Installing HP VEE for HP-UX

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About this Manual

This manual explains how to install HP VEE on an HP Series 700 HP-UX system. The applicable versions of HP-UX are 9.x, 10.01, and 10.20. The manual assumes you are familiar with HP-UX. No attempt is made to provide system administration information for HP-UX.

Conventions Used in This Manual

This manual uses the following typographical conventions:

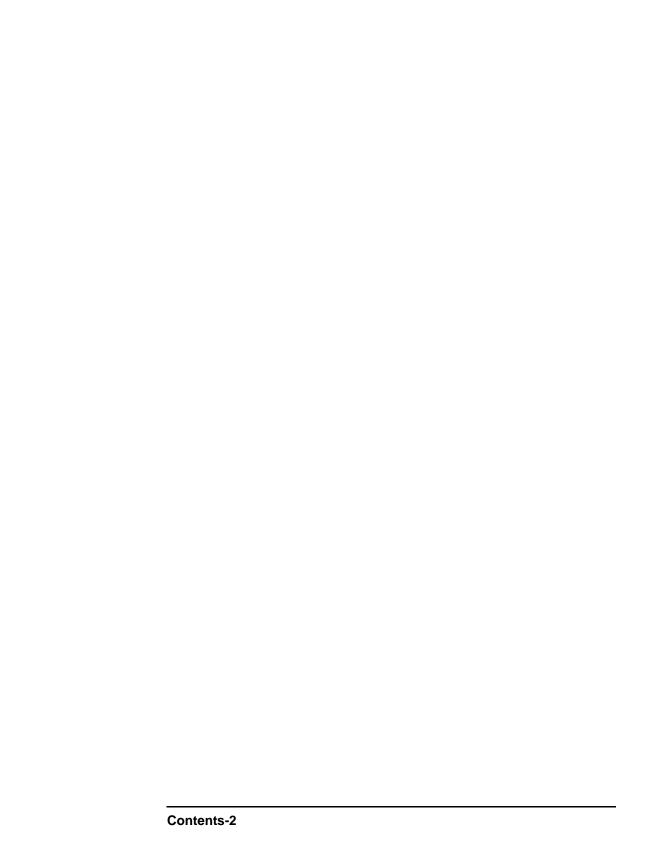|	
Getting Started	Italicized text is used for book titles and for emphasis.
Dialog Box	Bold text is used for the first instance of a word that is defined in the glossary.
File	Computer font represents text that you will see on the screen, including menu names, features, buttons, or text that you have to enter.
dir *filename*	In this context, the text in computer font represents an argument that you type exactly as shown, and the italicized text represents an argument that you must replace with an actual value.
File ⇒ Open	The "⇒" is used in a shorthand notation to show the location of HP VEE features in the menu. For example, "File ⇒ Open" means to select the File menu and then select Open.
Sml | Med | Lrg	Choices in computer font, separated with bars (|), indicate that you should choose one of the options.
Press **Enter**	In this context, bold represents a key to press on the keyboard.
Press **Ctrl + O**	Represents a combination of keys on the keyboard that you should press at the same time.

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Installing HP VEE

Installing HP VEE

This chapter explains the requirements for installing HP VEE Version 5.0 (hereafter called HP VEE unless the version designation is required). It also describes the installation procedure according to your type of HP-UX system (for example, a cluster server), and your version of HP-UX (for example, version 10.20). (Chapter 2 examines things you can do after you perform the installation.)

Orientation

While this manual is rather lengthy, you will not use all of it. The intent was to develop a document that discussed all the scenarios for installing HP VEE. Therefore, you should work through the following sections and specific steps according to your situation, needs, and experience.

Version Requirements

HP VEE runs on all 9.x versions of HP-UX. It also runs on the 10.01 and 10.20 versions. HP VEE does not run on the 10.00 or 11.0 versions, and there is no support for clustered clients on the 10.01 version. The primary difference between the 9.x versions and any 10.xx version is the structure of the file system, and this impacts the HP-UX commands you use to install HP VEE.

