

9FX Vision 330 (PCI) Graphics Option

Owner's Guide

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This guide describes the installation of the 9FX Vision 330 (PCI) Graphics Option on Digital AlphaServer and workstation products.

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Preface

Purpose of This Guide

This guide describes how to install the 9FX Vision 330 (PCI) Graphics Option in your computer system.

Who Should Use This Guide

This guide is intended for anyone who has purchased the 9FX Vision 330 (PCI) Graphics Option, either already installed or as an add-on.

Structure of This Guide

This guide is organized as follows:

- **Chapter 1, Overview**-Provides an overview of the 9FX Vision 330 (PCI) Graphics Option.
- **Chapter 2, Installation**-Describes how to install the 9FX Vision 330 (PCI) Graphics Option in your Digital AlphaServer or workstation running Windows NT, Digital UNIX, or OpenVMS Alpha.

Conventions Used in This Guide

In this guide, every use of Windows NT means the Windows NT operating system, every use of Digital UNIX means the Digital UNIX operating system, and every use of OpenVMS Alpha means the OpenVMS Alpha operating system.

This guide also uses the following conventions:

Convention	Meaning
Note	A note calls the reader's attention to any item of information that may be of special importance.
Caution	A caution contains information essential to avoid damage to the equipment.
<i>italic type</i>	<i>Italic type</i> indicates complete titles of manuals.
bold type	Bold type indicates text that is highlighted for emphasis.
monospaced	In text, this typeface indicates the exact name of a command, routine, partition, pathname, directory, or file.

Reader's Comments

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Overview

Introduction

This chapter provides a brief overview of the 9FX Vision 330 (PCI) Graphics Option.

Module Description

The 9FX Vision 330 (PCI) Graphics Option accelerator module is a single expansion-slot, 64-bit PCI bus graphics option, for use in Digital's AlphaServer 2000/2100 and 400/1000 systems, and 200 4/100, 200 4/166, and 255 4/233 workstations.

The option contains 1 MB of DRAM video memory for use with Digital's AlphaServer systems and 2 MB of DRAM video memory for use with Digital's workstations.

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Installation

Introduction

This chapter describes the installation of the 9FX Vision 330 (PCI) Graphics Option in your Digital AlphaServer or workstation system. Topics included in this chapter are:

- Unpacking
- Windows NT installation
- Digital UNIX installation
- OpenVMS Alpha installation
- Hardware installation

Unpacking

The graphics option hardware is packaged in a single carton that contains the graphics option and an owner's guide.

Windows NT Installation

Windows NT Version 3.51 (minimum version) already includes the graphics driver required by the Vision 330 graphics option.

If you have purchased a Digital AlphaServer system or a workstation that already has the Vision 330 graphics option installed, you do not need to take further action.

Installation

Note

If a graphics option other than the Vision 330 was previously operating in the system, keep that option installed while changing over to the Vision 330 option driver. If the previously installed graphics option is not available or it is not operational, reinstall Windows NT by using the procedure described in the “Custom Windows NT Installation” section of this guide.

If you have purchased the Vision 330 graphics option as an add-on, or you have chosen not to use the factory-installed software, install the Vision 330 graphics driver by performing the following steps:

1. From the Main menu, select the **Control Panel** option.
2. In Control Panel, click on the **Display** option.
3. In the Display Settings dialog box, click on the **Change Display Type** button. The Display Type dialog box lists information about the current driver.
4. In the Adapter Type dialog box, click on the **Change** button. The Select Device dialog box shows a list of current devices.
5. Insert the Windows NT installation CD-ROM into the CD-ROM drive unit.
6. In the Select Device dialog box, click on the **S3 Graphics Option** button.
7. In the Install From Disk dialog box, enter the CD-ROM drive device name and then click on the **OK** button.
8. From the list of software contained on the CD-ROM, select the **S3 compatible video driver**.
9. In the Select Device dialog box, click on the **Install** button.
10. In the Installing Driver dialog box, click on the **Yes** button.
11. Click on the **Restart now** button to start the system shutdown and reboot process.
12. When the display goes to the ARC Multiboot blue screen, you can remove power from your computer system and install the Vision 330 graphics option as described in the “Hardware Installation” section.

- When the system reboots, the graphics driver is loaded and the Vision 330 graphics option comes up in the 640 x 480 default mode.

Changing Windows NT Display Characteristics

The resolutions supported by Windows NT are as follows:

Resolution	Colors	Display Frequency (Hz)
640 x 480	16, 256, 65,536	60, 72
800 x 600	16, 256, 65,536	60, 72
1024 x 768	16, 256, 65,536	60, 70, 72
1280 x 1024*	16, 256, 65,536	60, 70

To change the display resolution and refresh rate from the Windows NT Control Panel, perform the following steps:

- Double click on the **Display** icon in the Control Panel dialog box and go through the following process:

List modes

Select a mode

TEST

The testing operation confirms that the monitor properly synchronizes in the selected mode. If the monitor synchronizes, but the display appears geometrically distorted, you must adjust the monitor geometry controls after rebooting.

