Video Driver Update 2 Guide for Solaris 2.6 (Intel Platform Edition)

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Contents

Preface v

1. What's New in Video Driver Update 2 1

New Video Display Device Support 1

New Updated Video Support 2

2. Video Driver Update 2 for Solaris 2.6 (Intel Platform Edition) 5

Video Driver Update Support 5

Video Display Device Support 5

Notebook Support 7

Updated Video Support 9

Video Driver Update Release Notes 9

Known Problems 10

Creating Video Driver Update Diskette Images 12

Installing the Video Driver Update 13

Preface

This document provides information about x86 video display devices that are now supported in the Solaris™ 2.6 computing environment. For information about support for other devices—SCSI host bus adapters or network adapters, for example—refer to *Driver Update Guide for Solaris 2.6 (Intel Platform Edition*), supplied with Driver Update 2 for Solaris 2.6 *Intel Platform Edition*.

Typically, as new or updated video drivers become available, they are released as Video Driver Update diskette images. You can download these images to create the Video Driver Update diskettes, then use these diskettes to update your installed Solaris 2.6 system with the new drivers.

Note - The term "x86" refers to the Intel 8086 family of microprocessor chips, including the Pentium, Pentium Pro, and Pentium II processors and compatible microprocessor chips made by AMD and Cyrix. In this document the term "x86" refers to the overall platform architecture, whereas "*Intel Platform Edition*" appears in the product name.

Before You Read This Book

This document contains additional device configuration information for supported hardware. The importance of configuring your hardware prior to installing Solaris software is discussed in the Configuring Devices module in *Information Library for Solaris 2.6 (Intel Platform Edition)*, part of Solaris 2.6 System Administrator Collection Vol 1 at `http://docs.sun.com`. This document assumes you have fully read and understood that module.

Likewise, the installation instructions in this Video Driver Update supplement the instructions in *Solaris Advanced Installation Guide*.

How This Book Is Organized

Chapter 1 describes what is new in this release.

Chapter 2 provides information about supported devices, release notes, known problems, diskette image creation procedures, and installation instructions for this Video Driver Update.

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To obtain technical support:

- Contact your Sun Software Support Provider.
- In North America, you can also call 1-800-SUNSOFT and choose option 4.

CHAPTER 1

What's New in Video Driver Update 2

Video Driver Update 2 adds new support for Solaris 2.6 *Intel Platform Edition* video devices. It must be used with Solaris 2.6 *Intel Platform Edition*.

This chapter provides a brief description of what has been added since the previous Video Driver Update. A complete description of the devices, release notes, known problems, diskette image creation procedures, and installation instructions for all the video display support included in this release can be found in Chapter 2.

New Video Display Device Support

Table 1–1 contains a list of the new video display devices supported in Solaris 2.6 *Intel Platform Edition* Video Driver Update 2.

While this table includes the resolution and color depth capabilities of each device, note that the resolution and color depth you select are also dependent on the capabilities of your monitor and the amount of video memory. See the Configuring Devices module in *Information Library for Solaris 2.6 (Intel Platform Edition)* for more information.

TABLE 1–1 New Video Display Devices Supported in This Video Driver Update

Vendor	Model	Bus	Video Chip[1]	Resolution and Color Depth									
				800x600		1024x768		1152x900		1280x1024		1600x1200	
				8	24	8	24	8	24	8	24	8	24
ATI	3D RAGE PRO[2]	—	ATI 3D RAGE PRO	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	XPERT@Play	PCI/ AGP	ATI 3D RAGE PRO	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	XPERT@Work	PCI/ AGP	ATI 3D RAGE PRO	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Diamond	Stealth 3D 2000/Pro	PCI	S3 ViRGE/DX (86C375)	✓	✓	✓	✓	✓		✓			
Matrox	Mystique 220	PCI	MGA1064SG (-G or -H)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
S3	ViRGE/DX[2]	PCI	ViRGE/DX (86C375)	✓	✓	✓	✓	✓		✓			
	ViRGE/GX[2]	PCI	ViRGE/GX (86C385)	✓	✓	✓	✓	✓		✓		✓	

1. A listing in the Video Chip column does not guarantee that video devices made by another manufacturer using the same chip will work. Only the specific models listed by Vendor, Model, Bus, and Video Chip have been tested.
2. SunSoft does not guarantee that every video device with this video chip will work, but it is possible that your model can be used successfully.