Note   There were many patches for HP-UX between versions 10.01 and 10.20. If you have questions about patches, call your HP support person. However, no patches are known to affect installing and using HP VEE.

Hardware Requirements

- A Series 700 HP-UX workstation that has an EISA slot.

- 64 MB RAM.

- At least 80 MB free space on the hard disk that contains `/usr/lib` on version 9.x or `/opt` on version 10.x.

- At least 20 MB swap space in addition to the swap space required to run other parts of HP-UX; for example, X11 Windows or another application.

- At least a 17-inch display with at least Super VGA capability; for example, 1024x768 resolution. An *equivalent* gray-scale display can be used.

- CD-ROM install drive.

- An HP LaserJet printer with at least 2 MB RAM is recommended.

Additional Software Requirements

You need to have, or account for, the following software:

- You need one of the following:

  ❑ X11 Windows (may ship with your HP-UX product).

  ❑ HP VUE (optional) (may ship with your HP-UX product).

- To do instrument I/O, you must install the HP I/O Libraries. This installation is done separately from this installation. It can be done before or after this installation. (See the *HP VEE-Installing the HP I/O Libraries* manual.)

Interface Cards and Instrument I/O

HP VEE supports many interface cards that let you perform instrument I/O. The number and type of cards can change over time. For complete information, contact your HP sales office to obtain a recent list of supported cards. With this in mind, HP VEE is known to support the following interface cards.

Versions 9.x and 10.x

HP VEE internal I/O supports the following interfaces using HP Panel Drivers and Direct I/O:

- HP E2070 HP-IB Interface for Series 700 Computers
- HP E2071 High Speed HP-IB Interface for Series 700 Computers
- HP Model 745i, or V743 Built-in HP-IB Port
- HP E2074 GPIO Interface for Series 700 Computers
- HP Model V743 VXIbus
- HP E1489 MXI Interface for the Series 700 Computers
- HP Series 700 Built-in RS-232 Interface
- HP Interpreted SCPI (I-SCPI) Interface for Series 700
- HP Series 700 Built-in LAN interface or add-on LAN card

Version 10.x Addition

HP VEE supports the following interfaces using VXI*plug&play* Drivers:

- HP E2070 HP-IB Interface for Series 700 Computers
- HP E2071 High Speed HP-IB Interface for Series 700 Computers
- HP Model 745i, or V743 Built-in HP-IB Port
- HP Model V743 VXIbus
- HP E1489 MXI Interface for the Series 700 Computers
- HP Series 700 Built-in LAN interface or add-on LAN card

Note   HP VEE does *not* support the GPIO or RS-232 interfaces for VXI*plug&play* on HP-UX 10.x.

An Overview of the Installation

You must be the *root* user to install HP VEE. Stated differently, you must have *superuser* or *system administration* privileges. Performing an installation requires knowledge opf system administration. If you have no system administration experience, HP recommends you have a qualified person perform the installation. As well, if your HP-UX system is a client in a diskless cluster, the system administrator for the cluster must install HP VEE and make HP VEE available on your system.

Impact on Previous Versions of HP VEE

If your system has an earlier version of HP VEE, installing HP VEE 5.0 replaces your old HP VEE executable file, examples, and such. Your veeio and veerc files are retained.

To keep a previous version of HP VEE, move the directories in and below /usr/lib/veetest (for versions 9.x) or /opt/veetest (for versions 10.x) to another location. After you install HP VEE 5.0, to run the previous version, use the -d command-line option to specify the location of the old (renamed) directory.

Installation Commands

9.x Systems	Use the /etc/update program to install HP VEE. If you need detailed information on the /etc/update program, refer to the *HP-UX System Administration Tasks* manual.
10.01 and 10.20 Systems	Use the swinstall program to install HP VEE on stand-alone systems, and use the swcluster program to install HP VEE on clustered systems (the latter requires version 10.20). If you need information on the swinstall or swcluster programs, refer to *the HP-UX System Administration Tasks* manual.

