Solaris™ 2.5/2.5.1
x86 Video Driver Update 11 Guide

Sun
microsystems

THE NETWORK IS THE COMPUTER™

Please
Recycle

Adobe PostScript™

Contents

Solaris 2.5/2.5.1 x86 Video Driver Update 11 Guide—November 1997

Preface

This document provides information about x86 video devices that are now supported in the Solaris™ 2.5 and 2.5.1 computing environments. Refer to *Solaris 2.5/2.5.1 x86 Driver Update Guide* (supplied with the Solaris 2.5/2.5.1 x86 Driver Update) for information about support for other devices—SCSI host bus adapters, the disk interface, and network adapters, for example.

Typically, as new video drivers become available, they are bundled with releases on separate Video Driver Update diskettes. You can use the Video Driver Update diskettes to update your installed Solaris 2.5/2.5.1 system with new video drivers.

Note – Video Driver Updates are cumulative distributions. The "New Video Support" section in Chapter 1 describes what's new in this Driver Update, and the "Video Driver Update Contents" section in Chapter 2 provides a complete list of what will be installed. You only need to install the current Video Driver Update to get the support described in Chapter 2.

Before You Read This Book

This document contains additional device configuration information for newly supported hardware. The importance of properly configuring your hardware prior to installing the Solaris software is discussed in *x86 Device Configuration Guide.* This document assumes you have fully read and understood that guide.

> **Note** – Appendix A, "Device Reference Pages," in *Solaris 2.5/2.5.1 x86 Driver Update Guide* is an addendum to *x86 Device Configuration Guide.*

Likewise, the installation instructions in this Video Driver Update supplement the instructions in *x86: Installing Solaris Software.*

How This Book Is Organized

Chapter 1, "What's New in Solaris 2.5/2.5.1 x86 Video Driver Update 11," provides information about what is new in this release.

Chapter 2, "Solaris 2.5/2.5.1 x86 Video Driver Update 11," provides information about the contents, installation instructions, and known problems in this Video Driver Update.

Related Books

You may need to refer to the following books when installing the Video Driver Update:

- *Solaris 2.5/2.5.1 x86 Driver Update Guide*
  Describes new support for devices such as SCSI host bus adapters, the disk interface, network adapters, and audio cards.

- *x86 Device Configuration Guide*
  Describes how to configure x86 devices before installing Solaris software.

- *x86: Installing Solaris Software*
  Describes how to install the Solaris software on x86 based systems.

- *x86: Solaris 2.5x Installation Notes*
  Describes late-breaking news about running Solaris 2.5/2.5.1 x86 software, including known problems with supported hardware or device drivers.

- *Solaris 2.5x x86 Hardware Compatibility List*
  Provides information about general x86 hardware requirements and the system platforms and peripherals supported in the Solaris 2.5/2.5.1 x86 computing environment.

How to Obtain Updated Hardware Compatibility Lists and Device Driver Information

Hardware Compatibility Lists and Driver Update releases (including related documentation) are produced periodically as support for new hardware becomes available. They are available from these sources:

- The Web—For Driver Updates, open URL `http://access1.sun.com/drivers`.

  For updated Hardware Compatibility Lists, open URL `http://access1.sun.com/certify/hcl.html`.

- FTP—Use anonymous FTP to access `ftp.uu.net` (or from your web browser, type `ftp://ftp.uu.net`), then go to `/vendor/sun/solaris/x86/2.5.1`.

- CompuServe—Type `go sunsoft` and go to the Solaris x86 library.

Note that the Web, CompuServe, and ASK-IT (below) also point to Support-provided installation and configuration information as well as answers to frequently asked questions.

Related Documentation Only

- Email Autoresponder—To obtain a Hardware Compatibility List or a Driver Update Announcement via email, write to `hcl-index@sun.com` for a list of autoresponse aliases that return hardware support information.

