1. Mount the ViewStation’s floppy disk on your host computer’s file system with NFS. For example, you could mount the floppy disk drive on a ViewStation named **mikevs** at file location */export/home/mike/mkfloppy* with this command:

```
mount –o rw,intr,wsize=6144,timeo=1200 mikevs:/floppy1
/export/home/mike/mkfloppy
```

2. From within your WABI window:

a. In the Program Manager, open the Configuration Manager.

b. Now open the Drives icon.

c. Select an unassigned drive letter in the Drives panel, for this example choose Drive E.

d. In the Available Directory Paths panel, navigate through the list of directories and files to reach the file system you want:

```
/export/home/mike/mkfloppy
```

in this example.

e. Choose Connect. The path displayed is assigned to the floppy disk drive, and appears next to the drive letter in the Drives panel.

f. Choose OK to save the assignment.

3. At this point, the ViewStation’s floppy disk drive is selectable from within the File Manager as Drive E.

where FXUtilities is the host IP address and path to the HDSware software. You can verify this setting with the "xset q" command, which reports the current font-path.

2. Make sure your username environment variables include the SoftWindows environment. You should have an entry in your .profile file for the SoftWindows environment:

```
setenv $SWINHOME /usr/lib/SoftWindows
```

or the directory appropriate to your system. If this variable is not set, SoftWindows will use a pop-up box and offer to set it for you. SoftWindows also checks for its system configuration file and will set it automatically for you if you wish.

If you use Xdm, the .profile file may not be read. In this case, you should add a line to your .xsession or .xinitrc file to read the .profile file.

3. Mount the ViewStation's floppy disk on your host computer's file system with NFS. You must be the root user to do this.

For example, you could mount the floppy disk drive on a ViewStation named **mikevs** at file location */export/home/mike/mkfloppy* with this command:

```
mount -o rw,intr,wsize=6144,timeo=1200 mikevs:/floppy1
/export/home/mike/mkfloppy
```

4. Set up your FSA (File Sharing Architecture, an MS-DOS utility) link to the floppy disk drive. From your SoftWindows Desktop, choose **Open Drive ...** from the **Disk Drives ...** cascade menu on the **Options** menu.

This menu lets you define a UNIX directory as your PC Drive E:

Click on the **FSA Root Directory Name ...** and then enter the mounted file location for the floppy disk drive: (for this example)

```
/export/home/mike/mkfloppy
```

Alternately, you could do Step 4 from your MS-DOS configuration, as below.

4a. From the MS-DOS prompt, you can use the NET USE command:

```
DOS:\> NET USE X:dir
```

or, in this example:

```
DOS:\> NET USE E:/export/home/mike/mkfloppy
```

You may want to add this line to your AUTOEXEC.BAT script to make this configuration automatically when you start your PC.

5. At this point, you're finished. You can read and write to the ViewStation's floppy disk as if it were your PC drive E:. For example, a file BUDGET.DOC on the floppy disk would appear to the PC application as E:BUDGET.DOC

1.12.12Using the ViewStation's Floppy Disk from WABI 2.0

To use the ViewStation's floppy disk drive on a WABI 2.0 system, follow these steps:

fdformat is a utility for formatting floppy diskettes. All new blank diskettes must be formatted before they can be used. fdformat formats and verifies each track on the diskette, and terminates if it finds any bad sectors. All existing data on the diskette, if any, is destroyed by formatting.

By default, fdformat formats a high density diskette with a capacity of 1.44 megabytes. Use the -l option to format low density diskettes (720K capacity). Note: it is not possible to put a low density format onto a high density floppy diskette. High density diskettes can be recognized by the high density detect hole in the lower right corner of the diskette, opposite the write protect hole in the lower left corner.

This installs a MS-DOS file system on the diskette after the format is done.

OPTIONS

-v Put a MS-DOS label on the disk after formatting it.

-l Format a low density (720K) diskette.

-n Skip verifying the floppy diskette after formatting.

NOTES

The MS-DOS file system installed by fdformat does not have the necessary system files to make it bootable on a PC.

