Tru64 UNIX and TruCluster Software Products

Patch Kit Installation Instructions

October 2000

Product Version: Tru64 UNIX Patch Kits

This manual provides instructions for installing and removing patches using the `dupatch` utility, which is included with Tru64 UNIX and TruCluster Server Software patch kits. It also describes baselining techniques and provides other information for working with patches.

For information about individual patches, see the *Patch Summary and Release Notes* document for the kit you are installing.

Compaq Computer Corporation
Houston, Texas

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About This Manual

This manual provides instructions for installing and removing patches that are provided by Compaq Computer Corporation in its Tru64 UNIX and TruCluster Software Products (TCR) patch kits. It also describes baselining techniques and provides other information for working with patches.

The information provided here deals with patches installed on Versions 4.0D and higher and 5.0 and higher, including both official and customer-specific (CSP) patches. The differences in dealing with the different product versions and patch-kit types are minimal; this manual alerts you to those differences during process discussions and step-by-step instructions.

The process for installing and removing patches using the rolling upgrade procedure introduced in Version 5.0A release of the TruCluster Server Software, is discussed in *Chapter 5*.

For information about individual patches, see the *Patch Summary and Release Notes* document for the kit you are installing.

Note

In most instances, this manual uses the name Tru64 UNIX for all versions of the operating system, including those that were originally released as DIGITAL UNIX.

In general, the terms *TruCluster Software Products* and *TCR* are used throughout this manual to refer to all releases of Compaq's TruCluster products.

Audience

This manual is for the person who installs and removes patch kits and for anyone who manages patches after they are installed.

Organization

The first two chapters describe the concepts of the patching process and provide an overview of the patch management utility, `dupatch`. *Chapter 3* lists issues and restrictions you should be aware of before you begin to work with the patch kits following the step-by-step procedures in *Chapter 4*.

This manual is organized as follows:

Chapter 1	Provides an overview of the concepts and features of the patch kits.
Chapter 2	Introduces the `dupatch` utility and describes its features.
Chapter 3	Provides information you must be aware of when installing and removing patches.
Chapter 4	Describes the procedures for installing and removing patches.
Chapter 5	Describes the "rolling upgrade" process for patching a cluster running TruCluster Server Version 5.0A or higher while the cluster is in operation. This process is also used for upgrading to a new version of the TruCluster software software or for doing an upgrade and a patch together.

Chapter 6	Provides examples of a typical patch installation, a TruCluster patch installation in a rolling upgrade, a baselining process, and a patch removal process.
Chapter 7	Describes error messages you might see while installing, removing, or maintaining patches.
Appendix A	Provides Tru64 UNIX system upgrade information.

Related Documentation

In addition to this manual, you should be familiar with the concepts and mechanisms described in the following documents:

- *Patch Summary and Release Notes* document for the patch kit you are working with
- Tru64 UNIX *Installation Guide*
- Tru64 UNIX *System Administration* manual
- TruCluster *Software Installation* manual
- TruCluster Software Products *Cluster Administration* manual
- Any release-specific installation documentation

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- The section numbers and page numbers of the information on which you are commenting.
- The version of Tru64 UNIX that you are using.
- If known, the type of processor that is running the Tru64 UNIX software.

The Tru64 UNIX Publications group cannot respond to system problems or technical support inquiries. Please address technical questions to your local system vendor or to the appropriate Compaq technical support office. Information provided with the software media explains how to send problem reports to Compaq.

Conventions

This guide uses the following conventions:

file	Italic (slanted) type indicates variable values, placeholders, and function argument names.
Ctrl/*x*	This symbol indicates that you hold down the first named key while pressing the key or mouse button that follows the slash. In examples, this key combination is enclosed in a box (for example, Ctrl/C).
% **cat**	Boldface type in interactive examples indicates typed user input.
device names	Operating system versions before Version 5.0 use different names than those of Version 5.0 and higher. In general, this manual uses the Version 5.0 names. For example, where a partition name is represented by `/dev/disk/dsk3g`, the Version 4.0n name might be `/dev/rz3g`.
Glossary Terms	In the online version of this document, various terms are linked to the *Glossary*. By clicking on the term, you will be taken to its definition. You can easily return to the place you were reading by clicking on your browser's Back button.

1

Introduction

This chapter provides an overview of the concepts and features of the patch kits for the Tru64 UNIX operating system and TruCluster Software (TCR) products.

1.1 Overview

A patch is a collection of files that contain fixes to problems. When possible, patches are merged together, into one patch, if they have intersecting files or codependencies. A patch may correct one or more problems.

The Tru64 UNIX and TCR patch kits contain patches for critical problems for those software products. These kits, which are distributed as needed, provide interim maintenance that prevents the occurrence of known critical problems. The patch kits contain the following elements:

- Version-specific patches and patch-specific documentation
- The `dupatch` patch-management utility, which you use to install, view, remove, and manage patches

Patch kits are not intended to provide general maintenance and new functions; applying them to your system does not obviate the need to upgrade to later versions of Tru64 UNIX and TCR.

Patches are applicable to a specific version of the software products, unless stated otherwise in the patch kit release notes. You cannot install version-specific kits on other software versions. Compaq recommends that you install all of the patches included in the kits and that you update the TCR products (if applicable) at the same time you update your operating system.

To install Tru64 UNIX and TCR patches, your system must meet the following requirements:

- Be running the appropriate version of Tru64 UNIX and TCR.
- Contain the necessary temporary and permanent storage space described in the Patch Summary and Release Notes document for the kit you are installing

After you install the patches, the following items are left on the system:

- The `dupatch` utility
- Patch-specific documentation that you can view with `dupatch`
- Optionally, the archived system files that were updated by the installed patches

1.2 Types of Patches

Compaq provides two kinds of patches for its Tru64 UNIX and TCR software products — release kits and customer-specific kits:

- Release patchess

  These patches provide interim maintenance that prevents the occurrence of known critical problems. Release patches (sometimes referred to as *official patches*) are provided in kits, grouped by software product versions. The following are features of release patch kits:

  – Provide selective patch installation and removal

  - Use dupatch for installing, viewing, removing, and managing patches
  - Are provided on the Internet or CD-ROM
- Customer-specific patches (CSPs)

  These patches are provided by your service provider in response to Tru64 UNIX or TCR problems that are specific to your own system's hardware and software configuration. CSP kits have the following features:

  - Generally use the dupatch utility for installing, viewing, removing, and managing patches
  - May contain patches for one or more software products. For example, a single tar file may contain patches for DIGITAL UNIX 4.0F, Tru64 UNIX 5.0, TCR1.5, and TCR1.6
  - May require release patches but do not contain any release patches

1.3 Patch Kit Distribution and Naming

Tru64 UNIX patches for specific operating system and TCR releases and customer-specific patches are packaged together in tar files. Each patch kit contains the following components:

- Patch management utility (dupatch) and other patch management tools.

  Installs, removes, and manages patches for Tru64 UNIX and TCR. This utility is installed and left on the system through the successful installation of a patch kit.
- Patch subsets for the operating system and TruCluster software products.
- Documentation

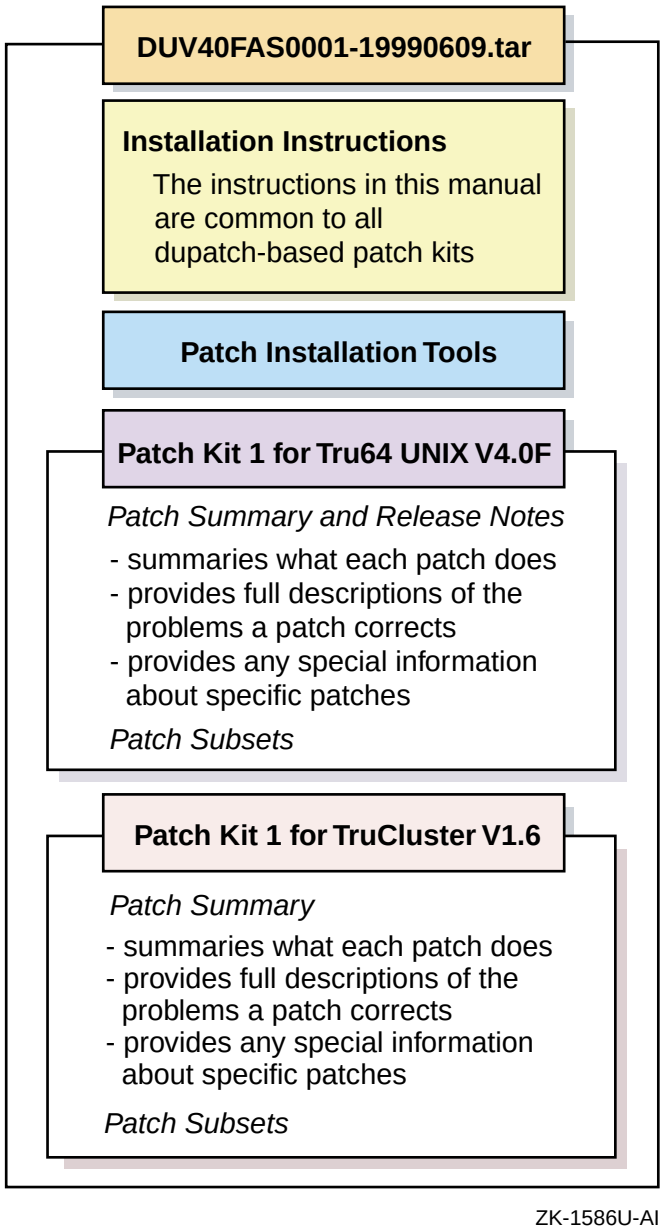
  Packaged with release patch kits is a document called *Patch Summary and Release Notes*, which summaries the problems that the patches in that kit correct and provides any information you may need to know about specific patches. The information in this document also exists in separate files that you can access using the dupatch utility. (See Section 2.3.)

  Release patch kits also contain the *Installation Instructions* (the manual you are reading), which is common to all patch kits.

  Both of these manuals are provided in PDF and HTML formats. The PDF version is easy to view and print using Adobe Acrobat Reader, which is provided on the Documentation CD–ROM that ships with Tru64 UNIX Version 4.0E and higher, and is also available at the Adobe Web site (**http://www.adobe.com/**). The HTML version is viewed with your Internet browser, such as Netscape.

The contents of the tar file varies, depending on the type of kit. For example a CSP kit might contain patches for several operating system versions, while release patch kits always contain patches for only one operating system version. Also, the tar file may or may not contain TCR patches. However, the structure of the tar file is the same for each type of kit. Figure 1–1 illustrates the contents of a patch tar file.

Figure 1–1: Structure of a Patch Kit Tar File



The following sections describe release and customer-specific patch kits.

1.3.1 Release Patch Kits

Tru64 UNIX and TCR release patch kits are available from the Internet and on CD–ROM.

- Patch Kits on the Internet

  Patch kits are available publicly on the Internet through the Compaq Services Web page located at:

  http://www.support.compaq.com/patches

  Release patches distributed over the Internet are provided in a tar file that you must unpack on your system or on an NFS-mountable file system. The tar file for each operating system version will contain patch kits for that version of the operating system and patch kits for the applicable TruCluster Software Products.

When you obtain a patch kit from the Internet, the kit is provided in a single tar file, which you must expand to install. The *Tru64 UNIX Patch CD–ROM* provides patch kits for several versions of the operating system, and each kit is already expanded.

- Patch kits on CD–ROM

  The Tru64 UNIX Patch CD–ROM contains all of the latest patch kits for the supported versions of Tru64 UNIX and TCR. The patch kits on the CD–ROM are provided in an expanded form (rather than a tar file) so they can be installed directly from the disk. The *00-READ-ME-FIRST* file on the CD–ROM lists the contents of the disk and provides other information.

  You can order a Patch CD–ROM in the United States by calling 1-800-344–4825 (1–800–ATCOMPAQ); customers in other countries should contact your local Compaq sales office or authorized reseller for pricing and availability. The order number is QA-MT4AW-H8.

Release patch kit names have the following syntax:

```
OS Product|Version|-KitType|Kit#|-MfgDate|.FileType
```

For example, a file named `DUV4-FAS0001-19990609.tar` contains Patch Kit 1 for Tru64 UNIX Version 4.0F and TruCluster software Version 1.6, manufactured on June 9, 1999.

The following list describes the attributes currently used in patch kit names:

OS Product
DU = DIGITAL UNIX
T64 = Tru64 UNIX (some versions of Tru64 UNIX may have the DU label)
TC = TruCluster

Version
V51
V50A
V50
V40G
V40F
V40D

KitType
AS = Aggregate Selective installation patch kit
SS = A patch kit containing a single patch

Kit#
The numeric identifier that Compaq uses to track the kit contents

–MfgDate
This is the year, month, and day the kit was built and is in the form of YYYYMMDD

.FileType
.tar

1.3.2 Customer-Specific Patch Kits

Customer-specific patch kits provide interim patches for a specific customer's problem and computing environment.

customer-specific patch kit names have the following syntax:

```
Product|Version|BL|-C|PatchID|-UniqueID|-MfgDate|.FileType
```

For example, a file named `DUV40F13-C0022300-1875-20000920.tar` contains a customer-specific patch distribution for DIGITAL UNIX 4.0D of BL13 containing patch 223.00 from the unique kit 1875 which was built on September 20, 2000. .

The following list describes the attributes currently used in patch kit names:

Product
DU = DIGITAL UNIX
T64 = Tru64 UNIX
TC = TruCluster

Version
V51
V50A
V50
V40G
V40F
V40D

BL
The release patch base level the customer-specific patch is built against. For example, 13. This field is used by the service provider.

C
Indicates a customer-specific patch.

PatchID
The numeric identifier used to track patches that are relative to the product version patch kit.

Patch identifiers have the following format:

`MajorID`	Five numeric digits, for example 00223.
`MinorID`	Two numeric digits, starting at 0. For example, 00.

UniqueID
The 4-8 place unique kitting ID for that patch. For example, 1875.

–MfgDate
The year, month, and day the kit was built and is in the form of YYYYMMDD.

.FileType
.tar

2

Patch Management Utility

This chapter introduces you to the dupatch utility for installing, removing, and managing patches. It also provides information you must be aware of when installing patches. See Chapter 4 for instructions on installing and removing patches from the Tru64 UNIX operating system and the TruCluster Software Products (TCR)

2.1 Overview of dupatch

All official Tru64 UNIX and TCR patches are installed, removed, and managed through the setld-based patch management utility dupatch. Because dupatch manages patch interdependencies, direct setld installations and deinstallations (setld -l -d) are disabled.

Note

For clustered systems running TruCluster Server Version 5.0A or higher, the dupatch utility is run in conjunction with the rolling upgrade procedure described in Chapter 5.

Directions for enabling or disabling patches are provided after the successful installation or removal of all selected patches (for example, kernel rebuild and system reboot).

The dupatch utility is a command line interface that provides you with menus that step you though the various tasks. With dupatch, you can perform the following actions:

- Install and remove all or selected patches.
- View the patch-specific documentation.
- View patch tracking and management information.
- Establish a baseline for systems that had manually installed system files placed on them.

The dupatch utility captures patching activities in the following log files:

- /var/adm/patch/log/session.log

  Every time you run dupatch it creates a session log that captures dupatch activities. The session.log files from the previous 25 sessions are saved. The order is first in, first out — with session.log.25 as the oldest file.

- /var/adm/patch/log/Dupatch_load_*Date*.log

  When you run dupatch from the newly untarred kit or from the mounted Tru64 UNIX Patch CD–ROM, dupatch determines if the patch distribution contains new patch tools, and loads them if necessary.

  This log file would have a name similar to this:
  Dupatch_load_2000Jul1:15:43:35.log

- /var/adm/patch/log/baseline.log

When you run the system baselining feature, dupatch creates a baseline log. The session.log files from the previous 25 sessions are saved. The order is first in, first out — with baseline.log.25 as the oldest file.

- When patches are installed or removed, an event log that captures installation and removal information is created. It is located in /var/adm/patch/log/event.log. Only one copy of the file is updated each time patches are installed or removed.

The dupatch utility also manages the system inventory for Tru64 UNIX and TCR patches. This enables patch tracking and management of patch activity such as:

- Tracking current dupatch-installed patches.
- Ensuring correct handling of customized system configuration files so that customizations are not lost (for example, conf.c). These files are also referred to as system-protected files (.new..).
- Validating patch applicability to existing system files (collision detection).

2.2 Patch Installation and Removal

Patch installation and removal is accomplished through the dupatch utility. For patch installation and removal dupatch manages the following:

- Patch applicability
- Patch dependencies
- Patch reversibility
- System inventory changes for patches
- Capturing patch activities in log files

2.2.1 Patch Applicability

Patch applicability to the existing system files is done on a file-by-file basis for each patch. This ensures that the installation of a patch will not degrade or crash the system. The installation of a patch is blocked if any system files to be replaced by a patch are not valid predecessors of the patch files.

Patch applicability also enables consistency checking and reporting for the installation of Tru64 UNIX and TCR patches.

In all cases where a patch is blocked, informative messages are provided to assist you in determining how to proceed. Chapter 7 lists common error messages and suggested corrective actions.

The installation of a patch is blocked if any of the following conditions exist:

- The underlying software product subset is not installed. For example if the applicable Tru64 UNIX or TCR release subset is not installed.
- The setld inventory is inconsistent with the existing system files. This occurs when an operating system or TCR setld subset is installed and individual operating system files that are part of that subset are moved, deleted, or replaced.
- Any of the existing system files (files that are targeted to be updated by a patch) have changed and cannot be related to previous versions of the patch. This ensures that operating system files that change due to other explicit system administrator action (for example, layered product patches or non-dupatch installed CSP installations) are not inadvertently overwritten. You must take special action, through the baseline feature, to enable patch installation in this situation.

2.2.2 Patch Dependency Management

Selective patch installation and removal is allowed in the Tru64 UNIX and TCR patch kits. When patches are selectively chosen, `dupatch` provides warning messages regarding other dependent patches requiring installation or removal for correct system operation.

The `dupatch` utility manages the dependencies between patches within each product patch kit and across product patch kits. For example, `dupatch` manages the following kinds of dependencies when patches on systems where both Version 4.0F and TCR1.6 are installed or removed:

- Patch dependencies within a product patch kit

  If, for example, you choose to install Tru64 UNIX 4.0F Patch 1.00 and it depends upon Tru64 UNIX 4.0F Patch 5.00, which is not already installed or chosen for installation, the `dupatch` preinstallation check will warn you of the dependency and prevent the installation of Tru64 UNIX 4.0F Patch 1.00.

  If the patch selections are reversed, `dupatch` will warn you and prevent installation of the chosen patch.

- Patch dependencies across product patch kits

  If, for example, you choose to install Tru64 UNIX 4.0F Patch 1.00 and it depends upon TruCluster 1.6 Patch 17.00, which is not already installed or chosen for installation, the `dupatch` preinstallation check will warn you of the dependency and prevent the installation of the Tru64 UNIX 4.0F Patch 1.00.

  If the patch selections are reversed, `dupatch` will warn you and prevent installation of the chosen patch.

Note

Even though selective patch installation capabilities exist, Compaq recommends that you install all patches in each kit for Tru64 UNIX and TCR to prevent the occurrence of known and corrected software problems.

2.2.3 Patch Reversibility

Enabling patch reversibility during patch installation allows you to revert the system to its state prior to the installation of a particular patch.

By default, the reversibility installation option is set to enable reversibility for patches. If you choose to make patch subsets nonreversible, then those patches will become nonremovable upon the successful installation of those patches.

Note

Customer-Specific-Patches are forced to be reversible when the CSP kit is manufactured. This forced reversiblity overrides the reversibility option provided by `dupatch` during installation.

Patch reversibility is dependent upon saving the existing system files that will be updated by the patch. Saving these files requires the availability of adequate storage space in `/var/adm/patch/backup`, which can be a mount point for a separate disk partition, an NFS mount point, or a symbolic link to another file system. This allows you to configure your system to reduce the impact on system disk space for the `/`, `/usr`, and `/var` partitions.

To further reduce the storage space required to save existing system files, the patch kits for Tru64 UNIX and TCR use the `gzip` utility to save each patch file in a compressed tar image. This results in a file with a name like *`filename`*`.tar.gz`.

The `dupatch` utility checks for the required storage space prior to patch installation. Patch installation is prevented if adequate backup space is unavailable.

2.2.4 Patch Installation and Removal Event Log

Patch installation and removal activities are logged in the patch event log located in `/var/adm/patch/log/event.log`. The information in the patch event log is not yet available through the `dupatch` user interface. However, the file is plain text and can be viewed manually.

The following list describes the types of information an event log provides, although the format and content are subject to change. Example 2–1 shows a typical event log.

DUPATCH_REV>	The revision of `dupatch` being used
TYPE>	The type of action that was taken; either install or remove
NAME>	The name entered by user through a `dupatch` query
USER>	the name of the user performing the action
NOTES>	Notes that were entered by the user through a `dupatch` query
KITLOC>	The directory from which the patch kit was installed
KITNAME>	The name of the patch kit that was installed
REVERT>	The choice made on whether or not the patch installation is reversible
BACKUP_DIRECTORY>	A pointer to the directory that contains the original files before they were patched
BACKUP_SETUP>	A plain directory; not a mount point or a symbolic link
SUCCEED>	A list of patches for which the action succeeded
FAIL>	A list of patches for which the action failed

Example 2–1: Sample Event Log

```
<RECORD>
DUPATCH_REV>27-04
TYPE>install
NAME>msstone
USER>mstone
DATE>Mon Jul 3 13:03:33 EST 2000
NOTES>Install BL13 patches from CD-ROM
>
KITLOC>/cdrom/DIGITAL_UNIX_V4.0F/patch_kit/DIGITAL_UNIX_V4.0F/kit
KITNAME><DUV40FAS0004-20000613> OSF440
REVERT>Y
BACKUP_DIRECTORY>//var/adm/patch/backup
BACKUP_SETUP>
SUCCEED>OSFPAT00001900440
```

2.3 Viewing the Patch Documentation

When you select the Patch Documentation item of the main menu, `dupatch` returns a menu that gives you access to different information:

- Problem summaries

Provide brief descriptions of the problems corrected by the patches. You can view the problems corrected by installed patches or by patches available from a specific kit.

- Full descriptions

  Provide complete descriptions of the problems corrected by the individual patches. You can view the problem descriptions for installed patches or for patches available from a specific kit.

- Special Instructions

  These files describe special instructions you need to be aware of for individual patches. You can view the instructions for installed patches or for patches available from a specific kit.

- Report identifiers
- Revision control strings

The following output shows the Patch Documentation menu and a typical session with it:

```
Tru64 UNIX Patch Utility (Rev. 27-04)
=========================
 - This dupatch session is logged in /var/adm/patch/log/session.log

    Patch Documentation Menu:
    -------------------------

     Installed patches on the system
    1)  View problem summaries
    2)  View full descriptions
    3)  View special instructions
    4)  View Problem Report Identifiers
    5)  View Revision Control Strings
     Patches in the patch kit
    6)  View problem summaries
    7)  View full descriptions
    8)  View special instructions
    9)  View Problem Report Identifiers
   10)  View Revision Control Strings
     All (installed and non-installed) patches
   11)  View patch problem summaries
   12)  View patch full descriptions
   13)  View patch special instructions
   14)  View Problem Report Identifiers
   15)  View Revision Control Strings

    b)  Back to Main Menu
    q)  Quit

Enter your choice: 6

    Patch Documentation Selection Menu:
    -----------------------------------

    1)  List Release problem summaries
    2)  List Customer Specific problem summaries
    3)  List All problem summaries

    b)  Back to Documentation Menu
    q)  Quit

Enter your choice: 1

Enter path to the top of the patch distribution,
or enter "q" to get back to the menu  [/mnt/PatchKit/kit2/patch_kit]: Return

     There may be more patches than can be presented on a single
     screen. If this is the case, you can choose patches screen by screen
     or all at once on the last screen. All of the choices you make will
     be collected for your confirmation before any patches are examined.

 - Tru64_UNIX_V5.0A / Cluster Kernel Patches:
     1) Patch 00090.00 - versw command can core dump during rolling upgrade
     2) Patch 00186.00 - Disks can become inaccessible on a cluster node

 - Tru64_UNIX_V5.0A / Commands, Shells, & Utilities Patches:
     3) Patch 00015.00 - Fixes a problem that occurs in multibyte locales
```

```
     4) Patch 00019
.
.
.
```

The patch description information and special instructions are conveniently organized in the *Patch Summary and Release Notes* document that is packaged with each kit.

