ora7sql		

For detailed installation and removal information, see the *ORACLE7 for Intel UNIX SVR4 (iABI) Installation & Configuration Guide*.

Installing the Oracle Base Software Packages

The Oracle base software packages includes the following:

- Intuity Base ORACLE RDBMS 7.3.2
- Intuity ORACLE 7 Integration Package
- Intuity SQL*NET TCP/IP V2 for ORACLE 7.3.2

Installing the Oracle Base Procedures

To install the ORACLE base software set, do the following:

- 1 Log in as root.
- 2 Insert the CD-ROM labeled “LINCS Oracle Base ” into the CD-ROM drive.
- 3 Enter **pkgadd -d cdrom1 ORAsct**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

4 Press ENTER.

The system displays the following message:

```
Installation in progress. Do not remove the CD.

PROCESSING:
Set: Lucent Integrated Call Server Base Oracle Set (ORAsct)
from <cdrom1>

Lucent Integrated Call Server Base Oracle Set
(i586) 4.0-3
Using </> as the package base directory.

Do you want to run the default set installation? (default: y)

Continue with one of the steps in the following decision table, Table 38:
```

Table 38. Default Installation Decision

If	Then
5 accepting the default set installation	continue with step 18 below.
6 your system requires other than the default	continue with step 7 below.

7 Enter n

The system displays the following message:

```
Do you want default installation for ora7base? (default:y)
```

- 8 If you want the ora7base default, continue with [step 11](#).
- 9 If you do not want the ora7base default, enter **n** and continue below.

The system displays the following message:

```
The voice system is currently running and must be stopped in
order to install this package. Is it OK to STOP the Voice
System?
```

- 10 Enter **y**

The system displays the following message:

```
The Oracle RDBMS is currently running and must be stopped in
order to install this package. Is it OK to STOP Oracle RDBMS?
```

- 11 Enter **y**

The system displays the following message:

```
The default name for the user database file is
/oracle/dbs/user01A.dbf

Enter a new name or strike [ENTER] to accept the default.
```

- 12 Enter a new pathname or press **ENTER**.

The system displays the following message:

```
The default name for the first redo log file is
/oracle/dbs/log01A.dbf

Enter a new name or strike [ENTER] to accept the default.
```

13 Enter a new pathname or press ENTER.

The system displays the following message:

```
The default name for the second redo log file is
/oracle/dbs/log02A.dbf
```

Enter a new name or strike ENTER to accept the default.

14 Enter a new pathname or press ENTER.

The system displays the following message:

```
The default name for the third redo log file is
/oracle/dbs/log03A.dbf
```

Enter a new name or strike[ENTER] to accept the default.

15 Enter a new pathname or press ENTER.

The system displays the following message:

```
The default size for the data base is 136800 (512 byte)
blocks. It is very important that you size your database
correctly. Refer to 'Filesystem - Oracle' in the 'Software
Installation' guide for database sizing information.
```

```
How many blocks do you want in your database? [ 136,800].
```

- 16** Enter the number of blocks you want in your database or press **ENTER**.

The system displays the following message:

```
The default size for each of the redo log files is 8000 [512
bytes] blocks.
```

```
How many blocks do you want in each of the redo log files?
[default: 8000]?
```

- 17** Enter the number of blocks you want in your redo log files or press **ENTER**.

The system displays the following message:

```
Installing Lucent Integrated Call Server Base Oracle Set as
<ORAs>
```

```
Enter password for Oracle:
```

- 18** Enter the Oracle password.

The system displays the following message:

```
New password:
```

- 19** Enter a new password for Oracle.

The system displays the following message:

```
Re-enter new password:
```

- 20** Re-type the new password.

21 Press ENTER.

The system displays a series of messages similar to the following:

```
Lucent Technologies Inc.  
## Processing package information.  
## Processing system information.  
## Processing package discrepancies  
## Verifying disk space requirements.  
  
Installing Intuity Base ORACLE RDBMS 7.3.2 as <ora7base>  
  
## Executing preinstall script.
```

The system displays several status messages as it installs the base Oracle. After approximately 45 minutes the system displays the following message:

```
Processing of packages for <ORAsset> is completed.
```

22 If installing the Oracle Pro*C package, continue with [Installing the Oracle Pro*C Software Package \(page 287\)](#), otherwise continue with [step 23](#).**23** Enter **shutdown -i6 -g0 -y**

For more information on this feature, see Chapter 2, “Digital Telephony Interfaces,” of *LINCS Server Communication Development*, 585-313-213 and Chapter 5, “Switch Interface Administration,” of *LINCS Server Administration*, 585-313-507.

Installing the Oracle Pro*C Software Package

Installing the ORACLE 7 Pro*C Package Procedures

To install the Pro*C package, do the following:

- 1 Insert the CD-ROM labeled "LINCS Oracle Pro*C" into the CD-ROM drive.
- 2 At the UNIX prompt, enter **pkgadd -d cdrom1 proc**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

The system displays the following message:

```
Installation in progress. Do not remove the CD.  
  
PROCESSING:  
Set: INTUITY ORACLE 7 Pro*C Package (proc) from <cdrom1>  
  
INTUITY ORACLE 7 Pro*C Package  
(i586) 4.0-3  
Using </> as the package base directory.  
Lucent Technologies Inc.
```

The system displays several status messages and then the following message:

```
Installation of Intuity ORACLE 7 Pro*C Package  
(proc) was successful.
```

- 3 Reboot the system. See “Reboot the System,” in “Common System Procedures,” in the *LINCS Server System Reference*, 585-313-210 for the procedure.

Installing the ORACLE Development Packages

CAUTION:

The LINCS Oracle Tools CD-ROM contains more ORACLE products than those listed. However, LINCS server customers must NOT install products that are not listed. Some of the products are already included in the various LINCS server system packages, while other products are not authorized to be used by the LINCS server system customers. A violation of the recommendation may result into the corruption of the LINCS server system software configuration and may be illegal usage of the ORACLE software.

Installation Requirements

Use the procedures in this section to install the ORACLE development packages.

The basic requirements for installing ORACLE add-on packages are as follows:

- Intuity Base ORACLE RDBMS 7.3.2 package is installed.
- The voice system and ORACLE database are stopped during the installation. (You can stop the database by entering **ior s.**)

Note: These procedures take approximately 1 hour to complete and must be completed in the order outlined in this document.

LINCS Oracle Tools CD

Installing the ORACLE Developer 2000 Toolkit

To install the developer 2000 toolkit, do the following:

Note: To select a response other than the screen default, use the **TAB** key to highlight the selection, and then press **ENTER**.

- 1 Insert the CD labeled "LINCS Oracle Tools" into the CD-ROM drive.
- 2 Login as root if you have not done so.

- 3 Enter the following commands in the sequence below:

```
mount -F cd95 -r -o fperm=777 /dev/cdrom/c* /mnt
su -l oracle
cd /mnt/orainst
mkdir /oracle/tmplink
./start.sh
```

The system displays the following message:

```
The installer requires a temporary working directory (your
oracle_link directory) which will contain installer and
documentation files and symbolic links.
```

```
Please enter your oracle_link directory.
```

- 4 Enter **/oracle/tmplink**

The system displays the following message:

```
Linking files. This will take a few minutes.
Linking /mnt to /oracle/tmplink
```

```
You may go to the orainst subdirectory or your oracle_link
directory and run the installer and documentation viewer.
```

- 5 Enter **cd /oracle/tmplink/orainst**

- 6 Enter **./orainst**

The system displays a welcome screen.

