

# New Hardware Delivery–3

## Release Notes and Installation Instructions

**April 2000**

**Operating System and Version:** Tru64 UNIX, Version 4.0F

This manual contains release notes and installation instructions for the New Hardware Delivery kit for the Compaq Tru64™ UNIX® operating system.

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## About This Manual

This manual contains release notes and installation instructions for the New Hardware Delivery kit for the Compaq Tru64 UNIX (formerly DIGITAL UNIX) operating system.

### Audience

This document is intended for persons who install New Hardware Delivery software.

### Organization

This guide consists of three chapters:

Chapter 1	Describes any known problems or restrictions related to the software provided on the New Hardware Delivery CD-ROM.
Chapter 2	Describes how to create a product kit from the downloaded New Hardware Delivery data.
Chapter 3	Describes how to install the New Hardware Delivery software.

### Related Documentation

The following Tru64 UNIX documents contain additional information about the installation and administration of the software contained on the New Hardware Delivery CD-ROM.

#### *Installation Guide*

Describes how to configure your system so that it supports New Hardware Delivery.

#### *Guide to Preparing Product Kits*

Describes how to create software kits.

#### *Sharing Software on a Local Area Network*

Describes how to load a New Hardware Delivery kit onto a RIS area.

## Icons on Tru64 UNIX Printed Books

The printed version of the Tru64 UNIX documentation uses letter icons on the spines of the books to help specific audiences quickly find the books that meet their needs. (You can order the printed documentation from Compaq.) The following list describes this convention:

- G Books for general users
- S Books for system and network administrators
- P Books for programmers
- D Books for device driver writers
- R Books for reference page users

Some books in the documentation help meet the needs of several audiences. For example, the information in some system books is also used by programmers. Keep this in mind when searching for information on specific topics.

The *Documentation Overview* provides information on all of the books in the Tru64 UNIX documentation set.

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```
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- The full title of the book and the order number. (The order number is printed on the title page of this book and on its back cover.)
- 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 document uses the following typographical and symbol conventions:

%	
\$	A percent sign represents the C shell system prompt. A dollar sign represents the system prompt for the Bourne, Korn, and POSIX shells.
% <b>cat</b>	Boldface type in interactive examples indicates typed user input.
<i>file</i>	Italic (slanted) type indicates variable values, placeholders, and function argument names.
[   ]	In syntax definitions, brackets indicate items that are optional and braces indicate items that are required. Vertical bars separating items inside brackets or braces indicate that you choose one item from among those listed.
{   }	
cat(1)	A cross-reference to a reference page includes the appropriate section number in parentheses. For example, <code>cat(1)</code> indicates that you can find information on the <code>cat</code> command in Section 1 of the reference pages.



---

## Release Notes

This chapter describes known restrictions and problems with the New Hardware Delivery software.

### 1.1 IDE CD-ROM Installation Restriction

With this version of the New Hardware Delivery kit, you cannot use an IDE CD-ROM device to install a CD-ROM kit that has been created using the procedure described in Chapter 2. To determine if your system has an IDE CD-ROM device, use one of the following procedures:

- On a running system, examine the boot messages in the `/var/adm/messages` file. Look for messages that identify an IDE bus and for messages that identify a CD-ROM device on that bus:

```
ata0 at pci0 slot 105 (slot 5, function 1)
scsil at ata0 slot 0
rz8 at scsil target 0 lun 0 (LID=7) (COMPAQ CD-224E 9.5B)
```

In this example, `ata0 slot 0` identifies an IDE bus, `scsil at ata0` identifies devices on that IDE bus, and `rz8 at scsil` identifies the CD-ROM device on the bus.

- From the console prompt, use the `show config` command to identify the type of CD-ROM device you have. Information similar to the following identifies an IDE CD-ROM:

```
Bus 00 Slot 07: Function 1: PCI IDE
dkb0.0.207.0 Toshiba CD-ROM XM 63
```

### 1.2 KZPCC Installation Restriction

If you install a KZPCC disk as a boot device, you cannot use the Installation Setup GUI to install the operating system software. To exit the Installation Setup GUI and restart the installation using the character cell-interface, perform the following steps:

1. From the Installation Setup screen, click on the UNIX Shell button.  
In the confirmation screen, click the OK button.
2. At the `#` prompt, enter the following command:

```
#restart nogui
```

The system installation with continue using a character-cell installation.