- If the test bitmap was properly displayed, continue to respond affirmatively to the dialog boxes, and when prompted, click on the **Restart now** button to reboot.
- When rebooted, the new display characteristics are loaded and the Vision 330 graphics option comes up in the new display mode.

Custom Windows NT Installation

If the previously installed graphics option is not available or it is not operational, you must reinstall Windows NT.

* Available only for the 2 MB version of the graphics option.

Installation

Install the Vision 330 graphics option as described in the “Hardware Installation” section and then perform the following steps:

1. From the ARC Multiboot blue screen menu, select **Supplementary Menu**.
2. Select **Install Windows NT from CD-ROM**.
3. Within the Windows NT Workstation Setup process, the system queries for either **Express Setup** or **Custom Setup** installation. Select **C** for custom installation. If you encounter difficulty, refer to the Windows NT installation guide for help.
4. Early in the Custom Setup process, the program queries for either a **New Version** or an **Upgrade**. Select **N** for new version.
5. A list of hardware and software components is displayed. From the menu, select the desired display.
6. Insert the Windows NT installation CD-ROM into the CD-ROM drive unit.
7. When queried, select the **S3 compatible video driver** option and press **Return**.
8. Press **Return** again to continue, and follow the Windows NT installation process instructions.

Note

Near the end of the first half of the Windows NT Setup process, an automatic reboot is invoked. Setup then continues in graphics mode. If you experience any difficulty, refer to the Windows NT installation guide for help.

9. Near the end of the last half of the Windows NT Setup process (after the point where the system clock is set), a dialog box appears acknowledging the presence of the Vision 330 graphics option. Click on the **OK** button to proceed and then select the **List all modes ...** option.
10. Set up a new default display mode as instructed in the “Changing Windows NT Display Characteristics” section.
11. When Windows NT reboots, the new display characteristics are loaded and the Vision 330 graphics option comes up in the selected display mode.

Digital UNIX Installation

Digital UNIX V3.2d-1 (minimum version) already includes the display driver software required by the Vision 330 graphics option.

If you have purchased a Digital AlphaServer system or a workstation that already has the Vision 330 graphics option installed, and you choose to use the factory-installed software, you do not need to take further action.

If you have purchased the Vision 330 graphics option as an add-on, or you have chosen not to use the factory-installed software and you choose to do a new Digital UNIX V3.2d-1 installation, you need to install Digital UNIX V3.2d-1 as described in the “New Digital UNIX V3.2d-1 Installation” section. Refer to the *Digital UNIX Installation Guide* for additional information.

If you have purchased the Vision 330 graphics option as an add-on, and your system is currently running Digital UNIX V3.2d-1, which was upgraded to that version while a graphics option other than the Vision 330 was installed, you need to install the Vision 330 driver software. You install the driver software from the Digital UNIX V3.2d-1 installation CD-ROM as described in the “

Digital UNIX Upgraded to V3.2d-1 with Another Graphics Option Installed” section.

Optionally, you can change the resolution of the graphics option as described in the “

Changing Digital UNIX Display Characteristics” section.

Note

When the Digital UNIX system is powered on, the Vision 330 graphics option runs in VGA text mode as a terminal device. If a graphics option other than the Vision 330 was previously running on the system, X/Motif cannot be started until the operating system kernel has been reconfigured.

Installation

New Digital UNIX V3.2d-1 Installation

Install the Vision 330 graphics option as described in the “Hardware Installation” section and then perform the following steps:

1. Shut down your Digital UNIX system to the SRM console prompt (>>>).
2. Insert the Digital UNIX V3.2d-1 CD-ROM into the system CD-ROM drive unit.
3. Boot the CD-ROM that contains Digital UNIX V3.2d-1.
4. Refer to your *Digital UNIX Installation Guide* and complete the V3.2d-1 installation.

Digital UNIX Upgraded to V3.2d-1 with Another Graphics Option Installed

Install the Vision 330 graphics option as described in the “Hardware Installation” section and then perform the following steps:

1. Insert the Digital UNIX V3.2d-1 or greater CD-ROM into the system CD-ROM drive unit.
2. From the appropriate drive, boot the system disk file `genvmunix` to single-user mode:

```
>>> set boot_osflags " "  
>>> boot -file genvmunix dka0
```

Installation

- Using the appropriate device name, mount the Digital UNIX installation CD-ROM, install the driver software, and rebuild the kernel:

```
# /sbin/bcheckrc
# mount -r /dev/rz6c /mnt
# setld -l /mnt/ALPHA/BASE/OSFSERPCI360
# doconfig -c
# cp /sys/hostname/vmunix /vmunix
# halt
```

- Using the appropriate device, reset the SRM console target boot device to multiuser mode and boot:

```
>>> set boot_osflags A
>>> boot dka0
```

- Upon rebooting, the operating system automatically detects the presence of the Vision 330 graphics option and defaults to the 1024 x 768, 70 Hz display resolution mode.

