

VERITAS 4.1 Installation Guide

HP-UX 11i v2

Second Edition



i n v e n t

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About This Document

The *VERITAS 4.1 Installation Guide* describes how to install, upgrade and remove the VERITAS 4.1 File System and Volume Manager.

Intended Audience

This document is for system administrators, 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 13	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 15	Describes how to upgrade from VxFS 3.5 and VxVM 3.5 to Base-VXFS 4.1 and Base-VXVM 4.1 respectively.
Chapter 4, "Installing Base-VXFS 4.1 and Base-VXVM 4.1," on page 17	Describes how to install Base-VXFS 4.1 and Base-VXVM 4.1 with the <code>swinstall</code> command.
Chapter 5, "Setting Up Base-VXFS 4.1 and Base-VXVM 4.1," on page 33	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 39	Describes how to remove Base-VXFS 4.1 and Base-VXVM 4.1 bundle 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.
<code>%</code>	C shell prompt	Not applicable
<code>\$</code>	Bourne/Korn shell prompt	Not applicable
<code>#</code>	Superuser prompt (all shells)	Not applicable
<code>\</code>	Continued input on the following line; you do not type this character	<code># mount -F vxfs \ /h/filesys</code>
<code>[]</code>	In command synopsis, brackets indicates an optional argument.	<code>ls [-a]</code>
<code> </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 refer to the following documents located in the `/usr/share/doc` directory:

- *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*
- *VERITAS Storage Foundation 4.1 Cross-Platform Data Sharing Administrator's Guide*
- *VERITAS Flashsnap Point-In-Time-Copy Solutions Administrator Guide*
- *VERITAS Storage Foundation Intelligent Storage Provisioning Administrator's Guide*
- *VERITAS Storage Foundation 4.1 for Oracle Administrator's Guide*
- *VERITAS Storage Foundation 4.1 Release Notes*
- *VERITAS Storage Foundation and Cluster File 4.1 Installation and Administration Guide*

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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.

Base-VXFS 4.1 requires Base-VXVM 4.1 for VxFS to work with VxVM and vice versa.

NOTE 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.

NOTE Ignite-UX version C.6.4 or later is required for use with Veritas 4.1 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 4.1

Package/Contents	/stand ^a	/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 the Base-VXVM 4.1 SD-Bundle.

Table 1-2 Minimum Space Requirement per Directory for Base-VXVM 4.1

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

Patch Requirements

The required patches for the 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 `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 VxFS 4.1. The patch `PHCO_33238` is required for using the `swapon` command to enable VxFS 4.1 file system for paging.

IMPORTANT If patch `PHCO_33308` 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 potential data loss.

WARNING **System Administration Manager (SAM) does not recognize a VxFS 4.1 file system with Disk Layout Version 6.**

Required Packages for VERITAS Enterprise Administrator (VEA)

To use VEA with VxVM 4.1, the following packages are required:

- VERITAS Enterprise Administrator Service (`VRTSob`)

System Requirements for Installing VERITAS 4.1
Required Packages for VERITAS Enterprise Administrator (VEA)

- VERITAS Volume Manager Service Provider (VRTSvmpro)
- VERITAS File System Service Provider (VRTSfspro)
- VERITAS Enterprise Administrator (VRTSobgui)

The minimum memory requirement for the VEA client is 64MB. The above packages are installed as part of Base-VXVM 4.1 SD-Bundle.

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 lists the packages included in the Base-VXFS 4.1 SD-Bundle:

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 lists the packages included in the Base-VXVM 4.1 SD-Bundle:

Table 2-2 Base-VXVM Packages

Package	Description
VRTSvxvm	Base VERITAS Volume Manager 4.1 for HP-UX
VRTSvlic	VERITAS License Utilities
VRTSvm doc	VERITAS Volume Manager Documentation
VRTSob	VERITAS Enterprise Administrator Services Provider
VRTSobgui	VERITAS Enterprise Administrator
VRTSvmpro	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)

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

Licensing Packages

- OnlineJFS (B3929EA): HP OnlineJFS (Server)
- Full VxVM (B9116BA): VERITAS Volume Manager 4.1 for HP-UX

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 the VxFS 3.5 bundle in the Core OS on HP-UX 11i v2. For more information on installing Base-VXFS 4.1 see “Installing Base-VXFS 4.1” on page 18.

NOTE The VxFS 4.1 default disk layout is version 6. If you remove VxFS 4.1, the VxFS 3.5 functionality returns automatically only if the disk layouts for directories / and /stand are not changed to version 6.

The 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 does not contain your configuration changes when installing with `vxinstall`.

NOTE VxFS 4.1 supports new Disk Layout Version 6. File system commands like `df`, `bdf`, `fstyp` and `mount` that use the API functions like `statfsdev()`, `fstatfsdev()`, `statvfsdev()`, `fsstatvfsdev()` will fail as `libc` library does not recognise the new Disk Layout Version 6. Applications using `statvfsdev()` must be linked with the new NCF library to recognize Disk Layout Version 6.

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 v2. Installation of the VxVM 4.1 bundle on HP-UX 11i v2 removes the VxVM 3.5 components. If the 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 23.

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 the `swinstall(1M)` command.

Mounting the HP-UX Serviceguard and Storage Management Products Media

To mount the media complete the following procedure:

Step 1. Insert the media into the drive and log in as root:

```
$ su root
```

Step 2. To determine the device name, run the following command:

```
# ioscan -fnC disk
```

The `-f` option is used for full listing, `-n` option is used for listing device file names, and the `-C` option is used for listing a subset of the input and output system.

Step 3. To create a directory under which to mount the media, run the following command:

```
# mkdir -p /cdrom
```

Step 4. To mount the media, run the following command:

```
# mount <absolute device-path> /cdrom
```

where `<absolute device-path>` is the device path for the CD-ROM.