### 1.3 System Messages During Installation

During this installation, the New Hardware Delivery kit will appear to be in a loop reloading itself multiple times. This behavior is normal for this installation and may take up to 30 minutes to complete; please wait for the system to finish loading the software. Do not eject the CD-ROM or type Ctrl/C during this part of the installation.

```
*** START LOAD HARDWARE KIT (Wed Dec 22 11:10:31 EST 1999) ***
Validating distribution media...
The Hardware Support product has been successfully located.
Checking file system space required to install specified subsets:
File system space checked OK.
4 subset(s) will be installed.
Loading 1 of 4 subset(s)....
New Hardware Base System Support V1.1
Copying from /instkit1/V4.0F/kit (disk)
Verifying Loading 2 of 4 subset(s)....
New Hardware Kernel Modules V1.1
Copying from /instkit1/V4.0F/kit (disk)
Verifying Loading 3 of 4 subset(s)....
New Hardware Kernel Header and Common Files V1.1
Copying from /instkit1/V4.0F/kit (disk)
Verifying Loading 4 of 4 subset(s)....
New Hardware Patch Files V1.1
Copying from /instkit1/V4.0F/kit (disk)
```

### 1.4 RIS Installation Is Not Supported

This version of the New Hardware Delivery kit does not support installation from a RIS server.

### 1.5 Updating Operation System Software

To update the operating system software after you have installed the New Hardware Delivery software, you cannot use the `updateinstall` procedure from a RIS server. You may use the `updateinstall` procedure and the CD-ROM distribution media.

### 1.6 AS8400 Systems Report Errors

If you attempt to install the New Hardware Delivery software on an AS8400 system that is running Version 5.4 of the console firmware, the system may display the following messages:

```
*** Error (eia0.0.0.4.0), Bad Checksum on eeprom
I82558 setmode failed: pid = 13, config_adap
eil, slot 5, bus 0, hose0
*** Error (eib0.0.0.5.0), Bad Checksum on eeprom
I82558 setmode failed: pid = 13, config_adap
```

You can ignore these errors. They will not be displayed when the console firmware is upgraded to Version 5.5.

## 1.7 Documentation for NHD Installation

In order to correctly install the New Hardware Delivery kit you must follow the procedures provided in this guide. If you use the procedures provided in Chapter 6 of the Tru64 UNIX *Installation Guide*, the New Hardware Delivery kit will not install correctly.



# 2

---

## Creating a Product Kit

This chapter describes how to create a product kit from the New Hardware Delivery data that is downloaded from the World Wide Web. If you have a New Hardware Delivery CD-ROM, you do not need to create a product kit. You can proceed to Chapter 3, and begin installing the New Hardware Delivery software.

In order to use the New Hardware Distribution data that is downloaded from the World Wide Web, you must create a product kit of the data either on a CD-ROM or on a local spare disk on the target system.

You must be running Tru64 UNIX Version 4.0E or later to create this kit.

The following sections describe how to create a product kit on a CD-ROM and on a local disk, such as an RZ26.

### 2.1 Common Steps for Creating a Product Kit

Use the following steps to create either a CD-ROM or local disk product kit:

1. Create a target directory for the product kit:

```
# /usr/bin/mkdir /var/tmp/nhd
# /usr/bin/chown root.system /var/tmp/nhd
```

2. Move the product kit files into the target directory:

```
# /usr/bin/gzip -dc <kitname> | /usr/bin/tar \
-C /var/tmp/nhd -xpf -
```

3. Create an ISO 9660 file system:

```
# /usr/sbin/mkisofs -R -D -a -o \
/var/tmp/nhd.iso /var/tmp/nhd
```

4. Create a disk label:

```
# /usr/sbin/disklabel -w -t cdfs -f /var/tmp/nhd.iso
```

5. Append pad data to the ISO file system:

```
# /usr/bin/echo "\0\c" | \
/usr/bin/dd bs=1024k conv=sync >> /var/tmp/nhd.iso
```

## 2.2 Steps for Creating a CD-ROM Kit

After you have created the `nhd.iso` file, you can copy it to a CD-ROM recording system and create the CD-ROM kit.

## 2.3 Steps for Creating a Local Disk Kit

To create a local disk kit, you must copy the `nhd.iso` file to a spare disk using the following commands. Note that `/dev/rrz99c` is used as an example of a spare RZ26 disk.

```
# /usr/sbin/disklabel -z /dev/rrz99c
```

```
# /usr/bin/dd if=/var/tmp/nhd.iso bs=64k of=/dev/rrz99c
```

---

## Installing Hardware Support

New hardware support provides the kernel modules required for your system to communicate with new hardware without the need to upgrade to a new version of the operating system.