2.4 Viewing Patch Tracking Information

The `dupatch` utility allows you to view the following patch installation and removal information:

List of dupatch-installed patches on the system

The following sample log shows how you can list the installed dupatch-based customer-specific patches:

```
DIGITAL UNIX Patch Utility (Rev. 27-04)
=========================
 - This dupatch session is logged in /var/adm/patch/log/session.log

    Patch Tracking Menu:
    --------------------

    1)  List installed patches
    2)  List installed patch files
    3)  List patch kit information for installed patches
    4)  Show Patch History for selected patches
    5)  Show System Patch History

    b)  Back to Main Menu
    q)  Quit

Enter your choice: 1

    Patch Tracking Selection Menu:
    ------------------------------

    1)  List Release Patches
    2)  List Customer Specific Patches
    3)  List All Patches

    b)  Back to Tracking Menu
    q)  Quit

Enter your choice: 2

Gathering details of relevant patches, this may take a bit of time


 Patches installed on the system:
 -------------------------------
  (depending upon the number of patches you installed, this may take a while)

 - DIGITAL_UNIX_V4.0F / Commands, Shells, & Utility Patches:
        Patch C 00045.00 - Fix for QAR 61365

 - DIGITAL_UNIX_V4.0F / Security Related Patches:
        Patch C 00043.00 - Fix for SSRT0585U
        Patch C 00052.00 - Fix for SSRT0585U

 - DIGITAL_UNIX_V4.0F / X11 Patches:
        Patch C 00044.00 - Fix for QAR 57198

Press RETURN to get back to the Patch Tracking Menu...
```

List of patched files on the system

The following show how you can list the installed patch files for customer-specific patches:

```
DIGITAL UNIX Patch Utility (Rev. 27-04)
=========================
 - This dupatch session is logged in /var/adm/patch/log/session.log

    Patch Tracking Menu:
    --------------------

    1)  List installed patches
    2)  List installed patch files
    3)  List patch kit information for installed patches
    4)  Show Patch History for selected patches
    5)  Show System Patch History

    b)  Back to Main Menu
    q)  Quit

Enter your choice: 2

    Patch Tracking Selection Menu:
    ------------------------------

    1)  List Release Files
    2)  List Customer Specific Files
    3)  List All Files

    b)  Back to Tracking Menu
    q)  Quit

Enter your choice: 2

Gathering details of relevant patches, this may take a bit of time


 The list of all patched files on your system:
 -----------------------------------------
  (depending upon the number of patches you installed, this may take a while)

./usr/bin/X11/dxpause (DIGITAL_UNIX_V4.0F Patch C 00044.00)
./usr/dt/bin/dtappintegrate (DIGITAL_UNIX_V4.0F Patch C 00043.00)
./usr/dt/bin/dtappintegrate (DIGITAL_UNIX_V4.0F Patch C 00052.00)
./usr/sbin/quotaoff (DIGITAL_UNIX_V4.0F Patch C 00045.00)
./usr/sbin/quotaon (DIGITAL_UNIX_V4.0F Patch C 00045.00)

Press RETURN to get back to the Patch Tracking Menu...
```

List of patch kit information on installed patches

The following shows how you can list the patch kits for the installed patches on your system:

```
DIGITAL UNIX Patch Utility (Rev. 27-04)
=========================
 - This dupatch session is logged in /var/adm/patch/log/session.log

    Patch Tracking Menu:
    --------------------

    1)  List installed patches
    2)  List installed patch files
    3)  List patch kit information for installed patches
    4)  Show Patch History for selected patches
    5)  Show System Patch History

    b)  Back to Main Menu
    q)  Quit

Enter your choice: 3

    Patch Tracking Selection Menu:
    ------------------------------

    1)  List Release kit information
    2)  List Customer Specific kit information
    3)  List All kit information

    b)  Back to Tracking Menu
    q)  Quit

Enter your choice: 3
```

```
Gathering details of relevant patches, this may take a bit of time


 Patches installed on the system came from following patch kits:
 ---------------------------------------------------------------

 - DUV40F1-C0004300-1367-19991104 OSF440
 - DUV40F1-C0004400-1372-19991105 OSF440
 - DUV40F1-C0004500-1373-19991105 OSF440
 - DUV40F1-C0005200-1377-19991105 OSF440
 - DUV40FAS0001-19990609 OSF440

    NOTE

 When a patch kit is listed, it does not necessarily mean
 all patches on that kit are installed on your system.


Press RETURN to get back to the Patch Tracking Menu...
```

If no patches are installed on the system, you will receive a message similar to the following:

```
There are no patches installed on your system.
```

List history for selected patches

The following shows you how to show the patch history for selected patches:

```
DIGITAL UNIX Patch Utility (Rev. 27-04)
==========================
 - This dupatch session is logged in /var/adm/patch/log/session.log

    Patch Tracking Menu:
    --------------------

    1)  List installed patches
    2)  List installed patch files
    3)  List patch kit information for installed patches
    4)  Show Patch History for selected patches
    5)  Show System Patch History

    b)  Back to Main Menu
    q)  Quit

Enter your choice: 4

    Patch Tracking Selection Menu:
    ------------------------------

    1)  List Release Patch History for selected patches
    2)  List Customer Specific Patch History for selected patches
    3)  List All Patch History for selected patches

    b)  Back to Tracking Menu
    q)  Quit

Enter your choice: 3

     There may be more patches than can be presented on a single
     screen. If this is the case, you can choose patches screen by screen
     or all at once on the last screen. All of the choices you make will
     be collected for your confirmation before any patches are listed.

 - DIGITAL_UNIX_V4.0F / Commands, Shells, & Utility Patches:
     1) Patch   00020.00 - Cannot Use ipcs Cmd On System Not Booted With vmunix
     2) Patch   00025.00 - Fix For ksh, file, tail, nawk, awk, And pax
     3) Patch   00032.00 - mkdir -p Not Returning Error
     4) Patch   00038.00 - quotaon Returns Incorrect Error Status
     5) Patch   00040.00 - binmail Delivers Only Partial Messages
     6) Patch   00041.00 - Fix For nroff Y2K Problem
     7) Patch   00045.00 - Fix For sort -i Abort Problem
     8) Patch   00047.00 - vi Puts Server Port INTO PASSALL MODE
     9) Patch C 00045.00 - Fix for QAR 61365
    10) Patch C 00046.00 - Fix for TLAQ90041

 - DIGITAL_UNIX_V4.0F / Common Desktop Environment (CDE) Patches:
```

```
    11) Patch   00005.00 - dtfile May Leave Defunct Processes

 - DIGITAL_UNIX_V4.0F / Filesystem Patches:
    12) Patch   00039.00 - System Panic When Accessing ISO9660 Format CDROM
    13) Patch   00054.00 - AdvFS volumes Not Setting I/O Byte Transfer Size

 - DIGITAL_UNIX_V4.0F / Hardware Configuration Patches:
    14) Patch   00018.00 - Resolves Corrupt EV6 Binary Error Log Entries
    15) Patch   00072.00 - Updates FORE ATM (lfa) driver to Rev. V1.0.14

 - DIGITAL_UNIX_V4.0F / I/O Device Handling Patches:
    16) Patch   00053.00 - Fix For spo_process_rsp Panic
    17) Patch   00056.00 - KZPCA Host Bus Adapter May Hang
    18) Patch   00058.00 - Additional Error Detection for FC Driver
    19) Patch   00060.00 - Fix For spo_misc_errors errlog Entries
    20) Patch   00073.00 - Problems With Driver Support For ELSA Gloria Synergy

 - DIGITAL_UNIX_V4.0F / Kernel Patches:
    21) Patch   00016.00 - Fixes Kernel Memory Fault Caused By SMP Race
    22) Patch   00034.00 - Fix For kio Subsystem Panic
    23) Patch   00044.00 - Fix For Kernel Memory Fault
    24) Patch   00055.00 - New Functionality To Detect Unlinked Reference Files

 - DIGITAL_UNIX_V4.0F / Library Patches:
    25) Patch   00046.00 - Shared Library Fix For curses-based Applications
    26) Patch   00048.00 - DECthreads Library Fix

 - DIGITAL_UNIX_V4.0F / Network Patches:
    27) Patch   00008.00 - Fix For POP Mail Handler
    28) Patch   00017.00 - Fix For BIND Server
    29) Patch   00021.00 - Fix For XTI And DECnet/OSI
    30) Patch   00022.00 - automount Daemon Hangs
    31) Patch   00043.00 - Fix For XTI Over TCP/IP
    32) Patch   00057.00 - Fixes Several NFS Problems
    33) Patch   00059.00 - Characters Randomly Repeated Using tip

 - DIGITAL_UNIX_V4.0F / Security Related Patches:
    34) Patch   00002.00 - Security (SSRT0571U)
    35) Patch   00003.00 - Security (SSRT0585U)
    36) Patch   00004.00 - Security (SSRT0580U)
    37) Patch   00006.00 - Security (SSRT0600U)
    38) Patch   00011.00 - Security (SSRT0596U)
    39) Patch   00012.00 - Security (SSRT0567U)
    40) Patch   00028.00 - Security (SSRT0556U)
    41) Patch   00031.00 - Security (SSRT0563U)
    42) Patch C 00043.00 - Fix for SSRT0585U
    43) Patch C 00052.00 - Fix for SSRT0585U

 - DIGITAL_UNIX_V4.0F / X11 Patches:
    44) Patch   00007.00 - dxcalendar Reminder Displays Through dxpause Screen
    45) Patch   00062.00 - Fix For Motif Drag-and-Drop
    46) Patch   00063.00 - xfs Fails With Segmentation Fault
    47) Patch   00074.00 - Fix For ELSA Gloria Synergy Graphics Board
    48) Patch C 00044.00 - Fix for QAR 57198

Or you may choose one of the following options:

    49) ALL of the above
    50) CANCEL selections and redisplay menus
    51) EXIT without listing any patches

Enter your choices or press RETURN to redisplay menus.

Choices (for example, 1 2 4-6): 49

You are listing the following patches:

 - DIGITAL_UNIX_V4.0F / Commands, Shells, & Utility Patches:
       Patch   00020.00 - Cannot Use ipcs Cmd On System Not Booted With vmunix
       Patch   00025.00 - Fix For ksh, file, tail, nawk, awk, And pax
       Patch   00032.00 - mkdir -p Not Returning Error
       Patch   00038.00 - quotaon Returns Incorrect Error Status
       Patch   00040.00 - binmail Delivers Only Partial Messages
       Patch   00041.00 - Fix For nroff Y2K Problem
       Patch   00045.00 - Fix For sort -i Abort Problem
       Patch   00047.00 - vi Puts Server Port INTO PASSALL MODE
       Patch C 00045.00 - Fix for QAR 61365
       Patch C 00046.00 - Fix for TLAQ90041

 - DIGITAL_UNIX_V4.0F / Common Desktop Environment (CDE) Patches:
       Patch   00005.00 - dtfile May Leave Defunct Processes
```

```
 - DIGITAL_UNIX_V4.0F / Filesystem Patches:
       Patch   00039.00 - System Panic When Accessing ISO9660 Format CDROM
       Patch   00054.00 - AdvFS volumes Not Setting I/O Byte Transfer Size

 - DIGITAL_UNIX_V4.0F / Hardware Configuration Patches:
       Patch   00018.00 - Resolves Corrupt EV6 Binary Error Log Entries
       Patch   00072.00 - Updates FORE ATM (lfa) driver to Rev. V1.0.14

 - DIGITAL_UNIX_V4.0F / I/O Device Handling Patches:
       Patch   00053.00 - Fix For spo_process_rsp Panic
       Patch   00056.00 - KZPCA Host Bus Adapter May Hang
       Patch   00058.00 - Additional Error Detection for FC Driver
       Patch   00060.00 - Fix For spo_misc_errors errlog Entries
       Patch   00073.00 - Problems With Driver Support For ELSA Gloria Synergy

 - DIGITAL_UNIX_V4.0F / Kernel Patches:
       Patch   00016.00 - Fixes Kernel Memory Fault Caused By SMP Race
       Patch   00034.00 - Fix For kio Subsystem Panic
       Patch   00044.00 - Fix For Kernel Memory Fault
       Patch   00055.00 - New Functionality To Detect Unlinked Reference Files

 - DIGITAL_UNIX_V4.0F / Library Patches:
       Patch   00046.00 - Shared Library Fix For curses-based Applications
       Patch   00048.00 - DECthreads Library Fix

 - DIGITAL_UNIX_V4.0F / Network Patches:
       Patch   00008.00 - Fix For POP Mail Handler
       Patch   00017.00 - Fix For BIND Server
       Patch   00021.00 - Fix For XTI And DECnet/OSI
       Patch   00022.00 - automount Daemon Hangs
       Patch   00043.00 - Fix For XTI Over TCP/IP
       Patch   00057.00 - Fixes Several NFS Problems
       Patch   00059.00 - Characters Randomly Repeated Using tip

 - DIGITAL_UNIX_V4.0F / Security Related Patches:
       Patch   00002.00 - Security (SSRT0571U)
       Patch   00003.00 - Security (SSRT0585U)
       Patch   00004.00 - Security (SSRT0580U)
       Patch   00006.00 - Security (SSRT0600U)
       Patch   00011.00 - Security (SSRT0596U)
       Patch   00012.00 - Security (SSRT0567U)
       Patch   00028.00 - Security (SSRT0556U)
       Patch   00031.00 - Security (SSRT0563U)
       Patch C 00043.00 - Fix for SSRT0585U
       Patch C 00052.00 - Fix for SSRT0585U

 - DIGITAL_UNIX_V4.0F / X11 Patches:
       Patch   00007.00 - dxcalendar Reminder Displays Through dxpause Screen
       Patch   00062.00 - Fix For Motif Drag-and-Drop
       Patch   00063.00 - xfs Fails With Segmentation Fault
       Patch   00074.00 - Fix For ELSA Gloria Synergy Graphics Board
       Patch C 00044.00 - Fix for QAR 57198

Is this correct? (y/n): y
Patch History for selected patches

  Date     Time   Prd     Patch       Operation   KitName
  ----     ----   ___     _____       _________   _______
1999/11/05 13:13 DU  Patch C 00052.00 Installed DUV40F1-C0005200-1377-19991105
1999/11/05 12:56 DU  Patch C 00046.00 Removed
1999/11/05 10:53 DU  Patch C 00046.00 Installed DUV40F1-C0004600-1374-19991105
1999/11/05 10:50 DU  Patch C 00045.00 Installed DUV40F1-C0004500-1373-19991105
1999/11/05 10:48 DU  Patch C 00044.00 Installed DUV40F1-C0004400-1372-19991105
1999/11/05 10:43 DU  Patch C 00043.00 Installed DUV40F1-C0004300-1367-19991104
1999/11/04 10:11 DU  Patch   00074.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00073.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00072.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00063.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00062.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00060.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00059.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00058.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00057.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00056.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00055.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00054.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00053.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00048.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00047.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00046.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00045.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00044.00 Installed DUV40FAS0001-19990609
```

```
1999/11/04 10:11 DU  Patch   00043.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00041.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00040.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00039.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00038.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00034.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00032.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00031.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00028.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00025.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00022.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00021.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00020.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00018.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00017.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00016.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00012.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00011.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00008.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00007.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00006.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00005.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00004.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00003.00 Installed DUV40FAS0001-19990609
1999/11/04 10:11 DU  Patch   00002.00 Installed DUV40FAS0001-19990609

Press RETURN to get back to the Patch Tracking Menu...
```

2.5 Handling Manually Installed System Files with Baselining

A `dupatch` feature called baselining looks at the files installed on a system, compares them to the files it expects to find, and prevents the installation of any patch files that might cause an incompatibility among system files. This section provides an overview of the baselining process. See Section 4.7 for instructions on setting a baseline.

Unknown system files occur when the files are replaced through non-standard system file installation methods such as the following:

- The manual installation of system files such as system administration customizations or manually installed patches
- Using the `setld` utility to install system files from user-derived `setld` subsets
- Using the `setld` utility to install files for layered software products
- Changes that result from weak system control programs (usually named *`file`*`.scp`)

Missing system files result from a root user manually deleting system files that were installed during a standard full or update installation procedure or with the `dupatch` utility. The file is removed but the system inventory records are still in place.

Unknown and missing system files will block patch installations until you take corrective action. However, before taking any action, it is important that you understand the origin of the unknown system files or why missing files are no longer present on your system. Changing the system without this knowledge could render your operating system or layered product software environment in an inconsistent and nonoperational state.

For example, a file whose origin is unknown that is blocking the installation of a release patch, could be part of a manually installed customer-specific patch that is not contained in the release patch. Removing that one file will disrupt the operation of your CSP and possibly the operation of the system.

When you run the `dupatch` system baseline feature, a baseline log file is captured in `/var/adm/patch/log/baseline.log`. The `session.log` files

from the previous 25 sessions are saved. The order is first in, first out — with `baseline.log.25` as the oldest file.

You may need to set the patch baseline for your system if you have manually installed system files or if `dupatch` informs you that patch installation is blocked by system files that are missing or unknown.

Warning

Misusing the baselining feature can cause serious problems with your system. It is important to be aware of the following potential problems:

- Enabling baselining to override its applicability checking could render your operating system or layered product software environment in an inconsistent and nonoperational state.
- Enabling baselining to update your system sets a new baseline for your operating system or TCR software environments. You will not be able to revert to the previous system state for manually installed patches that were marked as installed by baselining. Compaq recommends that you backup your `/`, `/usr`, and `/var` file systems before enabling system updates through `dupatch` baselining.

Baselining is divided into five phases that provide system information and optionally allow you to take actions that change the patch baseline of your system. You can run through all phases of baselining to get the system analysis without enabling changes to your system. You can run baselining in multiuser mode when you are the root user.

2.5.1 Phase 1 – System Evaluation

The primary goal of Phase 1 is to evaluate your system relative to the patch kit that is being installed. However, the baselining feature will report all missing and unknown files to assist you in better understanding the state of the changed files on the system.

The rest of the baselining phases use the information gathered in Phase 1 to inform you of any installation conflicts for patches contained in the patch kit.

The amount of time needed to evaluate the state of the system varies greatly depending on the size of the patch kit, the version of the software product, and the performance of the system.

2.5.2 Phase 2 – Patch Layered Product Conflicts

Phase 2 reports information for patches whose installation is blocked by system files that were installed by layered products.

Baselining will not override layered product patch installation collision detection mechanisms as it is likely that the layered product or application customizations are not contained in the patch. Installation of the patch in this situation would render the layered product or application nonoperational.

To resolve this situation contact your layered product or application Customer Services or Compaq Services if you have purchased Business Critical Services.

2.5.3 Phase 3 – Identifying Manually Installed Patches

Phase 3 reports patches that exactly match existing files on your system that are not marked as *installed* by the system inventory. For example, in earlier kits, TCR release patches were installed manually. This phase will report any manually

installed release patch files that exactly match a patch contained in the current dupatch-based TCR patch kit.

You can optionally enable dupatch to mark these patches as *installed*, which involves copying valid setld database information to your system. The dupatch utility will copy the appropriate *patch_subset*.inv, *patch_subset*.scp, and *patch_subset*.ctrl files into place for these patches.

If you do not want to enable dupatch to mark these patches as installed, you must manually remove the patched system files so the normal dupatch installation can install the affected patches.

2.5.4 Phase 4 – Handling Missing or Unknown Files on Your System

Phase 4 reports information about any unknown and missing system files. These files should be considered as intentional customizations which are important to correct system operation. As such, care should be taken to understand why system files have been customized.

Before enabling any patch installations in Phase 5, review the information reported in Phase 4 against your log of manual system changes to ensure you understand why the system was intentionally customized and to determine how to proceed. In some cases you may need to remove customizations to ensure proper system operation.

To assist you in identifying the origin of changed system files, baselining now reports all missing or unknown system files.

The following sections provide general guidance for some of the normal situations where system files are intentionally customized manually.

2.5.4.1 Manually Installed Customer-Specific Patches

In response to a problem report, you may receive a manually installable customer-specific patch from your service provider. Customer-specific patches are a set of compatible files that deliver fixes to the problems you reported. Additionally the patch may include instrumentation necessary for debugging purposes.

If your system was customized through a manual installation of customer-specific patches, you must ensure that the fixes delivered by the customer-specific patches are included in the current release patch kit before enabling dupatch to overwrite any unknown or missing system files.

Warning

If you are unsure if the customer-specific patch is included in the official patch kit, do not enable dupatch to overwrite the manually installed customer-specific patch. If you must install the official patch being blocked by a customer-specific patch, contact your service provider for assistance.

If the unknown or missing files are attributable to manually installed customer-specific patches that are included in a release patch kit, perform one of the following steps:

- If all customer-specific patch files are overwritten by the patches noted in Phase 5, you can safely enable dupatch to overwrite applicable missing or unknown system files.
- If some of the customer-specific patch files are not overwritten by the patches noted in Phase 5, contact your service provider for assistance.

To determine if your customer-specific patch is included in the release patch kit, refer to the *Patch Summary and Release Notes* for the release patch kit, the Compaq Services Web-based patch search engine (`http://www.service.digital.com/patches/index.html`), your service provider.

2.5.4.2 Manually Installed Release Patches

For some software products, manual installation has been the practiced method for patch installation. For example, until recently, patches for TCR had been manually installed.

You must determine whether the fixes delivered by the manually installed release patches are included in the current `dupatch`-based release patch kit before enabling `dupatch` to overwrite any unknown or missing system files. Once you have made this determination, proceed as follows:

- If the unknown or missing system files are attributable to the manual installation of release patches and those patches are included in the current `dupatch`-based releasel patch kit, you can safely enable `dupatch` to overwrite applicable missing or unknown system files.
- If the unknown or missing system files are not attributable to manual installation, you must understand the origin of the unknown or missing system files by reviewing the information reported in Phase 4 against your log of manual system changes to ensure you understand why the system was intentionally customized, and to determine how to proceed.

2.5.4.3 User Customized Commands and Utilities

Periodically system administrators of production computing environments replace Tru64 UNIX commands or utilities with freeware or their own customized version of the command or utility. In this situation you must ensure the unknown or missing files are attributable to intentional replacement of commands, utilities, or other system files.

If the unknown or missing system files are attributable to the replacement of commands, utilities, or other system files with customized versions for the computing environment, do not enable `dupatch` to overwrite the manually installed customized files. Instead, determine the reason for the customization and then decide how to proceed.

2.5.5 Phase 5 – Enabling dupatch to Overwrite Changed System Files

The fifth phase reports patches that are blocked due to missing or unknown system files, and optionally allows you to override the `dupatch` conflict management mechanism so the `dupatch`-based patch may be installed.

For each patch that is blocked by a missing or unknown system file you are presented with the following information:

- Software product identifier
- Patch category
- Patch identifier
- Patch subset description
- The list of unknown and missing files that block the patch installation
- The origin of all other files contained in the patch

Optionally, you can enable `dupatch` to override the collision detection mechanisms and install any of these patches. Use the missing and unknown file information

presented in Phase 4 and your system administration log of manual system changes to make Phase 5 patch installation enabling decisions.

Warning

Do not enable dupatch to install patches over missing or unknown system files for which you do not know the origin. Doing so may cause your operating system and TCR software environment to be in an inconsistent and nonoperational state.

2.6 Command Line User Interface

The dupatch utility provides a command line interface that allows dupatch to be called by other programs. You can use the command line to invoke all functions except for baselining. The functions have the same operation and definition as the menu-driven interface.

The following example shows the use of the dupatch command and several of its options to install Tru64 UNIX 4.0F Patch 8.01:

```
/usr/sbin/dupatch -install -kit /var/bl15/patch_kit -name Mike -note \
"install patch" -product TRU64_UNIX_V5.0 -patch 08.01
```

The following example shows the use of the dupatch command and several of its options to remove Tru64 UNIX 4.0F Patch 8.01:

```
/usr/sbin/dupatch -delete -name Mike -note "delete patch" \
-product TRU64_UNIX_V5.0 -patch 08.01
```

2.6.1 Using Command Line Options

You must specify all mandatory options on the command line or in the data_file file. If any mandatory option is missing, the command will fail with an appropriate error message; it will not prompt you for the missing option and information.

Remember, there is no reason to remove old official patches on your system before installing the new official patches.

2.6.2 Restriction on Loading New dupatch Tools from the Command Line

The new patch tools cannot be loaded using the delete command on the command line. Doing that will cause the following error to be displayed:

```
product_map does not exist or is empty, Cannot continue.
```

If you want to use delete from the command line, you can first load the new tools, without impacting the system, by issuing the install command with the -precheck_only option. This will load the tools and not cause changes to your system.

2.6.3 Command Line Interface Options

The following list shows all of the command line interface options (typing dupatch -help provides the same information):

```
dupatch -delete

       [Mandatory]
        -name user_name
        -note user_note
        -patch all | patch_id{patch_id...]

        [Optional]
        -data data_file
        -nolog (No session logging)
        -proceed ( Proceed with patches that passed predeletion check)
        -product all | product_id*
```

```
        -root root_path

*Mandatory when more than one product is available for operation

dupatch -help

           [Optional ]
        -data_file   (Specifies data_file to use)
        -kit kit_location
        -patch_id    ( Specifies patch_id to use)
        -rev   (Lists dupatch version)
        -product_id  (Specifies product_id to use)

dupatch -install

        [Mandatory ]

        -kit kit_location
        -name user_name*
        -note user_note*
        -patch all  | patch_id[patch_id...]
  *Optional when -precheck_only is specified

       [Optional ]

        -single_user (Bring system from multiuser to single-user mode)
        -data data_file
        -nobackup
        -nolog (No session logging)
        -precheck_only (Check patch applicability without installing)
        -proceed  (Proceed with patches that passed preinstallation check)
        -product all  | product_id*
        -root root_path
*Mandatory when more that one product is available for operation.
        -cfgfileconfig_file (Configuration file for kernel rebuild)

dupatch -track

        [Mandatory]

        -type file | file | patch

       (Use file to list all patched files.)
       (Use kit to list installed patch kits.)
       (Use patch to list installed patches.)

       [Optional ]
        -datadata_file
        -nolog (No session logging.)
         -rootroot_path
```

Specifying a Data File

When using the `-data` option, you must specify a data file, which is a file path that contains specifications with the following format:

```
switch1=value
switch2=value
     .
     .
     .
switch3
```

For example:

```
kit = /mnt
name = John Doe
note = install April patch kit
patch = all

precheck_only
nobackup
```

The following list describes characteristics of a data file:

- Blank lines and comments (preceded with #) are allowed.
- Line continuation (\) is required if a specification spans multiple lines.