7 Press ENTER.

The system displays the following message:

```
Select the Installer Activity
```

8 Select Install, Upgrade, or De-install Software.

9 Press ENTER.

The system displays the following message:

```
Select the Installer option
```

10 Select Install New Product.

11 Press ENTER.

The system displays the following message:

```
Enter mount point for your software installation.
```

12 Enter /oracle

The system displays the following message:

```
Complete $ORACLE_HOME location:
```

```
/oracle/app/oracle/product/7.3.2
```

- 13** Press **ENTER** at the confirmation message.

The system displays the following message:

```
Confirm (or change):  
ORACLE_BASE: /oracle/app/oracle  
ORACLE_HOME: /oracle/app/oracle/product/7.3.2
```

- 14** Press **ENTER**.

The system displays the following message:

```
Do you want to create DB objects also?
```

- 15** Select **No**.

The system displays a logging and status screen to indicate the log file location.

- 16** Press **ENTER**.

The system displays the README.FIRST file.

- 17** Press **ENTER**.

The system displays the following message:

```
Skip README  
( ) Do Not display README file in future  
(o) Continue to display the README file in future
```

18 Press **TAB**, **▼** (down arrow), and the **SPACEBAR** to select `Continue` to display the `README` file in the future.

19 Press **ENTER**.

The system displays the following message:

Select one of the following:

- (o) Install from CD-ROM
- () Install from staging area

20 Press **TAB**, **▲** (up arrow), and the **SPACEBAR** to select `Install from CD-ROM`.

21 Press **ENTER**.

The system displays the following message:

Enter the pathname of the `$ORACLE_LINK` directory
`/oracle/app/oracle/product/7.3.2/stage`

22 Enter `/oracle/tmplink`

The system displays the following message:

Select the native language to be installed:

23 Press **TAB**, **▼** (down arrow), and the **SPACEBAR** to select `American/English`.

24 Press **ENTER**.

The system displays the following message:

```
The /oracle/app/oracle/product/7.3.2/orainst/root.sh file
already exists. Select one of the following actions:
```

```
( ) Append root-related actions to this file
(o) Create new root.sh file
```

25 Press **TAB**, **▲** (up arrow), and the **SPACEBAR** to select Create new root.sh file.**26** Press **ENTER**.

The system displays the following message:

```
Enter the pathname where the existing root.sh file will be
saved.
```

```
/oracle/app/oracle/product/7.3.2/orainst/root.sh0
```

27 Press **ENTER**.

The system displays the following message

```
Post-installation steps that need to be run by root will be
written to
```

```
/oracle/app/oracle/product/7.3.2/orainst/root.sh
```

28 Press **ENTER**.

The system displays the following message

Install online help for:

- (o) All Product Being Installed
- () Products of Your Choice
- () No Products

29 Press **TAB**, **▲** (up arrow), and the **SPACEBAR** to select All Products Being Installed.**30** Press **ENTER**.

The system displays the following message:

Do you want to install UNIX-specific documentation?

31 Select Yes.

The system displays the following message:

Install product documentation from the product documentation CD-ROM for:

- (o) All Product Being Installed
- () Products of Your Choice
- () No Products

32 Select All Products Being Installed.

The system displays the following message:

```
Enter the pathname for your $ORACLE_DOC directory
/oracle/app/oracle/doc
```

33 Press **ENTER** to select the default pathname.

The system displays the Software Asset Manager screen.

34 Use the  (down arrow) to select and the space bar to highlight the following products:

```
~ ORACLE FORMS 4.5.7.12
~ ORACLE Reports 2.5.5.4.0
```

35 Press **TAB** to select `Install`, and then press **ENTER**.

The system displays the following message:

```
Would you like to install the PL/SQL Procedure Builder demos?
(Note: this will take up 5120 bytes of disk space).
```

36 Select `Yes`.

The system displays the following message:

```
Please enter the directory where the X-Windows libraries
(libxt.a, libX11.a) may be found:
```

37 Enter `/usr/X/lib`

The system displays the following message:

```
Please enter the directory where the MOTIF library (libXm.a)
is located:
```

38 Enter `/usr/X/lib`

The system displays the following message:

```
Would you like to install the ORACLE Graphics 2.5 demos?
(Note: this will take up 4405248 bytes of disk space).
```

39 Select `No.`

The system displays the following message:

```
Select one or more user interfaces for Oracle Forms...

(x) Character Mode Interface
( ) Motif Bitmapped Interface
```

40 Select `Character Mode Interface.`

The system displays the following message:

```
Would you like to install the ORACLE Forms demos?
(Note: this will take up 7963648 bytes of disk space).
```

- 41 Select `Yes`.

The system displays the following message:

```
Select one or more user interfaces for Oracle Reports 2.5...  
(x) Character Mode Interface  
( ) Motif Bitmapped Interface
```

- 42 Select `Character Mode Interface`.

The system displays the following message:

```
Would you like to install the ORACLE Reports 2.5 demos?  
(Note: this will take up 27224064 bytes of disk space).
```

- 43 Select `Yes`.

The system displays a continuous status screen during the installation. After approximately 30 minutes, the system displays an installer completed confirmation message.

- 44 Select `OK`.

The system displays the Software Asset Manager screen.

- 45 Press **TAB** seven (7) times to highlight `Exit`.

46 Press **ENTER**.

The system displays the following message:

```
Are you sure you want to exit the Oracle Installer?
```

```
        No        Yes
```

47 Select **yes**.

48 Press **ENTER**.

49 If finished loading the software, remove the CD labeled “LINCS Oracle Tools” from the CD-ROM drive.

Post installation setup

To perform the post installation setup, do the following:

- 1 At the UNIX system prompt, enter **su - root**
- 2 Enter the root password.
- 3 Enter **cd /oracle/app/oracle/product/7.3.2/orainst**
- 4 Enter **./root.sh**

The system displays the following message:

```
The following environment variables are set as
```

```
ORACLE_OWNER= oracle  
ORACLE_HOME=  /oracle  
ORACLE_SID=   A
```

```
Are these settings correct (Y/N)? [Y]
```

5 Press **ENTER**.

The system displays the following message:

```
Enter the full pathname of the local bin directory
[/usr/bin]:
```

6 Press **ENTER**.

The procedure is complete when the UNIX system prompt is returned.

Completing the Installation

To complete the installation, do the following:

Enter the following commands to complete installation of the ORACLE development packages:

```
cd /oracle
rm -r /oracle/tmplink
umount /mnt
```

9 Installing LSPS II Optional Software Packages

Overview

On new systems, all software packages are loaded and installed at the factory. However, if you are installing an LSPS II (6UB5) circuit card in an existing system, you will need to install the LSPS II optional software packages.

This chapter provides the detailed information for installing the LSPS II optional software packages after the LSPS II circuit card is installed.

LSPS II Software Packages

[Table 39](#) lists the LSPS II software feature packages that are installed during this procedure:

Table 39. Software Packages in LSPSset

Package name	Feature Description
cslsps	LSPS II Integration Package
asrenna	LSPS Automatic Speech Recognition for North American English
lspssapi	Low-level LSPS API
lspssrte	LSPS Speech RealTime Environment (RTE)
lspssdk	LSPS Software Development Kit
lspssp	LSPS Speech Driver
lspssutil	LSPS diagnostics
ttssenna	LSPS Text-To-Speech Module for North American English

Installing the LSPS II Optional Software Packages

Installing the LSPS II Software Packages Procedures

To install the optional LSPS II software packages, do the following:

- 1 Ensure an LSPS II circuit card is installed in the server.
- 2 Log in as root.
- 3 Insert the CD-ROM labeled “LINCS Base CD” into the CD-ROM drive.
- 4 Enter **pkgadd -d cdrom1 LSPSset**

The system displays the following message:

```
Insert CD into SCSI CD-Rom Drive 1.  
Type [go] when ready,  
or [q] to quit: (default: go)
```

- 5 Press **ENTER**.