This chapter provides the information necessary for you to perform the following user actions:

- Understand new hardware support concepts.
- Know what to do before you install a New Hardware Delivery kit.
- Be able to install a New Hardware Delivery kit onto a running system.
- Be able to install a New Hardware Delivery kit while performing a full installation.

### 3.1 New Hardware Support Overview

All system hardware requires supporting modules in the operating system kernel. Without this kernel support, the operating system cannot interact with the hardware and may fail to function altogether.

A New Hardware Delivery kit includes kernel modules that let your system support new or upgraded hardware without updating to a new version of the operating system. The kit is distributed on CD-ROM and can be installed directly from the distribution media.

The New Hardware Delivery kit lets you install new hardware support without reinstalling the base operating system. However, you must reboot your system to build a kernel that includes the modules that support your new hardware. The *bootlink* process builds a generic kernel in memory, using generic kernel modules along with those included in your New Hardware Delivery kit. This bootlinked kernel is not written to disk, but allows the `boot` utility to include the hardware support modules into your running kernel.

---

**Note**

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If you need to boot `genvmunix` at any time after you have installed hardware support using the New Hardware Delivery process, the products you have installed will no longer be recognized by the system. To access all of the kernel modules supplied by `genvmunix` and the kernel modules you have added using the New Hardware Delivery process, you must boot `/GENERIC` using the following command:

```
boot -fi GENERIC
```

---

## 3.2 Hardware Support Installation Prerequisites

Before you install a New Hardware Delivery kit, do the following:

1. Back up your system.
2. Have in your possession the New Hardware Delivery kit.
3. Determine the name of the New Hardware Delivery kit that you want to install. For this version of the New Hardware Delivery software, the kit name is:
  - `/V4.0F/usr/sys/hardware/base.kit`
4. Shut down your system and obtain the following information from the system console:
  - a. Determine if the `bootdef_dev` console variable is set. To find out, enter the following command at the console prompt:

```
>>> show bootdef_dev
```

Your output will be similar to the following:

```
bootdef_dev          dka0.0.0.1001.0
```

In this example, the `bootdef_dev` console variable is set to `dka0.0.0.1001.0`. If the `bootdef_dev` console variable is not set, you must determine the console device name of your system disk.

To determine the console name of your system disk, enter the following command at the console prompt:

```
>>> show dev
```

Your output will be similar to the following:

```
dka0.0.0.1001.0      DKA0          RZ28D      0010
dka500.5.0.0.1001.0 DKA500        RRD46      0557
dva0.0.0.0.1        DVA0
ewa0.0.0.1000.0     EWA0          hw_ethernet_address
pka0.7.0.1001.0     PKA0          SCSI Bus ID 7 5.01
```

```
pkb0.7.0.1001.0          PKB0          SCSI Bus ID 7 5.01
```

Hard disk drive types have an RZ prefix; in this example, the console device name of the RZ28D-type hard disk drive is DKA0.

- b. Determine if the `auto_action` console variable is set to `HALT`. To find out, enter the following command at the console prompt:

```
>>> show auto_action
```

Your output will be similar to the following:

```
auto_action          BOOT
```

In this example, the `auto_action` console variable is set to `BOOT`.

If the `auto_action` console variable is not set to `HALT`, enter the following command at the console prompt:

```
>>> set auto_action HALT
```

- c. Determine the console device name of your CD-ROM drive or the local disk drive that contains the New Hardware Delivery kit. To find out, enter the following command at the console prompt:

```
>>> show dev
```

Your output will be similar to the following:

```
dka0.0.0.1001.0          DKA0          RZ28D      0010
dka100.1.0.0.5.0        DKA100        RZ28D      0372
dka500.5.0.0.1001.0    DKA500        RRD46      0557
dva0.0.0.0.0.1         DVA0
ewa0.0.0.1000.0        EWA0          hw_ethernet_address
pka0.7.0.1001.0        PKA0          SCSI Bus ID 7 5.01
pkb0.7.0.1001.0        PKB0          SCSI Bus ID 7 5.01
```

CD-ROM drive types have an RRD prefix; in this example, the console device name of the RRD46-type CD-ROM drive is DKA500.

Local disks have an RZ prefix; in this example, the console device name of the RZ28D local disk drive is DKA100.

### 3.3 Adding Hardware Support to a Running System

Before you follow the procedure in this section, make sure that you have completed the applicable prerequisite tasks in Section 3.2.

