

# VERITAS 4.1 Installation Guide

HP-UX 11i v2



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# Contents

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# About This Document

The *VERITAS 4.1 Installation Guide* describes how to install, upgrade and remove the VERITAS 4.1 Web release depot.

## Intended Audience

This document is for system administrators who are responsible for installing and configuring UNIX systems with the VERITAS suite of products. Readers are expected to have knowledge of:

- System administration concepts
- UNIX operating system concepts
- UNIX File system concepts

## Document Organization

The *VERITAS 4.1 Installation Guide* is divided into the following chapters:

**Table 1**                      **Document Organization**

Chapter	Description
Chapter 1, "System Requirements for Installing VERITAS 4.1," on page 9	Describes the system requirements and licensing requirements for installing Base-VXFS 4.1 and Base-VXVM 4.1 on HP-UX 11i v2 or later.
Chapter 2, "Software Depot Contents," on page 11	Describes the contents of the VERITAS 4.1 software depot.
Chapter 3, "Upgrading to Base-VXFS 4.1 and Base-VXVM 4.1," on page 13	Describes how to upgrade from VxFS 3.5 and VxVM 3.5 to Base-VXFS 4.1 and Base-VXVM 4.1.
Chapter 4, "Installing Base-VXFS 4.1 and Base-VXVM 4.1," on page 15	Describes how to install Base-VXFS 4.1 and Base-VXVM 4.1 with <code>swinstall</code>
Chapter 5, "Setting Up Base-VXFS 4.1 and Base-VXVM 4.1," on page 21	Describes how to set up Base-VXFS 4.1 and Base-VXVM 4.1.
Chapter 6, "Removing Base-VXFS 4.1 and Base-VXVM 4.1," on page 29	Describes how to remove Base-VXFS 4.1 and Base-VXVM 4.1 bundles from your system.

## Typographic Conventions

Table 2 describes the typographic conventions used in this document.

**Table 2**                      **Typographic Conventions**

Typeface	Usage	Examples
monospace	Computer output, files, directories, software elements such as command options, function names, and parameters	Read tunables from the <code>/etc/vx/tunefstab</code> file.  See the <code>ls (1)</code> manpage for more information.
<i>italic</i>	New terms, book titles, emphasis, variables replaced with a name or value	See the <i>VERITAS 4.1 Installation Guide</i> for details.
%	C shell prompt	Not applicable
\$	Bourne/Korn shell prompt	Not applicable
#	Superuser prompt (all shells)	Not applicable
\	Continued input on the following line; you do not type this character	<code># mount -F vxfs \ /h/filesys</code>
[ ]	In command synopsis, brackets indicates an optional argument.	<code>ls [ -a ]</code>
	In command synopsis, a vertical bar separates mutually exclusive arguments.	<code>mount [ suid   nosuid ]</code>
blue text	An active hypertext link	In PDF and HTML files, click on links to move to the specified location.

## Related Documentation

For more information about VERITAS 4.1 products you can download the documentation set comprising of the following documents from <http://www.hp.com/go/softwaredepot>:

- *VERITAS File System 4.1 Release Notes*
- *VERITAS File System 4.1 Administrator's Guide*

- *VERITAS Volume Manager 4.1 Hardware Notes*
- *VERITAS Volume Manager 4.1 Release Notes*
- *VERITAS Volume Manager 4.1 Troubleshooting Guide*
- *VERITAS Volume Manager 4.1 Migration Guide*
- *VERITAS Volume Manager 4.1 Administrator's Guide*
- *VERITAS Enterprise Administrator (VEA 500 Series) Getting Started*

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# 1 System Requirements for Installing VERITAS 4.1

This chapter discusses the system requirements and patch requirements for installing Base-VXFS 4.1 and Base-VXVM 4.1 on HP-UX 11i v2 or later.

---

**NOTE** Before installing VERITAS 4.1 you must:

- Upgrade both VERITAS File System 3.5 and VERITAS Volume Manager 3.5 to Base-VXFS 4.1 and Base-VXVM 4.1, respectively for VxFS to work with VxVM.
  - Do not upgrade the operating system and the VERITAS products simultaneously. HP recommends that you first upgrade the operating system and later upgrade the VERITAS products.
- 

## Disk Space Requirements

Table 1-1 describes the disk space requirements for installing the Base-VXFS 4.1 SD-Bundle.

**Table 1-1 Minimum Space Requirement per Directory for Base-VXFS**

Package/Contents	/stand <sup>a</sup>	/sbin	/usr	/opt	/etc	/var	Total
VRTSvxfs File System	60MB	30MB	60MB	4MB	80MB	-	154MB
VRTSfsman File System manpages	-	-	-	1MB	-	-	1MB
VRTSvlic Licensing Package	-	8MB	3MB	.5MB	.5MB	-	12MB

- a. The space requirement in /stand is the estimated space required to save a copy of the old kernel on a system. You may require more or less space, depending on your configuration.

Table 1-2 describes the disk space requirements for installing Base-VXVM 4.1 SD-Bundle.

