4.2.5.2 vue.resources

This is the same file as .Xdefaults in a generic MIT distribution of the X11 Window System. This file contains resources for client settings to select options to be used when the client is run.

4.2.5.3 Creating a Common .vue Environment

To have all ViewStation's use the same environment, choose the desired environment directory, remove all other ViewStation directory files, then link the ViewStation names to that desired file. This ensures that the vue environment will now look the same for a user starting up on any ViewStation on the network.

New ViewStation's with the same environment can be added to the network by extending the linked .vue file to their name as well.

4.2.6 Settings on the HDS ViewStation

The HDS ViewStation is very easy to configure. From the Main Menu of Setup Mode, select the HDSware button and enter the three items requested:

- ViewStation IP address: *(this value is assigned by your system administrator)*
- HDSware host IP address: *(IP address of the host where the HDSware tape was loaded)*
- HDSware directory: *(the path to the HDSware tape directory)*

When this information is entered, click on the Save in NVM button, and restart the ViewStation. The ViewStation takes this HDSware information and stores it in its configuration file, which it then reads as it restarts. In this way, it locates its fonts, its server code, its client files, etc. and enters them automatically in the appropriate places in the Setup Mode menus.

This automatic ViewStation configuration doesn't set other items that may be important on your system. You should check Setup Mode for other important items, such as a gateway address, a domain name server, remote host entries, etc. When you are finished, save these items in NVM and your Setup is complete.

4.2.4.1 vue.session file

This file contains the commands required to set up the screen and visual environment to be the same as the last time the user logged in. Additional customization would be to add a line to execute a local client on the HDS ViewStation. For instance, a line to start the local hdsclock is:

```
    vuesmcmd -screen 0 -cmd “remsh fx-name hdsoclock -
geometry -0+0”
```

Notice that this requires the hdsoclock to run on “fx-name”, which is the unique name of an ViewStation registered in the */etc/hosts* file (and yp if needed).

4.2.5 Other important files in the .vue directory

The .vue directory contains several subdirectories, the most important being a directory containing the display names used by the ViewStation, as well as the display name of the system console. For example, this directory might contain:

```
adam:0 calvin:0 jack:0
bob:0 hobbes:0 wizard:0
```

where `wizard:0` is the display name of the HP system console and the other names are HDS ViewStations. (These names must be the same as those registered in the */etc/hosts* file).

Note that there must be a directory for each display device because each device may have special requirements for its hardware and environment. Further, the user might want a different appearance for different display devices, or the user may want the same appearance for the screen regardless of which display device it is.

Note also that since the HP700 and the ViewStation use different font files, their fontpaths would show different entries. The ViewStation’s fontpath line in the .vue file would look like this (depending, of course, on the actual directory location of the HDSware tape contents):

```
    adam:0 /current/vue.settings
    vuesession*FontPath: /HDS$$ROM/,/<HP host IP>/usr/hds-
fx/fonts/75dpi/
```

Note that this font path setting will override the font path stored in the FX setup or config file.

The corresponding setting for the HP700 would be:

```
    wizard:0 /current/vue.settings
    vuesession*FontPath: /usr/lib/X11/fonts/iso_8859.1/
75dpi/
```

4.2.5.1 palette.vue

This file contains the colors assigned to various components of the vue environment. The values are in `#rrrrggggbbbb` format. This file should only be modified by the vue environment control panel. This file will be the same format for either the HP console or the ViewStation.

```
palette.vue vue.resources vue.settings vue.session
```

These files are created automatically for the user when they login for the first time. A general description is given below. The *vue.settings* and *vue.session* files are of particular interest to the ViewStation user. The individual files are described below.

4.2.3 vue.settings file

This file contains entries that are different between the HP console and an HDS ViewStation. For the HP console:

```
      Vuesession*Hostname: mustang.aero.org,loop-
back.aero.org
      Vuesession*HostState: 1
      Vuesession*FontPath: /usr/lib/X11/fonts/hp_roman8/
75dpi/,
       /usr/lib/X11/fonts/iso_8859.1/75dpi/,/usr/lib/X11/
fonts/misc/
      Vuesession*ShutDownState: 1
      Vuesession*ShutDownMode: 4
```

The same file for an FX ViewStation contains:

```
      Vuesession*Hostname: mustang.aero.org,loop-
back.aero.org
      Vuesession*HostState: 1
      Vuesession*FontPath: /HDS$$ROM/,
       /128.92.3.12/usr/lib/X11/FXUtilities/hds-fx/fonts/hp/
iso100dpi/,
       /128.92.3.12/usr/lib/X11/FXUtilities/hds-fx/fonts/hp/
misc/,
       /128.92.3.12/usr/lib/X11/FXUtilities/hds-fx/fonts/hp/
roman75dpi/
      Vuesession*ShutDownState: 1
      Vuesession*ShutDownMode: 4
```

Notice the differences with the font path. This path is unique to each display. The iso100dpi and roman75dpi directories in the font path for the ViewStation are HP fonts that have been converted for use on the ViewStation. The tools used to convert the fonts are provided on the HDSware software tape.