Step 5. To verify that the media is mounted, run the following command:

```
# mount
```

NOTE If you install an HP Serviceguard Storage Management suite bundle, Base-VXFS 4.1 and Base-VXVM 4.1 are automatically installed.

Installing Base-VXFS 4.1

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

Installing Base-VXFS 4.1 in the Non-Interactive Mode

To install Base-VxFS 4.1 non-interactively, run the following command:

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

The following output is displayed:

```
==== 08/29/05 13:26:56 IST BEGIN swinstall SESSION
(non-interactive) (jobid=<servername>)
* Session started for user "root@<servername>".
* Beginning Selection
* Target connection succeeded for "<servername>:".
* Source:                <servername>:/tmp/cdrom
* Targets:                <servername>:/
* 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_IA
+ 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_IA
+ FSLibEnh.FS-CORE2-64SLB, 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_IA
+ FSLibEnh.FS-CORE2-SLB, 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_IA
+ FSLibEnh.FS-PROG2-AUX, 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_IA
.
.
* Analysis and Execution succeeded.
NOTE:    More information may be found in the agent logfile using the
```

```
command "swjob -a log <servername>".  
=====  
08/29/05 13:26:59 IST  END swinstall SESSION (non-interactive)  
(jobid=fslab02-0066)
```

Installing Base-VXFS 4.1 in the Interactive Mode

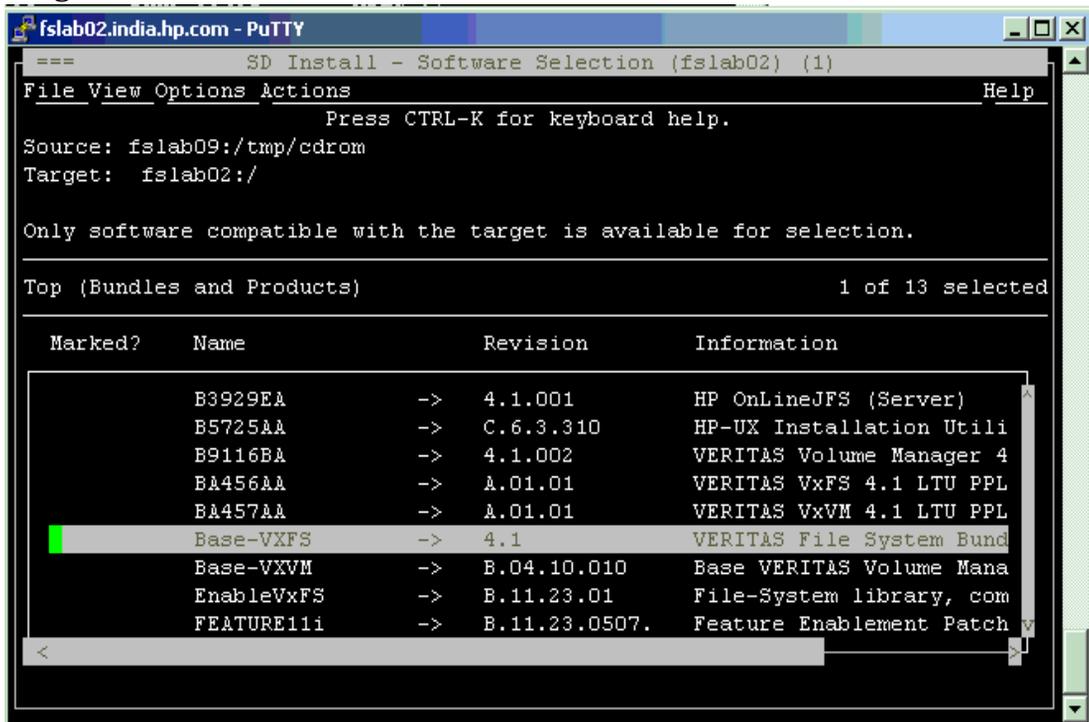
To install Base-VXFS 4.1 in the interactive mode, complete the following procedure:

1. To install Base-VXFS 4.1, run the following command:

```
# swinstall -x autoreboot=true -s Base-VXFS
```

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. Mark the Base-VXFS package.
3. Select **Actions**, and click **Install**. Follow the on-screen instructions 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` for information on installation.

Verifying Base-VXFS Installation

To verify that the Base-VXFS 4.1 packages are installed, run the following command:

```
# swverify Base-VXFS
```

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

```
Beginning Selection
```

```
* Target connection succeeded for "<servername>".
```

```
* Software selections:
```

```
Base-VXFS, r=4.1, a=HP-UX_B.11.23_IA/PA, v=HP
```

```
+DiskQuota-Enh.DQUOTA-ENH, l=/, 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_IA
```

```
+FSCmdsEnh.FS-CMDS-ENH, l=/, 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_IA
```

```
+FSLibEnh.FS-CORE2-64SLB, l=/, 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_IA
```

```
+FSLibEnh.FS-CORE2-SLB, l=/, 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_IA
```

```
.
```

```
* Verification succeeded.
```

```
NOTE: More information may be found in the agent logfile using the  
command "swjob -a log <servername>".
```

```
=====  
08/05/05 13:33:00 IST END swverify SESSION (non-interactive)  
(jobid=<servername>)
```

Installing OnlineJFS (B3929EA)

To get full VxFS 4.1 functionality, you must install OnlineJFS (B3929EA).

You can install OnlineJFS (B3929EA) either in non-interactive mode, or in the interactive mode.