**Table 1-2 Minimum Space Requirement per Directory for Base-VXVM**

Package/Contents	/home	/opt	/usr	/stand	/var	Total
Base-VXVM	-	431MB	129MB	10MB	1MB	570MB

## Patch Requirements

The required patches for Base-VXFS 4.1 SD-Bundle and Base-VXVM 4.1 SD-Bundle are part of the FEATURE11i bundle.

---

**NOTE** If `VRTSfsnbl` is installed on the system, you must remove it before installing Base-VXFS 4.1. The `Base-VXFS checkinstall` script detects it, and the installation is aborted with instructions in the SD logs.

---

The other patches you must install are `PHCO_33308` and `PHCO_33238`. The `PHCO_33308` patch is required for Logical Volume Manager (LVM) to work with Disk Layout Version 6. The Disk Layout Version 6 is the default disk layout for Base-VXFS 4.1. The patch `PHCO_33238` is required for using the `swapon` command to enable VxFS 4.1 file system for paging.

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**IMPORTANT** If `PHCO_33308` patch is not installed on your system and you try to create a physical volume for use in an LVM volume group or try to reduce the size of an existing LVM volume, there will be a potential data loss.

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## 2 Software Depot Contents

This chapter discusses the contents of the VERITAS 4.1 software depot.

### Base-VXFS 4.1 SD-Bundle

Table 2-1 describes the packages included in the Base-VXFS 4.1 SD-Bundle includes:

**Table 2-1 Base-VXFS Packages**

Package	Description
VRTSvxfs	VERITAS File System
VRTSfsman	VERITAS File System Manuals
VRTSvlic	VERITAS License Utilities

---

**NOTE** The licensing package `VRTSvlic` is installed as part of Base-VXVM 4.1 SD-Bundle.

---

### Base-VXVM 4.1 SD-Bundle

Table 2-2 describes the packages that the Base-VXVM 4.1 SD-Bundle includes:

**Table 2-2 Base-VXVM Packages**

Package	Description
VRTSvxvm	Base VERITAS Volume Manager 4.1 for HP-UX
VRTSvlic	VERITAS License Utilities
VRTSvmdoc	VERITAS Volume Manager Documentation
VRTSob	VERITAS Enterprise Administrator Service
VRTSobgui	VERITAS Enterprise Administrator
VRTSvmpo	VERITAS Volume Manager Management Services Provider
VRTSfspro	VERITAS File System Management Services Provider
VRTSalloc	VERITAS Volume Manager: VERITAS Intelligent Storage Provisioning
VRTSap	VERITAS Action Provider

**Table 2-2 Base-VXVM Packages (Continued)**

<b>Package</b>	<b>Description</b>
VRTStep	VERITAS Task Exec Provider
VRTSddlpr	VERITAS Device Discovery Layer Services Provider
VRTSvxmsa	VxMS Application Deployment Package

---

## 3 Upgrading to Base-VXFS 4.1 and Base-VXVM 4.1

This chapter discusses how to upgrade from VxFS 3.5 and VxVM 3.5 to Base-VXFS 4.1 and Base-VXVM 4.1 respectively.

### Upgrading to Base-VXFS 4.1 from VxFS 3.5

The installation of Base-VXFS 4.1 replaces the functionality provided by VxFS 3.5 (HP OnlineJFS/JFS) on HP-UX 11i Version 2. Installing Base-VXFS 4.1 on HP-UX 11i v2 does not remove the VxFS 3.5 (HP OnlineJFS/JFS) package. However, the functionality of VxFS 3.5 is disabled. For more information on installing Base-VXFS 4.1 see “Installing Base-VXFS 4.1” on page 15.

---

**NOTE** If you remove Base-VXFS 4.1, the VxFS 3.5 functionality returns automatically only if the disk layout for `/` and `/stand` is not changed.

---

The Base-VXFS installation changes the `/stand/system` file and rebuilds the kernel. If you have used a system configuration file other than `/stand/system` to configure your current kernel, you must copy your configuration changes to the `/stand/system` file. Otherwise, the kernel built when installing with `installvxfs` will not include your configuration changes.

### Upgrading to Base-VXVM 4.1 from VxVM 3.5

The installation of Base-VXVM 4.1 replaces the functionality provided by the VxVM 3.5 bundle on HP-UX 11i Version 2. Installation of the Base-VXVM 4.1 on HP-UX 11iv2 bundle removes the VxVM 3.5 components. If the Base-VXVM 4.1 bundle is removed for any reason, the VxVM 3.5 bundle has to be re-installed on your system. For more information on installing Base-VXVM 4.1 see “Installing Base-VXVM 4.1” on page 18.



---

## 4 Installing Base-VXFS 4.1 and Base-VXVM 4.1

This chapter describes how to install Base-VXFS 4.1 and Base-VXVM 4.1, with `swinstall`.

### Installing Base-VXFS 4.1

You can install Base-VXFS either in the interactive mode or in the non-interactive mode.