The system displays the following message:

```
Installation in progress. Do not remove the CD.  
PROCESSING:  
Set: LSPS Set (LSPSset) from <cdrom1>  
  
LSPS set  
(i586) LSPS0  
Using </> as the package base directory.  
  
Do you want to run default set installation? (default: y)
```

6 Press **ENTER**.

The system displays the several status messages indicating that each package listed in [Table 39 on page 302](#) successfully completed.

The system then displays the following message:

```
##Executing set postinstall script.  
Processing of packages for set <LSPSset> is completed.
```

7 Enter **pkginfo -l LSPSset | pg**

The system displays status information of the LSPS software packages. For each package listed in [Table 39 on page 302](#), verify the `STATUS` line displays completely installed.

- 8 If you are finished installing the optional feature software, remove the CD-ROM labeled “LINCS Base CD” from the CD-ROM drive.
- 9 Reboot the system. See “Reboot the System,” in “Common System Procedures,” in the *LINCS Server System Reference*, 585-313-210.

A Component Ordering Numbers

Component Ordering Numbers

[Table 40](#) contains a description of replaceable components and their associated ordering number.

Table 40. Component Ordering Numbers

Basic Component Description	Order Number
Assembly, Remote Alarm Panel	408097426
Assembly, DC Power Panel	408146991
Backplane, SCA, 6-Slot (Disk Drives)	408118214
Board Assembly, Mid-Plane, RAID	408228252
Board Assembly, Temperature Sensor, TAM	408118206
Cable Assembly, TAM, Power, -48V	408097434
Cable Assembly, Alarm Panel to CPCI Backplane (J8), Signal	408097442

1 of 5

Table 40. Component Ordering Numbers

Basic Component Description	Order Number
Cable Assembly, TAM Temp Sens, 3 Connectors	408154920
Cable Assy, CPCI Backplane (J3) to DC Power Backplane (J2)	408118230
Cable Assy, CPCI Backplane (J4) to DC Power Backplane (J3)	408118255
Cable assy, E1/T1 75ft M/F Modular (Twisted Pair)	407613975
Cable assy, E1/T1 25ft M/F Modular (Twisted Pair)	407613983
Cable assy, E1/T1 M/M Crossover Adapter (Twisted Pair)	407617968
Cable Assy, Power, CPCI Backplane to CD ROM/Tape Drive	408118263
Cable Assy, Power, CPCI Backplane to SCA Backplane	408118271
Cable Assy, RAID/SCSI CPCI Backplane to SCA Backplane	408118289

2 of 5

Table 40. Component Ordering Numbers

Basic Component Description	Order Number
Cable Assy, SCSI, SCA Backplane to CD ROM/Tape Drive/External SCSI connector	408118297
CD ROM Drive, SCSI	408069714
Chassis, DC w/o disk drives and CPCI cards – used for sparing	408145787
Circuit Pack, 8-Port Asynchronous Interface	408194868
Circuit Pack, 8-Port Asynchronous Interface Rear I/O	408194876
Circuit Pack, Companion IO Rear IO	408154904
Circuit Pack, CPU Rear IO	408154912
Circuit Pack, E1/T1 (CWB2)	108134529
Circuit Pack, E1/T1 Rear IO (CYD2)	108271966
Circuit Pack, LSPS II (6UB5)	108334475
Circuit Pack, SBC/Companion IO Complex	408097483
Circuit Pack, SSP, w/32MB (CWB1)	108006149
<i>3 of 5</i>	

Table 40. Component Ordering Numbers

Basic Component Description	Order Number
Circuit Pack, Telecom Alarm Module (early version)	408097459
Circuit Pack, Telecom Alarm Module, Rear IO (early version)	408097467
Circuit Pack, Telecom Alarm Module	408224368
Circuit Pack, Telecom Alarm Module, Rear IO	408224276
Disk Drive Assembly, SCSI, 4.5GB	408099547
Fan Tray Assembly, Lower	408099554
Fan Tray Assembly, Upper	408099562
Filter, Power Supplies Air Intake	408065068
Keyboard, 104-Key	408112142
Kit, Maintenance, 16 – Slot CPCI DC Server, RAID	408212777
Module, Ethernet LAN, 10/100 MB	408097491
Module, RAID Controller	408067486

4 of 5

Table 40. Component Ordering Numbers

Basic Component Description	Order Number
Module, Video Controller	408067452
Monitor, Color, 14 inch, Tatung	407926518
Mouse, 2-Button, Logitech	408112134
Panel, Blank, CPCI Card Cage w/Captive Screws	408145811
Panel, Blank, Disk Drive w/Captive Screws	408145753
Power Supply, DC	408063659
Tape, Blank, 4GB	408215903
Tape Drive, SCSI, 4GB	408097418
Terminator, SCSI, 68-Pin, Clip-On	408119196
<i>5 of 5</i>	

B How to Build a System

Checklist for Building a System

The following checklist, [Table 42 on page 313](#), assumes that you are starting with a LINCServer shell which has only the power supply and the backplanes.

Assignment Rules

If having to build a system from scratch, [Table 41 on page 311](#) contains assignment rules for installing circuit cards into the server.

Table 41. Circuit Card Assignments

Circuit Card Type	Server Assignment	Comments
8-Port* Asynchronous	Slot 16 Rear I/O location contains the transition card for external connections.	Optional circuit card. Install this optional card first. Fixed slot for the Equinox 8-port asynchronous circuit card.
CWB2 (E1/T1)	Install first E1/T1 into slot 1. Rear I/O locations contain the transition cards for external connections.	Subsequent installations count forward (i.e., 2, 3, etc.)
CWB1 (SSP)	First SSP card goes into slot 15. Rear I/O locations are blank with a cover over each slot.	If slot 15 already contains a circuit card, use the next available slot, counting backward, from slot 15 (i.e., 14, 13, etc.).
		<i>1 of 2</i>

Table 41. Circuit Card Assignments

Circuit Card Type	Server Assignment	Comments
6UB5 (LSPS II)	Install first LSPS II into slot 15. Rear I/O location is blank with a cover over the slot.	If slot 15 already contains a circuit card, use the next available slot, counting backward, from slot 15 (i.e., slot 14, 13, etc.).
CPU Complex	Slot 8 and slot 9 Rear I/O locations contain the transition cards for connections.	Fixed slots for the CPU complex only.
TAM	Slot 17 Rear I/O location contains the transition card for external connections.	Fixed slot for the TAM.
		2 of 2

* A CWB1, CWB2, or a 6UB5 may be assigned to slot 16 only if your server does not use an 8-port asynchronous circuit card and slots 15 through 1 are full.

Table 42. System Building Checklist

Task	Description	Comments	Refer to	Done
1	Acquire all of the components necessary to build your system.		Appendix A. Component Ordering Numbers (page 305)	
2	Determine the slot and bay locations for the equipment.			
3	Install the hard disk drive(s).		Chapter 3. Replacing the Hard Disk Drive Assembly	
4	Install the circuit cards.		Chapter 2. Installing or Replacing Circuit Cards	
5	Apply power to the unit.		Chapter 1. Getting Inside the LINC Server	
				1 of 2

Table 42. System Building Checklist

Task	Description	Comments	Refer to	Done
6	Install the base system software.		Chapter 5, Installing Base System Software	
7	Install the LINCS server software.		Chapter 6, Installing the LINCS Server Software	
8	Install the optional feature software.		Chapter 7, Installing the Optional Feature Software ; Chapter 8, Installing ORACLE Packages ; Chapter 9, Installing LSPS II Optional Software Packages	
				2 of 2

C Disaster Recovery Checklists

Disaster Recovery Checklists

Use the checklists in this appendix with the procedures in [Chapter 6. Installing the LINCS Server Software](#). The following checklists are included in this section:

- [Software Reloading with Existing HDDs \(page 316\)](#)
- [Checklist for LINCS Servers with All New HDDs \(page 317\)](#)
- [Checklist for Servers with New HDD0 \(page 318\)](#)
- [Checklist for Servers with a New HDD \(page 319\)](#)

Software Reloading with Existing HDDs

The procedures in this checklist below, [Table 43](#), should be conducted when your LINCS server experiences a software disaster. This checklist should not be used if hard disk drives are being replaced.