- ASK-IT[1]—SunSoft's Automated Support Fax-on-Demand Service
  - In North America, call one of these numbers:
    1-800-SUNSOFT and choose options 4, 1, 1, 1
    (310) 348-6219 and choose option 1
  - Outside North America, call one of these numbers and choose option 1:
Australia	61-2-844-5374
Japan	03-5717-2560
Singapore	65-383-1971
United Kingdom	44-1276-677131

---

1. Includes the current Hardware Compatibility List and document No. 51225, which summarizes the current Driver Update.

Ordering Sun Documents

The SunDocs℠ program provides over 250 manuals from Sun Microsystems, Inc. If you live in the U.S., Canada, Europe, or Japan, you can purchase documentation sets or individual manuals using this program.

For a list of documents and ordering information, see the catalog section of SunExpress™ On The Internet at `http://www.sun.com/sunexpress`.

How to Obtain Technical Support

To obtain technical support:

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

What's New in Solaris 2.5/2.5.1 x86 Video Driver Update 11 1 ≡

Video Driver Update 11 adds new support for Solaris 2.5/2.5.1 x86 video display adapters. It must be used with the Solaris 2.5 x86 or Solaris 2.5.1 x86 release.

This chapter provides a brief description of what's new in this Video Driver Update. A complete list of the contents, installation instructions, known problems, and release notes for all the video display support included in this release can be found in Chapter 2, "Solaris 2.5/2.5.1 x86 Video Driver Update 11."

New Video Support

Table 1-1 contains a list of the new video display adapters supported in Solaris 2.5/2.5.1 x86 Video Driver Update 11.

Table 1-1   New Video Display Adapters Supported in This Video Driver Update

Vendor	Model	Bus	Chipset[2]	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+[1]	—	ATI 3D RAGE II+	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	3D RAGE PRO[1]	—	ATI 3D RAGE PRO	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	All-in-Wonder	PCI	ATI 3D RAGE II+	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Table 1-1 New Video Display Adapters Supported in This Video Driver Update *(Continued)*

Vendor	Model	Bus	Chipset[2]	800x600		1024x768		1152x900		1280x1024		1600x1200	
				8	**24**	**8**	**24**	**8**	**24**	**8**	**24**	**8**	**24**
ATI, cont.	XPERT@Play	PCI/AGP	ATI 3D RAGE PRO	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	XPERT@Work	PCI/AGP	ATI 3D RAGE PRO	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Cirrus Logic	5480 chipset[1]	PCI	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[1]	—	S3 ViRGE/DX (86C375)	✓	✓	✓	✓	✓		✓			
	ViRGE/GX[1]	—	S3 ViRGE/GX (86C385)	✓	✓	✓	✓	✓		✓		✓	
STB	Nitro 3D	PCI	S3 ViRGE/GX (86C385)	✓	✓	✓	✓	✓		✓			
	Nitro 64 Video	PCI	Cirrus Logic GD5446	✓	✓	✓		✓		✓			
	Powergraph 64 3D	PCI	S3 ViRGE (86C325)	✓	✓	✓		✓		✓		✓	

1. SunSoft does not guarantee that every video card with this chipset will work, but it is possible that your model will be one of a large number that can be used successfully.

2. The information in the chipset column does not guarantee that video boards made by another manufacturer using the same chipset will work. Only the specific models listed by Vendor, Model, Bus, and Chipset have been tested.

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

For a complete list of video display adapters supported in this release, see Table 2-1 in Chapter 2, "Solaris 2.5/2.5.1 x86 Video Driver Update 11."

For a complete list of notebook displays supported by Driver Updates, see Table 2-2 in Chapter 2, "Solaris 2.5/2.5.1 x86 Video Driver Update 11."

Higher Refresh Rate Support

Support for higher monitor refresh rates (up to 115 kHz horizontal refresh and 120Hz vertical refresh) has been added to Video Driver Update 11.