- When a option is specified both on the command line and in the data file, the value specified on the command line overrides that specified in the data file.

Specifying a Patch ID

The following list describes the characteristics of a patch ID:

- A valid patch ID specification has the following format:

```
all
xxxx[.yy]
```

  For example:

```
15
200.11
10.2
00111.02
```

- Both xxxx and yy are numeric values; leading zeros can be omitted.
- Patch revision (yy), when left unspecified, maps to wildcarded "??"
- Multiple patch_id specifications are separated by white space.
- The keyword `all` cannot be combined with other patch IDs.

Specifying a Product ID

The following list describes the characteristics of a product ID.

Note

When using the command line, the `-product` option must preceed the `-patch` option.

- A valid product ID has the following format:

```
all
description_version
```

  where *`description`* is the product description, and *`version`* is the product version.

  For example:

```
DIGITAL_UNIX_V4.0F
TruCluster_V1.6
```

- Product ID specifications are case insensitive.
- Wildcards are not allowed in product ID specifications.
- Multiple product ID specifications are separated by white space.
- The keyword `all` cannot be combined with other product IDs.

Specifying a Root Path

The following list describes the characteristics of a root path:

- The `-root` option, which is similar to the `-D` option of `setld`, specifies an alternative root for the specified operation.
- The root path must be the root of a complete Tru64 UNIX file system.
- The default root path is `/` for all operations.
- If `-root` is the only argument on the command line, `dupatch` will proceed in interactive mode; this is an exception to the command line rule previously mentioned.

Specifying Product Strings

The following list provides valid Tru64 UNIX product strings:

```
TRU64_UNIX_V5.0A
TRU64_UNIX_V5.0
TRU64_UNIX_V4.0G
DIGITAL_UNIX_V4.0F
DIGITAL_UNIX_V4.0D

TruCluster_V5.0A
TruCluster_V1.6
TruCluster_V1.5
```

The following list describes characteristics of product strings:

- A product string specification only applies to the patch ID specifications that follow it and ends when another product string is specified.
- A product-string specification is not necessary when the system being patched has only one product installed. For example, Tru64 UNIX Version 4.0F with no TCR.
- Because the purpose of the product-string is to clarify the patch ID specification, its specification must precede that of the patch ID.

The following example shows a product string:

```
dupatch -install -product DIGITAL_UNIX_V4.0F -patch 1.1 -product TruCluster_V1.6 -patch 35 \
 -name Mike  -note "installing patch 1.1" -kit
```

3

Issues and Restrictions

This chapter provides information you must be aware of when installing or removing patches. Be sure to check the *Patch Summary and Release Notes* document of the kit you are installing for any issues and restrictions that pertain to that installation.

3.1 When Single-User Mode Is Recommended

Although you can install patches in multiuser mode, Compaq recommends that you bring down your system to single-user mode when installing patches that affect the operation of the Tru64 UNIX operating system or the product you are patching. If your system must remain in multiuser mode, it is recommended that you apply the patches when the system is as lightly loaded as possible.

There are no restrictions on performing patch selection and preinstallation checking in multiuser mode.

3.2 Impact on System Upgrades to Later Versions of Tru64 UNIX

In the presence of patches or layered products, certain procedures used to upgrade a system to a later version of Tru64 UNIX can lead to an inconsistency among operating system and layered product objects. For more information see Appendix A for general Tru64 UNIX system upgrade information.

Note

After successfully installing a new version of Tru64 UNIX, you should obtain and install the latest patch kit that is applicable to that version of Tru64 UNIX.

3.3 Patching a System Prior to Creating a Cluster

If you have not yet created your cluster, you can save time by patching your system first. The sequence of events when patching the initial installation of Tru64 UNIX are as follows:

1. Install and configure the Tru64 UNIX operating system.
2. Use the `setld` command to install the TruCluster software kit. If the TruCluster software kit is not loaded before the patch operation, patches for TruCluster software software will not be loaded.
3. Patch the system.
4. Use the `clu_create` command to create the single-member cluster.

See the Tru64 UNIX *Installation Guide* for information about installing the operating system and the TruCluster Server *Software Installation* manual for information about creating your cluster.

3.4 No RIS or DMS Installation of Patches

Remote Installation Services (RIS) and Dataless Management Services (DMS) installations of patches are not supported. However, the patch kit installation mechanism does support network installation via NFS.

3.5 Direct setld Installation and Removal of Patch Subsets Is Not Allowed

You can install and remove Tru64 UNIX and TCR patches only through `dupatch`. You cannot directly install or reinstall the patch subsets with `setld`. This ensures that patch tracking and management is not compromised.

3.6 Limitation for /var/adm/patch/backup Directory Handling

The patch management utility assumes there is one `/var/adm/patch/backup` directory per system. It does not handle placement of archived original files for multiple systems in one directory.

3.7 Do Not Enter Ctrl/c During Installation Phase

Do not enter a Ctrl/c command during the installation phase of the patch kit.

Caution

As with any system update, entering a Ctrl/c during this phase will leave the operating system software environment in an inconsistent and nonrecoverable state.

3.8 Removing Patches Containing Customized Files

If you use `dupatch` to remove a patch containing a customized file, messages similar to the following may appear in the session log file, `/var/adm/patch/log/session.log`:

```
Customization found in /<path>/filename

Before the backup was restored, we had saved a copy of this file in:

   /<path>/filename.PreDel_OSFPATyyy

Please compare /<path>/filename with this saved copy.

If there are extra customizations you want to keep, you would need
to merge them into <path>/filename manually.

/<path>/filename.PreDel_OSFPATyyy
can be removed afterwards.
```

In this message, `/<path>/filename` is the full path of the customized file being replaced, and `yyy` is the patch subset ID number. This message warns you to examine the removed patch for any customized files it may contain. In order to keep those customizations, you will have to manually add them.

The following are examples of such customized files:

- `/usr/var/spool/cron/crontabs/root`
- `/etc/sysconfigtab`
- `/usr/var/adm/sendmail/sendmail.cf`

3.9 Release Patches Do Not Automatically Supersede CSPs

Currently, release patches cannot automatically supersede dupatch-based customer-specific patches (CSPs). Any release patch blocked by a CSP will result in a dupatch message. See Section 7.1.7 for more information.

4

Patch Installation and Removal Instructions

This chapter provides instructions for installing and removing patches from the Tru64 UNIX operating system and the TruCluster Software Products (TCR).

- Backs up the member's member-specific files.
- Sets up the `it`(8) scripts that will be run on reboot to perform the roll.
- Reboots the member. During this boot, the `it` scripts roll the member, build a customized kernel, and reboot with the customized kernel.

5.2.7 Switch Stage

Command	Where Run	Run Level
`clu_upgrade switch`	any member	multiuser mode

The switch stage sets the active version of the software to the new version, which results in turning on any new features that had been deliberately disabled during the rolling upgrade.

The `clu_upgrade switch` command performs the following tasks:

- Verifies that all members have rolled, that all members are running the same versions of the base operating system and cluster software, and that no members are running on tagged files.
- Sets the new version ID in each member's `sysconfigtab` file and running kernel.
- Sets the active version to the new version for all cluster members.

Note

After the switch stage completes, you must reboot each member of the cluster, one at a time.

5.2.8 Clean Stage

Command	Where Run	Run Level
`clu_upgrade clean`	any member	multiuser mode

The clean stage cleans up the files and directories that were used for the rolling upgrade.

The `clu_upgrade clean` command performs the following tasks:

- Verifies that the switch stage has completed, that all members are running the same versions of the base operating system and cluster software, and that no members are running on tagged files.
- Removes all tagged `.Old..` files.
- Removes any on-disk backup archives that `clu_upgrade` created.
- Deletes the following directories: `/var/adm/update/TruClusterKit` and `/var/adm/clu_upgrade/OSKit`.
- If an update installation was performed, gives you the option of running the Update Administration Utility (`updadmin`) to manage the files that were saved during an update installation.
- Creates an archive directory for this upgrade, `/cluster/admin/clu_upgrade/history/`*`base_OS_version`*, and moves the `clu_upgrade.log` file to the archive directory.

5.3 Rolling Upgrade Procedure

In the following procedure, unless otherwise stated, run commands in multiuser mode.

Note

If you have not yet created your cluster, it is recommended that you patch the operating system and TruCluster software before peforming a rolling upgrade. See Section 3.3 for information.

Some stages of a rolling upgrade take longer to complete than others. Table 5–1 lists the approximate time it takes to complete each stage.

Table 5–1: Time Estimations for a Rolling Upgrade

Stage	Duration
Preparation	Not under program control.
Setup	45 – 120 minutes.[a]
Preinstall	15 – 30 minutes.[a]
Install	The same as installing a patch kit on a single system. Approximately 35 minutes, depending upon the size of the patch kit.
Postinstall	Less than 1 minute.
Roll (per member)	Patch: less than 5 minutes. Update installation: about the same amount of time it takes to add a member.
Switch	Less than 1 minute.
Clean	30 – 90 minutes.[a]

[a] These stages create, verify, or remove the tagged files required for a rolling upgrade. The time that it takes to run one of these stages depends on the speed of the member executing the command, the speed of the storage, and whether the member executing the command is the CFS server for the root (`/`), `/usr`, and `/var` file systems. Consider relocating these file systems to the member where you will run the `clu_upgrade` command.

1. Prepare the cluster (see Section 5.2.1):

   a. Back up the cluster.

   b. Choose a cluster member to be the lead member (the first member to roll). The examples in this procedure use the member whose `memberid` is `2` as the lead member. The member's host name is `provolone`.

   c. Make sure that your system contains the required space in all file systems as described in Section 5.2.1. If a file system needs more free space, use AdvFS utilities such as `addvol` to add volumes to domains as needed. For information on managing AdvFS domains, see the *AdvFS Administration* manual.

   d. On any member, run the `clu_upgrade -v check setup` *`lead_memberid`* command to determine whether the cluster is ready for an upgrade. For example:

      ```
      # clu_upgrade -v check setup 2
      ```

      Note that the `clu_upgrade -v check setup` *`lead_memberid`* command may check some — but not all — file systems for adequate space. Make sure that you manually check that your system meets the disk space requirements described in Section 5.2.1. If a file system needs more free space, use AdvFS utilities such as `addvol` to add volumes to domains

as needed. For information on managing AdvFS domains, see the *AdvFS AdministrationAdvFS AdministrationAdvFS Administration* manual.

2. Perform the setup stage (Section 5.2.2).

   On any member, run the `clu_upgrade setup` *`lead_memberid`* command. For example:

   ```
   # clu_upgrade setup 2
   ```

Caution

If any file system fails to meet the minimum space requirements, the program will fail and generate an error message similar to the following:

```
*** Error ***
The tar commands used to create tagged files in the ''/'' file system have
reported the following errors and warnings:
NOTE: CFS: File system full: /

        tar: sbin/lsm.d/raid5/volsd : No space left on device
        tar: sbin/lsm.d/raid5/volume : No space left on device
NOTE: CFS: File system full: /

.NOTE: CFS: File system full: /
```

If you receive this message, run the `clu_upgrade -undo setup` command, free up the required amount of space on the affected file systems, and then rerun the `clu_upgrade setup` command.

During the setup stage, `clu_upgrade` asks whether you are performing a update installation or a patch. However, the wording of the prompts in the Version 5.0A command are somewhat ambiguous:

```
Are you running the clu_upgrade command to upgrade to a new version of
the base operating system and cluster software? [yes]:

Are you running the clu_upgrade command in order to apply a rolling
patch? [yes]
```

The `clu_upgrade` command does not display the second prompt until it receives an answer for the first. An administrator might be tempted to answer **`yes`** to the `... upgrade to a new version ...` prompt when performing a rolling upgrade to patch the cluster because a patch is an upgrade to new software. However, if you see these prompts, answer **`yes`** to the first prompt only if you plan to run `installupdate` during the install stage.

Note: No WLS and Disk Space

Additional space is required in the `cluster_root` domain for backing up member files on clusters without Worldwide Language Support (WLS). If no space is available, the following message is displayed:

```
*** Error ***
There is no space available in the root (/), /usr, or /var
file systems to back up member ''???'' member-specific files.
Increase the available disk space on one of these file systems
and rerun this stage of the upgrade.
```

The minimum required available space in the `cluster_root` domain must be greater than the sum of all of the member directories in the root (`/`), `/usr`, or `/var` file systems.

To view the available space in the `cluster_root` domain, enter the following command:

```
# df /
```

For example:

```
# df /
Filesystem       512-blocks   Used  Available  Capacity  Mounted on
cluster_root#root    524288 175710     330512     35%    /
```

To calculate the minimum required value, enter the following command:

```
# ksh 'du  -s {,/usr,/var}/cluster/members/member?*/' | \
  awk '{minimum+=$1}; END{print minimum}'
```

For example:

```
# ksh 'du  -s {,/usr,/var}/cluster/members/member?*/' | \
> awk '{minimum+=$1}; END{print minimum}'
679030
```

The example indicates that `cluster_root` domain needs 348518 more blocks (679030 minus 330512), or approximately 175 MB of disk space. Use the `addvol` command to add additional volumes to the `cluster_root` domain.

---

3. When asked if you want to continue the cluster upgrade, accept the default of "yes":

```
This is the cluster upgrade program.
You have indicated that you want to perform the 'setup' stage of the
upgrade.

Do you want to continue to upgrade the cluster? [yes]: Return

Are you running the clu_upgrade command to upgrade to a new version of
the base operating system and cluster software? [yes]: no

Are you running the clu_upgrade command to apply a rolling patch? [yes]: Return
```

   Note that these prompts will change if you run the upgrade to its conclusion and then rerun it to remove patches. See Section 5.6 for more information (including the prompts you will see).

4. One at a time, reboot all cluster members except the lead member.
5. Perform the preinstall stage (Section 5.2.3).

Note

If you plan to run `installupdate` in the install stage, mount the device or directory that contains the new TruCluster software kit before running `clu_upgrade preinstall`. The `preinstall` command will copy the kit to the `/var/adm/update/TruClusterKit` directory.

On the lead member, run the following command:

```
# clu_upgrade preinstall
```

6. Manually relocate CAA services from the lead member to another cluster member before performing the install stage. For example:

```
# /usr/sbin/caa_relocate -s lead_member -c non_lead_member
```

7. Perform the install stage (Section 5.2.4).

Caution

If you encounter unrecoverable failures while running `dupatch`, do not run the `clu_upgrade -undo install` command.

Contact your support personnel for further instructions.

You can patch a cluster, update cluster and operating system software, or perform an update installation followed by a patch. (See Section 5.2.4 for information on what you can and cannot do during the install stage.)

The following steps are for performing a rolling upgrade to patch a cluster in either single-user mode, which is recommended, or in multiuser mode. See Chapter 4 for information about using the dupatch utility.

To patch the system in single-user mode:

a. Take the system to single-user mode:

```
# shutdown now
```

b. Run the bcheckrc command:

```
# bcheckrc
```

c. Run the dupatch command:

```
# dupatch
```

To patch the system in multiuser mode:

a. Run the dupatch command:

```
# dupatch
```

If you are performing a roll that includes both an upgrade and a patch, do the update installation first and then the patch.

After the lead member performs its final reboot with its new custom kernel, perform the following manual tests before you roll any additional members:

Verify that the newly rolled lead member can serve the shared root (/) file system.

a. Use the cfsmgr command to determine which cluster member is currently serving the root file system. For example:

```
# cfsmgr -v -a server /

 Domain or filesystem name = /
 Server Name = polishham
 Server Status : OK
```

b. Relocate the root (/) file system to the lead member. For example:

```
# cfsmgr -h polishham -r -a SERVER=provolone /
```

Verify that the lead member can serve applications to clients. Make sure that the lead member can serve all important applications that the cluster makes available to its clients.

You decide how and what to test. Thoroughly exercise all critical applications and satisfy yourself that the lead member can serve these applications to clients before continuing the roll. For example, you can:

a. Manually relocate CAA services to the lead member. For example, to relocate an application resource named clock to lead member provolone:

```
# caa_relocate clock -c provolone
```

b. Temporarily modify the default cluster alias attributes for the lead member so that it handles routing for the alias and serves all client requests that are directed to the alias. For example:

```
# cluamgr -a alias=DEFAULTALIAS,rpri=100,selp=100
# cluamgr -r start
```

The lead member is now handling all traffic that is addressed to the default cluster alias. (You can use the `arp -a` command to verify that the lead member has the `permanent published` entry for the default cluster alias.)

From another member or from an outside client, use services such as `telnet` and `ftp` to verify that the lead member can handle alias traffic. Test client access to all important services that the cluster provides. When you are satisfied, reset the alias attributes on the lead member to their original values.

8. Perform the postinstallation stage (Section 5.2.5).

   On the lead member, run:

   # **clu_upgrade postinstall**

9. Perform the roll stage (Section 5.2.6).

   One at a time, on each member of the cluster that has not rolled, do the following:

   a. Manually relocate CAA services from the member to another cluster member before performing the roll stage. For example:

      # **/usr/sbin/caa_relocate -s *member_to_roll* **
      -c *another_member*

   b. Take the member to single-user mode:

      # **shutdown now**

   c. Run the `bcheckrc` command:

      # **bcheckrc**

   d. Roll the member:

      # **clu_upgrade roll**

      When the member boots its new kernel, it has completed its roll and is no longer running on tagged files. Continue to roll members until all members of the cluster have rolled.

Note: /var Disk Space

The following messages might be displayed while running the `clu_upgrade roll` command:

```
Backing up member-specific data for member: n
 ...NOTE: CFS: File system full: /var

  tar: /dev/tty Unavailable

*** Error ***
An error was detected while backing up member 'n' \
member-specific files.
```

Additional space in the `cluster_var` domain is required. To view the available space in the `cluster_var` domain, enter the following command:

df /var

To calculate the required value, enter the following command:

```
# ksh 'du  -s {,/usr,/var}/cluster/members/member?*/' | \
  awk '{minimum+=$1}; END{print minimum}'
```

Use the `addvol` command to add additional volumes to the `cluster_var` domain.

10. Perform the switch stage (Section 5.2.7).

    After all members have rolled, run the following command on any member to enable any new software features that were deliberately disabled until all members have rolled:

    ```
    # clu_upgrade switch
    ```

11. One at a time, reboot each member of the cluster.

12. Perform the clean stage (Section 5.2.8).

    Run the following command on any member to remove the tagged (`.Old..`) files from the cluster and complete the upgrade.

    ```
    # clu_upgrade clean
    ```

5.4 Displaying the Status of a Rolling Upgrade

The `clu_upgrade` command provides the following options for displaying the status of a rolling upgrade or patch. You can run status commands at any time.

Note

During a roll, there might be two versions of the `clu_upgrade` in the cluster. An older version used by members that have not yet rolled, and a newer version (if included in the update distribution or patch kit). When checking status, the information that is displayed by the `status` command might differ depending on whether the command is run on a member that has rolled. Therefore, if you run the `status` command on two members, do not be surprised if the format and content of the displayed output are not the same.

- To display the overall status of a rolling upgrade or patch: `clu_upgrade -v` or `clu_upgrade -v status`.
- To determine whether you can run a stage: `clu_upgrade check [`*`stage`*`]`. If you do not specify a *`stage`*, the `clu_upgrade` tests whether the next stage can be run.
- To determine whether a stage has started or completed: `clu_upgrade started` *`stage`* and `clu_upgrade completed` *`stage`*.
- To determine whether a member has rolled: `clu_upgrade check roll` *`memberid`*.
- To verify whether tagged files have been created for a layered product: `clu_upgrade tagged check [`*`prod_code`* `[`*`prod_code`* `...]]`. If you do not specify a product code, `clu_upgrade` inspects all tagged files in the cluster.

5.5 Undoing a Stage

The `clu_upgrade undo` command provides the ability to undo a rolling upgrade that has not completed the switch stage. You can undo any stage except the switch stage and the clean stage.

Note

See Section 5.6 for information about deleting patches installed during a rolling upgrade.

To undo a stage, use the undo command with the stage that you want to undo. The clu_upgrade command determines whether the specified stage is a valid stage to undo. Table 5–2 outlines the requirements for undoing a stage:

Caution

If you encounter unrecoverable failures while running dupatch, do not run the clu_upgrade -undo install command.

Contact your support personnel for further instructions.

Table 5–2: Undoing a Stage

Stage to Undo	Command	Comments
Setup	clu_upgrade undo setup	You must run this command on the lead member. In addition, no members can be running on tagged files when you undo the setup stage. Before you undo the setup stage, use the clu_upgrade -v status command to determine which members are running on tagged files. Then use the clu_upgrade tagged disable *memberid* command to disable tagged files on those members. When no members are running on tagged files, run the clu_upgrade undo setup command on the lead member.
Preinstall	clu_upgrade undo preinstall	You must run this command on the lead member.
Install	clu_upgrade undo install	You can run this command on any member except the lead member. Halt the lead member. Then run the clu_upgrade undo install command on any member that has access to the halted lead member's boot disk. When the command completes, boot the lead member.
Postinstall	clu_upgrade undo postinstall	You must run this command on the lead member.
Roll	clu_upgrade undo roll *memberid*	You can run this command on any member except the member whose roll is being undone. Halt the member whose roll stage is being undone. Then run the clu_upgrade undo roll *memberid* command on any other member that has access to the halted member's boot disk. When the command completes, boot the halted member. The member will now be using tagged files.

Note

You might see the following error message when running the clu_upgrade undo postinstall command:

```
*** Error ***
The 'undo' option cannot be run at the 'postinstall' stage,
either because the next stage has already been started or
because the stage specified for undo has not been started.
```

If you see the message, remove the following file before running the clu_upgrade undo postinstall command:

```
# rm /cluster/admin/clu_upgrade/roll.started
```

5.6 Removing Patches Installed During a Rolling Upgrade

After you have installed the patches in your patch kit, you can remove some or all of the patches by returning to the preinstall stage, rerunning dupatch, and selecting the "Patch Deletion" item in the Main Menu at any time prior to issuing the clu_upgrade switch command. See Section 4.11 for information about removing patches with dupatch.

You can also reinstall some or all of the patches you removed prior to the switch stage by rerunning `dupatch`. (See Section 5.5 for information about undoing any of the rolling upgrade stages.)

In order to remove patches after you have issued the `clu_upgrade switch` command, you will have to complete the current rolling upgrade procedure and then rerun the procedure from the beginning (starting with the setup stage). When you rerun `dupatch`, select the Patch Deletion item in the Main Menu.

Note

If you rerun the rolling upgrade procedure to remove patches, the prompts you receive during the setup stage will be different from those issued during the initial rolling upgrade. Those prompts will look as follows:

```
Do you want to continue to upgrade the cluster? [yes]: Return

What type of upgrade will be performed?

1) Rolling upgrade using the installupdate command
2) Rolling patch using the dupatch command
3) Both a rolling upgrade and a rolling patch
4) Exit cluster software upgrade

Enter your choice: 2
```

The sample installation in Section 6.2 shows the prompts you will see during the initial rolling upgrade.