4.2.4 Optional Customization for the ViewStation

You can customize the operation of the ViewStation by making some settings in the vue.session file. This file corresponds to the .xsession file in the MIT X11 releases.

4.2.1.9 NFS - Network File System

In order to use NFS on the HP system, you must export a filesystem for the ViewStation or other workstations to access. This filesystem can be exported to either the world or a selected set of hosts.

1. Add a line for each file system you want to export in the */etc/exports* file. These entries have the form:

```
<partition name> <modifiers>
or,   /usr ro
      /home ro
```

where the partition is an mountable partition and the modifiers are as listed in the the exports man page. The "ro" (read-only) option is recommended.

2. Modify the */etc/netsfsrc* file to start the NFS server:

Change

```
NFS_SERVER=0
START_MOUNTD=0
```

to:

```
NFS_SERVER=1
START_MOUNTD=1
```

3. Make sure the */etc/netnfsrc* file is executable by root.

```
chmod o+x /etc/netnfsrc
```

4. Execute the */etc/netnfsrc* script or reboot the HP system to activate NFS. Remember to set the ViewStation's file transfer protocol to NFS for this host.

5. Check the NFS transfer block size. The ViewStation uses a 8192 byte block size by default. If 8192 is too large for your network environment, you must set the correct value in the ViewStation's configuration file. The ViewStation resource is:

```
HDSsetup.NFS.block.size: 8192 (permitted values are 128 to
8192)
```

4.2.2 Configure the User Account

This section contains suggestions for setting up user accounts. There is only one crucial entry, which is setting the fontpath in the vue.settings file. You may want to use different methods and procedures, these are only suggestions to show the correct format.

4.2.2.1 User's .vue Directory

Each user has an individual .vue directory which allows them to customize the HPvue environment. The directory tree and file names are the same for ViewStations and the HP console. In fact, there are very few differences in the files themselves. The directory tree for any display is:

```
/display:0
 /current
```

Check the man pages on your HP system for the TFTP arguments and options for your system. Check the relevant files to see what the current TFTP configuration is on your system.

4.2.1.6 ViewStation File Path Specifications

The important thing for ViewStation configuration is that these security mechanisms affect how you specify the HDSware path for the ViewStation. Since TFTP changes its root directory based on the security mechanisms in place, this has the effect of prepending those secure directory paths to the pathname you enter on the ViewStation.

For example, if your HDSware is located in */usr/lib/X11/HDS/HDSware*, and the TFTP secure directory is */usr/lib*, you must specify your ViewStation's HDSware path as */X11/HDS/HDSware*, since TFTP will prepend its secure directory to the path for the file search.

4.2.1.7 FTP - File Transfer Protocol

FTP is normally included with the HP/UX software, but it is often not started with the HP installation; refer to the */etc/inetd.conf* file for the FTP line as above. You should check to see if the FTP daemon is running; look for a comment character on the FTP line in the */etc/inetd.conf* file.

```
ftp  stream  tcp  nowait  root    /etc/ftpd    ftpd -l
```

Follow the example above if you need to restart the inetd process.

FTP requires a valid username and a real password to run, so the appropriate accounts should be set up on the HP (normal login accounts and passwords are sufficient, but they must also be entered in the ViewStation's Setup Mode Remote Hosts fields to be used for FTP file loading).

FTP transfers with usernames and passwords use the root directory (/) for the search path, so full file names are needed. File access is limited by the restrictions on the user's access.

4.2.1.8 Anonymous FTP File Transfer

Anonymous FTP file transfers do not require a password, but have other security limitations. All files to be transferred must be in a special anonymous FTP directory.

Refer to your man pages for details about setting up an anonymous FTP account. In summary, you must enter a "anonymous ftp" user in the password file (*/etc/passwd*) with appropriate group and ownership limitations, and then use that anonymous ftp user's home directory as the root directory for file transfers. Anonymous FTP file transfers initiate a chroot() call, so the new root directory is the home directory for the anonymous ftp user.

In this case, as with "secure TFTP" above (see Section 4.2.1.5), you must understand how these security mechanisms affect the entry of the HDSware path on the ViewStation. Your path on the ViewStation must take into account the new anonymous ftp root directory.

```
        /usr/lib/uxinstkern.700\
        /usr/lib/HDSware
```

Note the backslash character as a designator of line continuation.

4. Restart the inetd process. Find the process identification number (PID) from the following command:

```
ps -aux | grep inetd
```

Then issue this command:

```
kill -1 <PID>
```

This restarts the inetd process which starts the TFTP daemon.

4.2.1.5 TFTP in "Secure Mode" on HP Systems

TFTP on HP/UX systems operates with security limitations. Access to the file system is limited by the TFTP configuration. There are three possibilities for setting the TFTP security.