Installing OnlineJFS (B3929EA) in Non-Interactive Mode

To install OnlineJFS (B3929EA) in the non-interactive mode, run the following command:

```
# swinstall -x autoreboot=true -s <depot-path> B3929EA
```

The following output is displayed:

```
=====  
08/29/05 13:55:13 IST BEGIN swinstall SESSION  
      (non-interactive) (jobid=<servername>)  
* Session started for user "root@<servername>".  
* Beginning Selection  
* Target connection succeeded for "<servername>:/".  
* Source:                <servername>:/tmp/cdrom  
* Targets:               <servername>:/  
* Software selections:  
B3929EA,r=4.1.001,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_IA  
+ 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_IA  
+ FSLibEnh.FS-CORE2-64SLB,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_IA  
+ FSLibEnh.FS-CORE2-SLB,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_IA  
.  
.  
* Analysis and Execution succeeded.  
NOTE:   More information may be found in the agent logfile using the  
command "swjob -a log <servername>:/".  
=====  
08/29/05 13:55:37 IST END swinstall SESSION (non-interactive)  
      (jobid=<servername>)
```

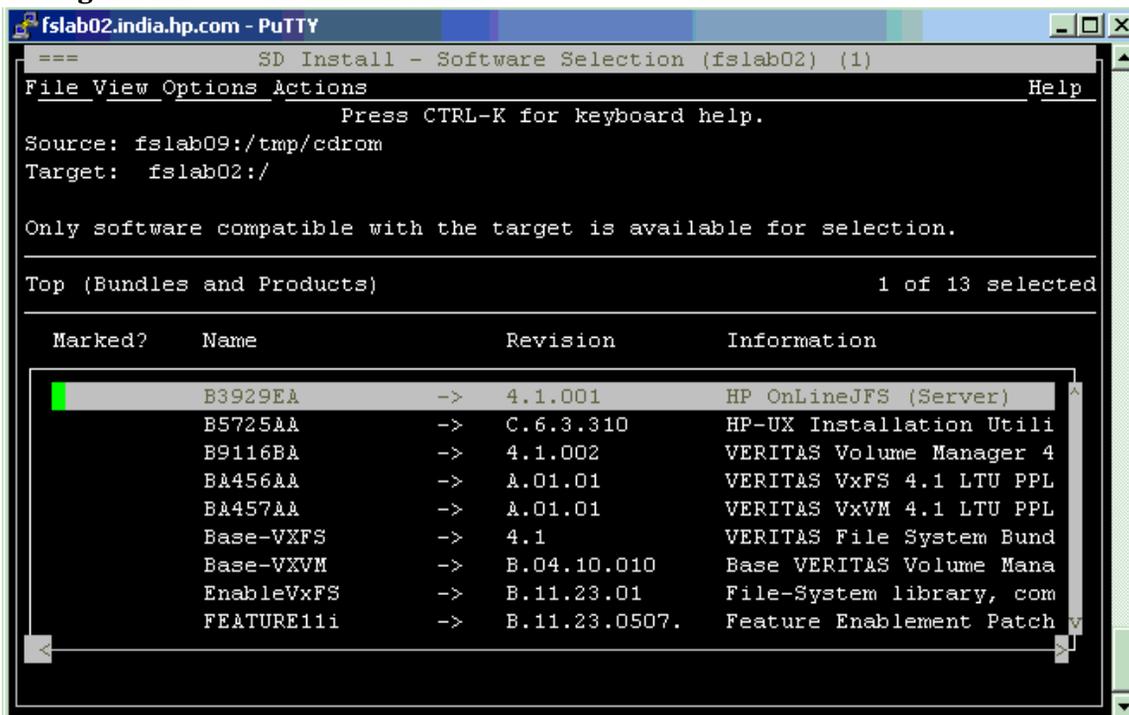
Installing OnlineJFS (B3929EA) in Interactive Mode

1. To install OnlineJFS (B3929EA) in the interactive mode, run the following command:

```
# swinstall -s <depot-path> B3929EA
```

Figure 4-2 is displayed. You must mark the OnlineJFS (B3929EA) package in the SD Install window to start the installation.

Figure 4-2 SD Install Window



2. Mark the B3929EA package.
3. Select **Actions**, and click **Install**. Follow the on-screen instructions to complete the installation.

Verifying OnlineJFS (B3929EA) Installation

```
# swverify B3929EA
```

If the OnlineJFS (B3929EA) package is successfully installed on your system, you will see the following output:

```
===== 08/29/05 14:21:58 IST BEGIN swverify SESSION (non-interactive)
```

```
(jobid=<servername>)
* Session started for user "root@<servername>".
* Beginning Selection
* Target connection succeeded for "<servername>:".
* Software selections:
B3929EA,r=4.1.001,a=HP-UX_B.11.23_IA/PA,v=HP
+ DiskQuota-Enh.DQUOTA-ENH,l=/,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_IA
+ FSCmdsEnh.FS-CMDS-ENH,l=/,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_IA
+ FSLibEnh.FS-CORE2-64SLB,l=/,r=B.11.23.01,a=HP-UX_B.11.23_IA/PA,v=HP,fr=B.11.23.01,fa=H
  P-UX_B.11.23_IA
.
.
* The analysis phase succeeded for "<servername>:".
* Verification succeeded.

NOTE:    More information may be found in the agent logfile using the
         command "swjob -a log <servername>:".
===== 08/29/05 14:22:10 IST  END swverify SESSION (non-interactive)
         (jobid=<servername>)
```

Installing Base-VXVM 4.1

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

Installing Base-VXVM 4.1 in the Non-Interactive Mode

To install Base-VXVM 4.1 in the non-interactive mode, run the following command:

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

The following output is displayed:

```
===== 08/29/05 16:26:02 IST  BEGIN swinstall SESSION
(non-interactive) (jobid=<servername>)
* Session started for user "root@<servername>".
* Beginning Selection
```

Installing Base-VXFS 4.1 and Base-VXVM 4.1

```
* Target connection succeeded for "<servername>:".
* Source:                <servername>:/tmp/cdrom
* Targets:               <servername>:/
* 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_I
A
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
VRTSap.VRTSAP-FILESET,r=2.00.025.005,a=HP-UX_B.11.23_IA/PA,v=HP,fr=2.00.025.005,
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 <servername>:".
==== 08/29/05 16:29:50 IST  END swinstall SESSION (non-interactive)
(jobid=<servername>)
```

NOTE The installation of VxVM above, also installs the VEA service and client packages.