6

Sample Patch Kit Installation

This chapter provides samples of using `dupatch` to do the following:

- Perform a typical patch kit installation (Section 6.1)
- Install Tru64 UNX and TruCluster Server patches using the rolling upgrade procedure (Section 6.2)
- Perform a baseline analysis (Section 6.3)
- Remove patches (Section 6.4)

6.1 Typical Patch Kit Installation

```
# /mnt/PatchKits/Kit2/patch_kits/dupatch

Tru64 UNIX Patch Utility (Rev. 27-04)
==========================
 - This dupatch session is logged in /var/adm/patch/log/session.log

    Main Menu:
    ---------

    1)  Patch Installation
    2)  Patch Deletion

    3)  Patch Documentation
    4)  Patch Tracking

    5)  Patch Baseline Analysis/Adjustment

    h)  Help on Command Line Interface

    q)  Quit

Enter your choice: 1

 Tru64 UNIX Patch Utility (Rev. 27-04)
 ==========================
  - This dupatch session is logged in /var/adm/patch/log/session.log

     Patch Installation Menu:
     ------------------------

    1)  Pre-Installation Check ONLY
    2)  Check & Install patches in Single-User Mode


    b)  Back to Main Menu
    q)  Quit

Enter your choice: 2

Checking patch kit for transmission errors during download...

Finished Checking patch kit checksums

Gathering patch information...
  (depending upon the size of the patch kit, this may take awhile)


               ***  Start of Special Instructions  ***



               ***  There are NO Special Instructions  ***
```

```
 Press RETURN to proceed...


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

     To Make Patches Reversible - PLEASE READ THE FOLLOWING INFORMATION:


   - You have the option to make the patches reversible so you can
     revert the system to its state prior to the installation of a patch.

   - Reversibility is achieved by compressing and saving a copy of the
     files being replaced by the patches. These files would be restored
     to the system if you choose to delete a patch.

   - If you choose to make patches NON-reversible, then the system cannot
     be restored to the state prior to the installation of a patch; you
     will not be able to delete the patches later.

   - This patch kit may force a small set of patches to be reversible to
     ensure your upgrades to future versions of Tru64 UNIX are successful.
     The Patch Utility will make those patches reversible automatically.

     Refer to the Release Notes / Installation Instructions provided with
     this patch kit.

Do you want the patches to be reversible? [y]: Return

     By default, the backup copies of the installed patches will be saved in
     "/var/adm/patch/backup".

     If you have limited space in /var, you may want to make the backup
     directory the mount point for a separate disk partition, an NFS mounted
     directory, or a symbolic link to another file system.

     You must ensure the backup directory is configured the same way during
     any patch removal operations.

Your current setup of "/var/adm/patch/backup" is:

 * A plain directory (not a mount point or a symbolic link)

Do you want to proceed with the installation with this setup? [y]: Return

Your name: Rita Semple

Enter any notes about this operation that you would like stored for
future reference (To end your input, enter a "."):

: Installing all patches for V5.0A Kit2
: .

The patches listed below are optional:

     There may be more optional patches than can be presented on a single
     screen. If this is the case, you can choose patches screen by screen
     or all at once on the last screen. All of the choices you make will
     be collected for your confirmation before any patches are installed.

 - Tru64_UNIX_V5.0A / Cluster Kernel Patches:
     1) Patch 00090.00 - versw command can core dump during rolling upgrade
     2) Patch 00186.00 - Disks can become inaccessible on a cluster node

 - Tru64_UNIX_V5.0A / Commands, Shells, & Utilities Patches:
     3) Patch 00015.00 - Fixes a problem that occurs in multibyte locales
     4) Patch 00019.00 - Fixes a problem with the grep command
     5) Patch 00035.00 - Fixes a problem with the find command
     6) Patch 00041.00 - Corrects problem with the fgrep command
     7) Patch 00042.00 - Fixes problem with the restore command
     8) Patch 00064.00 - Fixes btcreate and btextract problems

--- MORE TO FOLLOW ---
Enter your choices or press RETURN to display the next screen.

Choices (for example, 1 2 4-6): Return
     9) Patch 00065.00 - Fixes a hang in the shutdown process
    10) Patch 00068.00 - Fix for vrestore problems
    11) Patch 00079.00 - Fix for pax and vdump problems
    12) Patch 00098.00 - pax opens and truncated pre-existing files

 - Tru64_UNIX_V5.0A / Commands, Shells, & Utility Patches:
    13) Patch 00116.00 - Fixes a problem in uucp
```

```
    14) Patch 00192.00 - Fix for what command
    15) Patch 00205.00 - Corrects problem with mv command deleting files
    16) Patch 00211.00 - Fixes cron problems

 - Tru64_UNIX_V5.0A / Common Desktop Environment (CDE) Patches:
    17) Patch 00001.00 - CDE does not recreate list of application groups
    18) Patch 00165.00 - dtlogin core dumps from XDMCP clients
    19) Patch 00200.00 - Fix for dtmail problem
    20) Patch 00209.00 - dtwm hangs on system using multiple displays

--- MORE TO FOLLOW ---
Enter your choices or press RETURN to display the next screen.

Choices (for example, 1 2 4-6): Return


 - Tru64_UNIX_V5.0A / Filesystem Patches:
    21) Patch 00027.00 - Changes quotactl prototype to meet POSIX standards
    22) Patch 00031.00 - Fix for nfscast error message
    23) Patch 00047.00 - UFS disk quotas are not updating automatically
    24) Patch 00130.00 - Incorrect warning messages about mounted filesystems
    25) Patch 00134.00 - Fixes problems with vdf
    26) Patch 00190.00 - b-tree index for directory could become corrupted
    27) Patch 00207.00 - Potential hang on booting a cluster

 - Tru64_UNIX_V5.0A / Hardware Configuration Patches:
    28) Patch 00061.00 - Hardware manager inaccurately reports CPU speed
    29) Patch 00081.00 - Fix for dn_setup core dump
    30) Patch 00083.00 - SCSI_MC_GENERIC-READ_ELEMENT_STATUS fails

 - Tru64_UNIX_V5.0A / I/O Device Handling Patches:
    31) Patch 00051.00 - Provides the latest driver for PowerStorm 4D10T
    32) Patch 00084.00 - Corrects a hardware probe time hang

--- MORE TO FOLLOW ---
Enter your choices or press RETURN to display the next screen.

Choices (for example, 1 2 4-6): Return

    33) Patch 00122.00 - Fixes a timeout table overflow system panic
    34) Patch 00154.00 - Improper handling of PCI options cards
    35) Patch 00159.00 - Fixes AdvFS domain panic
    36) Patch 00194.00 - Fixes potential source code computability problem

 - Tru64_UNIX_V5.0A / I18N Patches:
    37) Patch 00014.00 - Updates the Danish (da_DK.ISO8859-1) locale
    38) Patch 00124.00 - Adds support for euro character to keymap files

 - Tru64_UNIX_V5.0A / Kernel Patches:
    39) Patch 00036.00 - OS only looks in slot 0 for primary CPU
    40) Patch 00057.00 - Fixes panic caused when deleting process group
    41) Patch 00062.00 - Cursor displays incorrectly when image plane set to 1
    42) Patch 00141.00 - System hangs when running granularity hints
    43) Patch 00178.00 - Incorrect bcache size returned to kernel from HWRPB
    44) Patch 00184.00 - Bootlink can fail on AlphaStations 600, 600A, 500/400

--- MORE TO FOLLOW ---
Enter your choices or press RETURN to display the next screen.

Choices (for example, 1 2 4-6): Return


 - Tru64_UNIX_V5.0A / Library Patches:
    45) Patch 00008.00 - Provides missing compose definitions for ISO8859-15
    46) Patch 00022.00 - Fix for EVM problems on some Alpha EV6 systems
    47) Patch 00071.00 - Static library fix for libevm
    48) Patch 00095.00 - Overlap checking in MKFDMN and NEWFS fails
    49) Patch 00097.00 - Fixes a problem with the dlsym routine
    50) Patch 00099.00 - MKFDMN NEWFS fails for third party drivers in cluster
    51) Patch 00163.00 - Fixes conflicting cuserid declarations

 - Tru64_UNIX_V5.0A / Memory Channel Patches:
    52) Patch 00086.00 - Fix for rm_state_change panic

 - Tru64_UNIX_V5.0A / Network Patches:
    53) Patch 00023.00 - Fixes a kernel memory fault when using ATM
    54) Patch 00025.00 - Fix for VMAC functionality when used with NETrain
    55) Patch 00032.00 - Kernel panics Classical IP over lfa ATM driver
    56) Patch 00033.00 - System panics when running ATM

--- MORE TO FOLLOW ---
Enter your choices or press RETURN to display the next screen.
```

```
Choices (for example, 1 2 4-6): Return

    57) Patch 00037.00 - Fixes a tftpd problem
    58) Patch 00069.00 - Updates the lfa ATM device driver to V1.0.17
    59) Patch 00118.00 - Corrects a problem in the lat driver
    60) Patch 00148.00 - Performance problem in Cluster File System
    61) Patch 00161.00 - Updates emx Fiber Channel driver to revision 1.22
    62) Patch 00170.00 - ATM LAN emulation fails with ATM Meteor 351 board

 - Tru64_UNIX_V5.0A / Printers Patches:
    63) Patch 00157.00 - Unnecessary error messages written to lpr log file

 - Tru64_UNIX_V5.0A / Security Related Patches:
    64) Patch 00074.00 - Security (SSRT0636U)
    65) Patch 00076.00 - Security (SSRT0656U)
    66) Patch 00100.00 - Security (SSRT0656U)
    67) Patch 00114.00 - Security (SSRT0636U)
    68) Patch 00120.00 - System panic occurs when auditing is enabled
    69) Patch 00188.00 - advscan does not display bootable partitions properly
    70) Patch 00196.00 - Security (SSRT0683U)

--- MORE TO FOLLOW ---
Enter your choices or press RETURN to display the next screen.

Choices (for example, 1 2 4-6):

    71) Patch 00202.00 - Upgrades sys_check utility to version 119

 - Tru64_UNIX_V5.0A / Software Development Environment Patches:
    72) Patch 00038.00 - Fixes linker (ld) problems
    73) Patch 00053.00 - Fixes errors seen when compiling with the -om switch
    74) Patch 00066.00 - Problems with kdbx extensions mount and swap
    75) Patch 00067.00 - Fixes a problem with routines in the libst library
    76) Patch 00072.00 - Cannot change file permission using libst routines
    77) Patch 00073.00 - prof profiling tool causes segmentation fault
    78) Patch 00198.00 - Fixes problems in the Compaq C compiler

 - Tru64_UNIX_V5.0A / System Administration Patches:
    79) Patch 00002.00 - Compaq SNMP subagent core dumps
    80) Patch 00003.00 - Fixes automount problem
    81) Patch 00075.00 - Fix for System Management Station daemon
    82) Patch 00167.00 - Fixes incorrect date and time stamp on new directory
    83) Patch 00172.00 - Fixes problems with the collect command

--- MORE TO FOLLOW ---
Enter your choices or press RETURN to display the next screen.

Choices (for example, 1 2 4-6):


 - Tru64_UNIX_V5.0A / Threads Patches:
    84) Patch 00126.00 - Fix for threaded applications problem
    85) Patch 00128.00 - Fix for threads created by taso programs

 - Tru64_UNIX_V5.0A / VM Patches:
    86) Patch 00089.00 - Adding swap partition less than 8KB causes problems

 - Tru64_UNIX_V5.0A / Workstation Patches:
    87) Patch 00213.00 - Fixes problem causing diskconfig to issue error msg

 - Tru64_UNIX_V5.0A / X11 Patches:
    88) Patch 00010.00 - Fixes a problem with the svn widget of libDXm.so
    89) Patch 00011.00 - Fix for lbxproxy utility
    90) Patch 00012.00 - Drawing problems with PowerStorm 4D10T graphics card
    91) Patch 00070.00 - Static library fix for libDXm
    92) Patch 00132.00 - Fix for tclhelp failure
    93) Patch 00150.00 - Fixes a memory leak in Xt

--- MORE TO FOLLOW ---
Enter your choices or press RETURN to display the next screen.

Choices (for example, 1 2 4-6): Return

    94) Patch 00152.00 - Memory leak when creating and destroying widgets
    95) Patch 00174.00 - Fix for memory leaks in Xlib
    96) Patch 00176.00 - Memory leaks occur when creating widgets
    97) Patch 00180.00 - Fixes memory leak in libXm
    98) Patch 00182.00 - libXm memory leak when creating widgets

Or you may choose one of the following options:
```

```
    99) ALL of the above
   100) CANCEL selections and redisplay menus
   101) EXIT without installing any patches

Enter your choices or press RETURN to redisplay menus.

Choices (for example, 1 2 4-6): 99

You are installing the following optional patches:

 - Tru64_UNIX_V5.0A / Cluster Kernel Patches:
        Patch 00090.00 - versw command can core dump during rolling upgrade
        Patch 00186.00 - Disks can become inaccessible on a cluster node

 - Tru64_UNIX_V5.0A / Commands, Shells, & Utilities Patches:
        Patch 00015.00 - Fixes a problem that occurs in multibyte locales
        Patch 00019.00 - Fixes a problem with the grep command
        Patch 00035.00 - Fixes a problem with the find command
        Patch 00041.00 - Corrects problem with the fgrep command
        Patch 00042.00 - Fixes problem with the restore command
        Patch 00064.00 - Fixes btcreate and btextract problems
        Patch 00065.00 - Fixes a hang in the shutdown process
        Patch 00068.00 - Fix for vrestore problems
        Patch 00079.00 - Fix for pax and vdump problems
        Patch 00098.00 - pax opens and truncated pre-existing files

 - Tru64_UNIX_V5.0A / Commands, Shells, & Utility Patches:
        Patch 00116.00 - Fixes a problem in uucp

Press RETURN to display the next screen: Return

        Patch 00192.00 - Fix for what command
        Patch 00205.00 - Corrects problem with mv command deleting files
        Patch 00211.00 - Fixes cron problems

 - Tru64_UNIX_V5.0A / Common Desktop Environment (CDE) Patches:
        Patch 00001.00 - CDE does not recreate list of application groups
        Patch 00165.00 - dtlogin core dumps from XDMCP clients
        Patch 00200.00 - Fix for dtmail problem
        Patch 00209.00 - dtwm hangs on system using multiple displays

 - Tru64_UNIX_V5.0A / Filesystem Patches:
        Patch 00027.00 - Changes quotactl prototype to meet POSIX standards
        Patch 00031.00 - Fix for nfscast error message
        Patch 00047.00 - UFS disk quotas are not updating automatically
        Patch 00130.00 - Incorrect warning messages about mounted filesystems
        Patch 00134.00 - Fixes problems with vdf
        Patch 00190.00 - b-tree index for directory could become corrupted
        Patch 00207.00 - Potential hang on booting a cluster

Press RETURN to display the next screen: Return


 - Tru64_UNIX_V5.0A / Hardware Configuration Patches:
        Patch 00061.00 - Hardware manager inaccurately reports CPU speed
        Patch 00081.00 - Fix for dn_setup core dump
        Patch 00083.00 - SCSI_MC_GENERIC-READ_ELEMENT_STATUS fails

 - Tru64_UNIX_V5.0A / I/O Device Handling Patches:
        Patch 00051.00 - Provides the latest driver for PowerStorm 4D10T
        Patch 00084.00 - Corrects a hardware probe time hang
        Patch 00122.00 - Fixes a timeout table overflow system panic
        Patch 00154.00 - Improper handling of PCI options cards
        Patch 00159.00 - Fixes AdvFS domain panic
        Patch 00194.00 - Fixes potential source code computability problem

 - Tru64_UNIX_V5.0A / I18N Patches:
        Patch 00014.00 - Updates the Danish (da_DK.ISO8859-1) locale
        Patch 00124.00 - Adds support for euro character to keymap files

 - Tru64_UNIX_V5.0A / Kernel Patches:
        Patch 00036.00 - OS only looks in slot 0 for primary CPU

Press RETURN to display the next screen: Return

        Patch 00057.00 - Fixes panic caused when deleting process group
        Patch 00062.00 - Cursor displays incorrectly when image plane set to 1
        Patch 00141.00 - System hangs when running granularity hints
        Patch 00178.00 - Incorrect bcache size returned to kernel from HWRPB
        Patch 00184.00 - Bootlink can fail on AlphaStations 600, 600A, 500/400

 - Tru64_UNIX_V5.0A / Library Patches:
```

```
        Patch 00008.00 - Provides missing compose definitions for ISO8859-15
        Patch 00022.00 - Fix for EVM problems on some Alpha EV6 systems
        Patch 00071.00 - Static library fix for libevm
        Patch 00095.00 - Overlap checking in MKFDMN and NEWFS fails
        Patch 00097.00 - Fixes a problem with the dlsym routine
        Patch 00099.00 - MKFDMN NEWFS fails for third party drivers in cluster
        Patch 00163.00 - Fixes conflicting cuserid declarations

 - Tru64_UNIX_V5.0A / Memory Channel Patches:
        Patch 00086.00 - Fix for rm_state_change panic

 - Tru64_UNIX_V5.0A / Network Patches:
        Patch 00023.00 - Fixes a kernel memory fault when using ATM

Press RETURN to display the next screen: Return

        Patch 00025.00 - Fix for VMAC functionality when used with NETrain
        Patch 00032.00 - Kernel panics Classical IP over lfa ATM driver
        Patch 00033.00 - System panics when running ATM
        Patch 00037.00 - Fixes a tftpd problem
        Patch 00069.00 - Updates the lfa ATM device driver to V1.0.17
        Patch 00118.00 - Corrects a problem in the lat driver
        Patch 00148.00 - Performance problem in Cluster File System
        Patch 00161.00 - Updates emx Fiber Channel driver to revision 1.22
        Patch 00170.00 - ATM LAN emulation fails with ATM Meteor 351 board

 - Tru64_UNIX_V5.0A / Printers Patches:
        Patch 00157.00 - Unnecessary error messages written to lpr log file

 - Tru64_UNIX_V5.0A / Security Related Patches:
        Patch 00074.00 - Security (SSRT0636U)
        Patch 00076.00 - Security (SSRT0656U)
        Patch 00100.00 - Security (SSRT0656U)
        Patch 00114.00 - Security (SSRT0636U)
        Patch 00120.00 - System panic occurs when auditing is enabled
        Patch 00188.00 - advscan does not display bootable partitions properly

Press RETURN to display the next screen: Return

        Patch 00196.00 - Security (SSRT0683U)
        Patch 00202.00 - Upgrades sys_check utility to version 119

 - Tru64_UNIX_V5.0A / Software Development Environment Patches:
        Patch 00038.00 - Fixes linker (ld) problems
        Patch 00053.00 - Fixes errors seen when compiling with the -om switch
        Patch 00066.00 - Problems with kdbx extensions mount and swap
        Patch 00067.00 - Fixes a problem with routines in the libst library
        Patch 00072.00 - Cannot change file permission using libst routines
        Patch 00073.00 - prof profiling tool causes segmentation fault
        Patch 00198.00 - Fixes problems in the Compaq C compiler

 - Tru64_UNIX_V5.0A / System Administration Patches:
        Patch 00002.00 - Compaq SNMP subagent core dumps
        Patch 00003.00 - Fixes automount problem
        Patch 00075.00 - Fix for System Management Station daemon
        Patch 00167.00 - Fixes incorrect date and time stamp on new directory
        Patch 00172.00 - Fixes problems with the collect command

Press RETURN to display the next screen: Return


 - Tru64_UNIX_V5.0A / Threads Patches:
        Patch 00126.00 - Fix for threaded applications problem
        Patch 00128.00 - Fix for threads created by taso programs

 - Tru64_UNIX_V5.0A / VM Patches:
        Patch 00089.00 - Adding swap partition less than 8KB causes problems

 - Tru64_UNIX_V5.0A / Workstation Patches:
        Patch 00213.00 - Fixes problem causing diskconfig to issue error msg

 - Tru64_UNIX_V5.0A / X11 Patches:
        Patch 00010.00 - Fixes a problem with the svn widget of libDXm.so
        Patch 00011.00 - Fix for lbxproxy utility
        Patch 00012.00 - Drawing problems with PowerStorm 4D10T graphics card
        Patch 00070.00 - Static library fix for libDXm
        Patch 00132.00 - Fix for tclhelp failure
        Patch 00150.00 - Fixes a memory leak in Xt
        Patch 00152.00 - Memory leak when creating and destroying widgets
        Patch 00174.00 - Fix for memory leaks in Xlib

Press RETURN to display the next screen: Return
```

```
        Patch 00176.00 - Memory leaks occur when creating widgets
        Patch 00180.00 - Fixes memory leak in libXm
        Patch 00182.00 - libXm memory leak when creating widgets


Is this correct? (y/n): y

Checking patch prerequisites and patch file applicability...
  (depending upon the number of patches you select, this may take awhile)


   *** You have selected 98 patches ***

************************* CAUTION ***********************************

 Interruption of this phase of the operation will corrupt your
 operating system software and compromise the patch database
 integrity.

 DO NOT Ctrl/C, power off your system, or in any other way
 interrupt the patch operation. The patch operation is complete
 when you are returned to the Patch Utility menus.

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


=== Installing "Tru64 UNIX V5.0A" Patches:

Checking file system space required to install specified subsets:

File system space checked OK.

98 subsets will be installed.

Loading subset 1 of 98 ...

Patch: Fixes panic caused when deleting process group
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 2 of 98 ...

Patch: Fixes problems with vdf
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 3 of 98 ...

Patch: Upgrades sys_check utility to version 119
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 4 of 98 ...