Modified Video Driver Update Distribution and Installation Instructions

The Solaris 2.5/2.5.1 x86 Video Driver Update file image distributed online is a compressed `cpio` file, instead of a diskette image. Consequently, installation instructions depend on whether you obtained the Video Driver Update on diskettes or from online sources. If you are installing from diskettes, a few more steps are required. See "Installing the Video Driver Update" in Chapter 2 for instructions.

Video Driver Update Diskettes

The contents of these diskettes are discussed in Chapter 2, "Solaris 2.5/2.5.1 x86 Video Driver Update 11."

For a complete list of the known problems that are fixed in this Video Driver Update, see the `README` file that gets installed in the patch directory `/var/sadm/patch/`*patch number*, where *patch number* for Solaris 2.5/2.5.1 x86 Video Driver Update 11 is 103500-08.

Patch Structure in This Release

In Video Driver Update 11, there is one patch for all drivers.

Each driver is identified by a string with the format

`category-drivername-version`

≡ *1*

After installing this Video Driver Update as described in Chapter 2, at the system prompt, type:

```
% pkgparam SUNWxwpls TOPDRVLIST
```

This will provide a sorted list showing all video drivers installed on the system as well as the current version number of each.

Solaris 2.5/2.5.1
x86 Video Driver Update 11   *2*≡

This chapter contains a brief description of the video support included in this
Video Driver Update, followed by release notes, known problems, and
installation instructions. Read the entire chapter once before installing the
Video Driver Update.

Video Driver Update Contents

This release contains two diskettes labeled Solaris 2.5/2.5.1 x86 Driver Update
11 VIDEO UPDATE Diskette 1 and Solaris 2.5/2.5.1 x86 Driver Update 11
VIDEO UPDATE Diskette 2. The release should be used on Solaris 2.5 x86 or
Solaris 2.5.1 x86 based systems only.

Video Support

Table 2-1 contains a list of the video display adapters supported in this Video Driver Update.

While this table includes the resolution and color depth capabilities of each adapter, note that the resolution and color depth you select are also dependent on the capabilities of your monitor and the amount of video memory on the card. See *x86 Device Configuration Guide* for more information.

Table 2-1 Video Display Adapters Supported in This Video Driver Update

Vendor	Model	Bus	Chipset[7]	800x600 8	800x600 24	1024x768 8	1024x768 24	1152x900 8	1152x900 24	1280x1024 8	1280x1024 24	1600x1200 8	1600x1200 24
ATI	3D Pro Turbo PC2TV	PCI	ATI 3D RAGE II+	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	3D RAGE[1]	—	ATI 3D RAGE	✓	✓	✓		✓		✓			
	3D RAGE II[1]	—	ATI 3D RAGE II	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	3D RAGE II+[1]	—	ATI 3D RAGE II+	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	3D RAGE PRO[1]	—	ATI 3D RAGE PRO	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	3D Xpression	PCI	ATI 3D RAGE	✓	✓	✓		✓		✓			
	3D Xpression+ PC2TV	PCI	ATI 3D RAGE II	✓	✓	✓		✓		✓			
	All-in-Wonder	PCI	ATI 3D RAGE II+	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Graphics Pro Turbo[2]	PCI	ATI Mach64	✓	✓	✓	✓	✓		✓			
	Graphics Pro Turbo[2]	VLB	ATI Mach64	✓	✓	✓	✓	✓		✓			
	Graphics Pro Turbo 1600	PCI	ATI Mach64	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Graphics Xpression[2]	PCI	ATI Mach64	✓	✓	✓		✓		✓			
	Graphics Xpression[2]	VLB	ATI Mach64	✓	✓	✓		✓		✓			
	Mach64CT[1, 2]	—	ATI Mach64CT	✓	✓	✓		✓		✓			
	Mach64CT Rev.2[1, 2]	—	ATI Mach64CT	✓	✓	✓		✓		✓			
	Mach64VT[2]	—	ATI Mach64VT	✓	✓	✓		✓		✓			
	Video Expression	PCI	ATI Mach64VT	✓	✓	✓		✓		✓			
	Winturbo[2, 3]	PCI	ATI Mach64	✓	✓	✓		✓		✓			
	XPERT@Play	PCI/ AGP	ATI 3D RAGE PRO	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	XPERT@Work	PCI/ AGP	ATI 3D RAGE PRO	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Table 2-1   Video Display Adapters Supported in This Video Driver Update   *(Continued)*