Installing Base-VXVM 4.1 in the Interactive Mode

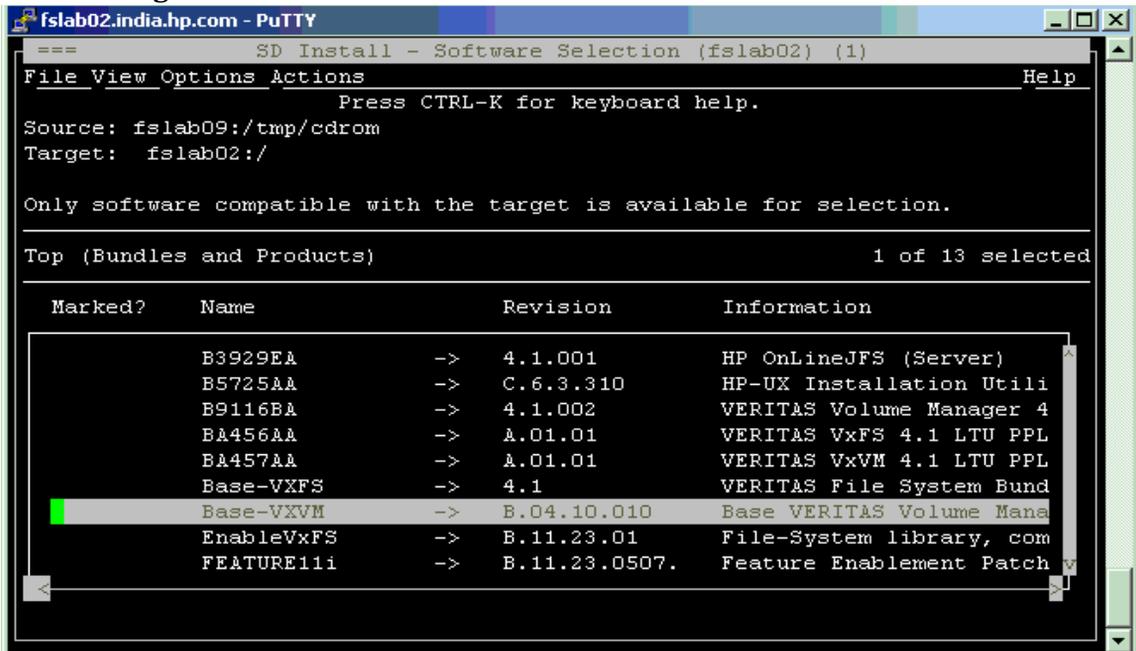
To install Base-VXVM 4.1 in the interactive mode, complete the following procedure:

Step 1. To install Base-VXVM 4.1, run the following command:

```
# swinstall -x autoreboot=true -s Base-VXVM
```

Figure 4-3 is displayed. You must mark the Base-VXVM 4.1 package in the SD Install window.

Figure 4-3 SD Install Window



Step 2. Mark the Base-VXVM package.

Step 3. Select **Actions**, and click **Install**. Follow the on- screen instructions to complete the installation.

The system reboots after the installation is complete.

Verifying Base-VXVM Installation

To verify that the Base-VXVM 4.1 packages are installed, run the following command:

```
# swverify Base-VXVM
```

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

```

===== 08/24/05 16:42:45 IST BEGIN swverify SESSION
          (non-interactive) (jobid=<servername>)
* Session started for user "<servername>".
* Beginning Selection
* Target connection succeeded for "<servername>:/".
  
```

Installing Base-VXFS 4.1 and Base-VXVM 4.1

```
* Software selections:
Base-VXVM,r=B.04.10.010,a=HP-UX_B.11.23_IA/PA,v=HP
+Networking.NET2-KRN,l=/,r=B.11.23,a=HP-UX_B.11.23_IA/PA,v=HP,fr=B.11.23,fa=HP-U
X_B.11.23_IA
+OS-Core.C-KRN,l=/,r=B.11.23,a=HP-UX_B.11.23_IA/PA,v=HP,fr=B.11.23,fa=HP-UX_B.11
.23_IA
.
.
* The analysis phase succeeded for "<servername>:".
    * Verification succeeded.
NOTE:    More information may be found in the agent logfile using the
        command "swjob -a log <servername>:".
===== 08/24/05 16:43:28 IST  END swverify SESSION (non-interactive)
        (jobid=<servername>)
```

Installing the Full VxVM (B9116BA)