The HP VEE 5.0 Environments

The HP VEE product, contains the HP VEE development environment and the HP VEE run-time environment (called *HP VEE RunTime*). Installing the development environment gives you all HP VEE functionality, including the run-time environment. After you develop HP VEE programs, and you want to use those programs on other HP-UX systems, you need to install the run-time environment on those systems.

The steps presented later for installing HP VEE mention both commands (installing the development environment or installing the run-time environment). You simply install the environment you need. The license for the installing the run-time environment is unrestricted.

Note   Do not install the development environment on an HP-UX system and then subsequently install the run-time environment on that system. Install the run-time environment only on those systems that will run fully developed and operating HP VEE programs. The run-time environment has very limited functionality.

Note   The media you obtained has the HP VEE development and run-time environments. You also received media containing the HP I/O Libraries, which you install via a separate process (refer to the *HP VEE-Installing the HP I/O Libraries* for further information about the libraries). Make sure you install the Version 5.0 environments and libraries. You cannot use the HP I/O Libraries for a previous version of HP VEE with the 5.0 version.

Installation Environments

You will install HP VEE from a CD-ROM. This manual accounts for both versions of HP-UX in separate sections. Depending on your version, look for the following sections:

- Installing HP VEE on HP-UX 9

- Installing HP VEE on HP-UX 10:
  Installation Steps on a Stand-Alone System

- Installing HP VEE on HP-UX 10:
  Installation Steps on a Clustered System

With this in mind, move on to the appropriate section.

Installing HP VEE on HP-UX 9

Use this section if you have Version 9.x of HP-UX.

Overview

The HP VEE installation CD-ROM contains a mountable file system. The HP-UX update program expects the CD-ROM to be mounted on your file system. Your system must meet the following prerequisites before you mount the CD-ROM on your file system:

■ The cdfs subsystem must be in your kernel. Use the HP-UX SAM program to verify the cdfs subsystem is in your kernel. If it isn't, use SAM to add it.

■ There must be an empty directory to use as a mount point. This example procedure assumes a directory called /cdrom. Your mount directory can have a different name. If needed, you can create this directory with the following command:

    mkdir /cdrom

■ There must be a block-mode device special file on your system for the CD-ROM drive. This special file may already exist in the /dev/dsk directory. If you do not find it there, you can create one with the mknod command. When using the mknod command you must supply a major number. Use 7 for a SCSI CD-ROM drive. The following procedure assumes a block-mode device special file name of /dev/dsk/cdrom. Your special file can have a different name.

For further information about the HP-UX update program, refer to the *Installing and Updating HP-UX* manual.

Installation Steps

1. Insert the CD-ROM in your CD-ROM drive.

2. Log in as superuser (`root`).

3. Mount the CD-ROM. For example:

    ```
    /etc/mount /dev/dsk/cdrom /cdrom -t cdfs
    ```

    Go to Step 4 to run the `update` program interactively. Go to Step 5 to run the `update` program non-interactively.

4. To install HP VEE interactively, execute the following command:

    ```
    /etc/update
    ```

    Then answer the `update` prompts as follows:

    a. Select: `Change Source or Destination ->`

    b. Select: `From Tape Device to Local System...` (*yes, even for CD-ROM*)

    c. Enter the file name for the update image in the `Source` field as follows:

        i. For the development environment, enter:

            ```
            /cdrom/HP-UX9/veetest.s700.updt
            ```

        ii. For the run-time environment, enter:

            ```
            /cdrom/HP-UX9/veerun.s700.updt
            ```

    d. Press the `Done` softkey: `f4`

    e. Select: `Select All Filesets on the Source Media ->`

    f. Select: `Start Loading Now...`

   g. Answer **Y** when asked to confirm.

   The update program will tell you when it is done. It will take 5-10
   minutes. Then go to Step 5.

5. To install HP VEE non-interactively, execute one of the following
   commands:

   a. For the development environment, enter:

```
/etc/update -s /cdrom/HP-UX9/veetest.s700.updt VEETEST
```

   b. For the run-time environment, enter:

```
/etc/update -s /cdrom/HP-UX9/veerun.s700.updt VEERUN
```

   The update program will tell you when it is done. It will take 5-10
   minutes. Then go to Step 6.