Follow these steps to install a New Hardware Delivery kit:

1. Log in as `root` or use the `su` command to gain superuser privileges.
2. Use the `shutdown` command to halt your system:

```
% shutdown -h now
```

3. Enter the following command at the console prompt:

```
>>> set auto_action halt
```

4. Turn off your system, unplug all power cords, and follow the instructions in the hardware documentation to install the new hardware. Reconnect all power cords and turn on your system.

5. Enter the following command at the console prompt:

```
>>> boot -flag fax -file GENERIC CD-ROM_device
```

The following list describes this command line:

- The `-flag fax` option defines boot flags: `f` for a New Hardware Delivery kit, `a` for multiuser mode, and `x` to boot a different `osf_boot` file.
- The `-file GENERIC` option tells the kernel to bootlink using the file `GENERIC`.
- The optional `CD-ROM_device` argument is the console device name of your New Hardware Delivery kit device.

6. After the boot process starts, the `boot` utility issues the following prompt:

```
Enter Device Name:
```

Enter the console device name for the CD-ROM drive or local disk that contains the New Hardware Delivery kit, such as `DKA500`, and press Return.

7. The `boot` utility issues the following prompt:

```
Enter Kit Name:
```

Enter the name of the New Hardware Delivery kit that you want to install and press Return. For Tru64 UNIX Version 4.0F systems, the kit name is: `/V4.0F/usr/sys/hardware/base.kit`

8. The `boot` utility issues the following prompt:

```
Insert media for kit 'device:hw_kit_name', press Return when ready:
```

In this prompt, `device` is the device name that you entered in step 6, and `hw_kit_name` is the New Hardware Delivery kit name that you entered in step 7.

Press Return. The `boot` utility reads the selected New Hardware Delivery kit information into memory.

9. The `boot` utility reissues the `Enter Kit Name:` prompt.

Press Return and continue to the next step.

10. The `boot` utility reissues the `Enter Device Name:` prompt.

Press Return and continue to the next step.

11. The `boot` utility issues the following prompt:

Insert boot media, hit <return> when ready:

Because you are adding hardware support to a running system and the system disk is your boot media, just press Return. The generic kernel modules are read so that the bootlink process can build the kernel in memory in the next step.

12. The `boot` utility links the kernel objects and issues the following prompt:

Insert media for kit '*dev\_name:hw\_kit\_name*', press Return when ready:

In this prompt, *dev\_name* is the device name that you entered in step 6 and *hw\_kit\_name* is the New Hardware Delivery kit name that you entered in step 7.

Press Return. The New Hardware Delivery kernel modules are read and the bootlink process builds the kernel in memory.

13. The `boot` utility issues the following prompt:

Insert boot media, press Return when ready:

Because the boot media is still your installed system disk, just press Return. The `boot` utility loads and configures the New Hardware Delivery kit.

---

**Note**

---

During this step of the installation, the New Hardware Delivery kit will appear to be in a loop, reloading itself multiple times. This behavior is normal for this installation and may take up to 30 minutes to complete; please wait for the system to finish loading the software. Do not eject the CD-ROM or type Ctrl/C during this part of the installation.

---

14. If a kernel build is required, the installation process issues the following prompt:

Enter a name for the kernel configuration file. [*SYS\_NAME*]:

In this prompt, the default *SYS\_NAME* is the name of your existing kernel configuration file, usually your system name in uppercase characters.

If you select the default, you are asked to confirm your selection. If you then confirm your selection of the default, the old kernel configuration file is backed up to *SYS\_NAME.bck*.

Perform the following steps:

- a. When you see a prompt similar to the following, select the kernel options you want:

```

*** KERNEL OPTION SELECTION ***

  Selection  Kernel Option
-----
  1          System V Devices
  2          Logical Volume Manager (LVM)
  3          NTP V3 Kernel Phase Lock Loop (NTP_TIME)
  4          Kernel Breakpoint Debugger (KDEBUG)
  5          Packetfilter driver (PACKETFILTER)
  6          Point-to-Point Protocol (PPP)
  7          STREAMS pckt module (PCKT)
  8          Data Link Bridge (DLPI V2.0 Service Class 1)
  9          X/Open Transport Interface (XTISO, TIMOD, TIRDWR)
 10          ISO 9660 Compact Disc File System (CDFS)
 11          Audit Subsystem
 12          ACL Subsystem
 13          Logical Storage Manager (LSM)
 14          Advanced File System (ADVFS)
 15          All of the above
 16          None of the above
 17          Help
 18          Display all options again
-----