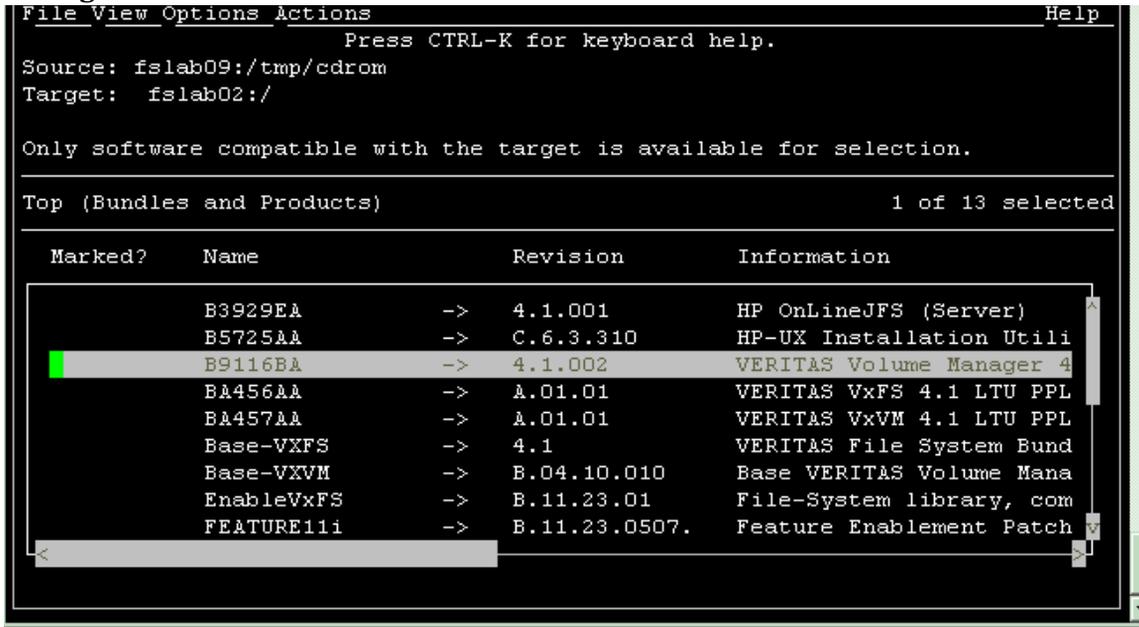
To get full Base-VXVM 4.1 functionality, you must install Full VxVM (B9116BA).

1. To install Full VxVM (B9116BA), run the following command:

```
# swinstall -s <depot-path> B9116BA
```

Figure 4-4 is displayed. You must mark the B9116BA package in the SD Install window:

Figure 4-4 SD Install Window



2. Mark the B9116BA package.
3. Select Actions, and click Install. Follow the on-screen instructions to complete the installation.

NOTE The B9116BA bundle contains a license for the full VxVM 4.1 functionality.

Verifying B9116BA Installation

To verify that the B9116BA package is installed, run the following command:

```
# swverify B9116BA
```

If the B9116BA package is successfully installed on the system, you will see the following output:

```
===== 08/24/05 16:47:00 IST BEGIN swverify SESSION
          (non-interactive) (jobid=<servername>)
* Session started for user "<servername>".
* Beginning Selection
          * Target connection succeeded for "<servername>:/".
```

Installing Base-VXFS 4.1 and Base-VXVM 4.1

```
* Software selections:
B9116BA,r=4.1.002,a=HP-UX_B.11.23_IA/PA,v=HP
+Networking.NET2-KRN,l=/,r=B.11.23,a=HP-UX_B.11.23_IA/PA,v=HP,fr=B.11.23,fa=HP-UX_B.11.23_
IA
+OS-Core.C-KRN,l=/,r=B.11.23,a=HP-UX_B.11.23_IA/PA,v=HP,fr=B.11.23,fa=HP-UX_B.11.23_IA
+OS-Core.CORE-KRN,l=/,r=B.11.23,a=HP-UX_B.11.23_IA/PA,v=HP,fr=B.11.23,fa=HP-UX_B.11.23_IA/
PA
+OS-Core.CORE2-KRN,l=/,r=B.11.23,a=HP-UX_B.11.23_IA/PA,v=HP,fr=B.11.23,fa=HP-UX_B.11.23_IA
+OS-Core.KERN-RUN,l=/,r=B.11.23,a=HP-UX_B.11.23_IA/PA,v=HP,fr=B.11.23,fa=HP-UX_B.11.23_IA/
PA
.
.
* Verification succeeded.
NOTE: More information may be found in the agent logfile using the
      command "swjob -a log <servername>:".
===== 08/24/05 16:47:07 IST  END swverify SESSION (non-interactive)
        (jobid=<servername>)
```

Installing Base-VXVM 4.1 on a System with LVM Volume Groups

Before installing Base-VXVM on a system with LVM Volume Groups, complete the following procedure:

Step 1. To migrate LVM volume groups to VxVM disk groups, run the following command:

```
# vxvmconvert
```

Step 2. To enable a VxVM rootable system and to clone the LVM-based root disk to a VxVM root disk, run the following command:

```
# vxcp_lvmroot
```

Step 3. To move disks under LVM control to VxVM control, complete the following procedure:

a. To remove the disk from any LVM volume groups, run the following command:

```
# vgreduce
```

- b. To remove any LVM volumes using the disk, run the following command:

```
# lvremove
```

- c. To erase the LVM disk headers, run the following command:

```
# pvremove
```

NOTE

If the disk to be removed is the last disk in the volume group, you must use `vgremove` to remove the volume group and `pvremove` to erase the LVM disk.

If the disk is not currently in use by any volume or volume group but has been initialized by `pvcreate`, you must use `pvremove` to remove LVM disk.

The `pvremove` command is an LVM command designed to aid LVM and VxVM coexistence on a system. As with LVM, VxVM partitions collections of disks into groups. In LVM these are referred to as volume groups and in VxVM they are referred to as disk groups or dynamic disk groups.

See “Installing Base-VXVM 4.1” on page 23 for installing Base-VXVM.

IMPORTANT Base-VXVM 4.1 introduces a new disk group layout 120. You must upgrade to the new disk group layout, for existing DRL logs to function.

Installing Base-VXFS 4.1 and Base-VXVM 4.1 using Ignite-UX Server

You must use an Ignite-UX server configured to install the HP-UX 11i v2 September 2005 Release.