Table 43. Software Reloading Checklist

✓	Task	Reference Documentation
	Locate the most recent backup tape.	
	Shutdown the LINCS server.	“Shut Down the System,” in “Common System Procedures,” in the <i>LINCS Server System Reference</i> , 585-313-210.
	Leave all hard disks connected to the SCSI bus.	
	Restore the system using the mkimage backup tape.	“Restore the System,” in “Common System Procedures,” in the <i>LINCS Server System Reference</i> , 585-313-210.

**Checklist for LINC
Servers with All
New HDDs**

The procedures in this checklist below, [Table 44](#), should be conducted when you are replacing both hard disk drives on your LINC server.

Note: No provisions for recovering existing file system are included. This checklist should not be used if either hard disk drive has been previously used.

Table 44. All New Hard Disk Drive Checklist

✓	Task	Reference Documentation
	Locate the most recent mkimage backup tape.	
	Replace the hard disk(s).	Performing a Hard Disk Drive Hot Swap (page 103) in Chapter 3, Replacing the Hard Disk Drive Assembly .
	Restore the system using the mkimage backup tape.	“Restore the System,” in “Common System Procedures,” in the <i>LINC Server System Reference</i> , 585-313-210.

Checklist for
Servers with New
HDD0

The procedures in this checklist, [Table 45](#), should be conducted on a two disk server in which Hard Disk Drive 0 has failed. This checklist should not be used if another hard disk drive has also failed.

Table 45. New Hard Disk Drive 0 Checklist

✓	Task	Reference Documentation
	Locate the most recent mkimage backup tape.	
	Replace the hard disk drive.	Performing a Hard Disk Drive Hot Swap (page 103) in Chapter 3, Replacing the Hard Disk Drive Assembly .
	Restore the system using the mkimage backup tape.	“Restore the System,” in “Common System Procedures,” in the <i>LINCS Server System Reference</i> , 585-313-210.

Checklist for Servers with a New HDD

The procedures in this checklist, [Table 46](#), should be conducted on a two disk server in which a hard disk drive, other than HDD 0 has failed.

Table 46. New Hard Disk Drive Checklist

✓	Task	Reference Documentation
	Locate the most recent mkimage backup tape.	
	Replace the hard disk drive.	Performing a Hard Disk Drive Hot Swap (page 103) in Chapter 3, Replacing the Hard Disk Drive Assembly .
		<i>1 of 2</i>

Table 46. New Hard Disk Drive Checklist

✓	Task	Reference Documentation
	Remove, for replacement, the old hard disk drive.	Performing a Hard Disk Drive Hot Swap (page 103) in Chapter 3, Replacing the Hard Disk Drive Assembly .
	Add the new hard disk drive .	Adding a New Hard Disk Drive to a RAID System (page 108) in Chapter 3, Replacing the Hard Disk Drive Assembly .
	Initialize the new hard disk drive drive using the mkimage backup tape.	“Restore the System,” in “Common System Procedures,” in the <i>LINCS Server System Reference</i> , 585-313-210.
		2 of 2

Numerics

23B+D

23 bearer (communication) and 1 data (signaling) channel on a T1 PRI circuit card.

30B+D

30 bearer (communication) and 1 data (signaling) channel (plus framing channel 0) on an E1 PRI circuit card.

47B+D

47 bearer (communication) and 1 data (signaling) channel on two T1 PRI circuit cards.

4ESS[®]

A large Lucent central office switch used to route calls through the telephone network.

5ESS®

A Lucent electronic switching machine used to route calls through the telephone network or private branch exchange.

A**AC**

alternating current

ACD

[automatic call distributor](#)

AD

application dispatch

AD-API

application dispatch application programming interface

adaptive differential pulse code modulation

A means of encoding analog voice signals into digital signals by adaptively predicting future encoded voice signals. This adaptive modulation method reduces the number of bits required to encode voice. See also [pulse code modulation](#).

adjunct products

Products (for example, the Adjunct/Switch Application Interface) that the system administers via cut-through access to the inherent management capabilities of the product itself; this is in opposition to the ability of the system to administer the switch directly.

ADPCM

[adaptive differential pulse code modulation](#)

ADU

[asynchronous data unit](#)

advanced speech recognition

A speech recognition ability that allows the system to understand WholeWord and FlexWord™ inputs from callers.

affiliate

A business organization that Lucent controls or with which Lucent is in partnership.

AGL

application generation language

ALERT

System alerter process

alerter

A system process that responds to patterns of events logged by the “logdaemon” process.

American Standard Code for Information Interchange

A standard code for data representation that represents alphanumeric characters as binary numbers. The code includes 128 upper- and lowercase letters, numerals, and special characters. Each alphanumeric and special character has an ASCII code (binary) equivalent that is 1 byte long.

analog

An analog signal, such as voice or music, that varies in a continuous manner. An analog signal may be contrasted with a digital signal, which represents only discrete states.

ANI

[automatic number identification](#)

announcement

A message the system plays to the caller to provide information. The caller is not asked to give a response. Compare to [prompt](#).

API

Application programming interface

application

The automated transaction (interactions) among the caller, the voice response system, and any databases or host computers required for your business.

application administration

The component of the system that provides access to the applications currently available on your system and helps you to manage and administer them.

application verification

A process in which the system verifies that all the components needed by an application are complete.

ASCII

[American Standard Code for Information Interchange](#)

ASI

analog switch integration

ASR

[advanced speech recognition](#)

asynchronous communication

A method of data transmission in which bits or characters are sent at irregular intervals and spaced by start and stop bits rather than by time. Compare to [synchronous communication](#).

asynchronous data unit

An electronic communications device that allows computer systems to communicate over asynchronous lines more than 50 feet (15 m) in length.

automatic call distributor

That part of a telephone system that recognizes and answers incoming calls and completes these calls based on a set of instructions contained in a database. The ACD can send the call to an operator or group of operators as soon as the operator has completed a previous call or after the system has played a message to the caller.

automatic number identification

A method of identifying the calling party by automatically receiving a string of digits that identifies the calling station of a particular customer.

B**back up**

The preservation of the information in a file in a different location, so that the data is not lost in the event of hardware or system failure.

backing up an application

Using a utility that makes an archive copy of a completed application or an interim copy of an application in progress. The back-up copy can be restored to the system if the on-line version is damaged, or if you make revisions and want to go back to the previous version.

barge-in

A capability provided by WholeWord and FlexWord speech recognition and Dial Pulse Recognition (DPR) that allows callers to speak or enter their responses during the prompt and have those responses recognized (similar to the Speak with Interrupt capability). See also [echo cancellation](#).

batch file

A file containing one or more lines, each of which is a command executable by the UNIX shell.