```

Enter the selection number for each kernel option you want.  
For example, 1 3 [16]:

- b. After selecting kernel options, you see a prompt similar to the following:

You selected the following kernel options:

```

System V Devices
Logical Volume Manager (LVM)
NTP V3 Kernel Phase Lock Loop (NTP_TIME)
Kernel Breakpoint Debugger (KDEBUG)
Packetfilter driver (PACKETFILTER)
Point-to-Point Protocol (PPP)
STREAMS pckt module (PCKT)
Data Link Bridge (DLPI V2.0 Service Class 1)
X/Open Transport Interface (XTISO, TIMOD, TIRDWR)
ISO 9660 Compact Disc File System (CDFS)
Audit Subsystem
ACL Subsystem
Logical Storage Manager (LSM)
Advanced File System (ADVFS)

```

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

- If the list is correct, enter **y** and continue to the next step.
  - If the list is not correct, enter **n** to return to the previous step and select kernel options again.
- c. The boot utility asks if you want to edit the `/usr/sys/conf/SYS_NAME` kernel configuration file.

---

### Note

---

Under most circumstances, you do not have to edit this file.

---

- If you want to edit the configuration file, enter `y`. The configuration file will be opened in an editor window. You can edit the file and continue to the next step.
  - If you do not want to edit the configuration file, enter `n` and continue to the next step.
15. After the system builds the new kernel, it loads, installs, and configures the New Hardware Delivery subsets.
  16. The system reboots with the new kernel, and you see the operating system login window.
  17. Log in as `root` and use the `setld -i` command to verify that your New Hardware Delivery kit is installed. Refer to the `setld(8)` reference page for additional information.
  18. Check to make sure that the installed files are where you want them and that the new hardware product is operational. You can use the `setld -i` command to verify installed software subsets.
  19. Check to make sure that the `/GENERIC` file was rebuilt correctly by issuing the following command:

```
# cat /GENERIC | grep -e module_name.mod
```

In this example, `module_name.mod` is the name of the module file or files that you loaded. If the `.mod` file was supplied in the `/opt` directory, the full pathname and file name should be in the `/GENERIC` file.

## 3.4 Adding Hardware Support During a Full Installation

Before you follow the procedure in this section, make sure that you have completed the applicable prerequisite tasks in Section 3.2.

Follow these steps to install a New Hardware Delivery kit in conjunction with a full installation of the operating system:

1. Log in as `root` or use the `su` command to gain superuser privileges.
2. Perform the appropriate preinstallation tasks described in the *Tru64 UNIX Installation Guide*.
3. Proceed to the next step if you are performing a default or cloned installation.

If you are performing a custom installation, plan your system disk space before proceeding to the next step.

---

**Note**

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Depending on the installation type you select, some of the system messages may differ. This document describes only the task required to install the New Hardware Delivery kit. Refer to the Tru64 UNIX *Installation Guide* for an explanation of the different types of installations you can perform.

---

4. Use the `shutdown` command to halt your system:

```
% shutdown -h now
```

5. Enter the following command at the console prompt:

```
>>> set auto_action halt
```

6. Turn off your system, unplug all power cords, and follow the instructions in the hardware documentation to install the new hardware. Reconnect all power cords and turn on your system.
7. Perform the appropriate processor-specific boot instructions except for the actual `boot` command.
8. Set the `bootdef_dev` console variable to `CD-ROM_device`.

```
>>> set bootdef_dev CD-ROM_device
```

9. Insert the New Hardware Delivery CD-ROM into the CD-ROM drive, and enter the following command:

```
>>> boot -flag fax -file GENERIC CD-ROM_device
```

The following list describes this command line:

- The `-flag fax` option defines boot flags: `f` for a New Hardware Delivery kit, `a` for multiuser mode, and `x` to boot a different `osf_boot` file.
- The `-file GENERIC` option tells the kernel to bootlink using the file `GENERIC`.
- The `location` argument is the device containing the New Hardware Delivery kit.

10. During the boot process, the `boot` utility issues the following prompt:

```
Enter Device Name:
```

Enter the console device name for the device that contains the New Hardware Delivery kit and press Return.

11. The `boot` utility issues the following prompt:

```
Enter Kit Name:
```

Enter the name of the New Hardware Delivery kit that you want to install and press Return. For Tru64 UNIX Version 4.0F systems, the kit name is: `/V4.0F/usr/sys/hardware/base.kit`

12. The boot utility issues the following prompt:

```
Insert media for kit 'dev_name:hw_kit_name',  
hit return when ready, or 'q' to quit this kit:
```

In this prompt, `dev_name` is the kit location you entered in step 10 and `hw_kit_name` is the New Hardware Delivery kit name that you entered in step 11.