Vendor	Model	Bus	Chipset[7]	800x600 8	800x600 24	1024x768 8	1024x768 24	1152x900 8	1152x900 24	1280x1024 8	1280x1024 24	1600x1200 8	1600x1200 24
Boca	Voyager 64	PCI	S3 Trio64	✓	✓	✓		✓		✓			
Chips & Technology	65545[1]	—	F65545	✓		✓		✓					
	65548[1]	—	F65548	✓		✓		✓					
	65550[1]	—	F65550	✓		✓		✓		✓			
Cirrus Logic	5428 chipset[1]	—	Cirrus Logic GD5428	✓		✓		✓		✓			
	5429 chipset[1]	—	Cirrus Logic GD5429	✓		✓		✓		✓			
	5436 chipset[1]	PCI	Cirrus Logic GD5436	✓	✓	✓		✓		✓			
	54M40 chipset[1]	—	Cirrus Logic GD54M40	✓	✓	✓		✓		✓			
	5446 chipset[1]	PCI	Cirrus Logic GD5446	✓	✓	✓		✓		✓			
	5480 chipset[1]	PCI	Cirrus Logic GD5480	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	7543 chipset[1]	—	Cirrus Logic GD7543	✓		✓							
Compaq	Professional Workstation 5000	PCI	MGA2064W	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	ProLiant 1000	—	Cirrus Logic GD5420	✓									
	ProLiant 1500	—	Cirrus Logic GD5420	✓									
	ProLiant 2000	—	Cirrus Logic GD5420	✓									
	ProLiant 2500	—	Cirrus Logic GD54M30	✓									
	ProLiant 4000	—	Cirrus Logic GD5420	✓									
	ProLiant 4500	—	Cirrus Logic GD5424	✓									

Table 2-1   Video Display Adapters Supported in This Video Driver Update   *(Continued)*

Vendor	Model	Bus	Chipset[7]	800x600 8	800x600 24	1024x768 8	1024x768 24	1152x900 8	1152x900 24	1280x1024 8	1280x1024 24	1600x1200 8	1600x1200 24
Compaq, cont.	ProLiant 5000	—	Cirrus Logic GD5424	✓									
	ProSignia 300	—	Cirrus Logic GD5424	✓									
	ProSignia 300/500	—	Cirrus Logic GD5420	✓									
	ProSignia 300/500	—	Cirrus Logic GD5424	✓									
	QVision 1280 chipset[4]	EISA	MGA ORION	✓		✓		✓		✓			
	QVision 2000	PCI	Matrox MGA-2	✓	✓	✓		✓		✓			
	QVision 2000 (Rev. G)	PCI	Matrox MGA-3	✓	✓	✓		✓		✓			
Diamond	Stealth 3D 2000	PCI	S3 ViRGE (86C325)	✓	✓	✓		✓		✓			
	Stealth 3D 2000/Pro	PCI	S3 ViRGE/DX (86C375)	✓	✓	✓	✓	✓		✓			
	Stealth 3D 3000	PCI	S3 ViRGE/VX (86C988)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Stealth 64 Video 2000	PCI	S3 Vision 868	✓	✓	✓		✓		✓			
	Stealth 64 Video 2001	PCI	S3 Vision 765	✓	✓	✓		✓		✓			
	Stealth 64 Video 3000[5]	PCI	S3 Vision 968	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Stealth 64 Graphics 2000	PCI	S3 Trio64	✓	✓	✓		✓		✓			
	Stealth 64 Graphics 2000	PCI	S3 Vision 864	✓	✓	✓		✓		✓			
	Stealth SE	PCI	S3 Trio32	✓		✓		✓					
	Viper Pro	PCI	Weitek Power 9100	✓	✓	✓	✓	✓		✓		✓	
	Viper Pro	VLB	Weitek Power 9100	✓	✓	✓	✓	✓		✓		✓	
ELSA	Victory 3D	PCI	S3 ViRGE (86C325)	✓	✓	✓	✓	✓		✓			
	Winner 1000 AVI	PCI	S3 Vision 868	✓	✓	✓		✓		✓			
	Winner 2000Pro-X	PCI	S3 Vision 968	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Winner 3000-S	PCI	S3 ViRGE (86C325)	✓	✓	✓		✓		✓			
Hercules	Dynamite 128/Video	PCI	Tseng ET6000	✓	✓	✓	✓	✓		✓			
IBM	PC 330—Model 6575	—	S3 Vision 864	✓	✓	✓		✓		✓			
	PC 330—Model 6576	—	S3 Trio64	✓		✓		✓					