Note - "—" in the Bus column indicates a video controller model that is used on video display adapters and motherboards.

Table 2–2 lists the notebook displays supported in Solaris 2.6 *Intel Platform Edition* Video Driver Update 2.

New Updated Video Support

- Support for ATI 3D RAGE II+ chips has been updated. Support for ATI 3D Pro Turbo cards with 8 Mbytes of video memory has been added.

- Support for ATI Mach64VT chips has been enhanced to eliminate some screen noise.
- Support for S3 ViRGE chips (86C325) has been enhanced to prevent screen corruption.
- Support for Cirrus Logic 542*x* chips has been updated to eliminate some screen noise.
- Support for notebooks using Chips and Technology 65555 chips has been updated to eliminate text distortion and vertical line problems.
- Minor improvements have been made to `kdmconfig`.

CHAPTER 2

Video Driver Update 2 for Solaris 2.6 (Intel Platform Edition)

This chapter contains a brief description of the video and notebook support included in this Video Driver Update, followed by release notes, known problems, diskette image creation procedures, and installation instructions. Read the entire chapter once before installing the Video Driver Update. Note that this Video Driver Update is cumulative so this update includes all previous Solaris 2.6 Video Driver Updates.

Video Driver Update Support

This release contains software improvements and support for the video devices listed below.

Video Display Device Support

Table 2-1 lists the video devices supported by this Video Driver Update.

TABLE 2–1 Video Display Devices Supported in This Video Driver Update

Vendor	Model	Bus	Video Chip[1]	Resolution and Color Depth									
				800x600		1024x768		1152x900		1280x1024		1600x1200	
				8	24	8	24	8	24	8	24	8	24
ATI	3D Pro Turbo PC2TV	PCI	ATI 3D RAGE II+	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	3D RAGE II+[2]	—	ATI 3D RAGE II+	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	3D RAGE PRO[2]	—	ATI 3D RAGE PRO	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	All-in-Wonder	PCI	ATI 3D RAGE II+	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	XPERT@Play	PCI/ AGP	ATI 3D RAGE PRO	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	XPERT@Work	PCI/ AGP	ATI 3D RAGE PRO	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cirrus Logic	5480[2]	—	Cirrus Logic GD5480	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Diamond	Stealth 3D 2000/Pro	PCI	S3 ViRGE/DX (86C375)	✓	✓	✓	✓	✓		✓			
Matrox	Millennium 220	PCI	MGA2064W–R3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Millennium II	PCI/ AGP	MGA2164W	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Mystique 220	PCI	MGA1064SG (-G or -H)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
S3	ViRGE/DX[2]	PCI	S3 ViRGE/DX (86C375)	✓	✓	✓	✓	✓		✓			
	ViRGE/GX[2]	PCI	S3 ViRGE/GX (86C385)	✓	✓	✓	✓	✓		✓		✓	

TABLE 2–1 Video Display Devices Supported in This Video Driver Update *(continued)*

Vendor	Model	Bus	Video Chip[1]	Resolution and Color Depth									
				800x600		1024x768		1152x900		1280x1024		1600x1200	
				8	24	8	24	8	24	8	24	8	24
STB	Nitro 3D	PCI	S3 ViRGE/GX (86C385)	✓	✓	✓	✓	✓		✓		✓	
	Nitro 64 Video	PCI	Cirrus Logic GD5446	✓	✓	✓		✓		✓			
	PowerGraph 64 3D	PCI	S3 ViRGE (86C325)	✓	✓	✓		✓		✓		✓	

1. A listing in the Video Chip column does not guarantee that video devices made by another manufacturer using the same chip will work. Only the specific models listed by Vendor, Model, Bus, and Video Chip have been tested.
2. SunSoft does not guarantee that every video device with this video chip will work, but it is possible that your model can be used successfully.

Note - "—" in the Bus column indicates a video controller model that is used on video display adapters and motherboards.

For new video device support added in this Video Driver Update, see "New Video Display Device Support" on page 1.

Note - If your video display device is not included in the list of supported video devices, make a note of its video chip. If you can find an entry for another device with this video chip, this support may work for your video device.

Notebook Support

Table 2-2 lists the notebooks supported with this Video Driver Update .

