Tru64 UNIX

Installing a New Version of the Operating System

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This best practice describes how to install a brand new version of the Tru64 UNIX operating system.

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A Full Installation is the process that installs a brand new version of the operating system. A Full Installation creates new file systems and swap space and overwrites existing system and user-created files on the disk partitions where the file systems and swap spaces are to be installed. After the installation is complete, the network and other system services are configured.

Not all best practices apply to all configurations, so you must be sure that it is appropriate for your system and circumstances. See *Is This Best Practice Right for You?* for more information.

See the Tru64 UNIX Best Practices Web page for more information about best practices documentation:

`http://www.unix.digital.com/faqs/publications/best_practices/`

Is This Best Practice Right for You?

Not all best practices apply to all configurations, so you must be sure that it is appropriate for your system and circumstances. To use this best practice, you must meet the requirements described in the following table.

Requirement	Description
Operating System and Version	A Full Installation of Version 5.0A can be performed on brand new Alpha systems or an Alpha system that is running any version of the Tru64 UNIX operating system.
Operating System Restriction	This best practice is not intended for systems that previously were running a Windows NT for Alpha operating system that are being migrated toTru64 UNIX. In that case, refer to the *Installation Guide*

Requirement	Description
System Configuration	The following are the minimum hardware requirements for a successful Full Installation: • 64 megabytes (MB) of memory • One 1 gigabyte (GB) disk • One disk with an `a` partition of 128 MB • One CD-ROM drive The instructions assume that your system is turned on with all peripheral hardware devices attached or installed.
Impact on Availability	The system will be unavailable from 45 to 90 minutes from the time the system is brought down to console mode to the time it reboots with the new version of the operating system. Actual time depends upon how long it takes you to answer the up front questions, the speed of the CD-ROM drive, and the number of software subsets you are installing.
Type of Distribution Media	The instructions assume you are using the Version 5.0A *Tru64 UNIX Operating System Volume 1* CD-ROM as the distribution media.
Assumptions	The instuctions assume that you are not invoking user-supplied scripts nor are you cloning the installation or configuration from another system.

If you do not meet the previous requirements, see *Alternative Practices* for information.

Before You Begin

Before you apply the best practice for performing a Full Installation, there are things you need to do:

1. Read a summary of the Full Installation process to understand how your system will change.
2. Gather the items you need to begin.

3. Prepare yourself to answer host-specific and installation-specific questions.
4. Decide upon file system layout and disk selection.
5. Perform preinstallation tasks .

Full Installation Summary

A Full Installation creates new file systems and swap space and overwrites existing system and user-created files on the disk partitions where the file systems and swap spaces are to be installed. You can use the recommended settings for the file system layout, disk selection, type of kernel components to build into the kernel, and the type of software to install. You also have the option to make your own customized selections.

A Full Installation is invoked by shutting down the system to console mode and booting the system from the distribution media. Depending upon the graphics capabilities of the system, a graphical or text-based user interface is displayed. The user interface can be viewed in either the English, Chinese, or Japanese language. The Full Installation has a task oriented design, which leads you through each decision in the setup process and lets you go backward and forward at any time to review or change your answers.

After the brand new operating system is installed, network services, printer services, software licenses, and mail services must be configured. Initial system configuration tasks are performed from the Quick Setup or the Custom Setup applications, which are displayed upon your first login.

Gather the Items You Need

You should have the following items in your possession before beginning a Full Installation:

- The *Operating System Volume 1* CD-ROM
- The *Alpha Firmware Update* CD-ROM
- The EISA Configuration Utility (ECU) diskette (if your system is connected to an EISA bus)
- A printed copy of the *Release Notes*
- A printed copy of the *Installation Guide*

If you do not have these items, contact your Compaq support representative.

Be Prepared to Answer These Questions

Before beginning the Full Installation, prepare yourself to answer the following questions:

- What host name will you give to the system?
- What will you use for the `root` password?
- Do you want to install all software, just mandatory software, or a combination of mandatory and optional software?
- What additional languages do you need to install software for besides United States English?
- Will you need to build optional kernel components into the kernel, or will the mandatory kernel components suffice?

Decide on File System Layout and Disk Selection

Before invoking the Full Installation, you may want to decide in advance which disks you want to install onto and how you want to lay out the standard UNIX file systems. However, it is not necessary to do so because the Full Installation recommends default answers for all decisions.

The Full Installation process determines the file system layout based on your software selections. You do not need to calculate in advance the size of the file systems, nor do you need to repartition your disks in advance of the installation process to ensure a successful installation.

Unless you specify otherwise, the Full Installation process defaults to the following file system layout:

- The operating system is installed on a single disk (`dsk0`) with the following layout:
  - The / (root) file system is on the `a` partition.
  - The `/usr` file system is on the `g` partition.
  - The `var` area is a directory in the `/usr` file system.
  - If Worldwide Language Support (WLS) software is installed, the `i18n` (internationalization) area is a directory in the `/usr` file system.
  - A single swap area is located on the `b` partition.
- All file systems are the Advanced File System (AdvFS) type.

The size of each disk partition depends on the size of the disk chosen for the installation and the number of subsets you chose to install. The option

to customize your disk layout and partitions is always available during a Full Installation.

Perform Preinstallation Tasks

Look in the *Installation Guide* and your hardware documentation for more information about any of these preinstallation tasks.