#### Installing Base-VXFS 4.1 in the Non-Interactive Mode

You can install Base-VXFS 4.1 using the `swinstall` as follows:

1. Log on to the system as superuser.
2. To install Base-VXFS non-interactively type the following command at the command prompt:

```
# swinstall -x autoreboot=true -s <depot> Base-VXFS
```

The following output is displayed:

```
=====  
06/20/05 16:25:31 IST BEGIN swinstall SESSION  
      (non-interactive) (jobid=ptstn5-0123)  
* Session started for user "root@ptstn5".  
* Beginning Selection  
* Target connection succeeded for "ptstn5:/".  
* Source connection succeeded for  
  "fslab10.india.hp.com:/destruct1/Mega1".  
* Source:                fslab10.india.hp.com:/destruct1/Mega1  
* Targets:                ptstn5:/  
* Software selections:  
      Base-VXFS,r=4.1,a=HP-UX_B.11.23_IA/PA,v=HP  
      + FEATURE11i,r=B.11.23.0507.025,a=HP-UX_B.11.23_IA/PA,v=HP  
+DiskQuota-Enh.DQUOTA-ENH,r=B.11.23.01,a=HP-UX_B.11.23_IA/PA,v=HP,fr=B.11.23  
.01,fa=HP-UX_B.11.23_PA
```

## Installing Base-VXFS 4.1 and Base-VXVM 4.1

```
+FSCmdsEnh.FS-CMDS-ENH,r=B.11.23.01,a=HP-UX_B.11.23_IA/PA,v=HP,fr=B.11.23.01
,fa=HP-UX_B.11.23_PA
.
.
.
* Analysis and Execution succeeded.
NOTE:    More information may be found in the agent logfile using the
         command "swjob -a log ptstn5-0123 @ ptstn5:".
===== 06/20/05 16:26:23 IST  END swinstall SESSION (non-interactive)
         (jobid=ptstn5-0123)
```

### Installing Base-VXFS 4.1 in the Interactive Mode

To install Base-VXFS 4.1 in the interactive mode, complete the following steps:

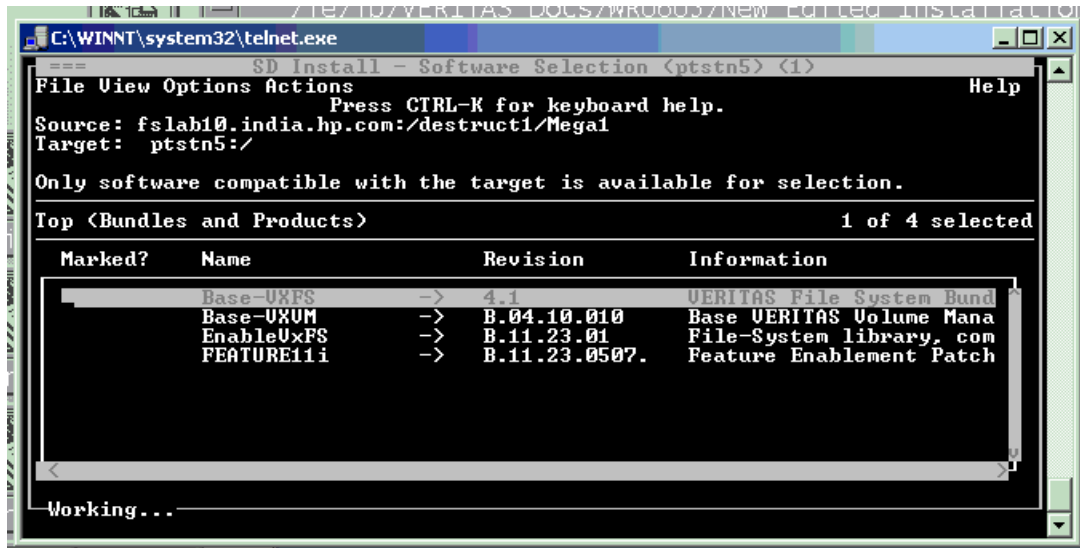
1. Run the following command at the command prompt:

```
# swinstall -x autoreboot=true -s <depot>
```

Figure 4-1 is displayed. You must mark the Base-VXFS 4.1 package in the SD Install window to start the installation.



Figure 4-1 SD Install Window



2. Select **Actions**, and click **Install**. Follow the instructions that appear on the window to complete the installation.

The system reboots automatically after the installation is complete. You can monitor the installation process for warnings and notes. See the log file, `/var/adm/sw/swagent.log` file for information about any installation-related errors.