1. File access is limited by the filenames or directories specified on the TFTP startup line in */etc/inetd.conf*, as described in the previous section.

```
tftp   dgram   udp   wait   root    /etc/in.tftpd    tftpd\
       /usr/lib/uxinstlf.700\
       /usr/lib/uxinstkern.700\
       /usr/lib/HDSware
```

In this case, TFTP file transfers are permitted for the two .700 files and any files in the */usr/lib/HDSware* directory. You could add other file names or directories as needed. Symbolic links are permitted in this path.

2. File access is limited to the home directory of the pseudo-user "tftp". In general, the "tftp" user is identified in the */etc/passwd* file as follows:

```
tftp:*:510:guest:tftp server:/usr/tftpdir:/bin/false
```

where tftp is the username, * is the password, guest is the membership, */usr/tftpdir* is the home directory, and the default shell is bogus since there is never a login to the tftp user's shell.

A TFTP file transfer initiates a chroot() call so it changes its root directory to the home directory of the tftp pseudo-user, which is */usr/tftpdir* in this case. All files transferred must be in this directory, and the file paths you enter must take this into account. Symbolic links are not permitted in this directory. This security mechanism for TFTP simulates the behavior of "TFTP secure mode" found in other operating systems.

3. You can specify both of these TFTP security variables. When you request a TFTP file transfer, TFTP first looks for the file using its home directory (which is */usr/tftpdir* in this example) as the root directory of its search. If the requested file is not found, it searches from the "root" directory specified in the TFTP startup line in */etc/inetd.conf*, which in the example above is */usr/lib/HDSware*.

- If you are using Bootp to start the ViewStation, you will have to verify that Bootp is running on the HP host. Check to see that the bootp daemon has been enabled in the */etc/inetd.conf* file. The Bootp line in the file should be uncommented. You probably also have to start the bootp daemon (and restart it after you have modified the */etc/bootptab* file).

Next, check the */usr/adm/inetd.sec* file and add these lines, if necessary:

```
bootps allow
bootpc allow
```

Now check the */etc/bootptab* file and enter the appropriate booting information for the ViewStation.

4.2.1.3 Verify the file access method

The ViewStation uses either the TFTP, FTP, or NFS file transfer protocols to load fonts and local clients, so at least one of these programs (daemons) must be present and running on the HP workstation. The ViewStation uses TFTP as its default file transfer protocol. You can select another protocol by changing the entry in the Remote Hosts menu of Setup Mode. Note that NFS is not available for booting the ViewStation.

4.2.1.4 TFTP - Trivial File Transfer Protocol

Typical HP installations do not start the TFTP daemon. When TFTP is started, various security mechanisms limit file access. These security mechanisms are discussed below.

On HP systems there is a startup line for TFTP present in the */etc/inetd.conf* file, but it is usually commented out. With the comment character removed, the TFTP protocol must be restarted. Note that TFTP can read only from directories available through the security mechanisms.

If you want to run TFTP as your file transfer protocol for the ViewStation, you must start it or verify that it is running, and then add the appropriate HDSware directory to the TFTP access list.

To start your TFTP service on the HP and add the HDSware directory (you must be root user to do these steps):

1. Check to see if TFTP is running; check for a comment character on the TFTP line in the */etc/inetd.conf* file. The line looks like this:

```
#tftp   dgram   udp   wait   root    /etc/in.tftpd    tftpd\
        /usr/lib/uxinstlf.700\
        /usr/lib/uxinstkern.700
```

2. Remove the comment character (#) from the beginning of the line.

3. Add the appropriate HDSware directory (in this case: */usr/lib/HDSware*) to the TFTP access list.

```
tftp   dgram   udp   wait   root    /etc/in.tftpd    tftpd\
       /usr/lib/uxinstlf.700\
```

Using the ViewStation on Selected Host Systems

This chapter will help you connect an HDS ViewStation to a Hewlett Packard host system.

Section 4.0 - Using the ViewStation on Selected Host Systems

4.2 Hewlett Packard Systems

This chapter addresses special features and requirements of Hewlett Packard systems as they relate to installing the HDS ViewStation.

4.2.1 Preparing the HP700

The installation of the HDS ViewStation will go smoothly if a few things are set up before the X terminal is started. The HPvue environment has different ways to configure each display device; those suggested below are one way to do it.

There are some things to do before starting the ViewStation.

4.2.1.1 Load the HDSware Tape on the HP host

Load the HDSware tape at a location of your choice on the HP700. Decide on a file transfer mechanism (TFTP, FTP, or NFS are available). This choice may decide where you locate the HDSware software.

If you use TFTP (the ViewStation’s default protocol), note that TFTP on the HP host is running with some in secure mode restrictions (discussed below). You should load the HDSware files into a directory which is available to TFTP, usually */usr/tftpdir* or */usr/lib/HDSware* (see the examples below).

4.2.1.2 Verify the startup method

- If you start the ViewStation from flashPROM or monitor mode, you can ignore this section.