TABLE 2–2 Notebook Displays Supported in This Video Driver Update

Notebook Display Video Support										
			Resolution and Color Depth E=With External Monitor I=With Internal Monitor							
			640x480		800x600		1024x768		1280x1024	
Vendor	**Model**	**Video Chip**	**8**	**24**	**8**	**24**	**8**	**24**	**8**	**24**
Toshiba	Satellite 200CDS	Chips & Technology 65550			E,I		E		E	
	Satellite 220CDS	Chips & Technology 65554			E,I		E		E	
	Tecra 530CDT	Chips & Technology 65555					E,I		E	

Note - When running a Solaris 2.6 window system on most newer notebooks, the resolution to use for the internal notebook display will be automatically determined. However, you must still run `kdmconfig` to configure the notebook as well as the characteristics of a possible external display. In `kdmconfig`, you should select the Monitor Type, Screen Size, and Resolution/Colors entries that apply to your external display. If you do not plan to use an external display, select one of the Notebook entries as your Monitor. The window system software will automatically switch between the available resolution for your internal notebook display and the configured resolution for the external monitor.

If you have an older notebook for which the resolution of the display is not automatically determined, the resolution selected by `kdmconfig` will be used on both internal and external displays. On these notebooks, make sure you don't select a resolution that is higher than the internal display supports, because this may damage the display.

Updated Video Support

- Support for ATI 3D RAGE II+ chips has been updated. Support for ATI 3D Pro Turbo cards with 8 Mbytes of video memory has been added.
- Support for ATI Mach64VT chips has been enhanced to eliminate some screen noise.
- Support for S3 ViRGE chips (86C325) has been enhanced to prevent screen corruption.
- Support for Cirrus Logic 542*x* chips has been updated to eliminate some screen noise.
- Support for notebooks using Chips and Technology 65555 chips has been updated to eliminate text distortion and vertical line problems.
- Support has been added for monitor refresh rates up to 115kHz horizontal and 120Hz vertical.
- Minor improvements have been made to `kdmconfig`.

Video Driver Update Release Notes

This section describes the diskette images in this Video Driver Update and known problems in this release.

The Solaris 2.6 *Intel Platform Edition* Video Driver Update is distributed as DOS diskette images. This allows the required diskettes to be created on non-Solaris systems as well as on Solaris systems. This release consists of five diskette images. Each diskette image is for a specific set of video devices or notebooks. The images in Video Driver Update 2 and their corresponding devices are:

`du2vnbk`	Updated video support for notebooks
`du2vati`	Updated video support for video cards and motherboards using video chips from ATI Technologies
`du2vmat`	Updated video support for video cards and motherboards using video chips from Matrox Graphics
`du2vs3`	Updated video support for video cards and motherboards using video chips from S3
`du2vcir`	Updated video support for video cards and motherboards using video chips from Cirrus Logic

You only need to install the images for the video devices you intend to use, although you may install all the images if you want. They can be installed in any order.

Known Problems

- (4086933) S3 Trio64V2/DX chips (86C775) do not work properly on some motherboards.
- (4076832) On boards using the Cirrus Logic GD5480 at 1280x1024 resolution with 24–bit color depth, moving windows aound may cause the X Server to crash.

  Workaround: Select a different resolution..
- (4033255) Boards using S3 ViRGE/VX (86C988) chips are not able to switch from 24-bit color depth resolutions to 8-bit color depth resolutions without rebooting.
- (4023063) The display at resolution 800x600 on the Intel TMI/IPG system is not correct. In a window system environment, the right edge of the screen appears to have synchronization problems.
- (4023057) `XSun` core dumps when attempting to display raster files. Using Image Tool to display raster files on the Intel TMI/IPG system using the WD9031A-based video adapter fails.

  Workaround: Use the program `xv`.
- (1250528) Onboard mouse configuration for the Dell Latitude XPi 75D notebook computer will fail due to interrupt conflicts with the `pcic` driver.

  Workaround: Edit `/kernel/drv/pcic.conf` and remove IRQ 12 from the `res-irq` line as shown below. Change:

```
res-irq=3,5,9,11,12,15
```

  to:

```
res-irq=3,5,9,11,15
```

  Run `kdmconfig` to reconfigure the mouse.
- (1192967) Due to hardware conflicts on some VESA local bus (VLB) systems, the Diamond Viper Pro VLB card may not function when configured at the default memory address (0xA0000000). If you see a blank screen and your system appears hung after starting window system software, do the following:

1. **Reboot your system.**

2. **Run the `kdmconfig` program and choose a different memory address from the Memory Address screen. The three possible choices are: 0x20000000, 0x80000000, or 0xA0000000.**

3. **Restart the window system software.**

   Follow these steps for each address until your system works correctly.