## Verifying Base-VXFS Installation

Verify that the Base-VXFS 4.1 packages are installed, by running the following command:

```
# swlist Base-VXFS
```

If the Base-VXFS software is successfully installed on the system, you will see the following output:

```

# Initializing...
# Contacting target "ptstn5"...
#
# Target: ptstn5:/
#
# Base-VXFS          4.1          VERITAS File System Bundle 4.1 for HP-UX
  
```

Base-VXFS.VRTSvxfs	4.1	VERITAS File System
Base-VXFS.VRTSvlic	3.02.006c.009	VERITAS License Utilities
Base-VXFS.VRTSfsman	4.1	VERITAS File System Manuals

## Installing Base-VXVM 4.1

You can install Base-VXVM 4.1 using the `swinstall` as follows:

1. To install Base-VXVM 4.1 in the non-interactive mode, type the following command at the prompt:

```
# swinstall -x autoreboot=true -s <depot> Base-VXVM
```

The following output is displayed:

```
===== 06/20/05 16:37:25 IST BEGIN swinstall SESSION
        (non-interactive) (jobid=ptstn5-0125)
* Session started for user "root@ptstn5".
* Beginning Selection
* Target connection succeeded for "ptstn5:/".
* Source connection succeeded for
  "fslab10.india.hp.com:/destruct1/Mega1".
* Source:                fslab10.india.hp.com:/destruct1/Mega1
* Targets:               ptstn5:/
* Software selections:
      Base-VXVM,r=B.04.10.010,a=HP-UX_B.11.23_IA/PA,v=HP
      + FEATURE11i,r=B.11.23.0507.025,a=HP-UX_B.11.23_IA/PA,v=HP
+PHKL_31500.CORE2-KRN,r=1.0,a=HP-UX_B.11.23_IA/PA,v=HP,fr=1.0,fa=HP-UX_B.11.
23_PA
VRTSalloc.VRTSALLOC,r=4.1,a=HP-UX_B.11.23_IA/PA,v=HP,fr=4.1,fa=HP-UX_B.11.23
_IA/PA
.
.
* Analysis and Execution succeeded.
```

NOTE: More information may be found in the agent logfile using the

```

command "swjob -a log ptstn5-0125 @ ptstn5:/".
===== 06/20/05 16:37:28 IST  END swinstall SESSION (non-interactive)
(jobid=ptstn5-0125)

```

---

**NOTE** This also installs the VERITAS Enterprise Administrator (VEA) service and client packages.

---

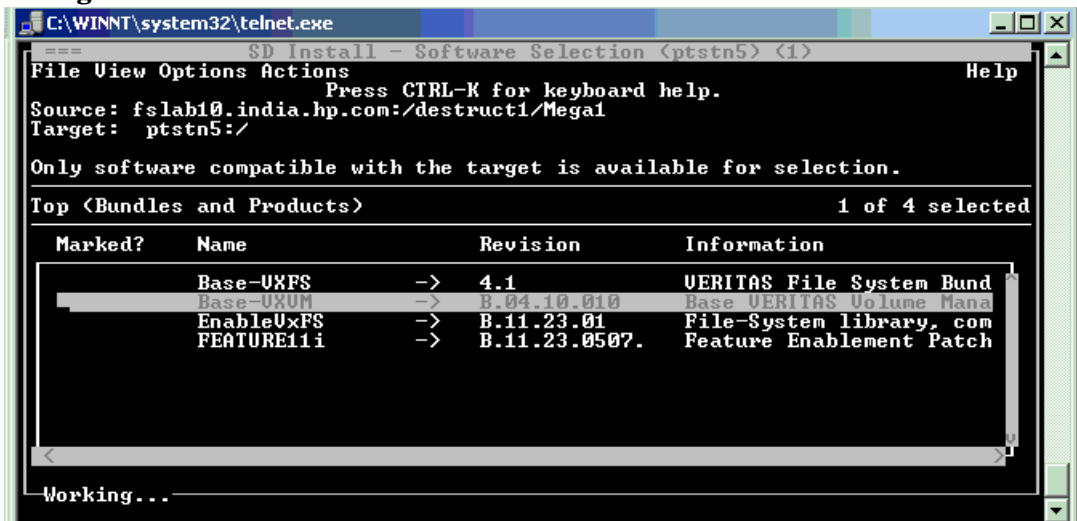
2. To install Base-VXVM 4.1 in the interactive mode, complete the following steps:

a. Type the following command at the command prompt:

```
# swinstall -x autoreboot=true -s <depot>
```

Figure 4-2 is displayed. You must mark the Base-VXVM 4.1 package in the SD Install window.

**Figure 4-2 SD Install Window**



- Select Actions, and click Install. Follow the instructions that appear on the window to complete the installation.
- The system reboots after the installation is complete.



---

# 5 Setting Up Base-VXFS 4.1 and Base-VXVM 4.1

This chapter discusses how to set up Base-VXFS 4.1 and Base-VXVM 4.1.

## Setting Up Base-VXFS 4.1

After installing Base-VXFS 4.1, you can create a file system on a VERITAS Volume Manager 4.1 volume or on an HP Logical Volume Manager (LVM) volume by running the following steps:

**Step 1.** Create the file system by running the following command:

```
# mkfs -F vxfs <special device>
```

-F option is used to specify the file system type.

**Step 2.** Mount the file system by running the following command:

```
# mount -F vxfs <special device> <directory>
```

-F option is used to specify the file system type.

---

**NOTE** Symbolic links to all Base-VXFS 4.1 command executables are installed in the `/opt/VRTS/bin` directory. Add this directory to the end of your `PATH` environment variable to access the commands.