6. Review the update log file for any error or warning messages by
   executing the following command:

```
view /tmp/update.log
```

7. Unmount the CD-ROM. For example:

```
/etc/umount /cdrom
```

Once you have completed the HP VEE software installation, you may run
HP VEE. The next chapter has some information about this.

Installing HP VEE on HP-UX 10

Use this section if you have Version 10.01 or 10.20 of HP-UX.

Overview

The HP VEE installation CD-ROM contains a mountable file system. The HP-UX 10 installation programs expect the CD-ROM to be mounted on your file system. Your system must meet the following prerequisites before you mount the CD-ROM on your file system:

- The `cdfs` subsystem must be in your kernel. Use the HP-UX `SAM` program to verify the `cdfs` subsystem is in your kernel. If it isn't, use `SAM` to add it.

- There must be an empty directory to use as a mount point. This example procedure assumes a directory called `/cdrom`. Your mount directory can have a different name. If needed, you can create this directory with the following command:

      mkdir /cdrom

- There must be a block-mode device special file on your system for the CD-ROM drive. This special file may already exist in the `/dev/dsk` directory. If you do not find it there, you can create one with the `mknod` command. When using the `mknod` command you must supply a major number. Use `7` for a SCSI CD-ROM drive. The following procedure assumes a block-mode device special file name of `/dev/dsk/cdrom`. Your special file can have a different name.

If you are installing HP VEE on a stand-alone system, use the `swinstall` program (next section). If you are installing HP VEE on a clustered system, use the `swcluster` program (follows the next section.) For further information about the HP-UX installation utilities, refer to the *HP-UX System Administration Tasks* manual.

Installation Steps on a Stand-Alone System

To install HP VEE on a stand-alone system:

1. Insert the CD-ROM in your CD-ROM drive.

2. Log in as superuser (`root`).

3. Mount the CD-ROM. For example:

    ```
    /etc/mount /dev/dsk/cdrom /cdrom -t cdfs
    ```

    Go to Step 4 to install the software interactively. Go to Step 5 to install the software non-interactively.

4. To install the software interactively:

    a. Execute the following command:

        ```
        swinstall
        ```

    b. The `Specify Source` dialog box appears.

        In the `Source Depot Path...` field, enter one of the following:

        i. Install the development environment:

            ```
            /cdrom/HP-UX10/veetest.s700.depot
            ```

        ii. Install the run-time environment:

            ```
            /cdrom/HP-UX10/veerun.s700.depot
            ```

        then click on `OK`.

   c. The `SD Install-Software Selection` dialog box appears listing the product bundle (check this against your media package; for example, `E2111F`).

      i. Click on the product name in the list field to highlight the bundle.

      ii. Click on `Actions` ⇒ `Mark For Install` to select the HP VEE bundle for installation.

      iii. Click on `Actions` ⇒ `Install (analysis)...` to begin the analysis process.

      iv. The `Install Analysis` dialog box appears. The analysis ensures the process will be successful. The analysis status reads `Ready` if there are no problems. If the analysis fails, click on the `Logfile` button for information.

      v. When the analysis status reads `Ready`, click on `OK` to start the installation.

   d. The `Install Window` dialog box appears indicating the installation status. The HP VEE software is installed when the `Complete` field displays `100%`. This will take about 5-10 minutes.

      i. If the program prompts you about problems, click on the `Logfile` button for information.

      ii. Click on `Done` to return to the `SD Install-Software Selection` dialog box.

   e. Click on `File` ⇒ `Exit`.

   f. Go to Step 6.

5. To install the software non-interactively:

   a. Execute one of the following commands:

      i. Install the development environment:

```
swinstall -s /cdrom/HP-UX10/veetest.s700.depot VEETEST
```

      ii. Install the run-time environment:

```
swinstall -s /cdrom/HP-UX10/veerun.s700.depot VEERUN
```

   b. The `swinstall` program tells you when it's done. Installation takes about 5-10 minutes.

   c. To check for errors or warnings that might have occurred during installation, you can review the logfile using the following command:

```
view /var/adm/sw/swagent.log
```

   d. Go to Step 6.