Table 2-1 Video Display Adapters Supported in This Video Driver Update *(Continued)*

Vendor	Model	Bus	Chipset[7]	Resolution and Color Depth									
				800x600		1024x768		1152x900		1280x1024		1600x1200	
				8	24	8	24	8	24	8	24	8	24
IBM, cont.	PC 350—Model 6581	—	Cirrus Logic GD5430	✓		✓		✓		✓			
	PC 360—Model 6598	—	MGA Storm	✓	✓	✓	✓	✓	✓	✓		✓	
	PC 750—Model 6885-35H	—	S3 Vision 864 + S3 SDAC	✓	✓	✓		✓		✓			
	PC 750—Model 6885-J0M	—	S3 Vision 864 + S3 SDAC	✓	✓	✓		✓		✓			
	PC Server 310—Model 8639-0DT	—	S3 Vision 868	✓		✓		✓		✓			
	PC Server 310—Model 8639-0EO	—	S3 Trio64V+	✓		✓		✓					
	PC Server 310—Model 8639-0XT	—	S3 Vision 864	✓		✓		✓					
	PC Server 320—Model 8640-0DV	—	Cirrus Logic GD5428	✓		✓							
	PC Server 320—Model 8640-0NJ	—	Cirrus Logic GD5428	✓		✓							
	PC Server 320—Model 8640-0XT	—	Cirrus Logic GD5428	✓		✓							
	PC Server 320—Model 8640-0YT	—	Cirrus Logic GD5428	✓		✓							
	PC Server 320—Model 8640-MXT	—	Cirrus Logic GD5430	✓		✓							
	PC Server 325—Model 8639-ESO	—	Cirrus Logic GD5436	✓		✓		✓					
	PC Server 325—Model 8639-ESV	—	Cirrus Logic GD5436	✓		✓		✓					
	PC Server 500—Model 8641-0YR	—	Cirrus Logic GD5428	✓		✓							
	PC Server 500—Model 8641-0YT	—	Cirrus Logic GD5428	✓		✓							
	PC Server 520—Model 8641-ED2	—	Cirrus Logic GD5428	✓		✓							

Table 2-1   Video Display Adapters Supported in This Video Driver Update *(Continued)*