---

---

**NOTE** If you add an entry for the file system in the `/etc/fstab` file, the file system can be mounted automatically.

---

You can unmount the file system later by running the following command.

```
# umount -F vxfs
```

All VERITAS-specific commands are described in the Base-VXFS 4.1 guides and online manpages. Refer to the *Quick Start Reference* appendix of the *VERITAS File System 4.1 Administrator's Guide* for examples on the most common Base-VXFS 4.1 operating procedures.

---

**NOTE** When you use the `swinstall` command to install the `VRTSfsman` package, the Base-VXFS 4.1 manpages are installed in the `/opt/VRTS/vxfs4.1/man` directory, and symbolic links to these manpages are created in the `/opt/VRTS/man` directory. When Base-VXFS 4.1 is installed, the `/opt/VRTS/vxfs4.1/man` directory is automatically added to the `/etc/MANPATH`. Make sure that `/opt/VRTS/vxfs4.1/man` appears before `/usr/share/man` in your `MANPATH` environment variable to display the latest version of the Base-VXFS 4.1 manpages.

---

## Files Modified After Installation

Table 5-1 describes the files modified after installing Base-VXFS and Base-VXVM.

**Table 5-1** Files Modified

File	Modifications
<code>/stand/system</code>	Deactivates JFS and OnLineJFS and configures Base-VXFS 4.1, and Quick I/O.
<code>/etc/MANPATH</code>	Inserts <code>/opt/VRTS/vxfs4.1/man</code> before the <code>/usr/share/man</code> directory in the <code>MANPATH</code> environment variable to ensure that the Base-VXFS 4.1 manpages are displayed instead of JFS/OnLineJFS 3.5 manpages located in the <code>/usr/share/man</code> directory.

## Files Added After Installation

Table 5-2 describes the files added after installing Base-VXFS and Base-VXVM.

**Table 5-2** Files Added

File	Description
<code>/usr/conf/lib/libvxfs41.a</code>	Kernel library for Base-VXFS 4.1
<code>/sbin/lib/mfsconfig.d/vxfs4.1</code>	Base-VXFS 4.1 command configuration file
<code>/usr/lib/libxdsm.a</code>	DMAPI library
<code>/usr/lib/libvxfsutil.a</code>	Base-VXFS 4.1 APIs library
<code>/usr/conf/mod/fdd</code>	Quick I/O module

**Table 5-2 Files Added (Continued)**

File	Description
/sbin/fs/vxfs4.1/ [bcheckrc, extendfs, fsck, fsdb, fstyp, mkfs, mount, newfs, vxdump, vxfsconvert, vxfsstat, vxrestore, vxtunefs, vxupgrade, vxumount]	Base-VXFS 4.1 commands
/usr/sbin/fs/vxfs4.1/ [df, fcladm, ff, fsadm, fsapadm, fscat, fscdsadm, fscdsconv, fscdstask, fsckpt_restore, fsckptadm, fsenvadm, fsvoladm, getext, ncheck, quot, quotacheck, setext, vxdump, vxlsino, vxrestore]	Base-VXFS 4.1 commands
/usr/sbin/ [fsclustadm, qiomkfile, qioadmin, qiostat vxfsckd, vxgetmsg]	Base-VXFS 4.1 commands and Quick I/O commands
/usr/lib/ [vxckptpriv.so, vxfspriv.so, vxfsutil.so, .libvxfsutil.so]	Dynamic libraries for Base-VXFS 4.1 APIs
/usr/lib/pa20_32/ [vxckptpriv.so, vxfspriv.so, vxfsutil.so, .libvxfsutil.so]	32-bit dynamic libraries for Base-VXFS 4.1 APIs

**Table 5-2 Files Added (Continued)**

File	Description
/usr/lib/pa20_64/ [vxckptpriv.so, vxfspriv.so, vxfsutil.so, .libvxfsutil.so]	64-bit dynamic libraries for Base-VXFS 4.1 APIs
/usr/lib/hpux32/ [vxckptpriv.so, vxfspriv.so, vxfsutil.so, .libvxfsutil.so]	32-bit dynamic libraries for Base-VXFS 4.1 APIs. These are installed only on Itanium machines.
/usr/lib/hpux64 [vxckptpriv.so, vxfspriv.so, vxfsutil.so, .libvxfsutil.s]	64-bit dynamic libraries for Base-VXFS 4.1 APIs. These are installed only on Itanium machines.
/opt/VRTS/bin/*	Symbolic links to Base-VXFS 4.1 and Quick I/O commands
/opt/VRTS/vxfs4.1/man/	Manpages for Base-VXFS 4.1
/opt/VRTS/vxfs4.1/include/	Header files for Base-VXFS 4.1
/opt/VRTSvxms/lib/map/libvxfs. sl	32-bit VxMS plugin for the VERITAS File System.
/opt/VRTSvxms/lib/map/pa20_64/ libvxfs.sl	64-bit VxMS plugin for the VERITAS File System.