FILES

/dev/fd1

/dev/fd2

etc.

BUGS

Bad sector mapping is not currently supported on floppy diskettes. Therefore, a diskette is unusable if fdformat finds an error (bad sector).

This command formats a high density disk with a volume label of 'TEST':

```
HDS> fdformat -v test /dev/fd1
```

1.12.11 Using the ViewStation's Floppy Disk with SoftWindows from Insignia Solutions

Application programs like SoftWindows from Insignia Solutions run on your host computer and can read/write MS-DOS disks using a DOS utility, FSA, File Sharing Architecture. These application programs reference the UNIX file system as if it were a DOS file system. For example, a typical application would set DOS drive E: as a UNIX directory.

Follow these steps to use the ViewStation's floppy disk drive from SoftWindows:

1. Make sure your ViewStation's fontpath includes the SoftWindows fonts. If you need to add these fonts, use this command line from an xterm window on your HDSware host:

```
xset +fp /FXUtilities/hds-fx/fonts/softpc
```

before resending requests, which allows the floppy drive time to complete the requests.

3. The write size argument, wsize=6144, is important since it reduces the size of the NFS write requests sent to the ViewStation. If too many large requests are sent too quickly, the ViewStation will lose the requests. The NFS client may think the NFS server is having problems and display a message like:

```
NFS server <ViewStation> not responding
```

There will be a noticeable pause before the NFS client retries, at which time you may see a message like:

```
NFS server <ViewStation> ok
```

4. The floppy filesystem should be unmounted before powering down the ViewStation, such as:

```
umount /tmp/vsfloppy
```

Otherwise, processes on the workstation may get "stuck" when performing operations that want access to the floppy filesystem mount, such as 'df'.

1.12.9 Floppy Drive File Ownership

Since MS-DOS filesystems do not store file owner or permissions mode information, the ViewStation assigns the same user ID, group ID, and permissions mode for all floppy files.

By default, floppy files are exported with uid=65534, gid=65534, and permissions mode 0777 (read, write, execute permissions for user, group, and others). Note that the mode, 0777, is interpreted as an octal number since it begins with a zero. Files that are read-only report their permissions mode without write permissions. If the floppy disk is write protected, all files will report their permissions mode without write permissions.

The default mount point, file owner, and permissions mode can be changed by adding a mount command to the ViewStation's Startup command file. The default mount command is:

```
mount -t rmfs -o synchro-
nous,exported,uid=65534,gid=65534,mode=0777 /dev/fd1 /
floppy1
```

1.12.10 Floppy Drive Formatting disks

The **fdformat** utility is provided as a ViewStation Console window shell command to format disks. This is the **fdformat** manual page:

NAME

fdformat - format floppy diskettes

SYNOPSIS

fdformat [-l] [-n] [-v label] device

DESCRIPTION

This nfsd entry in the clients.config file is On by default.

The ViewStation boot code does not support the floppy disk, so it cannot be used for booting.

1.12.6 Local Floppy Filesystem Access

Files on the floppy appear in the */floppy1* directory in the ViewStation's local filesystem. The ViewStation's **ls**, **cat**, and **more** shell commands can be used to examine floppy files in the Console window. For example:

```
HDS> cd /floppy1

/floppy1

HDS> ls

total 132

1 test* 131 termcap*

HDS> cat test

This is a small file on the HDS floppy.

HDS>
```

1.12.7 Floppy Drive RCP (Remote Copy) Access

The ViewStation accepts remote copy requests to its floppy drive issued by remote hosts. The remote copy command does not work from the HDS shell.

The **rcp** remote copy command supports the standard Unix filename wildcard matching for '*' and '?'. Metacharacters intended to be interpreted on the ViewStation should be quoted using \, ", or '.

This is an **rcp** example, issued from a workstation (hdssun1), to copy floppy files starting with the letter 't' from ViewStation named "mshvs":

```
hdssun1> rcp mshvs:/floppy1/t\* .
```

1.12.8 Floppy Drive NFS (Network File Service) Access

To access the ViewStation's floppy files remotely using NFS, you must mount the ViewStation's */floppy1* directory using the '**mount**' command.