NOTE Ignite-UX does not support configurations that include both VxVM 3.5 and VxVM 4.1 in the same depot.

To enable a network cold install of Base-VXVM 4.1 and Base-VXFS 4.1, complete the following procedure:

- Step 1.** To determine the location of the VERITAS-4.1 depot, complete the following procedure:

- a. Set the variable `src` to the location of the existing September 2005 OE media:

```
src=<servername>:/release/0505.1123/HPUX11i-OE-MC.DVD
```

- b. Set the variable `src_VERITAS-4.1` to the location of the VERITAS-4.1 bits:

```
src_VERITAS-4.1=<servername>:/release/VERITAS-4.1.1123/software
```

- c. Set the variable `des` to the location of the VERITAS-4.1 depot to be created:

```
des=<servername>:/release/VERITAS-4.1.1123/HPUX11i-OE-MC
```

- d. Set the variable `rem_sw` to the software to be removed:

```
rem_sw= Base-VXVM B5725AA Ignite-UX-11-00 Ignite-UX-11-11 \  
Ignite-IA-11-22 Ignite-UX-11-23 FEATURE11i
```

- Step 2.** Copy the existing depot to the location of the VERITAS-4.1 depot being created:

```
# swcopy -s $src \* @ $des
```

- Step 3.** Remove the software listed in `rem_sw`, run the following command:

```
# swremove $rem_w @ $des
```

- Step 4.** Copy the new software provided with the VERITAS-4.1 into the new depot being created. This results in the full VERITAS-4.1 depot.

```
# swcopy -s $src_VERITAS-4.1 \* @ $des
```

- Step 5.** To install the new VERITAS-4.1 version of Ignite-UX from the VERITAS-4.1 depot that was created in the steps above, complete the following steps:

```
# swinstall -s ${des} B5725AA
```

- Step 6.** To create the new configuration file for the VERITAS-4.1 depot, run the following command:

```
# make_config -s ${des} -c  
/var/opt/ignite/data/Rel_B.11.23/B.11.23.VERITAS_4.1_cfg
```

- Step 7.** Add the new configuration file to `/var/opt/ignite/INDEX` file.

```
manage_index -n "HP-UX B.11.23 Default" -c "HP-UX B.11.23 VERITAS 4.1"  
  
manage_index -a-f  
/var/opt/ignite/data/Rel_B.11.23/B.11.23.VERITAS_4.1_cfg -c "HP-UX  
B.11.23 VERITAS 4.1"
```

This will result in a server capable of installing Base-VXVM and Base-VXFS.

Cold Installing Base-VXFS and Base-VXVM

To install Base-VXFS and Base-VXVM, complete the following procedure:

- Boot the VERITAS-4.1 install kernels provided with the VERITAS-4.1 version of Ignite-UX.
- Select the configuration that was added to the server in step 7. Base-VXVM 4.1 will be automatically selected.
- Select the software (either Base-VXFS or Base-VXVM) from the Ignite-UX selection dialog box.

NOTE If you choose VxFS, all file system will be version 5 by default. You must run `vxupgrade` after cold install to upgrade to version 6.

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 New File System with 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.

To set up new file systems using Base-VXFS 4.1, complete the following procedure:

Step 1. To create the file system, run the following command:

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

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

Step 2. To mount the file system, run the following command:

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

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

Step 3. To unmount the file system later, run the following command:

```
# umount -F vxfs <special device>|<directory>
```

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.

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

For more information on the VERITAS-specific commands, refer to the *Quick Start Reference* appendix of the *VERITAS File System 4.1 Administrator's Guide*.

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.

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 VxFS 4.1 `mkfs` command has Disk Layout Version 6, unless explicitly specified.

To specify Version 4 or Version 5 disk layout, run the following command:

```
# mkfs -F vxfs -o (version=4|version=5) <special>
```

To determine the file system layout, run the following command:

```
# fstyp -v <special>
```

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

```
vxfs
version: 6
f_bsize: 8192
f_frsize: 1024
.
.
f_magic: a501fcf5
f_featurebits: 0
f_flag: 16
f_fsindex: 9
f_fsize: 1048576
```

In the above output, version 6 indicates Disk Layout Version 6.

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

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

The `-n` option 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. For more information on upgrading disk layouts, refer to the `vxfsconvert` (1M), `vxupgrade` (1M), and `fsadm` (1M) manpages.

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

If you have converted the other system volumes (`/usr`, `/var`, `/opt`, etc.) to Disk Layout Version 6, you must not remove Base-VXFS 4.1 and revert to JFS 3.5 because this will leave the system in an unbootable state.

Setting Up Base-VXVM 4.1

You can use the `vxinstall` procedure to initialize 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 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 procedure:

Step 1. To set up the VERITAS Volume Manager, run the following command:

```
# vxinstall
```

The following output is displayed:

VxVM uses license keys to control access. If you have not yet installed a VxVM license key on your system, you will need to do so if you want to use the full functionality of the product.

Licensing information:

System host ID: <hostid>

Host type: <servertype>

Are you prepared to enter a license key [y,n,q] (default: n) n

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

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

NOTE 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 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.

Step 3. To set up a system wide 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 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 VxVM 4.1. However, you may find it convenient to create a system wide default disk group. For operations that require a disk group, the system wide default disk group is used if the VxVM command is not specified with the `-g` option. The main advantage of creating a default disk group is that VxVM commands default to the default disk group, and you do 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, run the following command:

```
# vxdctl defaultdg diskgroup
```

The installation of VxVM is complete. You can now use the `vxdiskadm` command and the VEA GUI to create disk groups, and to populate disks. For more information on creating disk groups, disk initialization, and dynamic multipathing (DMP), refer to the *VERITAS Volume Manager 4.1 Administrator's Guide*.