BB

bulletin board

blind transfer protocol

A protocol in which a call is completed as soon as the extension is dialed, without having to wait to see if the telephone is busy or if the caller answered.

bps

bits per second

BRDG

call bridging process

bridging

The process of connecting one telephone network connection to another over the system TDM bus. Bridging decreases the processing load on the system since an active bridge does not require speech processing, database access, host activity, etc., for the transaction.

bundle

In the context of the Enhanced File Transfer package, this term is used to denote a single file, a group of files (package), or a combination of both.

byte

A unit of storage in the computer. On many systems, a byte is 8 bits (binary digits), which is the equivalent of one character of text.

C**call classification analysis**

A process that enables application designers to use information available within the system to classify the disposition of originated and transferred calls. CCA is an optional feature package.

call data event

A parameter that specifies a list of variables that are appended to a call data record at the end of each call.

call data handler process

A software process that accumulates generic call statistics and application events.

called party number

The number dialed by the person making a telephone call. Telephone switching equipment can use this number to selectively route an incoming call to a particular department or agent.

caller

The party who calls for a service, gets connected to the system, and interacts with it. As the system can also make outbound calls for service, the caller can also be the person who responds to those outbound calls.

call flow

See [transaction](#).

call progress tones

Standard telephony sounds that indicate the status of the call. These sounds include busy, fast busy, ringback, reorder, etc.

card cage

An area within a hardware platform that contains and secures all of the standard and optional circuit cards used in the system.

cartridge tape drive

A high-capacity data storage/retrieval device that can be used to transfer large amounts of information onto high-density magnetic cartridge tape based on a predetermined format. This tape can be removed from the system and stored as a backup, or used on another system.

CAS

channel associated signalling

caution

An admonishment or advisory statement used in the system documentation to alert the user to the possibility of a service interruption or a loss of data.

CCA

[call classification analysis](#)

CDH

[call data handler process](#)

CELP

[code excited linear prediction](#)

central office

An office or location in which large telecommunication devices such as telephone switches and network access facilities are maintained. These locations follow strict installation and operation requirements.

central processing unit

See [processor](#).

CGEN

Voice system general message class

channel

See [port](#).

channel associated signaling

A type of signaling that can be used on E1 circuit cards. It occurs on channel 16.

circuit card upgrade

A new circuit card that replaces an existing card in the platform. Usually the replacement is an updated version of the original circuit card to replace technology made obsolete by industry trends or a new system release.

cluster controller

A bisynchronous interface that provides a means of handling remote communication processing.

CO

[central office](#)

code excited linear prediction

A means of encoding analog voice signals into digital signals that provides excellent quality with use of minimum disk space.

command

An instruction or request the user issues to the system software to make the system perform a particular function. An entire command consists of the command name and options.

configuration

The arrangement of the software and hardware of a computer system or network. The system configuration includes either a standard or custom processor, peripheral equipment (for example, printers and modems), and software applications. Configuration also refers to the way the switch network is set up; that is, the types of products that are in the network and how those products communicate.

configuration management

The component of the system that allows you to manage the current configuration of voice channels, host sessions, and database connections, assign scripts to run on specific voice channels or host sessions, assign functionality to SSP and E1/T1 circuit cards, and perform various maintenance functions.

connect and disconnect (C and D) tones

DTMF tones that inform the system when the attendant has been connected (C) and when the caller has been disconnected (D).

connected digits

A sequence of digits that the system can process as a group, rather than requiring the caller to enter the digits one at a time.

controller circuit card

A circuit card used on a computer system that controls its basic functionality and makes the system operational. These circuit cards are used to control magnetic peripherals, video monitors, and basic system communications.

copying an application

A utility in which information from a source application is directed into the destination application.

coresidency

The ability of two products or services to operate and interact with each other on a single hardware platform.

CPE

customer provided equipment or customer premise equipment

CPN

[called party number](#)

CPT

[call progress tones](#)

CPU

[central processing unit](#)

CPU Complex

The processor for the LINCS server consisting of a single-board computing circuit card and an I/O companion board (SBC/IOB). The CPU complex is also used in other compactPCI platforms.

crash

An interactive utility for examining the operating system core and for determining if system parameters are being exceeded.

CSU

channel service unit

custom speech

Unique words or phrases to be used in system voice prompts that Lucent Technologies custom records on a per-customer basis.

custom vocabulary

A specialized package of unique words or phrases created on a per-customer basis and used by WholeWord or FlexWord speech recognition.

CVS

converse vector step

D**danger**

An admonishment or advisory statement used in system documentation to alert the user to the possibility of personal injury or death.

data interface process

A software process that communicates with Script Builder applications.

database

A structured set of files, records, or tables.

database field

A field used to extract values from a local database and form the structure upon which a database is built.

database record

The information in a database for a person, product, event, etc. The database record is made up of individual fields for each information item.

database table

A structure, made up of columns and rows, that holds information in a database. Database tables provide a means of storing information that changes too often to “hard-code,” or store permanently, in the transaction outline.

dB

decibel

DB

database

DBC

database checking process

DBMS

database management system

DC

direct current

DCE

data communications equipment

DCP

digital communications protocol

debug

The process of locating and correcting errors in computer programs; also referred to as [troubleshooting](#).

default

The way a computer performs a task in the absence of other instructions.

default owner

The owner of a channel when no process takes ownership of that channel. The default owner holds all idle, in-service channels. In terms of the IRAPI, this is typically the Application Dispatch process.

diagnose

The process of performing diagnostics on a bus or on Tip/Ring, E1/T1, or SSP circuit cards.

dial ahead

The ability to collect and process touch-tone inputs in sequence, even when they are received before the prompts.

dial pulse recognition

A method of recognizing caller pulse inputs from a rotary telephone.

dialed number identification service

A service that allows incoming calls to contain information about the telephone number for which it is destined.

dial through

A capability provided by touch-tone and dial pulse recognition that allows callers to enter their responses during the prompt and have those responses recognized (similar to the Speak with Interrupt capability). See also [barge-in](#) and [echo cancellation](#).

DIO

disk input and output process

DIP

[data interface process](#)

directory

A type of file used to group and organize other files or directories.

DMA

direct memory address

DNIS

[dialed number identification service](#)

DPR

[dial pulse recognition](#)

DSP

digital signal processor

DTE

data terminal equipment

DTMF

[dual tone multi-frequency](#)

DTR

data terminal ready

dual tone multi-frequency

A touch-tone sound that is an audio signal including two different frequencies. *DTMF feedback* is the process of the “switch” providing this information to the system. *DTMF muting* is the process of ignoring these tones (which might be simulated by human speech) when they are not needed for the application.

dump space

An area of the disk that is fixed in size and should equal the amount of RAM on the system. The operating system “dumps” an image of core memory when the system crashes. The dump can be fetched after rebooting to help in analyzing the cause of the crash.

E

E&M

[Ear and Mouth](#)

E1 / T1

Digital telephony interfaces, commonly called *trunks*. E1 is an international standard at 2.048 Mbps. T1 is a North American standard at 1.544 Mbps.

Ear and Mouth

A common T1 trunking protocol for connection between two “switches.”

EBCDIC

Extended Binary Coded Decimal Interexchange Code

echo cancellation

The process of making the channel quiet enough so that the system can hear and recognize WholeWord, FlexWord, and dial pulse inputs during the prompt. See also [barge-in](#).

editor system

A system that allows speech phrases to be displayed and edited by a user.

EIA

Electronic Industries Association

EISA

Extended Industry Standard Architecture

EMI

electromagnetic interference

Enhanced Basic Speech

Pre-recorded speech available from Lucent Technologies in several languages. Sometimes called [standard speech](#).

error message

A message on the screen indicating that something is wrong with a possible suggestion of how to correct it.

ESD

electrostatic discharge

ESS

electronic switching system

EST

Enhanced Software Technologies, Inc.