The following command mounts the floppy drive attached to the ViewStation called "mshvs" to a file location called */tmp/vsfloppy*: (check the syntax on your NFS system)

```
 mount -o rw,intr,wsize=6144,timeo=1200 mshvs:/floppy1 /tmp/
vsfloppy
```

Note:

1. The */tmp/vsfloppy* directory must exist before issuing the **mount** command.

2. The timeout argument, timeo=1200, is important since the floppy drive is a slow I/O device. With the timeout argument, the NFS client waits longer

1.12.2 Using the Floppy Drive with a Printer

A parallel port printer can still be used with the floppy disk drive present. Connect the printer's parallel port cable to the floppy base unit's female connector (in a daisy chain).

Printing from the ViewStation works the same way as when the printer was directly connected to the ViewStation. The printer is accessed via device */dev/pp0*. You may notice that the data transfer rate to the printer is reduced when both the floppy drive and the printer are simultaneously in use, since the parallel port is shared between the printer and floppy drive.

1.12.3 Software configuration

The ViewStation's floppy disk drive is auto-detected during startup; there is no ViewStation configuration needed for it. Further, the floppy disk's filesystem is automatically mounted and exported.

The Console window command "hwconfig" shows the presence of the floppy drive:

```
Parallel port device 1: 1.44MB Floppy Disk Drive
```

The floppy device driver is installed as */dev/fd1* in the ViewStation's local filesystem. This floppy device driver file name is used when formatting a disk. Formatting disks is discussed in a later section.

1.12.4 Changing Floppy Disks

Floppy disks can be changed whenever the floppy disk drive light is off. When a new floppy disk is inserted, its density (high or double) is automatically determined. If the floppy disk is not formatted, the Console message log will contain the following message:

```
HDS> Unformatted floppy disk?
```

When NFS is used to access the floppy and the floppy disk is changed, stale file errors may occur. This is a normal condition that occurs as a result of the NFS client referencing files that no longer exist. If the current working directory was within the floppy filesystem, change it to be the floppy mount point (e.g. '*cd /tmp/vsfloppy*' if the floppy was mounted using the example below).

1.12.5 Floppy Disk Drive Access

You can read or write to the floppy disk drive locally using shell commands in the Console window, or remotely from a host computer using **rcp** (remote copy), or by using NFS. The NFS method is most useful, and is set by default.

To access the floppy files remotely using NFS, the ViewStation's clients configuration database requires an entry for **nfsd**, the NFS server daemon. The *clients.config* file distributed with HDSware Version 3.1 contains the necessary **nfsd** entry, which is:

```
 hds.osExtension.nfsd.path: /FXUtilities/hds-fx/extensions/
nfsd
```

Note:

HDS ViewStation: Floppy Disk Drive

This chapter discusses connecting and using a 3 1/2″ floppy disk drive with the HDS ViewStation.

Section 1.0 - HDS ViewStation

1.12 ViewStation Floppy Drive Feature

With HDSware release Version 3.1, a 3.5″ external floppy disk drive can be used with HDS ViewStation models. The HDS floppy disk drive supports reading, writing, and formatting high density (1.44MB) and double density (720KB) MS-DOS disk formats. Only one floppy disk drive is supported at one time.

Note that older ViewStations must have ECO 375A installed in order to connect a floppy disk drive.

1.12.1 Hardware configuration

The HDS floppy disk drive comes with three separate parts; a floppy drive base unit, a parallel port cable, and an external wall mount power supply. Use these steps to connect the floppy disk drive to the ViewStation:

1. Connect the parallel cable's male connector to the parallel port on the ViewStation's backpanel.
2. Connect the other end of the parallel cable to the floppy drive base unit's male connector.
3. Plug the power supply's connector into the side of the floppy drive base unit.
4. Plug the power supply into an electrical outlet. The green LED next to the power connector should light on the floppy drive base unit.