### Upgrading the Base-VXFS Disk Layout

Base-VXFS 4.1 enables you to mount the following file system disk layouts:

- Disk Layout Version 4
- Disk Layout Version 5



- Disk Layout Version 6

The default layout for Base-VXFS 4.1 is Disk Layout Version 6. Any new file system created using the Base-VXFS 4.1 `mkfs` command has Disk Layout Version 6, unless specified explicitly. You can specify the Version 4 or 5 disk layout, by running the following command:

```
# mkfs -F vxfs -o version=4 <special>
```

You can determine the file system layout by running the following command:

```
# fstyp -v /dev/vx/dsk/dg1/vol3
```

The `-v` option is used for verbose output. The output contains information about the file system superblock.

```
Base-VXFS
version: 4
.
.
.
f_fsindex: 7
f_size: 512000
```

In the above output, version 4 indicates the Version 4 file system disk layout.

Use the following command to upgrade an existing Base-VXFS 4.1 disk layout to Disk Layout Version 6 while the file system remains online:

```
# vxupgrade -n 6 /mount_point
```

The option `-n` is used to specify the disk layout version number to which to upgrade.

You can use the `vxfsconvert` command to upgrade file systems, while they are offline, from Disk Layout Version 3 to Disk Layout Version 4. See the `vxfsconvert (1M)`, `vxupgrade(1M)`, and `fsadm(1M)` manpages for more information on upgrading Base-VXFS 4.1 file systems.

---

**NOTE** You must not convert `/` and `/stand` to Disk Layout Version 6, since the HP-UX bootloader does not support the Disk Layout Version 6.

If you have converted the system partitions to Disk Layout Version 6, you should not remove Base-VXFS 4.1 and revert to JFS 3.5 because this may leave the system in an unbootable state.

---

## Setting Up Base-VXVM 4.1

You can use the `vxinstall` procedure to initialize Base-VXVM. The `vxinstall` initialization procedure enables you to do the following:

- Specify the name of the default disk group to be used by the commands if the `-g` option is not used to specify a disk group.
- Choose whether to use enclosure-based naming for disks. This type of naming enables you to associate more meaningful disk-access names with disks in different arrays.

---

**NOTE** For more information on setting up Base-VXVM disk groups and volumes after installation, refer to section “*Configuring VERITAS Volume Manager*” in the *VERITAS Volume Manager 4.1 Administrator’s Guide*.

---

To configure Base-VXVM 4.1, complete the following steps:

**Step 1.** To run the `vxinstall` procedure, enter the following command:

```
# vxinstall
```

**Step 2.** To use enclosure-based names, enter `y` when prompted by the `vxinstall` utility:

```
Do you want to use enclosure based names for all disks ?
```

```
[y,n,q,?] (default: n)
```

After installation, disks use the traditional naming format, usually `c#t#d#`. Enclosure-based naming allows disk devices to be named for enclosures rather than for the controllers through which they are accessed. In a Storage Area Network (SAN) that uses Fibre Channel hubs or fabric switches, information about the disk location provided by the operating system may not correctly indicate the physical location of the disks. Enclosure-based naming allows Base-VXVM to access enclosures as separate physical entities. By configuring redundant copies of your data on separate enclosures, you can safeguard your data against failure of one or more enclosures. If you want to use enclosure-based naming, enter `y`. Otherwise, enter `n` or press Return.

**Step 3.** To set up a systemwide default disk group, enter `y` when prompted by the `vxinstall` utility:

```
Do you want to setup a system wide default disk group ?
```

```
[y,n,q,?] (default: y)
```

If you know the name of the disk group to be used as the default disk group, enter `y`, and type the name of the disk group at the prompt, or use the `list` option and make a selection. Otherwise, enter `n` if you do not want to define a default disk group.

---

**NOTE** In releases prior to VxVM 3.5, the default disk group was `rootdg` (the root disk group). For Base-VXVM 3.5 to function, the `rootdg` disk group had to exist, and it had to contain at least one disk. This is no longer required in Base-VXVM 4.1. However, you may find it convenient to create a systemwide default disk group. For operations that require a disk group, the systemwide default disk group will be used if the Base-VXVM command is not specified with the `-g` option. The main advantage of creating a default disk group is that Base-VXVM commands default to the default disk group, and you will not need to use the `-g` option.

---

**Step 4.** To verify that the default disk group is created, run the following command:

```
# vxdg defaultdg
```

---

**NOTE** You cannot use the following names for the default disk group because they are reserved words: `bootdg`, `defaultdg` and `nodg`.

---

**Step 5.** To define or change the name of the default disk group at a later time type the following command at the command prompt:

```
# vxdctl defaultdg diskgroup
```

The installation of Base-VXVM is complete. You can now use the `vxdiskadm` command and the VEA GUI to create disk groups, and to populate the with disks. For more information on creating diskgroups refer to the *VERITAS Volume Manager 4.1 Administrator's Guide* to carry out these and other tasks such as disk initialization and dynamic multipathing (DMP) administration.