Patch: Fixes problem causing diskconfig to issue error msg
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 5 of 98 ...

Patch: Fixes AdvFS domain panic
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 6 of 98 ...

Patch: Corrects problem with the fgrep command
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 7 of 98 ...

Patch: Fixes problem with the restore command
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 8 of 98 ...

Patch: Fixes problems with the collect command
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying
```

```
Loading subset 9 of 98 ...

Patch: CDE does not recreate list of application groups
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 10 of 98 ...

Patch: UFS disk quotas are not updating automatically
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 11 of 98 ...

Patch: Fix for dtmail problem
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 12 of 98 ...

Patch: dtlogin core dumps from XDMCP clients
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 13 of 98 ...

Patch: dtwm hangs on system using multiple displays
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 14 of 98 ...

Patch: Problems with kdbx extensions mount and swap
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 15 of 98 ...

Patch: Fixes a problem with the svn widget of libDXm.so
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 16 of 98 ...

Patch: Compaq SNMP subagent core dumps
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 17 of 98 ...

Patch: Fix for vrestore problems
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 18 of 98 ...

Patch: Updates the lfa ATM device driver to V1.0.17
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 19 of 98 ...

Patch: Fixes automount problem
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 20 of 98 ...

Patch: Fix for tclhelp failure
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 21 of 98 ...

Patch: SCSI_MC_GENERIC-READ_ELEMENT_STATUS fails
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 22 of 98 ...

Patch: Fix for System Management Station daemon
```

```
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 23 of 98 ...

Patch: Fixes incorrect date and time stamp on new directory
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 24 of 98 ...

Patch: Fix for pax and vdump problems
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 25 of 98 ...

Patch: Provides missing compose definitions for ISO8859-15
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 26 of 98 ...

Patch: Hardware manager inaccurately reports CPU speed
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 27 of 98 ...

Patch: Cursor displays incorrectly when image plane set to 1
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 28 of 98 ...

Patch: Fix for lbxproxy utility
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 29 of 98 ...

Patch: Drawing problems with PowerStorm 4D10T graphics card
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 30 of 98 ...

Patch: Fixes btcreate and btextract problems
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 31 of 98 ...

Patch: Fixes a hang in the shutdown process
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 32 of 98 ...

Patch: Adds support for euro character to keymap files
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 33 of 98 ...

Patch: Fixes memory leak in libXm
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 34 of 98 ...

Patch: Fix for memory leaks in Xlib
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 35 of 98 ...

Patch: Fixes a timeout table overflow system panic
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 36 of 98 ...
```

```
Patch: versw command can core dump during rolling upgrade
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 37 of 98 ...

Patch: Fix for threaded applications problem
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 38 of 98 ...

Patch: Fixes a problem with the dlsym routine
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 39 of 98 ...

Patch: Security (SSRT0683U)
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 40 of 98 ...

Patch: Updates the Danish (da_DK.ISO8859-1) locale
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 41 of 98 ...

Patch: Fixes cron problems
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 42 of 98 ...

Patch: Fixes conflicting cuserid declarations
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 43 of 98 ...

Patch: Fixes a problem that occurs in multibyte locales
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 44 of 98 ...

Patch: Corrects a problem in the lat driver
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 45 of 98 ...

Patch: Fixes a memory leak in Xt
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 46 of 98 ...

Patch: Fix for rm_state_change panic
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 47 of 98 ...

Patch: Fix for dn_setup core dump
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 48 of 98 ...

Patch: Corrects a hardware probe time hang
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 49 of 98 ...

Patch: Fixes a problem with routines in the libst library
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying
```

```
Loading subset 50 of 98 ...

Patch: Adding swap partition less than 8KB causes problems
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 51 of 98 ...

Patch: Overlap checking in MKFDMN and NEWFS fails
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 52 of 98 ...

Patch: System panic occurs when auditing is enabled
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 53 of 98 ...

Patch: Fix for what command
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 54 of 98 ...

Patch: Performance problem in Cluster File System
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 55 of 98 ...

Patch: Potential hang on booting a cluster
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 56 of 98 ...

Patch: Fix for nfscast error message
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 57 of 98 ...

Patch: Corrects problem with mv command deleting files
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 58 of 98 ...

Patch: System panics when running ATM
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 59 of 98 ...

Patch: Bootlink can fail on AlphaStations 600, 600A, 500/400
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 60 of 98 ...

Patch: Fixes a problem with the find command
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 61 of 98 ...

Patch: Fixes problems in the Compaq C compiler
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 62 of 98 ...

Patch: OS only looks in slot 0 for primary CPU
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 63 of 98 ...

Patch: Fixes a tftpd problem
```

```
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 64 of 98 ...

Patch: Fixes linker (ld) problems
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 65 of 98 ...

Patch: Incorrect bcache size returned to kernel from HWRPB
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 66 of 98 ...

Patch: Security (SSRT0656U)
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 67 of 98 ...

Patch: b-tree index for directory could become corrupted
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 68 of 98 ...

Patch: advscan does not display bootable partitions properly
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 69 of 98 ...

Patch: System hangs when running granularity hints
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 70 of 98 ...

Patch: Fixes a problem with the grep command
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 71 of 98 ...

Patch: Improper handling of PCI options cards
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 72 of 98 ...

Patch: Fixes a kernel memory fault when using ATM
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 73 of 98 ...

Patch: ATM LAN emulation fails with ATM Meteor 351 board
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 74 of 98 ...

Patch: Incorrect warning messages about mounted filesystems
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 75 of 98 ...

Patch: Fix for VMAC functionality when used with NETrain
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 76 of 98 ...

Patch: Security (SSRT0636U)
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 77 of 98 ...
```

```
Patch: Changes quotactl prototype to meet POSIX standards
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 78 of 98 ...

Patch: Fix for EVM problems on some Alpha EV6 systems
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 79 of 98 ...

Patch: Updates emx Fiber Channel driver to revision 1.22
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
 Working....Thu Sep 21 12:32:01 EDT 2000
   Verifying

Loading subset 80 of 98 ...

Patch: Unnecessary error messages written to lpr log file
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 81 of 98 ...

Patch: Disks can become inaccessible on a cluster node
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 82 of 98 ...

Patch: Provides the latest driver for PowerStorm 4D10T
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 83 of 98 ...

Patch: Fixes potential source code computability problem
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 84 of 98 ...

Patch: Fixes errors seen when compiling with the -om switch
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 85 of 98 ...

Patch: libXm memory leak when creating widgets
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 86 of 98 ...

Patch: Memory leaks occur when creating widgets
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 87 of 98 ...

Patch: Memory leak when creating and destroying widgets
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 88 of 98 ...

Patch: Static library fix for libDXm
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 89 of 98 ...

Patch: Fix for threads created by taso programs
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 90 of 98 ...

Patch: prof profiling tool causes segmentation fault
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
```

```
   Verifying

Loading subset 91 of 98 ...

Patch: Cannot change file permission using libst routines
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 92 of 98 ...

Patch: Security (SSRT0656U)
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 93 of 98 ...

Patch: Security (SSRT0636U)
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 94 of 98 ...

Patch: Kernel panics Classical IP over lfa ATM driver
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 95 of 98 ...

Patch: MKFDMN NEWFS fails for third party drivers in cluster
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 96 of 98 ...

Patch: Static library fix for libevm
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 97 of 98 ...

Patch: Fixes a problem in uucp
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 98 of 98 ...

Patch: pax opens and truncated pre-existing files
   Copying from /scratch/public/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

98 of 98 subsets installed successfully.

Configuring "Patch: Fixes panic caused when deleting process group" (OSFPAT00005700505)

Configuring "Patch: Fixes problems with vdf" (OSFPAT00013400505)

Configuring "Patch: Upgrades sys_check utility to version 119" (OSFPAT00020200505)

Configuring "Patch: Fixes problem causing diskconfig to issue error msg" (OSFPAT00021300505)

Configuring "Patch: Fixes AdvFS domain panic" (OSFPAT00015900505)

Configuring "Patch: Corrects problem with the fgrep command" (OSFPAT00004100505)

Configuring "Patch: Fixes problem with the restore command" (OSFPAT00004200505)

Configuring "Patch: Fixes problems with the collect command" (OSFPAT00017200505)

Configuring "Patch: CDE does not recreate list of application groups" (OSFPAT00000100505)

Configuring "Patch: UFS disk quotas are not updating automatically" (OSFPAT00004700505)

Configuring "Patch: Fix for dtmail problem" (OSFPAT00020000505)

Configuring "Patch: dtlogin core dumps from XDMCP clients" (OSFPAT00016500505)

Configuring "Patch: dtwm hangs on system using multiple displays" (OSFPAT00020900505)

Configuring "Patch: Problems with kdbx extensions mount and swap" (OSFPAT00006600505)

Configuring "Patch: Fixes a problem with the svn widget of libDXm.so" (OSFPAT00001000505)
```

```
Configuring "Patch: Compaq SNMP subagent core dumps" (OSFPAT00000200505)
Configuring "Patch: Fix for vrestore problems" (OSFPAT00006800505)
Configuring "Patch: Updates the lfa ATM device driver to V1.0.17" (OSFPAT00006900505)
Configuring "Patch: Fixes automount problem" (OSFPAT00000300505)
Configuring "Patch: Fix for tclhelp failure" (OSFPAT00013200505)
Configuring "Patch: SCSI_MC_GENERIC-READ_ELEMENT_STATUS fails" (OSFPAT00008300505)
Configuring "Patch: Fix for System Management Station daemon" (OSFPAT00007500505)
Configuring "Patch: Fixes incorrect date and time stamp on new directory" (OSFPAT00016700505)
Configuring "Patch: Fix for pax and vdump problems" (OSFPAT00007900505)
Configuring "Patch: Provides missing compose definitions for ISO8859-15" (OSFPAT00000800505)
Configuring "Patch: Hardware manager inaccurately reports CPU speed" (OSFPAT00006100505)
Configuring "Patch: Cursor displays incorrectly when image plane set to 1" (OSFPAT00006200505)
Configuring "Patch: Fix for lbxproxy utility" (OSFPAT00001100505)
Configuring "Patch: Drawing problems with PowerStorm 4D10T graphics card" (OSFPAT00001200505)
Configuring "Patch: Fixes btcreate and btextract problems" (OSFPAT00006400505)
Configuring "Patch: Fixes a hang in the shutdown process" (OSFPAT00006500505)
Configuring "Patch: Adds support for euro character to keymap files" (OSFPAT00012400505)
Configuring "Patch: Fixes memory leak in libXm" (OSFPAT00018000505)
Configuring "Patch: Fix for memory leaks in Xlib" (OSFPAT00017400505)
Configuring "Patch: Fixes a timeout table overflow system panic" (OSFPAT00012200505)
Configuring "Patch: versw command can core dump during rolling upgrade" (OSFPAT00009000505)
Configuring "Patch: Fix for threaded applications problem" (OSFPAT00012600505)
Configuring "Patch: Fixes a problem with the dlsym routine" (OSFPAT00009700505)
Configuring "Patch: Security (SSRT0683U)" (OSFPAT00019600505)
Configuring "Patch: Updates the Danish (da_DK.ISO8859-1) locale" (OSFPAT00001400505)
Configuring "Patch: Fixes cron problems" (OSFPAT00021100505)
Configuring "Patch: Fixes conflicting cuserid declarations" (OSFPAT00016300505)
Configuring "Patch: Fixes a problem that occurs in multibyte locales" (OSFPAT00001500505)
Configuring "Patch: Corrects a problem in the lat driver" (OSFPAT00011800505)
Configuring "Patch: Fixes a memory leak in Xt" (OSFPAT00015000505)
Configuring "Patch: Fix for rm_state_change panic" (OSFPAT00008600505)
Configuring "Patch: Fix for dn_setup core dump" (OSFPAT00008100505)
Configuring "Patch: Corrects a hardware probe time hang" (OSFPAT00008400505)
Configuring "Patch: Fixes a problem with routines in the libst library" (OSFPAT00006700505)
Configuring "Patch: Adding swap partition less than 8KB causes problems" (OSFPAT00008900505)
Configuring "Patch: Overlap checking in MKFDMN and NEWFS fails" (OSFPAT00009500505)
Configuring "Patch: System panic occurs when auditing is enabled" (OSFPAT00012000505)
Configuring "Patch: Fix for what command" (OSFPAT00019200505)
Configuring "Patch: Performance problem in Cluster File System" (OSFPAT00014800505)
Configuring "Patch: Potential hang on booting a cluster" (OSFPAT00020700505)
Configuring "Patch: Fix for nfscast error message" (OSFPAT00003100505)
```

```
Configuring "Patch: Corrects problem with mv command deleting files" (OSFPAT00020500505)
Configuring "Patch: System panics when running ATM" (OSFPAT00003300505)
Configuring "Patch: Bootlink can fail on AlphaStations 600, 600A, 500/400" (OSFPAT00018400505)
Configuring "Patch: Fixes a problem with the find command" (OSFPAT00003500505)
Configuring "Patch: Fixes problems in the Compaq C compiler" (OSFPAT00019800505)
Configuring "Patch: OS only looks in slot 0 for primary CPU" (OSFPAT00003600505)
Configuring "Patch: Fixes a tftpd problem" (OSFPAT00003700505)
Configuring "Patch: Fixes linker (ld) problems" (OSFPAT00003800505)
Configuring "Patch: Incorrect bcache size returned to kernel from HWRPB" (OSFPAT00017800505)
Configuring "Patch: Security (SSRT0656U)" (OSFPAT00007600505)
Configuring "Patch: b-tree index for directory could become corrupted" (OSFPAT00019000505)
Configuring "Patch: advscan does not display bootable partitions properly" (OSFPAT00018800505)
Configuring "Patch: System hangs when running granularity hints" (OSFPAT00014100505)
Configuring "Patch: Fixes a problem with the grep command" (OSFPAT00001900505)
Configuring "Patch: Improper handling of PCI options cards" (OSFPAT00015400505)
Configuring "Patch: Fixes a kernel memory fault when using ATM" (OSFPAT00002300505)
Configuring "Patch: ATM LAN emulation fails with ATM Meteor 351 board" (OSFPAT00017000505)
Configuring "Patch: Incorrect warning messages about mounted filesystems" (OSFPAT00013000505)
Configuring "Patch: Fix for VMAC functionality when used with NETrain" (OSFPAT00002500505)
Configuring "Patch: Security (SSRT0636U)" (OSFPAT00011400505)
Configuring "Patch: Changes quotactl prototype to meet POSIX standards" (OSFPAT00002700505)
Configuring "Patch: Fix for EVM problems on some Alpha EV6 systems" (OSFPAT00002200505)
Configuring "Patch: Updates emx Fiber Channel driver to revision 1.22" (OSFPAT00016100505)
Configuring "Patch: Unnecessary error messages written to lpr log file" (OSFPAT00015700505)
Configuring "Patch: Disks can become inaccessible on a cluster node" (OSFPAT00018600505)
Configuring "Patch: Provides the latest driver for PowerStorm 4D10T" (OSFPAT00005100505)
Configuring "Patch: Fixes potential source code computability problem" (OSFPAT00019400505)
Configuring "Patch: Fixes errors seen when compiling with the -om switch" (OSFPAT00005300505)
Configuring "Patch: libXm memory leak when creating widgets" (OSFPAT00018200505)
Configuring "Patch: Memory leaks occur when creating widgets" (OSFPAT00017600505)
Configuring "Patch: Memory leak when creating and destroying widgets" (OSFPAT00015200505)
Configuring "Patch: Static library fix for libDXm" (OSFPAT00007000505)
Configuring "Patch: Fix for threads created by taso programs" (OSFPAT00012800505)
Configuring "Patch: prof profiling tool causes segmentation fault" (OSFPAT00007300505)
Configuring "Patch: Cannot change file permission using libst routines" (OSFPAT00007200505)
Configuring "Patch: Security (SSRT0656U)" (OSFPAT00010000505)
Configuring "Patch: Security (SSRT0636U)" (OSFPAT00007400505)
Configuring "Patch: Kernel panics Classical IP over lfa ATM driver" (OSFPAT00003200505)
Configuring "Patch: MKFDMN NEWFS fails for third party drivers in cluster" (OSFPAT00009900505)
Configuring "Patch: Static library fix for libevm" (OSFPAT00007100505)
Configuring "Patch: Fixes a problem in uucp" (OSFPAT00011600505)
```

```
Configuring "Patch: pax opens and truncated pre-existing files" (OSFPAT00009800505)

Beginning kernel build...


Do you have a pre-existing configuration file?: y

*** KERNEL CONFIGURATION AND BUILD PROCEDURE ***

Enter a name for the kernel configuration file. [IDIOM2]:  Return

A configuration file with the name 'IDIOM2' already exists.
Do you want to replace it? (y/n) [n]: y

Saving /sys/conf/IDIOM2 as /sys/conf/IDIOM2.bck


*** KERNEL OPTION SELECTION ***

    Selection   Kernel Option
-----------------------------------------------------------------
 1 System V Devices
 2 NTP V3 Kernel Phase Lock Loop (NTP_TIME)
 3 Kernel Breakpoint Debugger (KDEBUG)
 4 Packetfilter driver (PACKETFILTER)
 5 Point-to-Point Protocol (PPP)
 6 STREAMS pckt module (PCKT)
 7 X/Open Transport Interface (XTISO, TIMOD, TIRDWR)
 8 ISO 9660 Compact Disc File System (CDFS)
 9 Audit Subsystem
 10 ATM UNI 3.0/3.1 ILMI (ATMILMI3X)
 11 IP Switching over ATM (ATMIFMP)
 12 LAN Emulation over ATM (LANE)
 13 Classical IP over ATM (ATMIP)
 14 ATM UNI 3.0/3.1 Signalling for SVCs (UNI3X)
 15 Asynchronous Transfer Mode (ATM)
 16 All of the above
 17 None of the above
 18 Help
 19 Display all options again
-----------------------------------------------------------------

Enter your choices.

Choices (for example, 1 2 4-6) [17]: 8

You selected the following kernel options:
 ISO 9660 Compact Disc File System (CDFS)

Is that correct? (y/n) [y]:  Return

Do you want to edit the configuration file? (y/n) [n]:


*** PERFORMING KERNEL BUILD ***

A log file listing special device files is located in /dev/MAKEDEV.log
 Working....Thu Sep 21 12:57:42 EDT 2000
 Working....Thu Sep 21 12:59:44 EDT 2000

The new kernel is /sys/IDIOM2/vmunix


 A reboot is necessary to complete the patch installation. Do
 you want to reboot now? [y/n] [y]:  Return

Existing kernel copied to /vmunix.PrePatch.

New Kernel (/sys/IDIOM2/vmunix) moved to /vmunix.

    *** successfully installed 98 patches; failed to install 0 pathes ***

   * A system reboot of the patched system is required for the successfully installed patches.
```