Vendor	Model	Bus	Chipset[7]	800x600		1024x768		1152x900		1280x1024		1600x1200	
				8	24	8	24	8	24	8	24	8	24
IBM, cont.	PC Server 520—Model 8641-EDG	—	Cirrus Logic GD5428	✓		✓							
	PC Server 520—Model 8641-EZS	—	Cirrus Logic GD5428	✓		✓							
	PC Server 520—Model 8641-EZV	—	Cirrus Logic GD5428	✓		✓							
	PC Server 720—Model 8642-0ZO	—	Cirrus Logic GD5428	✓		✓							
Intel	Professional/GX High Resolution	—	ATI Mach32	✓	✓	✓		✓		✓			
	TMI/IPG	—	WD9031A	✓									
Matrox	Millennium	PCI	MGA Storm-R1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Millennium 220	PCI	MGA Storm-R2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Millennium 220	PCI	MGA2064W-R2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Millennium 220	PCI	MGA2064W-R3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Millennium II	PCI/ AGP	MGA2164W	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Mystique	PCI	MGA1064SG	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Mystique 220	PCI	MGA1064SG (-G or -H)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Number Nine	9FX Motion 331	PCI	S3 Trio64V+	✓	✓	✓		✓		✓			
	9FX Reality 332	PCI	S3 ViRGE (86C325)	✓	✓	✓		✓		✓			
	Imagine 128 Pro	PCI	Imagine 128	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Imagine 128 Series 2	PCI	Imagine 128 V2	✓	✓	✓	✓	✓	✓	✓		✓	
	Imagine 128 Series 2e	PCI	Imagine 128 V2	✓	✓	✓	✓	✓		✓		✓	
Oak Technology	OTI107	PCI	OTI107	✓	✓	✓		✓		✓			
	OTI111	PCI	OTI111	✓	✓	✓		✓		✓			
S3	Trio32[1]	—	S3 Trio32	✓		✓							
	Trio64V+[1]	—	S3 Trio64V+	✓	✓	✓		✓		✓			
	Trio64V2/DX[1]	—	S3 Trio64V2/DX (86C775)	✓	✓	✓		✓		✓			

Table 2-1   Video Display Adapters Supported in This Video Driver Update   *(Continued)*

Vendor	Model	Bus	Chipset[7]	800x600		1024x768		1152x900		1280x1024		1600x1200	
				8	**24**	**8**	**24**	**8**	**24**	**8**	**24**	**8**	**24**
S3, cont.	ViRGE[1]	—	S3 ViRGE (86C325)	✓	✓	✓	✓	✓		✓			
	ViRGE/DX[1]	—	S3 ViRGE/DX (86C375)	✓	✓	✓	✓	✓		✓			
	ViRGE/GX[1]	—	S3 ViRGE/GX (86C385)	✓	✓	✓	✓	✓		✓		✓	
	ViRGE/VX[1]	—	S3 ViRGE/VX (86C988)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
SPEA	V-7 Mirage P-64	PCI	S3 Vision 868	✓	✓	✓		✓		✓			
STB	Lightspeed 128	PCI	Tseng ET 6000	✓	✓	✓		✓		✓			
	Nitro 3D	PCI	S3 ViRGE/GX (86C385)	✓	✓	✓	✓	✓		✓		✓	
	Nitro 64 Video	PCI	Cirrus Logic GD5446	✓	✓	✓		✓		✓		✓	
	Powergraph 64 3D	PCI	S3 ViRGE (86C325)	✓	✓	✓		✓		✓		✓	
	Powergraph 64 Video	PCI	S3 Trio64V+	✓	✓	✓		✓		✓			
	Velocity 3D	PCI	S3 ViRGE/VX (86C988)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Trident	9440[6]	PCI	TGUI9440	✓		✓							
	9680	PCI	TGUI9680	✓		✓		✓		✓			
	9685	PCI	TGUI9685	✓		✓		✓		✓			
Tseng	ET 6000[1]	—	Tseng ET 6000	✓	✓	✓		✓		✓			

1. SunSoft does not guarantee that every video card with this chipset will work, but it is possible that your model will be one of a large number that can be used successfully.

2. Support is provided for ATI cards with Mach64 chips and the following RAMDACs: ATT8860, ATT20C408, ATT20C491, ATT20C498, STG1702, and STG1703.

3. The ATI Winturbo model is equivalent to the Gateway ATI GX Mach64 PCI video card.

4. Used on the Compaq QVision 1280/E Graphics Controller and in the Compaq Deskpro 590.

5. Cards using either IBM or TI RAMDACs only.

6. This card does not work at the 1024x768 resolution with a 56-kHz refresh rate.

7. The information in the chipset column does not guarantee that video boards made by another manufacturer using the same chipset will work. Only the specific models listed by Vendor, Model, Bus, and Chipset have been tested.