ET

error tracker

Ethernet

A name for a local area network that follows IEEE standard 802.3. Supported implementations are 10BaseT and/or 100BaseT.

event

The notification given to an application when some condition occurs that is generally not encountered in normal operation.

EXTA

external alarms feature message class

external actions

Specific predefined system tasks that Script Builder can call or *invoke* to interact with other products or services. When an external action is invoked, the systems displays a form that provides choices in each field for the application developer to select. Examples are Call_Bridge, Make_Call, SP_Allocate, SR_Prompt, etc. In Voice@Work, external actions are treated as [external functions](#).

external functions

Specific predefined (or customer-created) system tasks that Voice@Work or Script Builder can call or *invoke* to interact with other products or services. The function allows the application developer to enter the argument(s) for the function to act on. Examples are concat, getarg, length, substring, etc. See also [external actions](#).

F

FCC

Federal Communications Commission

FDD

floppy disk drive

feature

A function or capability of a product or an application within the system.

feature package

An optional package that may contain both hardware and software resources to provide additional functionality to a standard system.

feature_tst script package

A standard system software program that allows a user to perform self-tests of critical hardware and software functionality.

FEP

front end processor

field

See [database field](#).

FIFO

first-in-first-out processing order

file

A collection of data treated as a basic unit of storage.

file transfer

An option that allows you to transfer files interactively or directly to and from UNIX using the file transfer system (FTS).

filename

Alphabetic characters used to identify a particular file.

FlexWord speech recognition

A type of speech recognition based on subword technology that recognizes phonemes or parts of words in a specific language. See also [subword technology](#).

foos

facility out-of-service state

FTS

file transfer process message class

function key

A key, labeled F1 through F8, on your keyboard to which the system software gives special properties for manipulating the user interface.

G**GEN**

PRISM logger and alerter general message class

grammar

The inputs that a recognizer can match (identify) from a caller.

GUI

graphical user interface

H**hard disk drive**

A high-capacity data storage/retrieval device that is located inside a computer platform. A hard disk drive stores data on nonremovable high-density magnetic media based on a predetermined format for retrieval by the system at a later date.

hardware

The physical components of a computer system. The central processing unit, disks, tape, and floppy drives, etc., are all hardware.

hardware upgrade

Replacement of one or more fundamental platform hardware components (for example, the CPU or hard disk drive), while the existing platform and other existing optional circuit cards remain.

HDD

[hard disk drive](#)

hwoos

hardware out-of-service state

Hz

Hertz

IBM

International Business Machines

iCk or ICK

The system integrity checking process.

ID

identification

IDE

integrated disk electronics

idle channel

A channel that either has no owner or is owned by its default owner and is onhook.

IE

information element

IEEE

Institute of Electrical and Electronic Engineers

IND\$FILE

The standard SNA file transfer utility that runs as an application under CICS, TSO, and CMS. IND\$FILE is independent of link-level protocols such as BISYNC and SDLC.

independent software vendor

A company that has an agreement with Lucent Technologies to develop software to work with the system to provide additional features required by customers.

indexed table

A table that, unlike a nonindexed table, can be searched via a field name that has been indexed.

industry standard architecture

A PC bus standard that allows processors and other circuit cards to communicate with each other.

INIT

voice system initialization message class

initialize

To start up the system for the first time.

inserv

in-service state

Integrated Services Digital Network

A network that provides end-to-end digital connectivity to support a wide range of voice and data services.

intelligent CCA

Monitoring the line after dialing is complete to determine whether a busy, reorder (fast busy), or other failure has been encountered. It also recognizes when the extension is answered or if the extension is not answered after a specified number of rings. The monitoring capabilities are dependent on the network interface circuit card and protocol used.

interface

The access point of a system. With respect to the system, the interface is designed to provide you with easy access to the software capabilities.

interrupt

The termination of voice and/or telephony functions when some condition occurs.

Intuity Response Application Programming Interface

A library of commands that provide a standard development interface for voice-telephony applications.

IOB

I/O companion card to the [SBC](#). This is part of the [CPU Complex](#).

IPC

interprocess communication

IPC

intelligent ports card (IPC-900)

IRAPI

[Intuity Response Application Programming Interface](#)

IRQ

interrupt request

ISA

[industry standard architecture](#)

ISDN

[Integrated Services Digital Network](#)

ISV

[independent software vendor](#)

ITAC

International Technical Assistance Center

K**Kbps**

kilobytes per second

Kbyte

kilobyte

keyboard mapping

In emulation mode, this feature enables the keyboard to send 3270 keyboard codes to the host according to a configuration table set up during installation.

keyword spotting

A capability provided by WholeWord speech recognition that allows the system to recognize a single word in the middle of an entire phrase spoken by a caller in response to a prompt.

L**LAN**

[local area network](#)

LDB

[local database](#)

LED

light-emitting diode

library states

The state information about channel activities maintained by the IRAPI.

LIFO

last-in-first-out processing order

LINCS

Lucent Integrated Network Call Server

line side E1

A digital method of interfacing a system to a PBX or “switch” using E1-related hardware and software.

line side T1

A digital method of interfacing a system to a PBX or “switch” using T1-related hardware and software.

listfile

An ASCII catalog that lists the contents of one or more talkfiles. Each application script is typically associated with a separate listfile. The listfile maps speech phrase strings used by application scripts into speech phrase numbers.

local area network

A data communications network in a limited geographical area. The LAN provides communications between computers and peripherals.

local database

A database residing on the system.

LOG

System logger process message class

logical unit

A type of SNA Network Addressable Unit.

logdaemon

A UNIX system information and error logging process.

logger

See [logdaemon](#).

logging on/off

Entering or exiting the system software.

LSE1

[line side E1](#)

LSPS II

[Lucent speech processing solutions II circuit card \(6UB5\)](#)

LST1

[line side T1](#)

LU

[logical unit](#)

Lucent speech processing solutions II circuit card (6UB5)

A high-performance speech processing circuit card capable of simultaneous support for various speech technologies. In addition to the basic speech-processing features, The LSPS II circuit card provides enhanced Text-to-Speech capabilities and subword recognition for large vocabularies.

M

magnetic peripherals

Data storage devices that use magnetic media to store information. Such devices include hard disk drives, floppy disk drives, and cartridge tape drives.

main screen

The system screen from which you are able to enter either the System Administration or Voice System Administration menu.

maintenance process

A software process that runs temporary diagnostics and maintains the state of circuit cards and channels.

manooos

manually out-of-service state

masked event

An event that an application can ignore (that is, the application can request not to be informed of the event).

master

A circuit card that provides clock information to the TDM bus.

Mbps

megabits per second

MByte

[megabyte](#)

megabyte

A unit of memory equal to 1,048,576 bytes (1024 x 1024). It is often rounded to one million.

menu

Options presented to a user on a computer screen or with voice prompts.

MF

[multifrequency](#)

MHz

megahertz

ms

millisecond

msec

millisecond

MS-DOS

A personal computer disk operating system developed by the Microsoft Corporation.

MTC

[maintenance process](#)

multifrequency

Dual tone digit signalling (similar to DTMF), used for trunk addressing between network switches or by network operators.

multichannel application

A single process/application that controls several channels. Each channel of the application is managed explicitly. Typically this means state information for each channel is maintained and the state of the application on each channel is tracked.