1. **Read the Installation and Hardware chapters of the** *Release Notes* for last minute changes to software, firmware, or hardware that may affect the installation. It is recommended to skim the Table of Contents for other topics that may be important for your computing environment.
2. **Back up the user data on the system** using the method of your choice (if the system already is installed with the Tru64 UNIX operating system).

   Note

   Typical backup methods include using the Networker utility, the `vdump` command, and the `tar` command. Refer to *System Administration* if you need more information about backing up user data on a system.

3. Make sure logged in users have ample notice of the impending installation because the system will be unavailable during the installation process.
4. As superuser or the `root` user, **shut down the system to the console mode**:

   ```
   # shutdown -h now
   ```

5. **If you do not know the CD-ROM console device name**, enter the following command:

   ```
   >>> show device
   ```

   Note

   In the command output, the CD-ROM device is designated by the characters `RRD` or `CDROM`. When booting the system

from CD-ROM, the CD-ROM device name can be entered in upper or lower case characters.

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6. **Disable automatic system reboots** so the system does not reboot in the event of a hardware or power failure during the installation. To do this on most systems, set the `auto_action` environment variable:

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

Note

If the `auto_action` halt console variable is not supported for your system, look in your hardware documentation to determine which environment variable disables automatic reboots, and set it.

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7. **Update the system firmware** by inserting the *Alpha Firmware Update* CD-ROM into the drive and booting from it:

```
>>> boot cdrom_device_name
```

You will see some initialization messages followed by instructions for running the Firmware Update Utility. Read the instructions on the screen; firmware update instructions and revision levels vary depending upon the type of system you have. General rules for updating firmware are:

a. Use the default boot file, which is the default response.

b. Select the **Update** menu option to start the firmware update.

c. Always choose the option to update all types of firmware (SRM, EPROM, ARC, and so on) if the option to do so is presented for your system type.

8. **Power off the processor for 15 seconds** after the firmware is updated. Then, power up the processor to initialize the new firmware. Remember to remove the firmware CD-ROM from the drive.

9. **Perform hardware-specific preinstallation tasks** depending upon the type of hardware you have. Tasks may include:

- Configuring the RAID subsystem
- Running the EISA configuration utility (ECU)
- Configuring ISA devices

- Setting the network adapter mode to be compatible with your environment

Applying the Best Practice

Before you perform a Full Installation, be sure to follow the recommendations in *Before You Begin*.

The following procedure assumes that your system already has been shut down and halted at the console mode prompt (>>>):

1. Set the boot flag:

   ```
   >>> set boot_osflags ""
   ```

2. Look in the *Installation Guide* for additional processor-specific console variables that must be set. Most processors do not require you to set additional console variables.
3. Insert the *Operating System Volume 1* CD-ROM into the drive, and boot from it to start the Full Installation:

   ```
   >>> boot cdrom_device_name
   ```

   Note

   This boot process takes several minutes. When the boot process is complete, the system is in single-user mode, and an installation *Welcome* screen or message is displayed.

4. Provide the following information when it is requested:
   - Host name
   - Root password
   - Geographic location and area
   - Current date and time
   - Software subsets to install
   - Additional languages to support
   - Type of kernel components to build into the kernel
   - The disk or disks to use for the installation (default is `dsk0`)

- Disk partitions to hold the basic UNIX file systems (if you are customizing the file system layout)

When you are finished entering information, a summary of your selections is displayed. **Verify that your selections are correct and give your confirmation to start the installation process**. You have two chances to confirm the start of the process before your system is changed in any way and software loading begins.

Note

If you chose a language other than U.S. English, Chinese, or Japanese, you will be prompted later to insert the *Tru64 UNIX Associated Products Volume 1* CD-ROM, which is where the WLS software is located.

After software is loaded, the system reboots, configures the newly installed software, and builds a new kernel.

5. If you chose the option to customize the kernel, select the custom kernel components to build into the kernel after the system reboots.

Verifying Success

You know the Full Installation was successful when the system reboots and the login prompt or window is displayed. When you use `root` as the login name and the root password you specified earlier, you should be able to log in to the system.

Another way to verify a successful installation is to examine the various installation log files that are located in the `/var/adm/smlogs` directory. The log files capture the output of the installation, and any errors are noted.

If the best practice was not successful, see *Troubleshooting* for information about identifying and solving problems.

Troubleshooting

If you determine that the best practice was not successful, as described in *Verifying Success*, refer to the *Error Message and Troubleshooting* appendix in the *Installation Guide* or your hardware documentation for assistance.

Alternative Practices

Although this best practice is the recommended method for performing a Full Installation of the operating system, if your system already is running

a version of the operating system but does not meet the requirements described in *Is This Best Practice Right for You?*, or perhaps you do not want to reconfigure services, you can perform an Update Installation instead.

An Update Installation takes a system that is running Version 4.0F or Version 5.0 and updates the operating system to Version 5.0A. An Update Installation preserves disk partitions, file system layout, system level file customizations, the networking, mail, and printing environment, user accounts, user created files, and any other system setup or configuration you may have done.

The primary difference between a Full Installation and an Update Installation is that an Update Installation updates your system to the next version of the operating system with little or no disruption to your existing system configuration. When you perform a Full Installation, you lose all existing configuration data, layered products, and third party software. If user data exists in one of the standard UNIX file systems (for example, in `/usr/users`), that data must be backed up so it can be restored after the Full Installation is complete.

Comments and Questions

We value your comments and questions on the information in this document. Please mail your comments to us at this address:

`best_practices@zk3.dec.com`

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