6.2 TruCluster Patch Installation in Rolling Upgrade

The example in this section illustrates the installation of a patch kit during a rolling upgrade. When following this example, note the following conventions:

- The cluster ID of the lead member is 10.
- During the roll stage, you will roll each member. This example shows the roll of only one member, which has the ID of 61.
- The output of booting processes in this sample has been truncated.

```
# clu_upgrade setup 10

This is the cluster upgrade program.
You have indicated that you want to perform the 'setup' stage of the
upgrade.

Do you want to continue to upgrade the cluster? [yes]: Return

Are you running the clu_upgrade command to upgrade to a new version of
the base operating system and cluster software? [yes]: no

Are you running the clu_upgrade command to apply a rolling patch? [yes]: Return

Backing-up member specific data for member: 10
.
Creating tagged files.
.....................................................................
.....................................................................
.....................................................................

The cluster upgrade 'setup' stage has completed successfully.
Reboot all cluster members except member: '10'
:
:


The 'setup' stage of the upgrade has completed successfully.

# clu_upgrade preinstall Return

This is the cluster upgrade program.
You have indicated that you want to perform the 'preinstall' stage of the
upgrade.

Do you want to continue to upgrade the cluster? [yes]: Return
Checking tagged files.
.............................................................
The cluster upgrade 'preinstall' stage has completed successfully.
You can now run the dupatch command on the lead member.


# ./dupatch

Enter path to the top of the patch distribution,
or enter "q" to quit : .

        * A new version of patch tools required for patch management
          is now being installed on your system.

        * Tools updated, invoking the updated Patch Utility...

Tru64 UNIX Patch Utility (Rev. 27-04)
=========================
        - This dupatch session is logged in /var/adm/patch/log/session.log

    Main Menu:
    ---------

    1)  Patch Installation
    2)  Patch Deletion

    3)  Patch Documentation
    4)  Patch Tracking

    5)  Patch Baseline Analysis/Adjustment

    h)  Help on Command Line Interface
```

```
    q)  Quit

Enter your choice: 1

Checking Cluster State...done

 Tru64 UNIX Patch Utility (Rev. 27-04)
 =========================
        - This dupatch session is logged in /var/adm/patch/log/session.log

     Patch Installation Menu:
     ------------------------

    1)  Pre-Installation Check ONLY
    2)  Check & Install patches in Single-User Mode
    3)  Check and Install in Multi-User mode

    b)  Back to Main Menu
    q)  Quit

Enter your choice: 3

                *** Installation Warning ***

You have chosen to install patches onto this system while it is running in
Multi-User mode. Some patches may directly affect core operating system
operations. To insure the proper operation of all applications, it is
strongly suggested that you install these patches while the system is in
Single-User mode. If this cannot be done, install these patches when the
system is as lightly loaded as possible (i.e. not running production
environments, no users logged on, etc.).

Do you wish to continue? (y/n) [y]: y

The products listed below are optional:

     There may be more optional products than can be presented on a single
     screen. If this is the case, you can choose products screen by screen
     or all at once on the last screen. All of the choices you make will
     be collected for your confirmation before any products are installed.

     1) Patches for Tru64 UNIX V5.0A
     2) Patches for TruCluster Server V5.0A

Or you may choose one of the following options:

     3) ALL of the above
     4) CANCEL selections and redisplay menus
     5) EXIT without installing any products

Enter your choices or press RETURN to redisplay menus.

Choices (for example, 1 2 4-6): 3

You are installing patches (to be selected) from the following products:

        Patches for Tru64 UNIX V5.0A
        Patches for TruCluster Server V5.0A

Is this correct? (y/n): y

Gathering patch information...
  (depending upon the size of the patch kit, this may take awhile)


                *** Start of Special Instructions  ***



                *** There are NO Special Instructions  ***


        Press RETURN to proceed...


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

    To Make Patches Reversible - PLEASE READ THE FOLLOWING INFORMATION:
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   - You have the option to make the patches reversible so you can
     revert the system to its state prior to the installation of a patch.

   - Reversibility is achieved by compressing and saving a copy of the
     files being replaced by the patches. These files would be restored
     to the system if you choose to delete a patch.

   - If you choose to make patches NON-reversible, then the system cannot
     be restored to the state prior to the installation of a patch; you
     will not be able to delete the patches later.

   - This patch kit may force a small set of patches to be reversible to
     ensure your upgrades to future versions of Tru64 UNIX are successful.
     The Patch Utility will make those patches reversible automatically.

     Refer to the Release Notes / Installation Instructions provided with
     this patch kit.

Do you want the patches to be reversible? [y]: Return

     By default, the backup copies of the installed patches will be saved in
     "/var/adm/patch/backup".

     If you have limited space in /var, you may want to make the backup
     directory the mount point for a separate disk partition, an NFS mounted
     directory, or a symbolic link to another file system.

     You must ensure the backup directory is configured the same way during
     any patch removal operations.

Your current setup of "/var/adm/patch/backup" is:

        * A plain directory (not a mount point or a symbolic link)

Do you want to proceed with the installation with this setup? [y]: Return


Enter any notes about this operation that you would like stored for
future reference (To end your input, enter a "."):

: Installing IPK for 5.0a on 3 nodes
: .

The patches listed below are optional:

     There may be more optional patches than can be presented on a single
     screen. If this is the case, you can choose patches screen by screen
     or all at once on the last screen. All of the choices you make will
     be collected for your confirmation before any patches are installed.

 - Tru64_UNIX_V5.0A / Cluster Kernel Patches:
     1) Patch 0090.00 - versw command can core dump during rolling upgrade

 - Tru64_UNIX_V5.0A / Commands, Shells, & Utilities Patches:
     2) Patch 0015.00 - Fixes a problem that occurs in multibyte locales
     3) Patch 0019.00 - Fixes a problem with the grep command
     4) Patch 0035.00 - Fixes a problem with the find command
     5) Patch 0041.00 - Corrects problem with the fgrep command
     6) Patch 0042.00 - Fixes problem with the restore command
     7) Patch 0050.00 - crontab jobs run multiple times in same minute
     8) Patch 0064.00 - Fixes btcreate and btextract problems

--- MORE TO FOLLOW ---
Enter your choices or press RETURN to display the next screen.

Choices (for example, 1 2 4-6): Return

     9) Patch 0065.00 - Fixes a hang in the shutdown process
    10) Patch 0068.00 - Fix for vrestore problems
    11) Patch 0079.00 - Fix for pax and vdump problems
    12) Patch 0098.00 - pax opens and truncated pre-existing files

 - Tru64_UNIX_V5.0A / Common Desktop Environment (CDE) Patches:
    13) Patch 0001.00 - CDE does not recreate list of application groups

 - Tru64_UNIX_V5.0A / Filesystem Patches:
    14) Patch 0027.00 - Changes quotactl prototype to meet POSIX standards
    15) Patch 0031.00 - Fix for nfscast error message
    16) Patch 0047.00 - UFS disk quotas are not updating automatically
    17) Patch 0077.00 - Fix for AdvFS kernerl memory fault problem
    18) Patch 0078.00 - Fix for advscan utility
    19) Patch 0096.00 - Fix for sendmsg, nsendmsg, recvmsg, and nrecvmsg
```

```
 - Tru64_UNIX_V5.0A / Hardware Configuration Patches:
    20) Patch 0054.00 - Provides PCI Resource Mgmt support for Atalla AXL200

--- MORE TO FOLLOW ---
Enter your choices or press RETURN to display the next screen.

Choices (for example, 1 2 4-6): Return

    21) Patch 0061.00 - Hardware manager inaccurately reports CPU speed
    22) Patch 0081.00 - Fix for dn_setup core dump
    23) Patch 0083.00 - SCSI_MC_GENERIC-READ_ELEMENT_STATUS fails
    24) Patch 0102.00 - Fixes a panic during a multi-node reboot

 - Tru64_UNIX_V5.0A / I/O Device Handling Patches:
    25) Patch 0051.00 - Provides the latest driver for PowerStorm 4D10T
    26) Patch 0059.00 - Updates emx Fiber Channel driver to revision 1.22
    27) Patch 0084.00 - Corrects a hardware probe time hang
    28) Patch 0103.00 - Fixes CAM disk problems

 - Tru64_UNIX_V5.0A / I18N Patches:
    29) Patch 0014.00 - Updates the Danish (da_DK.ISO8859-1) locale

 - Tru64_UNIX_V5.0A / Kernel Patches:
    30) Patch 0036.00 - OS only looks in slot 0 for primary CPU
    31) Patch 0062.00 - Cursor displays incorrectly when image plane set to 1

--- MORE TO FOLLOW ---
Enter your choices or press RETURN to display the next screen.

Choices (for example, 1 2 4-6): Return


 - Tru64_UNIX_V5.0A / Library Patches:
    32) Patch 0008.00 - Provides missing compose definitions for ISO8859-15
    33) Patch 0022.00 - Fix for EVM problems on some Alpha EV6 systems
    34) Patch 0071.00 - Static library fix for libevm
    35) Patch 0095.00 - Overlap checking in MKFDMN and NEWFS fails
    36) Patch 0097.00 - Fixes a problem with the dlsym routine
    37) Patch 0099.00 - MKFDMN NEWFS fails for third party drivers in cluster

 - Tru64_UNIX_V5.0A / Memory Channel Patches:
    38) Patch 0086.00 - Fix for rm_state_change panic

 - Tru64_UNIX_V5.0A / Network Patches:
    39) Patch 0023.00 - Fixes a kernel memory fault when using ATM
    40) Patch 0025.00 - Fix for VMAC functionality when used with NETrain
    41) Patch 0032.00 - Kernel panics Classical IP over lfa ATM driver
    42) Patch 0033.00 - System panics when running ATM
    43) Patch 0037.00 - Fixes a tftpd problem

--- MORE TO FOLLOW ---
Enter your choices or press RETURN to display the next screen.

Choices (for example, 1 2 4-6): Return

    44) Patch 0069.00 - Updates the lfa ATM device driver to V1.0.17
    45) Patch 0091.00 - Performance problem in Cluster File System

 - Tru64_UNIX_V5.0A / Printers Patches:
    46) Patch 0101.00 - Fixes various printing problems

 - Tru64_UNIX_V5.0A / Security Related Patches:
    47) Patch 0074.00 - Security (SSRT0636U)
    48) Patch 0076.00 - Security (SSRT0656U)
    49) Patch 0087.00 - Security (SSRT0636U)
    50) Patch 0100.00 - Security (SSRT0656U)

 - Tru64_UNIX_V5.0A / Software Development Environment Patches:
    51) Patch 0030.00 - Fixes problems in the Compaq C compiler
    52) Patch 0038.00 - Fixes linker (ld) problems
    53) Patch 0053.00 - Fixes errors seen when compiling with the -om switch
    54) Patch 0066.00 - Problems with kdbx extensions mount and swap
    55) Patch 0067.00 - Fixes a problem with routines in the libst library

--- MORE TO FOLLOW ---
Enter your choices or press RETURN to display the next screen.

Choices (for example, 1 2 4-6): Return

    56) Patch 0072.00 - Cannot change file permission using libst routines
    57) Patch 0073.00 - prof profiling tool causes segmentation fault
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 - Tru64_UNIX_V5.0A / System Administration Patches:
    58) Patch 0002.00 - Compaq SNMP subagent core dumps
    59) Patch 0003.00 - Fixes automount problem
    60) Patch 0007.00 - Fixes problems with dxaccounts application
    61) Patch 0075.00 - Fix for System Management Station daemon

 - Tru64_UNIX_V5.0A / Threads Patches:
    62) Patch 0080.00 - Fix for threaded applications problem

 - Tru64_UNIX_V5.0A / VM Patches:
    63) Patch 0089.00 - Adding swap partition less than 8KB causes problems

 - Tru64_UNIX_V5.0A / X11 Patches:
    64) Patch 0009.00 - Fix for problem with Caps Lock setting
    65) Patch 0010.00 - Fixes a problem with the svn widget of libDXm.so

--- MORE TO FOLLOW ---
Enter your choices or press RETURN to display the next screen.

Choices (for example, 1 2 4-6): Return

    66) Patch 0011.00 - Fix for lbxproxy utility
    67) Patch 0012.00 - Drawing problems with PowerStorm 4D10T graphics card
    68) Patch 0070.00 - Static library fix for libDXm

 - TruCluster_V5.0A / Cluster Kernel Patches:
    69) Patch 0001.00 - mounts that return ESTALE may loop forever
    70) Patch 0005.00 - Fixes a kernel memory fault panic
    71) Patch 0008.00 - Fix for MC2 vhub cluster panic
    72) Patch 0011.00 - Fixes problem on cluster nodes
    73) Patch 0012.00 - Corrects problem with cluster member

 - TruCluster_V5.0A / Cluster Services Patches:
    74) Patch 0003.00 - Delivers a new stripped clu_genvmunix

--- MORE TO FOLLOW ---
Enter your choices or press RETURN to display the next screen.

Choices (for example, 1 2 4-6):


Or you may choose one of the following options:

    75) ALL of the above
    76) CANCEL selections and redisplay menus
    77) EXIT without installing any patches

Enter your choices or press RETURN to redisplay menus.

Choices (for example, 1 2 4-6): 75

You are installing the following optional patches:

 - Tru64_UNIX_V5.0A / Cluster Kernel Patches:
       Patch 0090.00 - versw command can core dump during rolling upgrade

 - Tru64_UNIX_V5.0A / Commands, Shells, & Utilities Patches:
       Patch 0015.00 - Fixes a problem that occurs in multibyte locales
       Patch 0019.00 - Fixes a problem with the grep command
       Patch 0035.00 - Fixes a problem with the find command
       Patch 0041.00 - Corrects problem with the fgrep command
       Patch 0042.00 - Fixes problem with the restore command
       Patch 0050.00 - crontab jobs run multiple times in same minute
       Patch 0064.00 - Fixes btcreate and btextract problems
       Patch 0065.00 - Fixes a hang in the shutdown process
       Patch 0068.00 - Fix for vrestore problems
       Patch 0079.00 - Fix for pax and vdump problems
       Patch 0098.00 - pax opens and truncated pre-existing files

 - Tru64_UNIX_V5.0A / Common Desktop Environment (CDE) Patches:
       Patch 0001.00 - CDE does not recreate list of application groups

Press RETURN to display the next screen: Return


 - Tru64_UNIX_V5.0A / Filesystem Patches:
       Patch 0027.00 - Changes quotactl prototype to meet POSIX standards
       Patch 0031.00 - Fix for nfscast error message
       Patch 0047.00 - UFS disk quotas are not updating automatically
       Patch 0077.00 - Fix for AdvFS kernerl memory fault problem
       Patch 0078.00 - Fix for advscan utility
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        Patch 0096.00 - Fix for sendmsg, nsendmsg, recvmsg, and nrecvmsg

 - Tru64_UNIX_V5.0A / Hardware Configuration Patches:
        Patch 0054.00 - Provides PCI Resource Mgmt support for Atalla AXL200
        Patch 0061.00 - Hardware manager inaccurately reports CPU speed
        Patch 0081.00 - Fix for dn_setup core dump
        Patch 0083.00 - SCSI_MC_GENERIC-READ_ELEMENT_STATUS fails
        Patch 0102.00 - Fixes a panic during a multi-node reboot

 - Tru64_UNIX_V5.0A / I/O Device Handling Patches:
        Patch 0051.00 - Provides the latest driver for PowerStorm 4D10T
        Patch 0059.00 - Updates emx Fiber Channel driver to revision 1.22
        Patch 0084.00 - Corrects a hardware probe time hang

Press RETURN to display the next screen: Return

        Patch 0103.00 - Fixes CAM disk problems

 - Tru64_UNIX_V5.0A / I18N Patches:
        Patch 0014.00 - Updates the Danish (da_DK.ISO8859-1) locale

 - Tru64_UNIX_V5.0A / Kernel Patches:
        Patch 0036.00 - OS only looks in slot 0 for primary CPU
        Patch 0062.00 - Cursor displays incorrectly when image plane set to 1

 - Tru64_UNIX_V5.0A / Library Patches:
        Patch 0008.00 - Provides missing compose definitions for ISO8859-15
        Patch 0022.00 - Fix for EVM problems on some Alpha EV6 systems
        Patch 0071.00 - Static library fix for libevm
        Patch 0095.00 - Overlap checking in MKFDMN and NEWFS fails
        Patch 0097.00 - Fixes a problem with the dlsym routine
        Patch 0099.00 - MKFDMN NEWFS fails for third party drivers in cluster

 - Tru64_UNIX_V5.0A / Memory Channel Patches:
        Patch 0086.00 - Fix for rm_state_change panic

Press RETURN to display the next screen: Return


 - Tru64_UNIX_V5.0A / Network Patches:
        Patch 0023.00 - Fixes a kernel memory fault when using ATM
        Patch 0025.00 - Fix for VMAC functionality when used with NETrain
        Patch 0032.00 - Kernel panics Classical IP over lfa ATM driver
        Patch 0033.00 - System panics when running ATM
        Patch 0037.00 - Fixes a tftpd problem
        Patch 0069.00 - Updates the lfa ATM device driver to V1.0.17
        Patch 0091.00 - Performance problem in Cluster File System

 - Tru64_UNIX_V5.0A / Printers Patches:
        Patch 0101.00 - Fixes various printing problems

 - Tru64_UNIX_V5.0A / Security Related Patches:
        Patch 0074.00 - Security (SSRT0636U)
        Patch 0076.00 - Security (SSRT0656U)
        Patch 0087.00 - Security (SSRT0636U)
        Patch 0100.00 - Security (SSRT0656U)

Press RETURN to display the next screen: Return


 - Tru64_UNIX_V5.0A / Software Development Environment Patches:
        Patch 0030.00 - Fixes problems in the Compaq C compiler
        Patch 0038.00 - Fixes linker (ld) problems
        Patch 0053.00 - Fixes errors seen when compiling with the -om switch
        Patch 0066.00 - Problems with kdbx extensions mount and swap
        Patch 0067.00 - Fixes a problem with routines in the libst library
        Patch 0072.00 - Cannot change file permission using libst routines
        Patch 0073.00 - prof profiling tool causes segmentation fault

 - Tru64_UNIX_V5.0A / System Administration Patches:
        Patch 0002.00 - Compaq SNMP subagent core dumps
        Patch 0003.00 - Fixes automount problem
        Patch 0007.00 - Fixes problems with dxaccounts application
        Patch 0075.00 - Fix for System Management Station daemon

 - Tru64_UNIX_V5.0A / Threads Patches:
        Patch 0080.00 - Fix for threaded applications problem

Press RETURN to display the next screen: Return


 - Tru64_UNIX_V5.0A / VM Patches:
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        Patch 0089.00 - Adding swap partition less than 8KB causes problems

 - Tru64_UNIX_V5.0A / X11 Patches:
        Patch 0009.00 - Fix for problem with Caps Lock setting
        Patch 0010.00 - Fixes a problem with the svn widget of libDXm.so
        Patch 0011.00 - Fix for lbxproxy utility
        Patch 0012.00 - Drawing problems with PowerStorm 4D10T graphics card
        Patch 0070.00 - Static library fix for libDXm

 - TruCluster_V5.0A / Cluster Kernel Patches:
        Patch 0001.00 - mounts that return ESTALE may loop forever
        Patch 0005.00 - Fixes a kernel memory fault panic
        Patch 0008.00 - Fix for MC2 vhub cluster panic
        Patch 0011.00 - Fixes problem on cluster nodes
        Patch 0012.00 - Corrects problem with cluster member

 - TruCluster_V5.0A / Cluster Services Patches:
        Patch 0003.00 - Delivers a new stripped clu_genvmunix

Press RETURN to display the next screen: Return


Is this correct? (y/n): y

Checking patch prerequisites and patch file applicability...
  (depending upon the number of patches you select, this may take awhile)

************************* CAUTION **********************************

        Interruption of this phase of the operation will corrupt your
        operating system software and compromise the patch database
        integrity.

        DO NOT Ctrl/C, power off your system, or in any other way
        interrupt the patch operation. The patch operation is complete
        when you are returned to the Patch Utility menus.

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


=== Installing "Tru64 UNIX V5.0A" Patches:

68 subsets will be installed.

Loading subset 1 of 68 ...

Patch: Corrects problem with the fgrep command
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 2 of 68 ...

Patch: Fixes problem with the restore command
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 3 of 68 ...

Patch: CDE does not recreate list of application groups
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 4 of 68 ...

Patch: UFS disk quotas are not updating automatically
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 5 of 68 ...

Patch: Problems with kdbx extensions mount and swap
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 6 of 68 ...

Patch: Fixes a problem with the svn widget of libDXm.so
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 7 of 68 ...
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Patch: Compaq SNMP subagent core dumps
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 8 of 68 ...

Patch: Fix for vrestore problems
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 9 of 68 ...

Patch: Updates the lfa ATM device driver to V1.0.17
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 10 of 68 ...

Patch: Fixes automount problem
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 11 of 68 ...

Patch: SCSI_MC_GENERIC-READ_ELEMENT_STATUS fails
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 12 of 68 ...

Patch: Fix for AdvFS kernerl memory fault problem
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 13 of 68 ...

Patch: Fixes problems with dxaccounts application
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 14 of 68 ...

Patch: Fix for threaded applications problem
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 15 of 68 ...

Patch: Fix for System Management Station daemon
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 16 of 68 ...

Patch: Fix for advscan utility
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 17 of 68 ...

Patch: Fix for pax and vdump problems
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 18 of 68 ...

Patch: Updates emx Fiber Channel driver to revision 1.22
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 19 of 68 ...

Patch: Provides missing compose definitions for ISO8859-15
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 20 of 68 ...

Patch: Fix for problem with Caps Lock setting
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying
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Loading subset 21 of 68 ...

Patch: Hardware manager inaccurately reports CPU speed
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 22 of 68 ...

Patch: Cursor displays incorrectly when image plane set to 1
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 23 of 68 ...

Patch: Fix for lbxproxy utility
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 24 of 68 ...

Patch: Drawing problems with PowerStorm 4D10T graphics card
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 25 of 68 ...

Patch: Fixes btcreate and btextract problems
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 26 of 68 ...

Patch: Fixes a hang in the shutdown process
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 27 of 68 ...

Patch: Fixes a panic during a multi-node reboot
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 28 of 68 ...

Patch: versw command can core dump during rolling upgrade
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 29 of 68 ...

Patch: Fix for sendmsg, nsendmsg, recvmsg, and nrecvmsg
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 30 of 68 ...

Patch: Fixes a problem with the dlsym routine
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 31 of 68 ...

Patch: Updates the Danish (da_DK.ISO8859-1) locale
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 32 of 68 ...

Patch: Fixes a problem that occurs in multibyte locales
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 33 of 68 ...

Patch: Fix for rm_state_change panic
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 34 of 68 ...

Patch: Security (SSRT0636U)
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
```

```
   Verifying

Loading subset 35 of 68 ...

Patch: Fix for dn_setup core dump
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 36 of 68 ...

Patch: Corrects a hardware probe time hang
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 37 of 68 ...

Patch: Fixes a problem with routines in the libst library
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 38 of 68 ...

Patch: Adding swap partition less than 8KB causes problems
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 39 of 68 ...

Patch: Overlap checking in MKFDMN and NEWFS fails
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 40 of 68 ...

Patch: Fixes problems in the Compaq C compiler
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 41 of 68 ...

Patch: Fix for nfscast error message
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 42 of 68 ...

Patch: System panics when running ATM
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 43 of 68 ...

Patch: Fixes a problem with the find command
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 44 of 68 ...

Patch: OS only looks in slot 0 for primary CPU
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 45 of 68 ...

Patch: Fixes a tftpd problem
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 46 of 68 ...

Patch: Fixes linker (ld) problems
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 47 of 68 ...

Patch: Security (SSRT0656U)
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 48 of 68 ...
```

```
Patch: Fixes a problem with the grep command
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 49 of 68 ...

Patch: Fixes various printing problems
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 50 of 68 ...

Patch: Fixes a kernel memory fault when using ATM
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 51 of 68 ...

Patch: Fix for VMAC functionality when used with NETrain
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 52 of 68 ...

Patch: Fixes CAM disk problems
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 53 of 68 ...

Patch: Changes quotactl prototype to meet POSIX standards
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 54 of 68 ...

Patch: Fix for EVM problems on some Alpha EV6 systems
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 55 of 68 ...

Patch: Performance problem in Cluster File System
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 56 of 68 ...

Patch: crontab jobs run multiple times in same minute
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 57 of 68 ...

Patch: Provides the latest driver for PowerStorm 4D10T
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 58 of 68 ...

Patch: Fixes errors seen when compiling with the -om switch
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 59 of 68 ...

Patch: Provides PCI Resource Mgmt support for Atalla AXL200
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 60 of 68 ...

Patch: pax opens and truncated pre-existing files
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying

Loading subset 61 of 68 ...

Patch: Static library fix for libevm
   Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
   Verifying
```

```
 Loading subset 62 of 68 ...

 Patch: MKFDMN NEWFS fails for third party drivers in cluster
    Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
    Verifying

 Loading subset 63 of 68 ...

 Patch: Kernel panics Classical IP over lfa ATM driver
    Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
    Verifying

 Loading subset 64 of 68 ...

 Patch: Security (SSRT0636U)
    Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
    Verifying

 Loading subset 65 of 68 ...

 Patch: Security (SSRT0656U)
    Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
    Verifying

 Loading subset 66 of 68 ...

 Patch: Cannot change file permission using libst routines
    Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
    Verifying

 Loading subset 67 of 68 ...

 Patch: prof profiling tool causes segmentation fault
    Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
    Verifying

 Loading subset 68 of 68 ...

 Patch: Static library fix for libDXm
    Copying from /Patchkits/patch_kit/Tru64_UNIX_V5.0A/kit (disk)
    Verifying

 68 of 68 subsets installed successfully.


 *** Starting protofile merges for "Tru64 UNIX V5.0A Patch Distribution"
(T64V50AAS0001-20000626OSF505,26-Jun-2000:15:22:42) ***


 Configuring "Patch: Corrects problem with the fgrep command" (OSFPAT00004100505)
 on member0

 Configuring "Patch: Fixes problem with the restore command" (OSFPAT00004200505)
 on member0

 Configuring "Patch: CDE does not recreate list of application groups"
 (OSFPAT00000100505) on member0

 Configuring "Patch: UFS disk quotas are not updating automatically"
 (OSFPAT00004700505) on member0

 Configuring "Patch: Problems with kdbx extensions mount and swap"
(OSFPAT00006600505) on member0

 Configuring "Patch: Fixes a problem with the svn widget of libDXm.so"
(OSFPAT00001000505) on member0

 Configuring "Patch: Compaq SNMP subagent core dumps" (OSFPAT00000200505)
on member0

 Configuring "Patch: Fix for vrestore problems" (OSFPAT00006800505) on member0

 Configuring "Patch: Updates the lfa ATM device driver to V1.0.17"
(OSFPAT00006900505) on member0

 Configuring "Patch: Fixes automount problem" (OSFPAT00000300505) on member0

 Configuring "Patch: SCSI_MC_GENERIC-READ_ELEMENT_STATUS fails"
(OSFPAT00008300505) on member0

 Configuring "Patch: Fix for AdvFS kernerl memory fault problem"
(OSFPAT00007700505) on member0
```

```
 Configuring "Patch: Fixes problems with dxaccounts application"
(OSFPAT00000700505) on member0

 Configuring "Patch: Fix for threaded applications problem"
(OSFPAT00008000505) on member0

 Configuring "Patch: Fix for System Management Station daemon"
(OSFPAT00007500505) on member0

 Configuring "Patch: Fix for advscan utility" (OSFPAT00007800505) on member0

 Configuring "Patch: Fix for pax and vdump problems" (OSFPAT00007900505) on member0

 Configuring "Patch: Updates emx Fiber Channel driver to revision 1.22"
(OSFPAT00005900505) on member0

 Configuring "Patch: Provides missing compose definitions for ISO8859-15"
(OSFPAT00000800505) on member0

 Configuring "Patch: Fix for problem with Caps Lock setting"
(OSFPAT00000900505) on member0

 Configuring "Patch: Hardware manager inaccurately reports CPU speed"
(OSFPAT00006100505) on member0

 Configuring "Patch: Cursor displays incorrectly when image plane set to 1"
(OSFPAT00006200505) on member0

 Configuring "Patch: Fix for lbxproxy utility" (OSFPAT00001100505) on member0

 Configuring "Patch: Drawing problems with PowerStorm 4D10T graphics card"
(OSFPAT00001200505) on member0

 Configuring "Patch: Fixes btcreate and btextract problems"
(OSFPAT00006400505) on member0

 Configuring "Patch: Fixes a hang in the shutdown process" (
OSFPAT00006500505) on member0

 Configuring "Patch: Fixes a panic during a multi-node reboot"
(OSFPAT00010200505) on member0

 Configuring "Patch: versw command can core dump during rolling upgrade"
(OSFPAT00009000505) on member0

 Configuring "Patch: Fix for sendmsg, nsendmsg, recvmsg, and nrecvmsg"
(OSFPAT00009600505) on member0

 Configuring "Patch: Fixes a problem with the dlsym routine"
(OSFPAT00009700505) on member0

 Configuring "Patch: Updates the Danish (da_DK.ISO8859-1) locale"
(OSFPAT00001400505) on member0

 Configuring "Patch: Fixes a problem that occurs in multibyte locales"
(OSFPAT00001500505) on member0

 Configuring "Patch: Fix for rm_state_change panic" (OSFPAT00008600505) on member0

 Configuring "Patch: Security (SSRT0636U)" (OSFPAT00008700505) on member0

 Configuring "Patch: Fix for dn_setup core dump" (OSFPAT00008100505) on member0

 Configuring "Patch: Corrects a hardware probe time hang"
(OSFPAT00008400505) on member0

 Configuring "Patch: Fixes a problem with routines in the libst library"
(OSFPAT00006700505) on member0

 Configuring "Patch: Adding swap partition less than 8KB causes problems"
(OSFPAT00008900505) on member0

 Configuring "Patch: Overlap checking in MKFDMN and NEWFS fails"
(OSFPAT00009500505) on member0

 Configuring "Patch: Fixes problems in the Compaq C compiler"
(OSFPAT00003000505) on member0

 Configuring "Patch: Fix for nfscast error message" (OSFPAT00003100505) on member0

 Configuring "Patch: System panics when running ATM" (OSFPAT00003300505) on member0
```

```
 Configuring "Patch: Fixes a problem with the find command" (OSFPAT00003500505)
on member0

 Configuring "Patch: OS only looks in slot 0 for primary CPU" (OSFPAT00003600505)
on member0

 Configuring "Patch: Fixes a tftpd problem" (OSFPAT00003700505) on member0

 Configuring "Patch: Fixes linker (ld) problems" (OSFPAT00003800505) on member0

 Configuring "Patch: Security (SSRT0656U)" (OSFPAT00007600505) on member0

 Configuring "Patch: Fixes a problem with the grep command" (OSFPAT00001900505)
on member0

 Configuring "Patch: Fixes various printing problems" (OSFPAT00010100505) on member0

 Configuring "Patch: Fixes a kernel memory fault when using ATM"
(OSFPAT00002300505) on member0

 Configuring "Patch: Fix for VMAC functionality when used with NETrain"
(OSFPAT00002500505) on member0

 Configuring "Patch: Fixes CAM disk problems" (OSFPAT00010300505) on member0

 Configuring "Patch: Changes quotactl prototype to meet POSIX standards"
(OSFPAT00002700505) on member0

 Configuring "Patch: Fix for EVM problems on some Alpha EV6 systems"
(OSFPAT00002200505) on member0

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(OSFPAT00009100505) on member0

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(OSFPAT00005000505) on member0

 Configuring "Patch: Provides the latest driver for PowerStorm 4D10T"
(OSFPAT00005100505) on member0

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(OSFPAT00005300505) on member0

 Configuring "Patch: Provides PCI Resource Mgmt support for Atalla AXL200"
(OSFPAT00005400505) on member0

 Configuring "Patch: pax opens and truncated pre-existing files"
(OSFPAT00009800505) on member0

 Configuring "Patch: Static library fix for libevm" (OSFPAT00007100505) on member0

 Configuring "Patch: MKFDMN NEWFS fails for third party drivers in cluster"
(OSFPAT00009900505) on member0

 Configuring "Patch: Kernel panics Classical IP over lfa ATM driver"
(OSFPAT00003200505) on member0

 Configuring "Patch: Security (SSRT0636U)" (OSFPAT00007400505) on member0

 Configuring "Patch: Security (SSRT0656U)" (OSFPAT00010000505) on member0

 Configuring "Patch: Cannot change file permission using libst routines"
(OSFPAT00007200505) on member0

 Configuring "Patch: prof profiling tool causes segmentation fault"
(OSFPAT00007300505) on member0

 Configuring "Patch: Static library fix for libDXm" (OSFPAT00007000505) on member0


 *** Finished protofile merges for "Tru64 UNIX V5.0A Patch Distribution"
(T64V50AAS0001-20000626OSF505,26-Jun-2000:15:22:42) ***


 Configuring "Patch: Corrects problem with the fgrep command" (OSFPAT00004100505)
on member10

 Configuring "Patch: Fixes problem with the restore command" (OSFPAT00004200505)
on member10

 Configuring "Patch: CDE does not recreate list of application groups"
```

```
(OSFPAT00000100505) on member10

 Configuring "Patch: UFS disk quotas are not updating automatically"
(OSFPAT00004700505) on member10

 Configuring "Patch: Problems with kdbx extensions mount and swap"
(OSFPAT00006600505) on member10

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(OSFPAT00006900505) on member10

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 Configuring "Patch: Provides PCI Resource Mgmt support for Atalla AXL200"
(OSFPAT00005400505) on member10

 Configuring "Patch: Static library fix for libDXm" (OSFPAT00007000505) on member10

 Configuring "Patch: prof profiling tool causes segmentation fault"
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(OSFPAT00003200505) on member10

 Configuring "Patch: MKFDMN NEWFS fails for third party drivers in cluster"
(OSFPAT00009900505) on member10

 Configuring "Patch: Static library fix for libevm" (OSFPAT00007100505) on member10

 Configuring "Patch: pax opens and truncated pre-existing files"
(OSFPAT00009800505) on member10


 === Installing "TruCluster Server V5.0A" Patches:

 6 subsets will be installed.

 Loading subset 1 of 6 ...

 Patch: Fixes a kernel memory fault panic
    Copying from /Patchkits/patch_kit/TruCluster_V5.0A/kit (disk)
    Verifying

 Loading subset 2 of 6 ...

 Patch: mounts that return ESTALE may loop forever
    Copying from /Patchkits/patch_kit/TruCluster_V5.0A/kit (disk)
    Verifying

 Loading subset 3 of 6 ...

 Patch: Fix for MC2 vhub cluster panic
    Copying from /Patchkits/patch_kit/TruCluster_V5.0A/kit (disk)
    Verifying

 Loading subset 4 of 6 ...

 Patch: Delivers a new stripped clu_genvmunix
    Copying from /Patchkits/patch_kit/TruCluster_V5.0A/kit (disk)
    Verifying

 Loading subset 5 of 6 ...

 Patch: Fixes problem on cluster nodes
    Copying from /Patchkits/patch_kit/TruCluster_V5.0A/kit (disk)
    Verifying

 Loading subset 6 of 6 ...

 Patch: Corrects problem with cluster member
    Copying from /Patchkits/patch_kit/TruCluster_V5.0A/kit (disk)
    Verifying

 6 of 6 subsets installed successfully.


 *** Starting protofile merges for "Tru64 UNIX V5.0A Patch Distribution"
(T64V50AAS0001-20000626TCR505,26-Jun-2000:15:25:36) ***


 Configuring "Patch: Fixes a kernel memory fault panic" (TCRPAT00000500505)
on member0

 Configuring "Patch: mounts that return ESTALE may loop forever"
(TCRPAT00000100505) on member0

 Configuring "Patch: Fix for MC2 vhub cluster panic" (TCRPAT00000800505) on member0

 Configuring "Patch: Delivers a new stripped clu_genvmunix" (TCRPAT00000300505)
on member0

 Configuring "Patch: Fixes problem on cluster nodes" (TCRPAT00001100505) on member0

 Configuring "Patch: Corrects problem with cluster member" (TCRPAT00001200505)
on member0


 *** Finished protofile merges for "Tru64 UNIX V5.0A Patch Distribution"
(T64V50AAS0001-20000626TCR505,26-Jun-2000:15:25:36) ***
```

```
 Configuring "Patch: Fixes a kernel memory fault panic" (TCRPAT00000500505)
on member10

 Configuring "Patch: mounts that return ESTALE may loop forever"
(TCRPAT00000100505) on member10

 Configuring "Patch: Fix for MC2 vhub cluster panic" (TCRPAT00000800505) on member10

 Configuring "Patch: Delivers a new stripped clu_genvmunix" (TCRPAT00000300505)
on member10

 Configuring "Patch: Fixes problem on cluster nodes" (TCRPAT00001100505) on member10

 Configuring "Patch: Corrects problem with cluster member" (TCRPAT00001200505)
on member10

 Beginning kernel build...


 Do you have a pre-existing configuration file?: y

 Enter the name of the pre-existing configuration file or
 press RETURN to use :

 *** KERNEL CONFIGURATION AND BUILD PROCEDURE ***

 Saving /sys/conf/ as /sys/conf/.bck

 Do you want to edit the configuration file? (y/n) [n]:  Return


 *** PERFORMING KERNEL BUILD ***
        Working....Fri Jun 30 10:44:08 EDT 2000

 The new kernel is /sys/nodename/vmunix
 The system needs to be rebooted in order to complete the patch installation.

 Please choose one of the following options.


                Reboot Menu:
                -----------


    1)  Reboot now
    2)  Schedule a reboot at a later time
    3)  Do nothing at this time

 Enter your choice: 1

 Existing kernel copied to cluster/members/{memb}/boot_partition/vmunix.PrePatch.

 New Kernel (/sys/nodename/vmunix) moved to
 cluster/members/{memb}/boot_partition/vmunix.


 CPU 0 halted
   halt code = 5
   HALT instruction executed
   PC = fffffc00005b3310

 CPU 0 booting

 .
 .
 .

 LAT started.
 Printer service started
 SysMan authentication server started
 CAA Applications now started
 Cluster sub-agent started
 cluster wall daemon started
 SysMan Station Server (smsd) started
 The system is ready.



 Compaq Tru64 UNIX V5.0A (Rev. 1094) (stone.grosys.com) console

 login: root
 Password:
 Last login: Thu Jun 29 14:49:11 EDT 2000 from bensyl.grosys.com
```

```
Compaq Tru64 UNIX V5.0A (Rev. 1094); Thu Jun 29 13:44:13 EDT 2000

The installation software has successfully installed your system.

There are logfiles that contain a record of your installation.  These are:

        /var/adm/smlogs/install.cdf     - configuration description file
        /var/adm/smlogs/install.log     - general log file
        /var/adm/smlogs/install.FS.log  - file system creation logs
        /var/adm/smlogs/setld.log       - log for the setld(8) utility
        /var/adm/smlogs/fverify.log     - verification log file


# clu_upgrade postinstall

This is the cluster upgrade program.
You have indicated that you want to perform the 'postinstall' stage of the
upgrade.

Do you want to continue to upgrade the cluster? [yes]:  Return

The 'postinstall' stage of the upgrade has completed successfully.
```