N**NCP**

Network Control Program

NEBS

Network Equipment Building Standards

NEMA

National Electrical Manufacturers Association

netoos

network out-of-service state

non-facility associated signalling

NFS

network file sharing

NM-API

Network Management - Application Programming Interface

NMVT

network management vector transport

nonex

nonexistent state

nonindexed table

A table that can be searched only in a sequential manner and not via a field name.

nonmasked event

An event that must be sent to the application. Generally, an event is nonmaskable if the application would likely encounter state transition errors by trying to it.

null value

An entry containing no value. A field containing a null value is normally displayed as blank and is different from a field containing a value of zero.

O**OEM**

original equipment manufacturer

on-line help

Messages or information that appear on the user's screen when a function key (usually F1) is pressed.

option

An argument used in a command line to modify program output by modifying the execution of a command. When you do not specify any options, the command executes according to its default options.

ORACLE

A company that produces relational database management software. It is also used as a generic term that identifies a database residing on a local or remote system that is created and maintained using an ORACLE RDBMS product.

P**PBX**

[private branch exchange](#)

PC

personal computer

PCB

printed circuit board

PCI

[peripheral component interconnect](#)

PCI Mezzanine Card

A PCI module, such as a LAN or RAID controller, that connects to the [CPU Complex IOB](#) companion card.

PCM

[pulse code modulation](#)

PEC

price element code

peripheral (device)

Equipment such as printers or terminals that is in addition to the basic processor.

peripheral component interconnect

A newer, higher speed PC bus that is gradually displacing ISA for many components.

permanent process

A process that starts and initializes itself before it is needed by a caller.

phoneme

A single basic sound of a particular spoken language. For example, the English language contains 40 phonemes that represent all basic sounds used with the language. The English word “one” can be represented with three phonemes, “w” - “uh” - “n.” Phonemes vary between languages because of guttural and nasal inflections and syllable constructs.

phrase filtering (screening)

The rejection of unrecognized speech. The WholeWord and FlexWord speech recognition packages can be programmed to reprompt the caller if the system does not recognize a spoken response.

phrase tag

A string of up to 50 characters that identifies the contents of a speech phrase used by an application script.

platform migration

See [platform upgrade](#).

platform upgrade

The process of replacing the existing platform with a new platform.

pluggable

A term usually used with speech technologies, in particular standard speech, to indicate that a basic algorithmic technique has been implemented to accept one or more sets of parameters that tailors the algorithm to perform in one or more languages.

PMC

[PCI Mezzanine Card](#)

poll

A message sent from a central controller to an individual station on a multipoint network inviting that station to send if it has any traffic.

polling

A network arrangement whereby a central computer asks each remote location whether it wants to send information. This arrangement enables each user or remote data terminal to transmit and receive information on shared facilities.

port

A connection or link between two devices that allows information to travel to a desired location. See [telephone network connection](#).

PRI

[Primary Rate Interface](#)

Primary Rate Interface

An ISDN term for connections over E1 or T1 facilities that are usually treated as trunks.

private branch exchange

A private switching system, either manual or automatic, usually serving an organization, such as a business or government agency, and usually located on the customer's premises.

processor

In system documentation, the computer on which UnixWare and system software runs. In general, the part of the computer system that processes the data. Also known as the [central processing unit](#).

prompt

A message played to a caller that gives the caller a choice of selections in a menu and asks for a response. Compare to [announcement](#).

pseudo driver

A driver that does not control any hardware.

PSTN

public switch telephone network

pulse code modulation

A digital modulation method of encoding voice signals into digital signals. See also [adaptive differential pulse code modulation](#).

R**RAID**

redundant array of independent disks

RAID Array

An assembly of disk drives configured to provide some level of RAID functionality

RAM

random access memory

RDMBS

ORACLE relational database management system

RECOG

speech recognition feature message class

recognition type

The type of input the recognizer can understand. Available types include touch-tone, dial pulse, and Advanced Speech Recognition (ASR), which includes WholeWord and FlexWord speech recognition.

recognizer

The part of the system that compares caller input to a grammar in order to correctly match (identify) the caller input.

record

See [database record](#).

recovery

The process of using copies of the system software to reconstruct files that have been lost or damaged. See also [restore](#).

remote database

Information stored on a system other than your current system that can be accessed by your current system.

REN

ringer equivalence number

reports administration

The component of a system that provides access to system reports, including call classification, call data detail, call data summary, message log, and traffic reports.

restore

The process of recovering lost or damaged files by retrieving them from available back-up tapes or from another disk device. See also “recovery.”

restore application

A utility that replaces a damaged application or restores an older version of an application.

reuse

The concept of using a component from a source system in a target system after a software upgrade or platform migration.

RFS

remote file sharing

RM

resource manager

roll back

To cancel changes to a database since the point at which changes were last committed.

rollback segment

A portion of the database that records actions that should be undone under certain circumstances. Rollback segments are used to provide transaction rollback, read consistency, and recovery.

RTS

request to send

S**SCA**

single connector architecture

SBC

A single-board computing circuit card used in LINCS servers. It is part of the CPU complex.

screen pop

A method of delivering a screen of information to a telephone operator at the same time a telephone call is delivered. This is accomplished by a complex chain of tasks that include identifying the calling party number, using that information to access a local or remote ORACLE database, and pulling a “form” full of information from the database using an ORACLE database utility package.

script

The set of instructions for the system to follow during a transaction.

Script Builder

An optional software package that provides a menu-oriented interface designed to assist in the development of custom voice response applications on the system (see also [Voice@Work](#)).

SCSI

[small computer system interface](#)

SDN

software defined network

shared database table

A database table that is used in more than one application.

shared speech

Speech that is a part of more than one application.

shared speech pools

A parameter that allows the user of a voice application to share speech components with other applications.

SID

station identification

single-threaded application

An application that runs on a single voice channel.

slave

A circuit card that depends on the TDM bus for clock information.

SLIP

serial line interface protocol

small computer system interface

A disk drive control technology in which a single SCSI adapter circuit card plugged into a PC slot is capable of controlling as many as seven different hard disks, optical disks, tape drives, etc.

SNA

systems network architecture

SNMP

simple network management protocol

software

The set or sets of programs that instruct the computer hardware to perform a task or series of tasks — for example, UnixWare software and the system software.

software upgrade

The installation of a new version of software in which the existing platform and circuit cards are retained.

source system

The system from which you are upgrading (that is, your system as it exists *before* you upgrade).

speech and signal processor circuit card (CWB1)

A high-performance signal processing circuit card capable of simultaneous support for various speech technologies.

speech energy

The amount of energy in an audio signal. Literally translated, it is the output level of the sound in every phonetic utterance.

speech envelope

The linear representation of voltage on a line. It reflects the sound wave amplitude at different intervals of time. This envelope can be plotted on a graph to represent the oscillation of an audio signal between the positive and negative extremes.

speech file

A file containing an encoded speech phrase.

speech filesystem

A collection of several talkfiles. The filesystem is organized into 16-Kbyte blocks for efficient management and retrieval of talkfiles.

speech modeling

The process of creating WholeWord speech recognition algorithms by collecting thousands of different speech samples of a single word and comparing them all to obtain a statistical average of the word. This average is then used by a WholeWord speech recognition program to recognize a single spoken word.

speech space

An area that contains all digitized speech used for playback in the applications loaded on the system.

speech phrase

A continuous speech segment encoded into a digital string.

speech recognition

The ability of the system to understand input from callers.