6. Unmount the CD-ROM. For example:

```
/etc/umount /cdrom
```

Once you have completed the HP VEE software installation, you may run HP VEE. The next chapter has some information about this.

Installation Steps on a Clustered System

1. Insert the CD-ROM in your CD-ROM drive.

2. Log in as superuser (`root`).

3. Mount the CD-ROM. For example:

        /etc/mount /dev/dsk/cdrom /cdrom -t cdfs

4. Run the `swcluster` program using verbose mode:

        swcluster -i -vvv

5. The `Select Alternate Root Path` dialog box appears. Click on `OK` to accept the current entries.

6. The `Specify Source` dialog box appears.

    a. In the `Source Depot Path...` field, enter

            /cdrom/HP-UX10/veetest.s700.depot

    b. Click on `OK`.

7. The `SD Install-Software Selection` dialog box appears listing the product bundle (check this against your media package; for example, `E2111F`).

    a. Click on the product name in the list field to highlight the bundle.

    b. Click on `Actions ⇒ Mark For Install` to select the HP VEE bundle for installation.

    c. Click on `Actions ⇒ Install (analysis)...` to begin the analysis process.

8. The `Install Analysis` dialog box appears. The analysis ensures the process will be successful. The analysis status reads `Ready` if there are no problems. If the analysis fails, click on the `Logfile` button for information.

   a. When the analysis status reads `Ready`, click on `OK` to start the installation.

   b. A `Confirmation` dialog box appears. Click on `Yes` to start the installation.

   Now, the windows that were opened while running `swcluster` will close and further processing will occur with log messages going to the terminal window from which you started `swcluster`. Installation time varies depending on the number of clients on the cluster. This is typically 15-20 minutes.

9. To review the logfile for error or warning messages that might have occurred during installation, execute the following command:

   ```
   view /var/adm/sw/swagent.log
   ```

10. Unmount the CD-ROM. For example:

   ```
   /etc/umount /cdrom
   ```

Once you have completed the HP VEE software installation, you may run HP VEE. The next chapter has some information about this.

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After You Have Installed HP VEE

After You Have Installed HP VEE

Once you have finished installing HP VEE, verify the installation and perform other tasks as they pertain to your system and situation.

Verifying the Installation

Start HP VEE as follows:

1. Log onto HP-UX, and start X11 (or HP VUE) if they are not already running.

2. At the prompt in an active X11 or HP VUE window, type:

   ```
   veetest
   ```

   If you move HP VEE to a non-default directory, you must start HP VEE using the command `veetest -d /MySpecialDir`.

Shortly, you'll see the HP VEE window.

The *Getting Started with HP VEE* manual, which shipped with your product, has a complete description of the HP VEE window, the parts of the window, how to start and stop HP VEE, and how to develop simple HP VEE programs. If you are unfamiliar with HP VEE, you should begin with this manual.

To exit HP VEE, click on `File`, then click on `Exit` in the resulting pull-down menu. The HP VEE window disappears.

Where to Go from Here

Once you have installed HP VEE, you can get information as follows. Be aware that much of the information is online. Again, the *Getting Started with HP VEE* manual has a complete description of how to get additional information.

- Descriptions about what is new in this release of HP VEE, and how to use HP VEE are located in the online help:

  ❑ In the HP VEE menu bar, click on `Help`.

  ❑ Select `Contents and Index` and click.

  ❑ You get a list of help areas; for example, `What's New in HP VEE`, `How Do I...`, `Tell Me About...`, and `Reference`. Double-click on an area to get more information or topics.

- The back covers of manuals contain a guide to using shortcuts in the HP VEE window.

- The *HP VEE Advanced Programming Techniques* manual has information as per title.

- The *Controlling Instruments with HP VEE* manual explains how to make HP VEE interact with instruments.