The following step involves performing the `cluster_upgrade roll` program on all other members of your cluster:

```
# clu_upgrade roll

This is the cluster upgrade program.
You have indicated that you want to perform the 'roll' stage of the
upgrade.

Do you want to continue to upgrade the cluster? [yes]:  Return

Backing up member-specific data for member: 61
.
The 'roll' stage has completed successfully.  This
member must be rebooted in order to run with the newly installed software.
Do you want to reboot this member at this time? []: y
You indicated that you want to reboot this member at this time.
Is that correct? [yes]:  Return
# syncing disks... done
drd: Clean ShutdowCP - SAVE_TERM routine to be called
CP - SAVE_TERM exited with hlt_req = 1, r0 = 00000000.00000000

halted CPU 0

halt code = 5
HALT instruction executed
PC = fffffc00005b3320

CPU 0 booting

.
.
.

Subsystem hwautoconfig was successfully configured.
Jun 30 14:40:03 update: started

Checking for Installation Tasks...

Executing Installation Tasks...
Rolling member specific files on member...CNX QDISK: Successfully claimed quorum disk, adding 1 vote.

Configuring "Patch: versw command can core dump during rolling upgrade" (OSFPAT00009000505) on member61

Configuring "Patch: Fixes a problem that occurs in multibyte locales" (OSFPAT00001500505) on member61

Configuring "Patch: Fixes a problem with the grep command" (OSFPAT00001900505) on member61

Configuring "Patch: Fixes a problem with the find command" (OSFPAT00003500505) on member61

Configuring "Patch: Corrects problem with the fgrep command" (OSFPAT00004100505) on member61

Configuring "Patch: Fixes problem with the restore command" (OSFPAT00004200505) on member61

Configuring "Patch: crontab jobs run multiple times in same minute" (OSFPAT00005000505) on member61

Configuring "Patch: Fixes btcreate and btextract problems" (OSFPAT00006400505) on member61

Configuring "Patch: Fixes a hang in the shutdown process" (OSFPAT00006500505) on member61
```

```
Configuring "Patch: Fix for vrestore problems" (OSFPAT00006800505) on member61
Configuring "Patch: Fix for pax and vdump problems" (OSFPAT00007900505) on member61
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Configuring "Patch: Updates emx Fiber Channel driver to revision 1.22" (OSFPAT00005900505) on member61
Configuring "Patch: Corrects a hardware probe time hang" (OSFPAT00008400505) on member61
Configuring "Patch: Fixes CAM disk problems" (OSFPAT00010300505) on member61
Configuring "Patch: Updates the Danish (da_DK.ISO8859-1) locale" (OSFPAT00001400505) on member61
Configuring "Patch: OS only looks in slot 0 for primary CPU" (OSFPAT00003600505) on member61
Configuring "Patch: Cursor displays incorrectly when image plane set to 1" (OSFPAT00006200505) on member61
Configuring "Patch: Provides missing compose definitions for ISO8859-15" (OSFPAT00000800505) on member61
Configuring "Patch: Fix for EVM problems on some Alpha EV6 systems" (OSFPAT00002200505) on member61
Configuring "Patch: Static library fix for libevm" (OSFPAT00007100505) on member61
Configuring "Patch: Overlap checking in MKFDMN and NEWFS fails" (OSFPAT00009500505) on member61
Configuring "Patch: Fixes a problem with the dlsym routine" (OSFPAT00009700505) on member61
Configuring "Patch: MKFDMN NEWFS fails for third party drivers in cluster" (OSFPAT00009900505) on member61
Configuring "Patch: Fix for rm_state_change panic" (OSFPAT00008600505) on member61
Configuring "Patch: Fixes a kernel memory fault when using ATM" (OSFPAT00002300505) on member61
Configuring "Patch: Fix for VMAC functionality when used with NETrain" (OSFPAT00002500505) on member61
Configuring "Patch: Kernel panics Classical IP over lfa ATM driver" (OSFPAT00003200505) on member61
Configuring "Patch: System panics when running ATM" (OSFPAT00003300505) on member61
Configuring "Patch: Fixes a tftpd problem" (OSFPAT00003700505) on member61
Configuring "Patch: Updates the lfa ATM device driver to V1.0.17" (OSFPAT00006900505) on member61
Configuring "Patch: Performance problem in Cluster File System" (OSFPAT00009100505) on member61
Configuring "Patch: Fixes various printing problems" (OSFPAT00010100505) on member61
Configuring "Patch: Security (SSRT0636U)" (OSFPAT00007400505) on member61
Configuring "Patch: Security (SSRT0656U)" (OSFPAT00007600505) on member61
Configuring "Patch: Security (SSRT0656U)" (OSFPAT00010000505) on member61
Configuring "Patch: Security (SSRT0636U)" (OSFPAT00010400505) on member61
```

```
Configuring "Patch: Fixes problems in the Compaq C compiler" (OSFPAT00003000505) on member61

Configuring "Patch: Fixes linker (ld) problems" (OSFPAT00003800505) on member61

Configuring "Patch: Fixes errors seen when compiling with the -om switch" (OSFPAT00005300505) on member61

Configuring "Patch: Problems with kdbx extensions mount and swap" (OSFPAT00006600505) on member61

Configuring "Patch: Fixes a problem with routines in the libst library" (OSFPAT00006700505) on member61

Configuring "Patch: Cannot change file permission using libst routines" (OSFPAT00007200505) on member61

Configuring "Patch: prof profiling tool causes segmentation fault" (OSFPAT00007300505) on member61

Configuring "Patch: Compaq SNMP subagent core dumps" (OSFPAT00000200505) on member61

Configuring "Patch: Fixes automount problem" (OSFPAT00000300505) on member61

Configuring "Patch: Fixes problems with dxaccounts application" (OSFPAT00000700505) on member61

Configuring "Patch: Fix for System Management Station daemon" (OSFPAT00007500505) on member61

Configuring "Patch: Fix for threaded applications problem" (OSFPAT00008000505) on member61

Configuring "Patch: Adding swap partition less than 8KB causes problems" (OSFPAT00008900505) on member61

Configuring "Patch: Fix for problem with Caps Lock setting" (OSFPAT00000900505) on member61

Configuring "Patch: Fixes a problem with the svn widget of libDXm.so" (OSFPAT00001000505) on member61

Configuring "Patch: Fix for lbxproxy utility" (OSFPAT00001100505) on member61

Configuring "Patch: Drawing problems with PowerStorm 4D10T graphics card" (OSFPAT00001200505) on member61

Configuring "Patch: Static library fix for libDXm" (OSFPAT00007000505) on member61

Configuring "Patch: mounts that return ESTALE may loop forever" (TCRPAT00000100505) on member61

Configuring "Patch: Fixes a kernel memory fault panic" (TCRPAT00000500505) on member61

Configuring "Patch: Fix for MC2 vhub cluster panic" (TCRPAT00000800505) on member61

Configuring "Patch: Fixes problem on cluster nodes" (TCRPAT00001100505) on member61

Configuring "Patch: Corrects problem with cluster member" (TCRPAT00001200505) on member61

Configuring "Patch: Delivers a new stripped clu_genvmunix" (TCRPAT00000300505) on member61

Beginning kernel build...


Do you have a pre-existing configuration file?: y

Enter the name of the pre-existing configuration file or
press RETURN to use :

*** KERNEL CONFIGURATION AND BUILD PROCEDURE ***

Saving /sys/conf/ as /sys/conf/.bck

Do you want to edit the configuration file? (y/n) [n]:  Return


*** PERFORMING KERNEL BUILD ***
 Working....Fri Jun 30 14:42:28 EDT 2000
 Working....Fri Jun 30 14:44:29 EDT 2000
 Working....Fri Jun 30 14:46:29 EDT 2000

The new kernel is /sys/nodename/vmunix
syncing disks... done
drd: Clean Shutdown
CP - SAVE_TERM routine to be called
CP - SAVE_TERM exited with hlt_req = 1, r0 = 00000000.00000000

halted CPU 0

halt code = 5
HALT instruction executed
PC = fffffc00005b3320

CPU 0 booting
```

```
.
.

# clu_upgrade switch

This is the cluster upgrade program.
You have indicated that you want to perform the 'switch' stage of the
upgrade.

Do you want to continue to upgrade the cluster? [yes]: Return

The cluster upgrade 'switch' stage has completed successfully.
All cluster members must be rebooted before running the 'clean' command.


# shutdown -h now
Shutdown at 15:07 (in 0 minutes) [pid 5250134]



        *** FINAL System shutdown message from root@stone.grosys.com ***

System going down IMMEDIATELY
        ...


System shutdown time has arrived


CPU 0 halted
halt code = 5
HALT instruction executed
PC = fffffc00005b3310

CPU 0 booting

.
.

The system is ready.



Compaq Tru64 UNIX V5.0A (Rev. 1094) (stone.grosys.com) console

login: root
Password:
Last login: Fri Jun 30 15:15:31 EDT 2000 from bensyl.grosys.com
Compaq Tru64 UNIX V5.0A (Rev. 1094); Thu Jun 29 13:44:13 EDT 2000

The installation software has successfully installed your system.

There are logfiles that contain a record of your installation.  These are:

        /var/adm/smlogs/install.cdf     - configuration description file
        /var/adm/smlogs/install.log     - general log file
        /var/adm/smlogs/install.FS.log  - file system creation logs
        /var/adm/smlogs/setld.log       - log for the setld(8) utility
        /var/adm/smlogs/fverify.log     - verification log file
```

At this point you will reboot each remaining member of the cluster before beginning the clean stage to complete the rolling upgrade procedure.

```
# clu _upgrade clean

This is the cluster upgrade program.
You have indicated that you want to perform the 'clean' stage of the
upgrade.

Do you want to continue to upgrade the cluster? [yes]: Return
Deleting tagged files.
.................
.....................................................................
.......................................
```

6.3 Gathering Baseline Information

The example in this section shows how to use dupatch to perform a patch baseline analysis. You can perform this operation in either single-user or multiuser modes.

```
# dupatch

Tru64 UNIX Patch Utility (Rev. 27-04)
=========================
 - This dupatch session is logged in //var/adm/patch/log/session.log

    Main Menu:
    ---------

    1)  Patch Installation
    2)  Patch Deletion

    3)  Patch Documentation
    4)  Patch Tracking

    5)  Patch Baseline Analysis/Adjustment

    h)  Help on Command Line Interface

    q)  Quit

Enter your choice: 5

Patch Baseline Analysis and Adjustment
======================================

This section of the patch management utility does not actually install
patches. It is an enabler and need only be used to baseline your
system for routine use of setld-based patch kits. It is recommended that
you read the release notes accompanying this kit, prior to continuing.

It is specifically designed to provide continuity from an environment with
manually installed operating system patches to one that can be managed
using the standard 'setld' installation technology.

This baselining is broken into phases that assess and report the state of
your operating system files. It will only make changes to your system with
your confirmation.

    Phase 1 - System Evaluation

        Where possible, this phase determines the origin of changed operating
 system files and detects formally released official patches that were

----------------------------------------
Press <RETURN> to continue viewing:
----------------------------------------

 manually installed.

    Phase 2 - Report patches with inter-product inventory conflicts

 Some layered products ship operating system files or files delivered
 by other layered products.  If you have any of these layered products
 installed on your system and the patch kit happens to contain those
 files with inventory conflicts, the Patch Utility will block the
 installation of the patches containing inventory conflicts since it
 may corrupt the layered product operation.

    Phase 3 - Create installation records for manually-installed patches

 During this phase, you will be shown a list of patches that match
 the files on your system, but are not marked as 'installed'.  You will
 be offered an opportunity to mark these patches as 'installed'.  This
 involves copying valid 'setld' database information to your system.

    Phase 4 - Report changed system files

        This phase provides information to help you make choices later in
 this process.  It reports both 'missing' and files whose origin
 cannot be determined.  Some of these files may affect patch
 installation.  You will want to consider this information when you
 later make decisions in phase 5.

    Phase 5 - Enable patches with file applicability conflicts
```

```
 This phase allows you to enable subsequent installation of patches
 whose inventory does not match the installed system.  This occurs
 when:

  1) System files changed and the origin of that
     change cannot be determined, or
  2) The changed files can only be traced back to
     previous manual patches, or
  3) The original file to be patched is missing
     from the system, or
  4) Hard links to files about to be patched are broken

        It is recommended that you do not enable the installation of these
        patches, if any, until you have tracked down the origin of the
 files that are in conflict, or you may compromise the integrity of
 your operating system.

----------------------------------------
Press <RETURN> to continue viewing:
----------------------------------------


        To assist you in this effort, the file list for the entire patch
        with the known information will be displayed. You may run through
 this phase to get the analysis without enabling the installation
 of any of the listed patches.

        It is recommended that you backup your operating system prior to
 the actual patch installation.

Do you want to proceed with the analysis and adjustment? [y/n]: y

    - This Patch Baseline Analysis/Adjustment session is logged in:
      //var/adm/patch/log/baseline.log

KITNAME><DUV50AS0001-19991008> OSF500

Phase 1 - System Evaluation
===========================

    This evaluation compares the contents of your patch kit to the
    state of files already installed on your system regardless of their
    origin.

    The amount of time needed to complete this phase can vary greatly
    depending on the size of the patch kit, the version of the Operating
    System, and the performance of the system.

    * system evaluation completed.
      --------------------------

    Press RETURN to proceed to the next phase...

Phase 2 - Report patches with inter-product inventory conflicts
===============================================================

    Some layered products replace files delivered in the original Operating
    System inventory or other layered products' inventory.  The Patch Utility
    will block installation of those patches with inventory conflicts since
    they could compromise the integrity of the layered products.

    * no inter-product inventory conflicts detected.
      ---------------------------------------------

    Press RETURN to proceed to the next phase...

Phase 3 - Create installation records for manually installed patches
====================================================================

    You can choose to copy valid installation records to your system for
    the following patches, if any.  This will allow future management and
    reporting for patches to your operating system.

    Creating installation records is intended to establish a baseline to
    which future patches might be applied.  Future patch removal may
    only ever occur to this baseline.

    * no manually installed patches detected.
      ---------------------------------------

    Press RETURN to proceed to the next phase...
```

```
Phase 4 - Report changed system files and missing files
=======================================================

    This phase provides information to help you make choices later in
    this process.  It reports both 'missing' and files whose origin
    cannot be determined.  Some of these files may affect patch
    installation.  You will want to consider this information when you
    later make decisions in phase 5.

     * no changed files detected
      ------------------------

    Press RETURN to proceed to the next phase...

Phase 5 - Enable patches with file applicability conflicts
==========================================================

    You will be shown a list of patches, if any, and their files.
    Patches show up during this phase when:

 1) System files changed and the origin of that change cannot
    be determined, or
 2) The changed files can only be traced back to previous
    manual patches, or
 3) The file to be patched is missing from the system, or
 4) Hard links to files about to be patched are broken

    After reviewing this section, you can elect to enable the installation
    of these patches using a standard selection menu. Enabling a patch
    means that the checks for patch file applicability, done during patch
    installation, will be bypassed if you later choose to install that
    patch through the installation section of dupatch.

    It is recommended that you understand the origin of the listed files
    before enabling a patch for installation.

    * no patches with file applicability conflicts detected.
      -----------------------------------------------------

* Baseline Analysis/Adjustment process completed.
  ==============================================

Press RETURN to get back to the Main Menu...

Tru64 UNIX Patch Utility (Rev. 27-04)
=========================
 - This dupatch session is logged in //var/adm/patch/log/session.log

    Main Menu:
    ---------

    1)  Patch Installation
    2)  Patch Deletion

    3)  Patch Documentation
    4)  Patch Tracking

    5)  Patch Baseline Analysis/Adjustment

    h)  Help on Command Line Interface

    q)  Quit

Enter your choice: 1

Tru64 UNIX Patch Utility (Rev. 27-04)
=========================
 - This dupatch session is logged in //var/adm/patch/log/session.log

    Patch Installation Menu:
    -----------------------

    1)  Pre-Installation Check ONLY
    2)  Check & Install (requires single-user mode)

    b)  Back to Main Menu
    q)  Quit

Enter your choice: 2

        This operation can be performed in single-user mode only.
```

```
Tru64 UNIX Patch Utility (Rev. 27-04)
==========================
 - This dupatch session is logged in //var/adm/patch/log/session.log

    Patch Installation Menu:
    ------------------------

    1)  Pre-Installation Check ONLY
    2)  Check & Install (requires single-user mode)

    b)  Back to Main Menu
    q)  Quit

Enter your choice: q
```

6.4 Removing Patches

The example in this section shows how to use dupatch to remove patches from a system. You can perform this operation only from systems running in single-user mode.

```
# dupatch

 * Previous session logs saved in session.log.[1-25]

Tru64 UNIX Patch Utility (Rev. 27-04)
=========================
 - This dupatch session is logged in //var/adm/patch/log/session.log

    Main Menu:
    ---------

    1)  Patch Installation
    2)  Patch Deletion

    3)  Patch Documentation
    4)  Patch Tracking

    5)  Patch Baseline Analysis/Adjustment

    h)  Help on Command Line Interface

    q)  Quit

Enter your choice: 2


               ***  Start of Special Instructions  ***


SPECIAL INSTRUCTIONS FOR Tru64 UNIX V5.0 Patch 48.00
Update your /etc/fstab entries to enable the selected mount option
("throttle") on the selected UFS filesystems.

For example, change from:
   /dev/rz12e      /mnt/test ufs rw 0 2

TO:
   /dev/rz12e      /mnt/test ufs rw,throttle 0 2

Append to /etc/sysconfigtab any tuning changes.  For further information
on this patch, refer to the Patch Summary and Release Notes document.
The release note for this patch includes a section on TUNING. The TUNING
section describes the new io-throttle-shift, io-throttle-maxmzthruput,
and io-throttle-static tunables. These tunables are configured in the
"vfs" stanza.

The following 3 lines make up an example:

vfs:

----------------------------------------
Press <RETURN> to continue viewing:
----------------------------------------

    io-throttle-shift = 1
    io-throttle-maxmzthruput = 1

(Note - if you already have a vfs stanza in your sysconfigtab file, then
just add the 2 "io-throttle" entries.)



               ***  End of Special Instructions  ***


Your name: Joe Smith

Enter any notes about this operation that you would like stored for
future reference (To end your input, enter a "."): .

: Deleting Patches
```

```
: .

     There may be more patches than can be presented on a single
     screen. If this is the case, you can choose patches screen by screen
     or all at once on the last screen. All of the choices you make will
     be collected for your confirmation before any patches are deleted.

 - Tru64_UNIX_V5.0 / Commands, Shells, & Utility Patches:
     1) Patch 0011.00 - ld command inserts incorrect values
     2) Patch 0019.00 - C shell incorrectly handles 2-byte characters
     3) Patch 0021.00 - Fix for crontab command
     4) Patch 0022.00 - Fix for sort command
     5) Patch 0023.00 - Fix for ksh core dump problem
     6) Patch 0028.00 - Fix for binmail
     7) Patch 0032.00 - Fix for tar/pax program
     8) Patch 0033.00 - Fix for vdump program dumping core
     9) Patch 0035.00 - usermod command does not allow use of commas
    10) Patch 0042.00 - rc.config and rc.config.common files may be corrupt

--- MORE TO FOLLOW ---
Enter your choices or press RETURN to display the next screen.

Choices (for example, 1 2 4-6): Return


 - Tru64_UNIX_V5.0 / Common Desktop Environment (CDE) Patches:
    11) Patch 0039.00 - Fix for dxaccounts shared library

 - Tru64_UNIX_V5.0 / Filesystem Patches:
    12) Patch 0049.00 - Fix for AdvFS system hang

 - Tru64_UNIX_V5.0 / Hardware Configuration Patches:
    13) Patch 0005.00 - Fix for Compaq AlphaServer problems
    14) Patch 0025.00 - Restriction lifted for AlphaServer DS20 and ES40
    15) Patch 0046.00 - Fix for simple lock timeout panic
    16) Patch 0051.00 - Fix for system hang at boot time

 - Tru64_UNIX_V5.0 / I/O Device Handling Patches:
    17) Patch 0001.00 - Fix for KZPCM and 8952U adapters
    18) Patch 0004.00 - Fix for Universal Serial Bus (USB) problems
    19) Patch 0036.00 - Powerstorm 4D10T does not draw lines correctly

--- MORE TO FOLLOW ---
Enter your choices or press RETURN to display the next screen.

Choices (for example, 1 2 4-6): Return


 - Tru64_UNIX_V5.0 / Kernel Patches:
    20) Patch 0017.00 - Fix for kernel memory fault
    21) Patch 0045.00 - Fixes error in the SCSI device probe code
    22) Patch 0048.00 - Fix for lock hierarchy violation panic

 - Tru64_UNIX_V5.0 / Network Patches:
    23) Patch 0007.00 - Fix for FDDI interface hang
    24) Patch 0012.00 - Fix for packetfilter problems
    25) Patch 0024.00 - Fix for NFS V3 XDR encoding
    26) Patch 0030.00 - NFS server cannot handle greater than 8K I/O reqs

 - Tru64_UNIX_V5.0 / Security Related Patches:
    27) Patch 0040.00 - Security (SSRT0614U)
    28) Patch 0041.00 - Security (SSRT0571U)

 - Tru64_UNIX_V5.0 / Software Development Environment Patches:
    29) Patch 0029.00 - Fix for Compaq C compiler

--- MORE TO FOLLOW ---
Enter your choices or press RETURN to display the next screen.

Choices (for example, 1 2 4-6): Return


 - Tru64_UNIX_V5.0 / X11 Patches:
    30) Patch 0038.00 - Fix for problem in X Display Manager (xdm)

Or you may choose one of the following options:

    31) ALL of the above
    32) CANCEL selections and redisplay menus
    33) EXIT without deleting any patches

Enter your choices or press RETURN to redisplay menus.
```

```
Choices (for example, 1 2 4-6): 31

You are deleting the following patches:

 - Tru64_UNIX_V5.0 / Commands, Shells, & Utility Patches:
        Patch 0011.00 - ld command inserts incorrect values
        Patch 0019.00 - C shell incorrectly handles 2-byte characters
        Patch 0021.00 - Fix for crontab command
        Patch 0022.00 - Fix for sort command
        Patch 0023.00 - Fix for ksh core dump problem
        Patch 0028.00 - Fix for binmail
        Patch 0032.00 - Fix for tar/pax program
        Patch 0033.00 - Fix for vdump program dumping core
        Patch 0035.00 - usermod command does not allow use of commas
        Patch 0042.00 - rc.config and rc.config.common files may be corrupt

 - Tru64_UNIX_V5.0 / Common Desktop Environment (CDE) Patches:
        Patch 0039.00 - Fix for dxaccounts shared library

 - Tru64_UNIX_V5.0 / Filesystem Patches:
        Patch 0049.00 - Fix for AdvFS system hang

Press RETURN to display the next screen: Return


 - Tru64_UNIX_V5.0 / Hardware Configuration Patches:
        Patch 0005.00 - Fix for Compaq AlphaServer problems
        Patch 0025.00 - Restriction lifted for AlphaServer DS20 and ES40
        Patch 0046.00 - Fix for simple lock timeout panic
        Patch 0051.00 - Fix for system hang at boot time

 - Tru64_UNIX_V5.0 / I/O Device Handling Patches:
        Patch 0001.00 - Fix for KZPCM and 8952U adapters
        Patch 0004.00 - Fix for Universal Serial Bus (USB) problems
        Patch 0036.00 - Powerstorm 4D10T does not draw lines correctly

 - Tru64_UNIX_V5.0 / Kernel Patches:
        Patch 0017.00 - Fix for kernel memory fault
        Patch 0045.00 - Fixes error in the SCSI device probe code
        Patch 0048.00 - Fix for lock hierarchy violation panic

 - Tru64_UNIX_V5.0 / Network Patches:
        Patch 0007.00 - Fix for FDDI interface hang
        Patch 0012.00 - Fix for packetfilter problems

Press RETURN to display the next screen:

        Patch 0024.00 - Fix for NFS V3 XDR encoding
        Patch 0030.00 - NFS server cannot handle greater than 8K I/O reqs

 - Tru64_UNIX_V5.0 / Security Related Patches:
        Patch 0040.00 - Security (SSRT0614U)
        Patch 0041.00 - Security (SSRT0571U)

 - Tru64_UNIX_V5.0 / Software Development Environment Patches:
        Patch 0029.00 - Fix for Compaq C compiler

 - Tru64_UNIX_V5.0 / X11 Patches:
        Patch 0038.00 - Fix for problem in X Display Manager (xdm)

Is this correct? (y/n): y

Checking patch dependency...
  (depending upon the number of patches you select, this may take a while)

************************ CAUTION ***********************************

 Interruption of this phase of the operation will corrupt your
 operating system software and compromise the patch database
 integrity.

 DO NOT Ctrl/C, power off your system, or in any other way
 interrupt the patch operation. The patch operation is complete
 when you are returned to the Patch Utility menus.

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


=== Deleting "Tru64 UNIX V5.0":

Deleting "Patch: Fix for problem in X Display Manager (xdm)" (OSFPAT00003800500).
```

```
Deleting "Patch: Fix for Compaq C compiler" (OSFPAT00002900500).

Deleting "Patch: Security (SSRT0571U)" (OSFPAT00004100500).

Deleting "Patch: Security (SSRT0614U)" (OSFPAT00004000500).

Deleting "Patch: NFS server cannot handle greater than 8K I/O reqs" (OSFPAT00003000500).

Deleting "Patch: Fix for NFS V3 XDR encoding" (OSFPAT00002400500).

Deleting "Patch: Fix for packetfilter problems" (OSFPAT00001200500).

Deleting "Patch: Fix for FDDI interface hang" (OSFPAT00000700500).

Deleting "Patch: Fix for lock hierarchy violation panic" (OSFPAT00004800500).

Deleting "Patch: Fixes error in the SCSI device probe code" (OSFPAT00004500500).

Deleting "Patch: Fix for kernel memory fault" (OSFPAT00001700500).

Deleting "Patch: Powerstorm 4D10T does not draw lines correctly" (OSFPAT00003600500).

Deleting "Patch: Fix for Universal Serial Bus (USB) problems" (OSFPAT00000400500).

Deleting "Patch: Fix for KZPCM and 8952U adapters" (OSFPAT00000100500).

Deleting "Patch: Fix for system hang at boot time" (OSFPAT00005100500).

Deleting "Patch: Fix for simple lock timeout panic" (OSFPAT00004600500).

Deleting "Patch: Restriction lifted for AlphaServer DS20 and ES40" (OSFPAT00002500500).

Deleting "Patch: Fix for Compaq AlphaServer problems" (OSFPAT00000500500).

Deleting "Patch: Fix for AdvFS system hang" (OSFPAT00004900500).

Deleting "Patch: Fix for dxaccounts shared library" (OSFPAT00003900500).

Deleting "Patch: rc.config and rc.config.common files may be corrupt" (OSFPAT00004200500).

Deleting "Patch: usermod command does not allow use of commas" (OSFPAT00003500500).

Deleting "Patch: Fix for vdump program dumping core" (OSFPAT00003300500).

Deleting "Patch: Fix for tar/pax program" (OSFPAT00003200500).

Deleting "Patch: Fix for binmail" (OSFPAT00002800500).

Deleting "Patch: Fix for ksh core dump problem" (OSFPAT00002300500).

Deleting "Patch: Fix for sort command" (OSFPAT00002200500).

Deleting "Patch: Fix for crontab command" (OSFPAT00002100500).

Deleting "Patch: C shell incorrectly handles 2-byte characters" (OSFPAT00001900500).

Deleting "Patch: ld command inserts incorrect values" (OSFPAT00001100500).

*** KERNEL CONFIGURATION AND BUILD PROCEDURE ***

Enter a name for the kernel configuration file. [COBB]: Return

A configuration file with the name 'COBB' already exists.
Do you want to replace it? (y/n) [n]: y

Saving /sys/conf/COBB as /sys/conf/COBB.bck


*** KERNEL OPTION SELECTION ***

    Selection   Kernel Option
-------------------------------------------------------------
 1 System V Devices
 2 NTP V3 Kernel Phase Lock Loop (NTP_TIME)
 3 Kernel Breakpoint Debugger (KDEBUG)
 4 Packetfilter driver (PACKETFILTER)
 5 Point-to-Point Protocol (PPP)
 6 STREAMS pckt module (PCKT)
 7 Data Link Bridge (DLPI V2.0 Service Class 1)
 8 X/Open Transport Interface (XTISO, TIMOD, TIRDWR)
 9 ISO 9660 Compact Disc File System (CDFS)
```

```
 10 Audit Subsystem
 11 All of the above
 12 None of the above
 13 Help
 14 Display all options again
------------------------------------------------------------

Enter your choices.

Choices (for example, 1 2 4-6) [12]:  Return

You do not want to select any kernel options.
Is that correct? (y/n) [y]:  Return

Do you want to edit the configuration file? (y/n) [n]:  Return

*** PERFORMING KERNEL BUILD ***

A log file listing special device files is located in /dev/MAKEDEV.log
 Working....Tue Feb 1 14:09:04 EDT 2000
 Working....Tue Feb 1 14:11:08 EDT 2000

The new kernel is /sys/COBB/vmunix

A reboot is necessary to complete the patch deletion. Do
you want to reboot now? [y/n] [y]:  Return
```