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

Notebook Support

The Solaris implementation of the X Window System is available for notebook systems that allow the state of the display to be detected.

In the notebook computers listed in Table 2-2, when OpenWindows™ is started, the driver will probe to determine whether the LCD is turned on or off, and choose its action accordingly. If the LCD is on, which is the case when you are using your notebook in portable mode, the default resolution for the LCD is used. If the LCD is off, which is generally the case when you are using a CRT external monitor, the driver uses the resolution specified during the configuration process.

For information on configuring notebook computers not listed in this table, see the online document *Solaris 2.5 x86 Notebook Supplement Guide*, part number 802-5028-10 (available through the Internet and other locations; call your technical support provider).

Table 2-2 contains a list of the notebook displays supported in this Solaris 2.5/2.5.1 x86 Video Driver Update. Only the systems listed in this table support the automatic LCD resolution configuration.

Table 2-2 Supported Notebook Displays

Notebook Display Video Support									
			Resolution and Color Depth **E=With External Monitor** **I=With Internal Monitor**						
			640x480		**800x600**		**1024x768**		**1280x1024**	
Vendor	**Model**	**Chipset**	**8**	**24**	**8**	**24**	**8**	**24**	**8**	**24**
Ambra	SN425C[1]	WD 90C24	I							
AST	Ascentia 950N w/SVGA Panel	Cirrus Logic GD7543	E,I		E,I		E			
	PowerExec 4/33SL	WD 90C26	I							
Chips & Technology	65550[2]	Chips & Technology 65550	E,I		E,I		E,I		E	
Compaq	ARMADA 4120T	Cirrus Logic GD7548			E,I		E			
	LTE 4/25C	WD 90C24	I							
	LTE 4/33C	WD 90C24	I							
	LTE Elite 4/40C	WD 90C24	E,I		E		E			
Compaq, cont.	LTE 5100	Cirrus Logic GD7543	E,I		E,I		E			
	LTE 5200	Cirrus Logic GD7543	E,I		E,I		E			
Dell	Latitude XPi 75D	Cirrus Logic GD7543	E,I		E		E			
	Latitude XPi CD	NeoMagic NM2090			E,I		E			
	Latitude XPi P133ST	NeoMagic NM2070			E,I		E			
	Latitude LM P133ST	NeoMagic NM2070			E,I		E			
Ergo	Power Brick	WD 90C24	I							
HP	Omni 5550[3]	Chips&Technology 65548	E,I		E,I		E			
IBM	ThinkPad 365XD[4]	Trident 9320			E,I		E			
	ThinkPad 750	WD 90C24	E,I							
	ThinkPad 750C	WD 90C24	I							
	ThinkPad 755C	WD 90C24	E,I		E		E			
	ThinkPad 755CD	WD 90C24	E,I		E		E			
	ThinkPad 755CV	WD 90C24	E,I		E		E			
	ThinkPad 755CX w/SVGA Panel	WD 90C24	E,I		E,I		E			
	ThinkPad 760CD	Trident 9320			E,I		E			
	ThinkPad 760ED	Trident 9385			E,I		E		E	