---

## 6 Removing Base-VXFS 4.1 and Base-VXVM 4.1

This chapter discusses how to remove Base-VXFS 4.1 and Base-VXVM 4.1 SD-bundles from your system.

### Removing Base-VXFS 4.1 SD-Bundle

This section describes how to remove Base-VXFS 4.1.

The new tunables for Base-VXFS 4.1 such as `inode_aging_size`, `inode_aging_count`, `fcl_maxalloc`, `fcl_keeptime`, `fcl_winterval`, and `oltp_load`, to the `tunefstab` directory, must be removed. The JFS/OnLineJFS 3.5 `vxtunefs` command does not recognize the Base-VXFS 4.1 tunables.

---

**NOTE** As Base-VXFS 4.1 makes changes to the HP-UX kernel when it is installed, Base-VXFS 4.1 may not be removed completely using the following procedure. If you experience any problems with the Base-VXFS 4.1 removal, contact HP technical support for assistance (see “Technical Support” on page 7).

---

---

**CAUTION** Do not remove the `VRTSvlic` package if there are any other VERITAS products running on your system.

---

1. Check `/etc/vx/tunefstab` and remove any Base-VXFS 4.1 tunable settings.
2. To remove the VERITAS file system packages, run the following command at the command prompt:

```
# swremove -x autoreboot=true Base-VXFS
```

The following output is displayed:

```
=====  
06/20/05 16:10:47 IST BEGIN swremove SESSION  
(non-interactive) (jobid=ptstn5-0122)  
  
* Session started for user "root@ptstn5".  
  
* Beginning Selection  
  
* Target connection succeeded for "ptstn5:/".  
  
* Software selections:  
  
Base-VXFS, r=4.1, a=HP-UX_B.11.23_IA/PA, v=HP
```

## Removing Base-VXFS 4.1 and Base-VXVM 4.1

```
VRTSfsman.VXFS-ENG-A-MAN,l=/,r=4.1,a=HP-UX_B.11.23_IA/PA,v=HP,fr=4.1,fa=HP-UX_B.11.23_
IA/PA
VRTSvxfs.VXFS-KRN,l=/,r=4.1,a=HP-UX_B.11.23_IA/PA,v=HP,fr=4.1,fa=HP-UX_B.11.23_PA
VRTSvxfs.VXFS-PRG,l=/,r=4.1,a=HP-UX_B.11.23_IA/PA,v=HP,fr=4.1,fa=HP-UX_B.11.23_PA
VRTSvxfs.VXFS-RUN,l=/,r=4.1,a=HP-UX_B.11.23_IA/PA,v=HP,fr=4.1,fa=HP-UX_B.11.23_PA

* Selection succeeded.
* Beginning Analysis
* Session selections have been saved in the file
  "/.sw/sessions/swremove.last".
* The analysis phase succeeded for "ptstn5:".
* Analysis succeeded.
* Beginning Execution
* The execution phase succeeded for "ptstn5:".
* Execution succeeded.

NOTE:   More information may be found in the agent logfile using the
        command "swjob -a log ptstn5-0122 @ ptstn5:".

===== 06/20/05 16:11:03 IST  END swremove SESSION (non-interactive)
        (jobid=ptstn5-0122)
```

3. To verify that the VERITAS packages were removed from the system, run the following command at the command prompt:

```
# swlist -l product | grep VRTS
```

The output will not display the packages VRTSvxfs, VRTSfsman, and VRTSvlic. This confirms that the Base-VXFS package is removed.

```
VRTSalloc  4.01CAP2.004  VERITAS Volume Manager: VERITAS Intelligent
Storage Provisioning
VRTSap     2.00.025.004  VERITAS Action Provider
VRTSddlpr  b4.01.003      VERITAS Device Discovery Layer Services Provider
VRTSfspro  4.1jkl.001     VERITAS File System Management Services Provider
VRTSob     3.2.532.0.009  VERITAS Enterprise Administrator Service
VRTSobgui  3.2.532.0.009  VERITAS Enterprise Administrator
VRTStep   1.20.028.006   VERITAS Task Exec Provider
VRTSvlic  3.02.006c.008  VERITAS License Utilities
VRTSvmdoc  4.1.009        VERITAS Volume Manager Documentation
```

```
VRTSvmpro 4.1.009          VERITAS Volume Manager Management
Services Provider

VRTSvxmsa 4.02.1.0224.001 VxMS Application Deployment Package

VRTSvxvm  4.1.009          Base VERITAS Volume Manager 4.1 for HP-UX
```

The listing shown above confirms that the Base-VXFS package was removed from the system.

## Before Removing Base-VXVM 4.1 SD-Bundle

If you try to remove Base-VXVM 4.1 software from your system without completing the following preparatory steps, you will lose data and your system will be in an unstable state.

Make sure that you take a full backup of your system before removing Base-VXVM 4.1 software.

---

**NOTE** If Base-VXVM 4.1 rootability has been installed using either an Ignite-UX install, or by using the `vxcp_lvmroot` command, Base-VXVM 4.1 cannot be removed until the root disk is under LVM control. If you have used `vxcp_lvmroot` to make Base-VXVM 4.1 rootable, you can use the `vxres_lvmroot` command to restore the root disk to LVM control.