- (1179340) Using the Intel Professional GX High Resolution system in 1280x1024 with 256 colors mode and an 80-kHz monitor causes problems when returning to text mode after exiting the window system. The foreground color is set to purple; the background color is set to blue.

  Workaround: Select either a different resolution or a different monitor frequency when configuring the window system.

- (1179339) The ATI Graphics Ultra Pro VLB video card with a Mach32 graphics chip, a TI68875 BFN RAMDAC, and 2 Mbytes of DRAM may not work properly if the "ATI Graphic Ultra Pro (2MB)" entry is selected when configuring the window system. Vertical bars get displayed on the screen.

  Workaround: If you have this version of the card, choose the "ATI Graphic Ultra Pro (1MB)" entry when configuring the window system, but note that you will not be able to use a resolution of 1280x1024. Note also that the ATI Graphics Ultra Pro VLB video card with VRAM does not have this problem.

- (1173773) After running `xlock`, there may be a white border around the screen on systems with video cards that use the Tseng Labs W32p chipset. This border disappears after the screen is unlocked.

- (1176285) Programs that use the Solaris™ PEX™ extension may fail if a user's `XGLHOME` variable is set incorrectly. If the `XGLHOME` shell environment variable points to a nonexistent path (or one that doesn't contain the XGL™ runtime binaries), then any program that uses the Solaris PEX extension (including XGL programs on most display adapters) will cause the server to abort.

  Workaround: Before you start the window system, make sure your `XGLHOME` environment variable is not set or that it points to a valid path for the system you are using.

- (1161494) Under the Solaris operating environment, the Diamond Viper video card based on the P9000 chipset is not compatible with a motherboard that has a Symphony chipset. This combination may cause the system to panic or reboot. If the Symphony chipset is present on the motherboard, do not use the Diamond Viper video card.

- The VLB versions of the Diamond Viper and Diamond Viper Pro adapters do not work on some systems that have both PCI and VESA local bus support on the motherboard. The window system will fail with an error message when you attempt to start it. The Solaris software expects a PCI version of the Diamond Viper boards if the system supports PCI.

Workaround: Use a PCI version of the Diamond Viper adapters on those systems that support both bus types.

- The VLB version of the Diamond Viper SE adapter is not supported in this release.
- Some versions of the Orchid Kelvin 64 VLB video card have memory addressing limitations that may cause problems if your system contains 32 Mbytes or more of RAM. A newer revision of this board addresses these problems. Unfortunately, there is no distinction made between revisions of this card. If your system has 32 Mbytes or more of RAM and you observe symptoms such as a fuzzy display or random vertical lines when using the window system, contact Orchid Technology to request a newer version of this card.
- The Number Nine Imagine 128, the #9GXE64, and #9GXE64 Pro video cards do not support interlaced mode. Configuring the window system using a monitor type of "MultiFrequency-38kHz (up to 1024x768 interlaced)" or "MultiFrequency-56kHz (up to 1280x1024 interlaced)" will cause the window system to fail.

  Workaround: Use a monitor that can support 1024x768 or 1280x1024 in non-interlaced mode.

The following problems apply only to 24-bit depth color:

- (1174561) The STB LIGHTSPEED VL video card used in 800x600 resolution, 24-bit color mode, does not work properly with the Sony CPD 1604S monitor.

  Workaround: Do not use this particular monitor type at that resolution and color depth.
- (1173985) Icon Editor dies when saving a 24-bit image to a file.
- The IslandPaint application does not work properly under 24-bit mode. All of the button icons on the left side of the window are either missing images or display incorrect ones.

Creating Video Driver Update Diskette Images

This Video Driver Update must be installed from diskettes. The diskette images are available either in a compressed (`.Z` file) or zipped (`.zip` file) format. Since either file produces the same diskette image, you only need to download the file in *one* of the formats.

- To uncompress a compressed (`.Z`) file, type:

```
# uncompress du2vxxx
```

where du2v*xxx* is the name of the uncompressed diskette image.

Note - If you use Netscape to download a `.Z` file, it may remove the `.Z` suffix but not uncompress it. If this happens, rename the file before you uncompress it.

```
# mv du2vxxx du2vxxx.Z
```

- To unzip a zipped (`.zip`) file, follow the instructions that are appropriate for your unzip program.