SPIP

signal processor interface process

SPPLIB

speech processing library

SQL

[structured query language](#)

SR

[speech recognition](#)

SSP

[speech and signal processor circuit card \(CWB1\)](#)

standard speech

The speech package available in several languages containing simple words and phrases produced by Lucent Technologies for use with the system. This package includes digits, numbers, days of the week, and months, each spoken with initial, medial, and falling inflection. The speech is in digitized files stored on the hard disk to be used in voice prompts and messages to the caller. This feature is also called Enhanced Basic Speech.

standard vocabulary

A standard package of simple word speech models provided by Lucent Technologies and used for WholeWord speech recognition. These phrases include the digits “zero” through “nine,” “yes,” “no,” and “oh,” or the equivalent words in a specific local language.

string

A contiguous sequence of characters treated as a unit. Strings are normally bounded by white spaces, tabs, or a character designated as a separator. A string value is a specified group of characters symbolized by a variable.

structured query language

A standard data programming language used with data storage and data query applications.

subword technology

A method of speech recognition used in FlexWord recognition that recognizes phonemes or parts of words. Compare to [WholeWord speech recognition](#).

switch

A software and hardware device that controls and directs voice and data traffic. A customer-based switch is known as a [private branch exchange](#).

switch hook

The device at the top of most telephones that is depressed when the handset is resting in the cradle (in other words, is *on hook*). The device is raised when the handset is picked up (in other words, when the telephone is *off hook*).

switch hook flash

A signaling technique in which the signal is originated by momentarily depressing the “switch hook.”

switch interface administration

The component of the system that enables you to define the interaction between the system and switches by allowing you to establish and modify switch interface parameters and protocol options for both analog and digital interfaces.

switch network

Two or more interconnected telephone switching systems.

synchronous communication

A method of data transmission in which bits or characters are sent at regular time intervals, rather than being spaced by start and stop bits. Compare to [asynchronous communication](#).

SYS

UNIX system calls message class

sysgen

system generation

system administrator

The person assigned the responsibility of monitoring all system software processing, performing daily system operations and preventive maintenance, and troubleshooting errors as required.

system architecture

The manner in which the system software is structured.

system message

An event or alarm generated by either the system or end-user process.

system monitor

A component of the system that tests to verify that each incoming telephone line and its associated Tip/Ring or T1 circuit card is functional. Through the “System Monitor” component, you are able to see displays of the Voice Channel and Host Session Monitors.

T**T1**

A digital transmission link with a capacity of 1.544 Mbps.

table

See [database table](#).

talkfile

An ASCII file that contains the speech phrase tags and phrase tag numbers for all the phrases of a specific application. The speech phrases are organized and stored in groups. Each talkfile can contain up to 65,535 phrases, and the speech filesystem can contain multiple talkfiles.

talkoff

The process of a caller interrupting a prompt, so the prompt message stops playing.

TAM

[telecom alarm module](#)

target system

The system to which you are upgrading (that is, your system as you expect it to exist *after* you upgrade).

TAS

[transaction assembler script](#)

TCP/IP

transmission control protocol/internet protocol

TDM

time division multiplexing

telecom alarm module

An intelligent alarm module that provides critical, major, and minor alarm indicators.

telephone network connection

The point at which a telephone network connection terminates on a system. Supported telephone connections are Tip/Ring, T1, and E1.

Text-to-Speech

An optional feature that allows an application to play US English speech directly from ASCII text by converting that text to synthesized speech. The text can be used for prompts or for text retrieved from a database or host, and can be spoken in an application with prerecorded speech.

ThickNet

A 10-mm (10BASE5) coaxial cable used to provide interLAN communications.

ThinNet

A 5-mm (10BASE2) coaxial cable used to provide interLAN communications.

time-division multiplex

A method of serving a number of simultaneous channels over a common transmission path by assigning the transmission path sequentially to the channels, with each assignment being for a discrete time interval.

Tip/Ring

Analog telecommunications using four-wire media.

token ring

A ring type of local area network that allows any station in the network to communicate with any other station.

trace

A command that can be used to monitor the execution of a script.

traffic

The flow of information or messages through a communications network for voice, data, or audio services.

transaction

The interactions (exchanges) between the caller and the voice response system. A transaction can involve one or more telephone network connections and voice responses from the system. It can also involve one or more of the system optional features, such as speech recognition, 3270 host interface, FAX Actions, etc.

transaction assembler script

The computer program code that controls the application operating on the voice response system. The code can be produced from Voice@Work, Script Builder, or by writing directly in TAS code.

transaction state machine process

A multi-channel IRAPI application that runs applications controlled by TAS script code.

transient process

A process that is created dynamically only when needed.

troubleshooting

The process of locating and correcting errors in computer programs. This process is also referred to as debugging.

TSO

time share operation

TSM

[transaction state machine process](#)

TTS

[Text-to-Speech](#)

TWIP

T1 interface process

U**UK**

United Kingdom

US

United States of America

UNIX Operating System

A multiuser, multitasking computer operating system originally developed by Lucent Technologies.

UNIX shell

The command language that provides a user interface to the UNIX operating system.

upgrade scenario

The particular combination of current hardware, software, application and target hardware, software, applications, etc.

usability

A measurement of how easy an application is for callers to use. The measurement is made by making observations and by asking questions. An application should have high usability to be successful.

USOC

universal service ordering code

UVL

unified voice library

V**VDC**

video display controller

vi editor

A screen editor used to create and change electronic files.

virtual channel

A channel that is not associated with an interface to the telephone network (Tip/Ring, T1, LSE1/LST1, or PRI). Virtual channels are intended to run “data-only” applications which do not interact with callers but may interact with DIPs. Voice or network functions (for example, coding or playing speech, call answer, origination, or transfer) will not work on a virtual channel. Virtual channel applications can be initiated only by a “virtual seizure” request to TSM from a DIP.

vocabulary

A collection of words that the system is able to recognize using either WholeWord or FlexWord speech recognition.

vocabulary activation

The set of active vocabularies that define the words and wordlists known to the FlexWord recognizer.

vocabulary loading

The process of copying the vocabulary from the system where it was developed and adding it to the target system.

Voice@Work

An optional software package that provides a graphical interface to assist in development of voice response applications on the system (see also [Script Builder](#)).

voice channel

A channel that is associated with an interface to the telephone network (T1, E1, or PRI). Any system application can run on a voice channel. Voice channel applications can be initiated by being assigned to particular voice channels or dialed numbers to handle incoming calls or by a “soft seizure” request to TSM from a DIP or the **soft_szr** command.

voice processing co-marketer

A company licensed to purchase voice processing equipment to market and sell based on their own marketing strategies.

voice response output process

A software process that transfers digitized speech between system hardware (for example, Tip/Ring and SSP circuit cards) and data storage devices (for example, hard disk, etc.)

voice response unit

A computer connected to a telephone network that can play messages to callers, recognize caller inputs, access and update a databases, and transfer and monitor calls.

voice system administration

The means by which you are able to administer both voice-related aspects of the system.

VPC

[voice processing co-marketer](#)

VROP

voice response output process

VRU

[voice response unit](#)

W**warning**

An admonishment or advisory statement used in system documentation to alert the user to the possibility of equipment damage.

watchdog timer

An timer that activates a [TAM](#) alarm when CPU activity is not received within the 30-second threshold.

WholeWord speech recognition

An optional feature package based on whole-word technology that can recognize the numbers one through zero, “yes”, and “no” (the key words). This feature is reliable, regardless of the individual speaker. This feature can identify the key words when spoken in phrases with other words. A string of key words, called *connected digits*, can be recognized. During the prompt announcement, the caller can speak or use touch tones (or dial pulses, if available). See also [whole-word technology](#).

whole-word technology

The ability to recognize an entire word, rather than just the phoneme or a part of a word. Compare to “subword technology.”

wink signal

An interruption of current to a busy lamp indicating that there is a line on hold.

word

A unique utterance understood by the recognizer.

wordlist

A set of words available for FlexWord recognition by an application during a Prompt & Collect action step.

word spotting

The ability to search through extraneous speech during a recognition.

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