Changing Digital UNIX Display Characteristics

Digital UNIX supports 256 colors and resolutions as follows:

Resolution	Frequency (Hz)	Pixel Frequency (MHz)
640 x 480	60, 72	25.18, 31.5
800 x 600	60, 72	40, 50
1024 x 768	60, 70, 72	65, 75, 74.37
1280 x 1024	60, 66, 72	110.16, 119, 131

Installation

To change to any of the other supported resolution and refresh modes, perform the following steps:

1. Change directory to `/var/X11/xdm`:

```
# cd /var/X11/xdm
```

2. Change the mode of Xservers:

```
# chmod +w Xservers
```

3. Edit the file Xservers:

```
# vi Xservers
```

4. At the end of the line that reads:

```
:0 local /usr/bin/X11/X -nice ..
```

Append the command line switches that correspond to the resolution and vsync (vertical synchronization) desired from the table. For example, 1024 x 768 at 70 Hz would be:

```
:0 local /usr/bin/X11/X -nice -screen0 1024 -vsync 70
```

5. When the editing is complete, save the file and perform a shutdown with automatic reboot to affect the changes:

```
# shutdown -r now
```

OpenVMS Alpha Installation

OpenVMS Alpha Version 6.2-1H1 or 6.2-1H2 (minimum version) already includes the driver software required by the Vision 330 graphics option.

If you have purchased a Digital AlphaServer system or a workstation that already has the Vision 330 graphics option installed, and you choose to use the factory-installed software, you do not need to take further action.

However, you can change the display resolution and vertical synchronization frequency.

Changing OpenVMS Alpha Display Characteristics

OpenVMS Alpha supports 256 colors and resolutions as follows:

Resolution	Frequency (Hz)	Pixel Frequency (MHz)
640 x 480	60, 72	25.18, 31.5
800 x 600	60, 72	40, 50
1024 x 768	60, 70, 72	65, 75, 74.37
1280 x 1024	60, 66, 72	110.16, 119, 131

Note

Although the 640 x 480 and 800 x 600 resolutions are available, Digital does not recommend their use because many X11/Motif applications make assumptions about minimum screen size.

To change to any of the other supported resolution and refresh modes, perform the following steps:

1. Copy the DECwindows server setup template to a command file:

```
$ COPY SYSS$MANAGER: -
  _$ DECW$PRIVATE_SERVER_SETUP.TEMPLATE -
  _$ SYSS$MANAGER:DECW$PRIVATE_SERVER_SETUP.COM
```

2. Edit the file SYSS\$MANAGER:DECW\$PRIVATE_SERVER_SETUP.COM to add the following lines in the **Cluster Common or Standalone Workstation Setup** area of the file, along with the other setup options:

```
DECW$XSIZE_IN_PIXELS == 1024
DECW$YSIZE_IN_PIXELS == 768
DEFINE/SYSTEM DECW$SERVER_REFRESH_RATE 70
```

3. Invoke the shutdown and reboot process:

```
$ @SYSS$SYSTEM:SHUTDOWN
```

4. Continue to use the defaults until prompted to reboot and then type **Y** to reboot.

Installation

5. During reboot of OpenVMS Alpha, the new characteristics are loaded and the Vision 330 graphics option comes up in the selected display mode.

Note

During reboot, the system display may dim momentarily. This condition corrects itself when the DECwindows server comes up.

Hardware Installation

The following section describes how to install the 9FX Vision 330 (PCI) Graphics Option. To install the graphics option, perform the following steps:

Note

Before installing the graphics option, check your monitor specification for signal compatibility and supported features offered by the graphics option.

Caution

Static electricity can damage sensitive electronic components. When handling your graphics option, use an antistatic wriststrap that is connected to a grounded surface on your computer system.

1. Remove power from your computer system and disconnect the monitor cable.
2. Remove the cover from your computer (refer to your system documentation).
3. If your computer has an existing graphics module, remove the hardware that secures it and then remove the module.
4. If your system had a previously installed graphics option, you can use that slot if it is a PCI bus, or you can select any empty PCI expansion slot. Remove the slot cover if you are using a new slot.

Installation

Note

For the Windows NT operating system, you must install the graphics option in a slot that is located in front of the PCI-to-PCI bridge. Refer to your system owner's guide for information about graphics option slots.

5. Grasp the top edge of the graphics option and carefully insert it into the slot, then firmly seat it.
6. Secure the module retaining bracket.
7. Replace the computer cover.
8. Ensure that the monitor cable is connected to the video output connector located on the back of the graphics option.