---

Before you remove Base-VXVM 4.1 ensure that the following have been completed:

- File systems and other applications that use volume devices have been modified to use the underlying disks or logical volumes.
- Any file system that has been created since Base-VXVM 4.1 was installed, must be made accessible through a disk or LVM logical volume.
- Data from any volume that was created from multiple regions of storage, including striped or spanned volumes, must be moved to a single disk or to an appropriate LVM logical volume.
- Data from any volume that was created from multiple regions of storage, including striped or spanned volumes, has been moved to a single disk, or to an appropriate LVM logical volume.
- Data has been moved out of Base-VXVM 4.1 control.

- Copies of file systems are removed to free up as much space as possible. If a volume contains one of more plex, all plexes except one have been removed. See “Removing Plexes” on page 32.
- Base-VXVM 4.1 volumes are moved to the LVM volumes. See “Moving Base-VXVM 4.1 Volumes to the LVM Volumes” on page 32.
- Base-VXVM 4.1 is shut down. See “Shutting Down Base-VXVM 4.1” on page 34.

### Removing Plexes

If a volume contains more than one plex (mirror), all plexes except one must be removed.

To remove plexes complete the following steps:

1. To display a list of all the volumes, run the following command:

```
# vxprint -Ath
```

2. To remove a named plex, run the following command:

```
# vxplex -o rm disk plex
```

If the remaining plex has more than one sub-disk, run the following commands to consolidate those sub-disks into a single sub-disk:

```
# vxassist mirror volume layout=contig
```

```
# vxplex -o rm dis plex_name
```

---

**NOTE** This operation will not work if you do not have sufficient space on another disk.

---

### Moving Base-VXVM 4.1 Volumes to the LVM Volumes

Before moving Base-VXVM 4.1 volumes to LVM volumes, ensure the following:

1. You have backed up the system to tape or other media.
2. You have backed up each file system individually, created new file systems on LVM logical volumes, and recovered all volumes.
3. Moved volumes incrementally on to logical volumes. To move the volumes, complete the following steps:



- a. Evacuate as many disks as possible. Evacuation moves subdisks from the source disks to target disks. The evacuated disks provide the initial free disk space for volumes to be moved to LVM volumes. Disks can be evacuated using one of the following:
  - Run the `vxdiskadm` command with the `remove disk` option and follow the steps
  - Run the `vxevac` script
- b. Remove the evacuated disks from Base-VXVM 4.1 control by running the following commands:

```
# vxdg rmdisk diskname
# vxdisk rm devname
```
- c. Decide which volume to move first. If the volume to be moved is mounted, unmount it. If the volume is being used as a raw partition for database applications, ensure that the application is not updating the volume and the data on the volume has been synchronized.
- d. On the free disk space, create an LVM logical volume of the same size as the Base-VXVM 4.1 volume. If there is not enough free space for the logical volume, add a new disk to the system for the first volume to be removed. For subsequent volumes, you can use the free space generated by the removal of the first volume.
- e. Copy the data on the volume to the newly created LVM logical volume by running the following command:

```
# dd if=/dev/vx/dsk/lhome of=/dev/vgvol/lhome
```

where `vgvol` is a newly created LVM volume group and `lhome` is a new logical volume.
- f. Replace the entry (if any) for the volume in `/etc/fstab` with an entry for the newly created LVM logical volume.
- g. Mount the logical volume only if the VXVM volume was mounted before.
- h. Remove the volume from Veritas Volume Manager control by running the following command:

```
# vxedit -rf rm volume_name
```
- i. Remove any free disks by removing volumes from Volume Manager control. To check whether the subdisks remain on a disk, enter the following command at the command prompt:

```
# vxprint -F "%snum" diskname
```
- j. If the output is other than 0, some subdisks remain on this disk and they must be removed. However, if the output is 0, remove the disk from Volume Manager control by running the following commands at the command prompt:

## Removing Base-VXFS 4.1 and Base-VXVM 4.1

```
# vxdg rmdisk diskname
```

```
# vxdisk rm devname
```

- k. Copy the data in the next volume to be removed to the newly created free space.
- l. Reboot the system after all volumes have been converted successfully. Run the following command to verify that no open volumes remain after the system reboot:

```
# vxprint -Aht -e v_open
```

- m. If any volumes remain open, repeat steps a to l.

## Shutting Down Base-VXVM 4.1

To shutdown the Base-VXVM 4.1 package, run the following commands:

```
# vxdctl stop
```

```
# vxiod -f set 0
```

## Removing the Base-VXVM 4.1 SD-Bundle

To remove the Base-VXVM 4.1 package, run the following command:

```
# swremove -x autoreboot=true Base-VXVM
```

---

**NOTE** After removing the VERITAS packages, the system reboots.

---

The errors that occur during the software removal process are due to the following:

- System contains open volumes.
- Root disk is under Base-VXVM 4.1 control.

For more information, check the log file `/var/adm/sw/swagent.log`.