Setting Up a VEA Server

The VEA server is automatically started at system reboot. However, you can also set up the VEA server later by completing the following procedure:

Step 1. To check the status of the VEA service, run the following command:

```
# /opt/VRTSob/bin/vxsvcctrl status
```

Step 2. To start the VEA service, run the following command:

```
# /opt/VRTSob/bin/vxsvcctrl start
```

Step 3. To stop the VEA service later, run the following command:

```
# /opt/VRTSob/bin/vxsvcctrl stop
```

Setting Up a VEA Client

To run VEA and administer a local or remote system, ensure that you have sufficient privileges. Also, ensure that the VxVM and the VEA server are installed on the same machine to be administered and that the `vxconfigd` daemon and the VEA server are running.

- To administer a local HP-UX system, run the following command:

```
# /opt/VRTSob/bin/vea &
```

- To administer a remote system, run the following command:

```
# /opt/VRTSob/bin/vea remote_machine_name &
```

6 Removing Base-VXFS 4.1 and Base-VXVM 4.1

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

Removing the Base-VXFS 4.1

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`, must be removed from the `tunefstab` file. The `OnLineJFS/JFS 3.5 vxxtunefs` command does not recognize the Base-VXFS 4.1 tunables.

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

- To remove the VERITAS file system packages, run the following command:

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

The following output is displayed:

```
===== 08/30/05 11:21:12 IST BEGIN swremove SESSION
        (non-interactive) (jobid=<servername>)
* Session started for user "root@<servername>".
* Beginning Selection
* Target connection succeeded for "<servername>:".
* Software selections:
Base-VXFS,r=4.1,a=HP-UX_B.11.23_IA/PA,v=HP
VRTSfsman.VXFS-ENG-A-MAN,l=/,r=4.1,a=HP-UX_B.11.23_IA/PA,v=HP,fr=4.1,fa=HP-U
X_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_IA
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_IA
```

Removing Base-VXFS 4.1 and Base-VXVM 4.1

```
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_IA
```

```
VRTSvxfs.VXFS-RUN-PALIB,l=/,r=4.1,a=HP-UX_B.11.23_IA/PA,v=HP,fr=4.1,fa=HP-UX_B.11.23_A
```

```
*Selection succeeded.
```

```
* Beginning Analysis
```

```
* Session selections have been saved in the file
```

```
    "/.sw/sessions/swremove.last".
```

```
* The analysis phase succeeded for "<servername>:/".
```

```
* Analysis succeeded.
```

```
* Beginning Execution
```

```
    * The execution phase succeeded for "<servername>:/".
```

```
* Execution succeeded.
```

```
NOTE:    More information may be found in the agent logfile using the  
command "swjob -a log fslab02-0105 @ <servername>:/".
```

```
=====  
08/30/05 11:22:11 IST  END swremove SESSION (non-interactive)  
(jobid=<servername>)
```

- To verify that the VERITAS packages were removed from the system, run the following command:

```
# swlist -l product \*VRTS\*
```

The output does not display the VRTSvxfs and VRTSfsman packages. This confirms that the Base-VXFS 4.1 package is removed.

```
Initializing...
```

```
Contacting target "<servername>"...
```

```
Target: <servername>:/
```

```
VRTSalloc 4.1 VERITAS Volume Manager: VERITAS Intellige Storage Provisioning
```

```
VRTSap 2.00.025.005 VERITAS Action Provider
```

```
VRTSddlpr b4.1 VERITAS Device Discovery Layer Services Provider
```

```
VRTSfspro 4.1k VERITAS File System Management Services Provider
```

```
VRTSob 3.2.532.0.100 VERITAS Enterprise Administrator Service
```

```
VRTSobgui 3.2.532.0.100 VERITAS Enterprise Administrator
```

VRTStep	1.20.028.007	VERITAS Task Exec Provider
VRTSvlic	3.02.006c.009	VERITAS License Utilities
VRTSvmdoc	4.1.010	VERITAS Volume Manager Documentation
VRTSvmpro	4.1.010	VERITAS Volume Manager Management Services Provider
VRTSvxmsa	4.2.1.224	VxMS Application Deployment Package
VRTSvxvm	4.1.010	Base VERITAS Volume Manager 4.1 for HP-UX

NOTE After removing Base-VXFS 4.1 you must remove the EnableVxFS bundle for NCF products installed on the system.

Removing OnlineJFS

To remove OnlineJFS (B3929EA), run the following command:

```
# swremove B3929EA
```

The following output is displayed:

```
===== 08/24/05 16:05:59 IST BEGIN swremove SESSION
        (non-interactive) (jobid=fslab02-0021)
* Session started for user "root@fslab02".
* Beginning Selection
* Target connection succeeded for "fslab02:".
* Software selections:
        B3929EA,r=4.1.001,a=HP-UX_B.11.23_IA/PA,v=HP
        OnlineJFS01.VXFS-ADV-RUN,l=/,r=4.1.001,a=HP-UX_B.11.23_IA/PA,v=HP,fr=4.1.001,
        fa=HP-UX_B.11.23_IA/PA
* Selection succeeded.
* Beginning Analysis
* Session selections have been saved in the file
        "/.sw/sessions/swremove.last".
* The analysis phase succeeded for "fslab02:".
* Analysis succeeded.
```

```
* Beginning Execution
* The execution phase succeeded for "fslab02:/".
* Execution succeeded.
NOTE: More information may be found in the agent logfile using the
      command "swjob -a log fslab02-0021 @ fslab02:/".
===== 08/24/05 16:06:02 IST  END swremove SESSION (non-interactive)
          (jobid=fslab02-0021)
```

Removing Base-VXVM 4.1

Base-VXVM 4.1 can be removed from systems only where the root disk is under HP Logical Volume Manager (LVM) control. 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 the data on your system before removing Base-VXVM 4.1 software.