Additional Information for Programmers

The following sections provide information of interest to HP VEE programmers.

About the .veeio File

HP VEE contains a file called `/usr/lib/veetest/config/d.veeio` on HP-UX 9, and `/opt/veetest/config/d.veeio` on HP-UX 10. This ASCII file contains some example configuration information (for example, hardware type and addresses) for communicating with external instruments. As shipped, it contains several entries that are used to run some of the programs in the `examples` directory.

The first time each user runs HP VEE, HP VEE automatically copies the `d.veeio` file to that user's `$HOME` directory as `.veeio`. There is nothing that you, the system administrator, need to do to configure the `.veeio` file. Users will add to this file as they configure additional drivers.

Color Planes and HP VEE

Your computer is equipped with a certain number of display planes (usually 1, 4, 6, or 8). X11 uses the information in these display planes to color your application's window. If you have more than one application running (each in its own window), and you notice the screen colors changing as you move from one application's window to another, then one of two things may be happening. Either all the applications, together, use more colors than one set of planes can handle, or one or more of the applications allocates its own private color map (for example, HP BASIC/UX).

HP VEE uses at least 100 colors (this varies depending which colors your program actually uses), so you may experience this behavior when HP VEE is one of your applications. The symptoms are: when you are in the HP VEE window, the HP VEE colors will be correct for HP VEE, but may be wrong in other application's windows. When you move to another application's window, the colors will be correct for that application, but may be wrong for HP VEE. *This is typical X11 behavior -- it is not a problem with HP VEE.*

For further information, refer to the "Configuring HP VEE" appendix in *HP VEE Advanced Programming Techniques* manual.

Local-Language Keyboard Support in HP VEE

You can configure HP VEE to accept input from local-language keyboards and to display most local-language characters. *If your users will run HP VEE on a system that has a non-USASCII keyboard, you must configure HP VEE to support the local language keyboard before your users use HP VEE.* Please refer to the "Configuring HP VEE" appendix in *HP VEE Advanced Programming Techniques*. This appendix includes information on supported keyboards and how to configure HP VEE for those keyboards.

Help Viewer

The Help viewer used for this version of HP VEE affects how certain environment variables are set. It also affects the printer configuration for printing Help information.

Environment Variables

Specific environment variables are set when you run HP VEE so the Help viewer will run correctly on your system. HP VEE sets the value for the HHHOME environment variable to the default installation directory. There is no environment variable that you can set that lets you find the Help viewer if you move HP VEE to a non-default directory.

If you move HP VEE to a non-default directory, you must start HP VEE with the command veetest -d /mySpecialDir.

The following table lists the variables set for the Help viewer and their values:

Environment Variable	Value	Used For
HHHOME	~installDir (default directory is /opt/veetest in HP-UX 10, /usr/lib/veetest in HP-UX 9)	This directory contains the Help viewer executable, and the HP VEE online help file.
XPPATH	~installDir/xprinter (default directory is /opt/veetest in HP-UX 10, /usr/lib/veetest in HP-UX 9)	The Help viewer looks here to find the configuration files it uses when you use the Help viewer's File $\Longrightarrow$ Print command.

Printing Help Viewer Contents

To print HP VEE Help viewer contents to a printer, you must first configure the printer. The following procedure creates a .Xpdefaults file in your home directory so that you only need to configure a printer once. It is vital that you click on Save before and after configuring your new printer as stated in the procedure.

1. If the Help window is not open, click on Help ⇒ Contents and Index in HP VEE.

2. In the Help window, click on File ⇒ Printer Setup and immediately click on Save.

3. Change the Output to box to Printer.

4. Click on Install and then click on Add Printer.

5. Highlight the desired printer and click on Define New Port.

6. Select the port, or click on Spooler to add a new port. Click on Dismiss when you are done.

7. Highlight the desired port and click on Add Selected.

8. Click on Dismiss until you exit.

9. Click on Options to change printers.

10. Click on Save to update the .Xpdefaults file with your changes.

11. Click on Apply to have your changes take immediate effect and close the dialog box.

The printer is now configured.

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