Press Return. The boot utility reads the selected New Hardware Delivery kit into memory.

13. The boot utility issues the following prompt:

```
Enter Hardware Kit Name, or <return> if done with dev_name
```

Press Return.

14. The boot utility issues the following prompt.

```
Enter Device Name, or <return> if done:
```

Press Return.

15. The boot utility issues the following prompt:

```
Insert boot media, hit <return> when ready:
```

Insert the *Operating System Volume 1* CD-ROM into the drive and press Return. The generic kernel modules are read so that the bootlink process can build the kernel in memory in the next step.

16. The boot utility issues the following prompt:

```
Insert media for kit 'location:hw_kit_name',  
hit <return> when ready or 'q' to quit:
```

Insert the New Hardware Delivery CD-ROM into the drive and press Return. The New Hardware Delivery kernel modules are read and the bootlink process builds the kernel in memory.

17. The boot utility issues the following prompt:

```
Insert boot media, hit <return> when ready:
```

Insert the *Operating System Volume 1* CD-ROM into the drive and press Return.

18. The installation process creates the file systems, loads operating system subsets, and begins to reboot.

---

**Note**

---

You must halt the system at this point and boot the New Hardware Delivery media as described in the following steps.

If you do not boot the New Hardware Delivery media at this point, the installation will fail.

---

Halt the system before it completes the reboot, insert the New Hardware Delivery CD-ROM into the CD-ROM drive, and enter the following command:

```
>>> boot -flag fax -file GENERIC CD-ROM_device
```

19. The boot utility issues the following prompt:

Enter device name, or <return> if done:

Enter the name of the CD-ROM drive and press Return.

20. The boot utility issues the following prompt:

Enter the hardware kit name, or <return> if done with *CD-ROM\_device*:

Enter `/V4.0F/usr/sys/hardware/base.kit` and press Return.

21. The boot utility issues the following prompt:

Insert media for <kit\_name> hit <return> when ready or 'q' to quit this kit:

Press Return.

22. The boot utility issues the following prompt:

Enter hardware kit name or <return> if done

Press Return.

23. The boot utility issues the following prompt:

Enter device name or <return> if done

Press Return.

24. The boot utility issues the following prompt:

Insert boot media, hit <return> when ready:

Press Return. The boot media is the boot disk that has just been installed. The systems boots the newly installed software, links the kernel objects, configures software subsets, and loads hardware kits.

25. The boot utility issues the following prompt:

Insert media for <kit\_name> hit <return> when ready or 'q' to quit:

Put the NHD CD-ROM in the drive and press Return.

26. The boot utility issues the following prompt:

Insert boot media, hit return when ready

Press Return. The boot media is the boot disk that has just been installed. The systems boots the newly installed software, links the kernel objects, configures software subsets, and loads the hardware kits.

---

**Note**

---

During this step of the installation, the New Hardware Delivery kit will appear to be in a loop, reloading itself multiple times. This behavior is normal for this installation and may take up to 30 minutes to complete; please wait for the system to finish loading the software. Do not eject the CD-ROM or type Ctrl/C during this part of the installation.

---

27. The `boot` utility rebuilds your operating system kernel and reboots with the new kernel. After a successful reboot, you see the operating system login window.
28. Log in as `root` and use the `setld -i` command to verify that your New Hardware Delivery kit is installed. Refer to the `setld(8)` reference page for information about this command.
29. Perform the appropriate postinstallation tasks described in the Tru64 UNIX *Installation Guide*.
30. Check to make sure that the installed files are where you want them and that the new hardware product is operational. You can use the `setld -i` command to verify installed software subsets.
31. Check to make sure that the `/GENERIC` file was rebuilt correctly by issuing the following command:  

```
# cat /GENERIC | grep -e module_name.mod
```

In this example, `module_name.mod` is the name of the module file or files that you loaded. If the `.mod` file was supplied in the `/opt` directory, the full pathname and file name should be in the `/GENERIC` file.
32. Check the install logs for errors. These logs are located in the `/var/adm/smlogs` directory after the system has been installed.



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# Reader's Comments

## New Hardware Delivery-3

Release Notes and Installation Instructions

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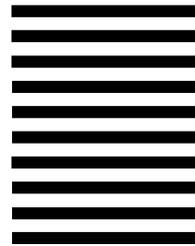
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