NOTE If Base-VXVM 4.1 rootability has been installed using either an Ignite-UX installation, 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 removing the Base-VXVM 4.1, ensure that the following steps are completed:

- File systems and other applications that use volume devices must be modified to use the underlying disks or logical volumes.
- File systems that has been created since Base-VXVM 4.1 was installed must be made accessible through a disk or LVM logical volume.
- Copies of file systems must be removed to free up as much space as possible. If a volume contains one of more plexes, all plexes except one have been removed. See “Removing Plexes” on page 43.

- 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. See “Moving Base-VXVM 4.1 Volumes to LVM Volumes” on page 43.
- Base-VXVM 4.1 must be shut down. See “Shutting Down Base-VXVM 4.1” on page 45.

Removing Plexes

To remove plexes, complete the following steps:

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

```
# vxprint -Ath
```

Step 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=config
```

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

NOTE The consolidation operation fails if you do not have sufficient space on a single sub-disk.

Moving Base-VXVM 4.1 Volumes to LVM Volumes

Before moving Base-VXVM 4.1 volumes to LVM volumes, ensure that the following steps are completed:

Step 1.

Step 2. Backup the system to tape or other media.

Step 3. Backup each file system individually, create new file systems on LVM logical volumes, and recover all volumes.

Step 4. Move volumes incrementally on to logical volumes.

To move volumes, complete the following procedure:

- a. Evacuate as many disks as possible. Evacuation moves sub-disks 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 in one of the following ways:
 - Using the `vxdiskadm` command with the `remove disk` option.
 - Using 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. Unmount the disk to be removed first. 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. Create an LVM logical volume of the same size as the plex VxVM 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. Run the following command to copy the data on the volume to the newly created LVM logical volume:

```
# 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` file with an entry for the newly created LVM logical volume.
- g. Mount the logical volume only if the VxVM volume was mounted before.
- h. Run the following command to remove the volume from VERITAS Volume Manager control:

```
# vxedit -rf rm volume_name
```
- i. Run the following command, to check whether any sub-disks remain on a disk:

```
# vxprint -F "%sdnum" diskname
```

If the output is 0, remove the disk from Volume Manager control:

```
# vxdg rmdisk diskname
```

```
# vxdisk rm devname
```

If the output is not 0, remove sub-disks from the disk and then remove the disk.

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

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

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

Shutting Down Base-VXVM 4.1

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

```
# vxdctl stop
```

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

Removing Base-VXVM 4.1

To remove the VxVM 4.1 package, run the following command:

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

The following output is displayed:

```
=====  
08/24/05 16:58:24 IST BEGIN swremove SESSION  
(non-interactive) (jobid=<servername>)  
* Session started for user "root@<servername>".  
* Beginning Selection  
* Target connection succeeded for "<servername>:/".
```

WARNING: The software specified contains a fileset that changes the kernel. Either the attribute `dynamic_module`, used for dynamic changes, is specified, or the `is_kernel` attribute, used for static changes, is set to true.

Removing Base-VXFS 4.1 and Base-VXVM 4.1

```
* Software selections:
    Base-VXVM,r=B.04.10.010,a=HP-UX_B.11.23_IA/PA,v=HP
    VRTSalloc.VRTSALLOC,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
    VRTSap.VRTSAP-FILESET,l=/,r=2.00.025.005,a=HP-UX_B.11.23_IA/PA,v=H
    P,fr=2.00.025.005,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 <servername>:/".

```
=====  
08/29/05 15:20:04 IST END swinstall SESSION (non-interactive)  
(jobid=<servername>)
```

NOTE After removing the VERITAS packages, the system reboots.

Any errors that occur during the software removal process may be 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`.

Removing Full VxVM (B9116BA)

To remove Full VxVM (B9116BA), run the following command:

```
# swremove B9116BA
```

The following output is displayed:

```
=====  
08/24/05 16:56:49 IST BEGIN swremove SESSION  
(non-interactive) (jobid=<servername>)  
  
* Session started for user "root@<servername>".  
  
* Beginning Selection  
  
* Target connection succeeded for "<servername>:/".
```

* Software selections:

B9116BA,r=4.1.002,a=HP-UX_B.11.23_IA/PA,v=HP

VxVM-LIC.VXVM-B9116BA,l=/,r=4.1.002,a=HP-UX_B.11.23_IA/PA,v=HP,fr=4.1.002,fa=HP-UX_B.11.23_IA/PA

VxVM-LIC.VXVM-FULL-LIC,l=/,r=4.1.002,a=HP-UX_B.11.23_IA/PA,v=HP,fr=4.1.002,fa=HP-UX_B.11.23_IA/PA

* Selection succeeded.

* Beginning Analysis

* Session selections have been saved in the file

"/.sw/sessions/swremove.last".

* The analysis phase succeeded for "<servername>:/".

* Analysis succeeded.

* Beginning Execution

* The execution phase succeeded for "<servername>:/".

* Execution succeeded.

NOTE: More information may be found in the agent logfile using the
command "swjob -a log <servername>:/".

=====
08/24/05 16:56:53 IST END swremove SESSION (non-interactive)
(jobid=<servername>)

Removing Base-VXFS 4.1 and Base-VXVM 4.1

A List of Files Added and Modified After Base-VXFS Installation

Files Modified After Base-VXFS Installation

Table A-1 lists the files modified after installing Base-VXFS and Base-VXVM.

Table A-1 Files Modified

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

Files Added After Base-VXFS Installation

Table A-2 lists the files added after installing Base-VXFS and Base-VXVM.

Table A-2 Files Added

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

Table A-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 A-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 plug-in for the VERITAS File System