7

Common Error, Warning, and Informational Messages

This chapter describes error, warning, and informational messages for the dupatch utility. The following information is provided for each message:

Source: The function that generates the message.

Problem: A brief description of possible causes for the message.

Causes: A summary of situations that cause the message.

Action: General recovery guidance.

Output: A sample of the message.

7.1 Patch Preinstallation Check and Installation Messages

The following sections describe messages you might see when running the dupatch preinstallation check or installation functions.

7.1.1 Patch Installation Blocked by Unknown System File

Source: dupatch preinstallation check or installation.

Problem: The installation of a specific patch is blocked due to an existing system file that is unknown.

Cause: Generally this situation occurs when system files are placed on the system through manual intervention. For example, this may have been the result of installing a customer-specific patch received from Compaq Services or a system administrator's customization of a Tru64 UNIX file.

Until you confirm otherwise, the unknown system files should be viewed as intentional customizations that are important for proper system operation. As such, care should be taken to understand why the system files have been customized.

Action: Determine the origin of the existing unknown system files. The steps you take will be determined by the reason your system files were manually changed. See Section 2.5 for more information.

Output:

```
Checking patch prerequisites and patch file applicability ...
       (depending upon the number of patches you select, this may take a while)
 ------------------------------------------------------------------------
     Problem installing:

      - DIGITAL_UNIX_V4.0F / Common Desktop Environment (CDE) Patches:

             Patch 0326.00 - CDE Login Correction

             ./usr/dt/bin/dtwm:
                     its origin cannot be identified.

     This patch will not be installed.
  ------------------------------------------------------------------------
       * Following patch(es) failed in prerequisite/file applicability check:

      - TRU64_UNIX_V4.0D / Common Desktop Environment (CDE) Patches:
             Patch 0326.00 - CDE Login Correction
```

7.1.2 Patch Installation Blocked by Missing System File

Source: dupatch preinstallation check or installation.

Problem: Installation of a specific patch is blocked due to missing system file.

Causes: Generally this situation occurs when a system file that was installed with setld is manually removed from the system. The file is marked as installed in the system inventory records.

Action: Determine why the system file is missing and whether it is safe to enable dupatch to install the blocked patch. See Section 2.5 for more information.

Output:

```
Checking patch prerequisites and patch file applicability...
  (depending upon the number of patches you select, this may take a while)
------------------------------------------------------------------------

Problem installing:

 - DIGITAL_UNIX_V4.0F / Commands, Shells, & Utility Patches:
        Patch 0236.00 - vi Editor Correction

   ./usr/bin/vedit:
           does not exist on your system,
           however, it is in the inventory of installed subsets.

 This patch will not be installed.

 ------------------------------------------------------------------------
    * Following patch(es) failed in prerequisite/file applicability check:

  - DIGITAL_UNIX_V4.0F / Commands, Shells, & Utility Patches:
         Patch 0236.00 - vi Editor Correction
```

7.1.3 Installation Blocked by Layered Product Collision

Source: dupatch preinstallation check or installation.

Problem: The installation of a specific patch is blocked due to an existing system file that is installed by a layered product.

Causes: A small set of layered products deliver updated Tru64 UNIX operating system files.

Action: To resolve this situation contact the Product Customer Services representative.

Output:

```
Checking patch prerequisites and patch file applicability...
   (depending upon the number of patches you select, this may take a while)
 ------------------------------------------------------------------------

 Problem installing:

  - TRU_UNIX_V4.0F / Network Patches:
        Patch 0182.00 - xti/streams Interface Module Correction

        ./sys/BINARY/xtiso.mod:
                is installed by:

                                BLTLPCONFLICTTEST410

                and can not be replaced by this patch.

 This patch will not be installed.

 ------------------------------------------------------------------------
```

```
   * Following patch(es) failed in prerequisite/file applicability check:

 - DIGITAL_UNIX_V4.0F / Network Patches:
       Patch 0182.00 - xti/streams Interface Module Correction
```

7.1.4 Patch Installation Blocked by Dependencies on Other Patches

Source: dupatch preinstallation check or installation.

Problem: The installation of a specific patch is blocked due to its dependency on other uninstalled patches.

Causes: Generally this occurs when you miss the selection of all dependent patches.

Action: Through the dupatch Installation Menu, take one of the following actions:

- Reselect the patches including the noted dependent patch and attempt reinstallation; dupatch will notify you of other missing dependent patches.
- Select all patches and proceed with patch installation.

Output:

```
SAMPLE OUTPUT:

 Checking patch prerequisites and patch file applicability...
   (depending upon the number of patches you select, this may take a while)
 ------------------------------------------------------------------------

 Problem installing:

  - DIGITAL_UNIX_V4.0F / Security Related Patches:
       Patch 0579.01 - Security, Various Kernel Fixes (SSRT0482U)

 requires the existence of the following un-installed/un-selected subset(s):

  - TruCluster_V1.6 / Filesystem Patches:
       Patch 0037.00 - Support For New AdvFS Mount Option "-o noatimes"

  - TruCluster_V1.6 / ASE Availability Manager (AM) Patches:
       Patch 0033.00 - Kern Mem Fault And simple_lock Panic Correction

 This patch will not be installed.

 ------------------------------------------------------------------------
    * Following patch(es) failed in prerequisite/file applicability check:

  - TRU64L_UNIX_V4.0F / Security Related Patches:
       Patch 0579.01 - Security, Various Kernel Fixes (SSRT0482U)
```

7.1.5 Patch Installation Blocked by Missing Product Subset

Source: dupatch preinstallation check or installation.

Problem: A specific patch cannot be installed because the product software subset is not installed on your system.

Causes: Generally this is a informational message and no further action is required. However, this message may also occur due to an internal patch kit error that results in an incorrectly specified patch dependencies.

Action: If the specific patch being blocked is the only patch being blocked you can assume this is an informational message. It may be an internal patch kit error, if there are other patches whose installation is blocked by the patch whose subset is not installed. As a workaround, if you need one of the other patches whose installation is blocked, you can install the optional Tru64 UNIX or TCR release subset and reinstall the patches

Output:

```
Checking patch prerequisites and patch file applicability...
   (depending upon the number of patches you select, this may take a while)
 ------------------------------------------------------------------------

 Problem installing:

  - TruCluster_V1.6 / Cluster Kernel Patches:
         Patch 0035.00 - rm_spur Driver Correction

 requires the existence of the following un-installed/un-selected subset(s):

 - TruCluster_V1.6 - subset: TCRMCA141

 This patch will not be installed.

 ------------------------------------------------------------------------
   * Following patch(es) failed in prerequisite/file applicability check:

  - TruCluster_V1.6 / Cluster Kernel Patches:
         Patch 0035.00 - rm_spur Driver Correction
```

7.1.6 Patch Installation Blocked by Disk Space

Source: dupatch preinstallation check or installation.

Problem: The system disk did not have enough space to install patches.

Causes: There is not enough disk space in /, /var, or /usr partitions for dupatch to archive the existing system files and move the patched files into place.

Action: Provide the necessary disk space and reinstall patches. If you cannot provide enough system disk space through other means, you may want to make /var/adm/patch/backup a symbolic link to or NFS-mount another file system that is not related to the /, /var, or /usr partitions.

Output:

```
Checking patch prerequisites once more...
       (depending upon the number of patches you select, this may take a while)

      ./usr/lbin/fitset:
      file system /whd needs 65829 Kbytes more to install the software specified.

             There is not enough file system space to install all the patches.
             you have selected.

             Please press RETURN to start another selection.
                       .
                       .
                       .
```

7.1.7 Patch Installation Blocked by Installed Patch or Subset

Source: dupatch preinstallation check or installation.

Problem: The patch you are trying to install is built so it cannot supersede the later revision patch or subset that is installed on your system.

Causes: This applicability feature is used to ensure that your system is not regressed through the installation of older code.

Action: If the situation is caused by a release patch being blocked by a layered product or other subsets, contact your service provider.

Output:

```
Problem installing:

 - DIGITAL_UNIX_V4.0D / Filesystem Patches:
```

```
    Patch   00016.01 - System Run Level Correction

    ./sbin/.new..bcheckrc:
         is installed by:


- DIGITAL_UNIX_V4.0D:
    Patch C 00484.01

         and can not be replaced by this patch.

This patch will not be installed.
```

7.1.8 Patch Installation Blocked by an Existing CSP

Source: dupatch preinstallation check or installation.

Problem: Release patches will not automatically supercede a customer specific patch (CSP).

Causes: A file you are trying to update with a release patch has been previously updated through the installation of a CSP. The release patch does not have any knowlege as to whether it contains fixes contained in CSPs.

Action: Determine if the CSP is included in the release patch kit:

- If yes, then you can safely remove the CSP (via dupatch) and reinstall the release patch
- If no, contact your service provider to determine how to proceed

Output:

```
Problem installing:

 - DIGITAL_UNIX_V4.0F / Commands, Shells, & Utility Patches:
         Patch   00444.00 - Fixes sort problem when running in Japanese locale

         ./usr/bin/sort:
                is installed by Customer Specific Patch (CSP):

  - DIGITAL_UNIX_V4.0F:
         Patch C 00187.00

                and can not be replaced by this patch. To install this patch,
                you must first remove the CSP using dupatch. Before performing
                this action, you should contact your Compaq Service
                Representative to determine if this patch kit contains the
                CSP. If it does not, you may need to obtain a new CSP from
                Compaq in order to install the patch kit and retain the CSP fix.
```

7.1.9 dupatch Tools Are Outdated

Source: dupatch preinstallation check or installation.

Problem: Patch tool set residing on system are not the most recent version

Causes: If the dupatch utility delivered with the patch kit determines that the tools residing on the system are not consistent with the patch kit, it will copy over updated versions of utilities used by dupatch.

Action: This is an informational message and no further action is required.

Output:

```
  Patch tools need to be installed or updated on your system.
 Please invoke the command as the super-user (root) first.

 * A new version of patch tools required for patch management
   is now being installed on your system.
```

7.1.10 Some Patches Must Be Made Reversible

Source: dupatch preinstallation check or installation.

Problem: Patch tool set residing on system is not the most recent version

Causes: The user tried to install a patch as non-reversible; however, the patch in question must be installed as reversible.

Action: This is an informational message and no further action is required.

Output:

```
* The following patch(es) are required to be reversible and
      will be made reversible automatically:

 - DIGITAL_UNIX_V4.0F / Commands, Shells, & Utility Patches:
        Patch C 00187.00 - v 4.0f patch E C187.00
```

7.2 Patch Removal Messages

The following sections describe messages you might see when running the dupatch patch deletion function.

7.2.1 Patch Removal Blocked by Missing Patch Backup Files

Source: dupatch deletion.

Problem: An attempt to remove a specific patch or all patches fails because the backup of the prepatch system files is not available to dupatch.

Causes: The /var/adm/patch/backup area does not contain the prepatch system files.

Action: Ensure that dupatch can access the/var/adm/patch/backup area and that the area is set up as it was when the patches were installed. For example, if you were using /var/adm/patch/backup as a mount point for another file system, make sure that file system is mounted. Once you have solved the /var/adm/patch/backup access or content problem, remove patches through the dupatch Delete Menu.

Output:

```
Checking patch dependency...
   (depending upon the number of patches you select, this may take a while)
 ------------------------------------------------------------------------

  - DIGITAL_UNIX_V4.0F / Commands, Shells, & Utility Patches:
        Patch 0019.00 - quota Command Correction

  cannot be deleted.

  Can not find the backup copy for this patch in /var/adm/patch/backup.

 ------------------------------------------------------------------------
    * Following patch(es) failed in dependency check:

  - DIGITAL_UNIX_V4.0F / Commands, Shells, & Utility Patches:
        Patch 0019.00 - quota Command Correction
```

7.2.2 Patch Removal Blocked by Dependencies on Other Patches

Source: dupatch deletion.

Problem: A specific patch cannot be removed because of its dependency on other installed patches.

Causes: Generally this occurs when you miss the selection of all dependent patches.

Action: Through the dupatch Delete Menu, reselect the patches including the noted dependent patch and try to remove them. The program will notify you of any other dependent patches you might have missed.

Output:

```
Checking patch dependency...
   (depending upon the number of patches you select, this may take a while)
 ---------------------------------------------------------------------------

  - DIGITAL_UNIX_V4.0F / Library Patches:
         Patch 0262.00 - libm Corrections

 can not be deleted unless the following patches are also selected or
 deleted first:

  - DIGITAL_UNIX_V4.0F / Library Patches:
         Patch 0676.00 - libm Corrections

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

     * Following patch(es) failed in dependency check:

   - DIGITAL_UNIX_V4.0F / Library Patches:
          Patch 0262.00 - libm Corrections
```

7.2.3 No Original Files Restored When Patch Is Removed

Source: dupatch deletion.

Problem: The removal of a specific patch results in no original system files being restored.

Causes: This occurs when a patch delivers files to your system that were not shipped in the initial release of the product. For example, the sample output shows the removal of Tru64 UNIX 4.0F Patch 314.00; the patch delivers files that were not shipped with the initial release of Tru64 UNIX 4.0F.

Action: This is an informational message and no further action is required.

Output:

```
=== Deleting "DIGITAL UNIX V4.0F":

     Deleting "Patch: AdvFS Command Correction " (OSFPAT00031400425).
     ---------------------------------------------------------------------------

     Patch OSFPAT00031400425 delivered all new files to your system
     so there are no original files to be restored.
     No user action is necessary.

     ---------------------------------------------------------------------------
```

7.3 TruCluster-Specific dupatch Messages

The following sections show the output of informational messages you might see when running dupatch on a TruCluster system:

7.3.1 System Not Adequately Prepared

Output:

```
This system is part of a V5.0 cluster which has
not been prepared to do a rolling patch installation. Refer to the Patch
Installation Guide as to the proper procedure to start a
rolling patch.
```

7.3.2 Rolling Upgrade in Progress (Installation)

Output:

```
This system is part of a V5.0 cluster which
is currently in the process of being installed via the rolling upgrade/
rolling patch procedure. New patches cannot be installed on the system
until the rolling installation procedure has completed on all cluster
members.
```

7.3.3 Rolling Upgrade in Progress (Baselining)

Output:

```
This Cluster is in the process of a roll. Baselining is not permitted
until the cluster is out of the roll.
```

7.3.4 Version 5.0 Wave 4 Cluster is Unsupported

Output:

```
This system is a Version 5.0 - Wave 4 Cluster. Dupatch cannot patch
this type of cluster. This is an unsupported operation and dupatch will
now exit.
```

7.4 Messages Specific to the Rolling Patch Procedure

The following section shows a message generated by the rolling patch procedure.

7.4.1 Insufficient Free Space (File System Full)

Source: `clu_upgrade setup` stage of the rolling upgrade procedure.

Problem: The rolling upgrade cannot proceed because required space allocations are not met.

Causes: The `/`, `/usr`, `/var`, and/or `/i18n` file systems do not have the required amount of free space.

Action: Run the `clu_upgrade -undo setup` command, free up enough space in the affected file systems to meet the requirements listed in Section 5.2.1, and rerun the `clu_upgrade -undo setup` command.

Output:

```
*** Error ***
The tar commands used to create tagged files in the '/' file system have
reported the following errors and warnings:
NOTE: CFS: File system full: /

        tar: sbin/lsm.d/raid5/volsd : No space left on device
        tar: sbin/lsm.d/raid5/volume : No space left on device
NOTE: CFS: File system full: /

.NOTE: CFS: File system full: /
```

A

System Upgrade Information

The Tru64 UNIX Update Installation procedure lets you upgrade your system from an earlier version, while preserving disk partitions, file systems, file customizations, the network, print, and mail environments, user accounts, user created files, and any other system setup you may have done. Table A–1 lists the supported upgrades for Tru64 UNIX releases. (See the Tru64 UNIX *Installation Guide* for more information.)

Table A–1: Upgrade Migration

Version	Upgrade Migration Supported
V5.1	From 4.0G and 5.0A
V5.0A	From 4.0F and 5.0
V5.0	From 4.0D and 4.0F
V4.0G	From 4.0E and 4.0F
V4.0F	From 4.0D and 4.0E

Glossary

baselining
A dupatch feature that looks at the files installed on a system, compares them to the files it expects to find, and prevents the installation of any patch files that might cause an incompatibility among system files.

See also

customer-specific patch (CSP)
Any patch that is developed and made available to resolve a problem for a specific customer. A customer-specific patch is developed with prior knowledge of that customer's unique hardware and software configuration and environment. Customer-specific patches may not be useful for another customer's system.

See also *release patch*

dupatch
A utility included in a patch kit that installs, removes, and manages patches for Tru64 UNIX and TruCluster Software Products. This utility is installed and left on the system through the successful installation of a patch kit.

full installation
A Tru64 UNIX installation that creates new file systems and loads a full copy of the operating system from the kit onto a system. Any other version of the operating system, any layered products, and any patches that previously existed on the system are overwritten. A full installation does not preserve system customizations (for example, user or data files) because the root (/), `/usr`, and `/var` file systems are re-created during the process.

See also *update installation*

HTML file
The coding inserted in a file intended for display on a World Wide Web browser that tells the browser how to display a Web page's words and other elements. HTML (hypertext markup language) files are text (ASCII) files. The documentation provided with the Tru64 UNIX patch kits is provided in HTML files for viewing on a Web browser.

See also *PDF file*

official patch
See *release patch*

patch
A file or a collection of files that contain fixes to problems. When possible, patches are merged together into one patch if they have intersecting files or codependencies. A patch may correct one or more problems.

Each patch is packaged in its own setld subset. The subsets are managed by a utility named `dupatch`.

patch applicability
A file-by-file check of system files to determine whether a patch might cause a a system to be degraded or crash. The installation of a patch is blocked if any system files to be replace by that patch are not valid predecessors of the patch files.

PDF file

A file type recognized by the Adobe Acrobat Reader, which provides an easy way to view and print documentation. As the next generation of Adobe's PostScript format, PDF files have become a standard way of distributing documentation, especially on CD–ROM and over the Internet. The Tru64 UNIX patch documentation is provided in PDF and HTML formats. The Acrobat Reader is provided on the Tru64 UNIX Documentation CD–ROM of Version 4.0E and higher. It is also available at the Adobe Web site, **http://www.adobe.com/**

See also *HTML file*

release patch

Any patch that is included in a Tru64 UNIX patch kit. Sometimes referred to as *official* patches, release patches are intended for worldwide distribution and can be safely used on any customer's system within the guidelines documented in the patch kit.

See also *customer-specific patch (CSP)*

rolling upgrade

A software upgrade of a cluster that is performed while the cluster is in operation. One member at a time is rolled and returned to operation while the cluster transparently maintains a mixed-version environment for the base operating system, cluster, and Worldwide Language Support (WSL) software. Clients accessing services are not aware that a rolling upgrade is in progress.

On Version 5.0A and higher systems, you use a rolling upgrade to patch a cluster or to update the Tru64 UNIX operating system or TruCluster Server software on a cluster. The procedure is same for both types of upgrades — the only difference is the command you run during the **install stage** of the rolling upgrade procedure.

setld

An interactive program for installing and managing software subsets. Software products are organized into subsets that can be loaded, deleted, inventoried, and configured. The load operation reads software from disk, tape, CD-ROM, or an Internet installation server. The patch installation tool, `dupatch`, is based on the `setld` program.

tar file

A file created with the `tar` command that saves and restores multiple files in a single file. Tru64 UNIX patch kits are provided as tar files (except for kits included on the Tru64 UNIX CD–ROM).

update installation

A type of installation that preserves disk partitions, file systems, file customizations, the network, print, and mail environments, user accounts, user created files, and any other system setup you may have done. If software patches had been applied to the operating system, it would not be necessary to remove the patches before beginning the update process, which is designed to update and reinstall any software fixes or features that were supplied in release patches.

See also *full installation*

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