When you are done, you should have files of size 1474560 bytes.

Installing the Video Driver Update

The contents of the Video Driver Update diskette are installed as patches on your Solaris 2.6 *Intel Platform Edition* system. To do this, you must already have the Solaris 2.6 *Intel Platform Edition* Driver Update installed and running on your system.

In Video Driver Update 2, there are six patches, each associated with a particular driver:

105191-02 (`v-ati`)
105192-02 (`v-cirrus`)
105193-02 (`v-ct55x`)
105194-02 (`v-s3`)
105195-02 (`v-matrox`)
105200-02 (`v-common`)

Each diskette image consists of one of the first five patches and `v-common`.

After installing this Video Driver Update as described in this chapter, at the system prompt, you may type:

```
% pkgparam SUNWxwpls TOPDRVLIST
```

to see a sorted list showing all video drivers installed on the system as well as the current version number of each.

Note - If you are installing Solaris 2.6 *Intel Platform Edition* software on a system that contains one of the video devices listed in Table 1-1 or Table 2-1, or on a notebook listed in Table 2-2, your video device or notebook will not be supported during the installation. When you get to the point in the Solaris installation when the `kdmconfig - Introduction` screen appears, press F4_Bypass to skip the window system configuration at this time. Skipping the configuration allows you to install with a non-window-system interface. Toward the end of the installation, you will be given the opportunity to install the Video Driver Update. This is the correct time to install this update. When you reboot the machine following the installation, `kdmconfig` will be run again, and you can configure your video device or notebook at this time.

---

1. **Exit your window system to install the Video Driver Update.**

   If you are running the Common Desktop Environment (CDE), exit it and choose Command Line Login from Options. If you are running the OpenWindows environment, exit it.

2. **Become root.**

3. **Type** `ps -ef | grep vold` **to see if the Volume Management software is running on the machine you are updating.**

   For more information about managing diskettes and drives, see *System Administration Guide*.

4. **If Volume Management is running, temporarily stop it:**

   ```
   # /etc/init.d/volmgt stop
   ```

5. **Transfer each diskette image to diskette by inserting a writable diskette into your diskette drive and typing:**

   ```
   # dd if=du2vxxx of=/dev/rdiskette bs=10240
   ```

   After the copy completes, you should see the messages:

   ```
   144+0 records in
   144+0 records out
    #
   ```

Note - You only need to install the images for the video devices you intend to use.

6. **Label the Solaris 2.6 Video Diver Update 2 diskette and insert it into the diskette drive.**
7. **Mount the diskette at the** `/mnt` **mount point:**

```
# mount -F pcfs /dev/diskette /mnt
```

Note - You must mount the diskette at this point in the file structure to update your system successfully.

8. **Execute the install script on the diskette by typing:**

```
# /mnt/DU/sol_26/i86pc/Tools/install.sh -i
```

   The `install.sh` script searches for all new drivers on the diskette. When a new driver is found, the following prompt is displayed:

```
Install patch driver-name? [y]
```

9. **If the driver is the one you want to install, at the prompt, type** `y` **for yes or press Enter. If the driver is not the one you want to install, type** `n` **for no.**

   If you specify yes, the `install.sh` script installs the driver you indicated.

Note - Whenever the driver `v-common` is available in a Video Driver Update, you should always install it.

10. **When you're done and the** `install.sh` **script exits, unmount the diskette by typing the following command at the system prompt:**

```
# umount /mnt
```

11. **Remove the diskette from the diskette drive.**

    Repeat Steps 5 through 11 for any additional Video Driver Update diskettes.

12. **If Volume Management was turned off in** Step 4 on page 14**, you may turn it on again:**

```
# /etc/init.d/volmgt start
```

13. **After the Video Driver Update software has been installed, reconfigure the window system by typing:**

```
# kdmconfig
```

`kdmconfig` attempts to identify your video device, monitor, keyboard, and pointing device. The identification may be incorrect in some cases, so you should verify each selection. `kdmconfig` will give you an opportunity to change each of these selections, as well as the desired resolution and color depth. After the selections are made, `kdmconfig` will allow you to test the selected configuration by displaying a sample screen.

14. **When you are satisfied with the configuration, click the Yes button on the sample screen to save the configuration and exit** `kdmconfig`**.**

15. **End your root login session and restart the CDE or OpenWindows environment.**