Table 2-2 Supported Notebook Displays *(Continued)*

			Resolution and Color Depth E=With External Monitor I=With Internal Monitor							
			640x480		800x600		1024x768		1280x1024	
Vendor	Model	Chipset	8	24	8	24	8	24	8	24
IBM, cont.	ThinkPad 760ED w/XVGA	Trident 9385					E,I		E	
	ThinkPad 760EL[4]	Trident 9385			E,I		E			
NEC	Versa/50	WD 90C24	I							
	Versa M75C	Chips&Technology 65540	E,I		E		E			
	Versa M75HC	Chips&Technology 65545	E,I		E,I		E			
	Versa UltraLite	WD 90C24	I							
Panasonic	CF-V211[1]	WD 90C24	I							
TI	Extensa 560CDT	Cirrus Logic GD7543	E,I		E		E			
	TravelMate 4000E TFT	Cirrus Logic GD6440	I							
Toshiba	4800CT	WD 90C24	E,I		E		E			
	4850CT	WD 90C24	E,I		E		E			
	4900CT	Chips&Technology 65545	E,I		E		E			
	Portege 610CT	Chips&Technology 65546	E,I		E		E			
	Portege 650CT	Chips&Technology 65550			E,I		E		E	
	Portege 660CDT	Chips&Technology 65554			E,I		E		E	
	Satellite 200CDS	Chips&Technology 65550			E,I		E		E	
	Satellite 220CDS	Chips&Technology 65554			E,I		E		E	
	Satellite Pro 400CDT	Chips&Technology 65546	E,I		E		E			
	Satellite Pro 410CDT	Chips&Technology 65548	E,I		E,I		E			
	Satellite Pro 425CDT	Chips&Technology 65550	E,I		E,I		E		E	
	T3400	WD 90C24	I							
	T4400C	WD 90C30	I							
	T4600C	WD 90C26	I							
	T4700C	WD 90C24	I							
	Tecra 700CT	Chips&Technology 65548	E,I		E,I		E			
	Tecra 500CDT	Chips&Technology 65550	E,I		E,I		E		E	

Table 2-2 Supported Notebook Displays *(Continued)*

Notebook Display Video Support *(Continued)*										
			Resolution and Color Depth E=With External Monitor I=With Internal Monitor							
			640x480		800x600		1024x768		1280x1024	
Vendor	**Model**	**Chipset**	**8**	**24**	**8**	**24**	**8**	**24**	**8**	**24**
Toshiba, cont.	Tecra 520CDT	Chips&Technology 65555			E,I		E		E	
	Tecra 530CDT	Chips&Technology 65555					E,I		E	
	Tecra 720CDT	Chips&Technology 65550	E,I		E,I		E,I		E	
	Tecra 730CDT	Chips&Technology 65550	E,I		E,I		E,I		E	
	Tecra 740CDT	Chips&Technology 65554					E,I		E	
Twinhead	Slimnote 486E	WD 90C24	I							
Zenith Data Systems	Z-Note GT	Chips&Technology 65548	E,I		E,I		E			
	Z-Noteflex	WD 90C24	E,I		E		E			

1. Select "T3400ct,T4700ct, Twinhead 486E, ThinkPad 750: WD90C24 w/1Mb" when configuring the display adapter during Solaris installation.

2. Both SVGA and XGA panels are supported.

3. The HP Omnibook 5500CT does not support panning.

4. Not tested by SunSoft, but reported to work. Panning is not supported for this notebook.

⚠ **Caution** – Even though many notebook computers are capable of supporting external monitors at a resolution higher than 640x480, you should *not* change the default video resolution on a notebook computer to be anything other than what the internal monitor can support. Higher resolution video modes do not work on the integrated LCD screen. If you start up the window system without an external monitor, you may not see anything on the LCD screen; in some cases, this may even damage your LCD screen.

Video Driver Update Release Notes

- The problem of corrupted window borders occurring when the left side of an icon was dragged over the window while using the Diamond Viper Pro in 24-bit mode has been fixed.

- The problem of OpenWindows displaying out of sync when using the Diamond Viper Pro PCI with 4 Mbytes of video memory in 8-bit mode with 1280x1024 resolution and 80-kHz refresh rate has been fixed.

- The problem of extended lines being left on the screen when iconifying and deiconifying windows while using a Number Nine Imagine 128 video card has been fixed.

- The problem seen on systems with video cards that use hardware cursors, in which only one icon was shown when multiple icons to drag and drop were selected, has been fixed. This problem was seen on video cards that contain the following chipsets: Imagine 128, S3 Vision 864, S3 Vision 964, ATI Mach64, ATI Mach32, Matrox MGA-1, and Matrox MGA-2.

- NEC 5FGe and NEC 6FGp monitors are supported.

- If your video adapter contains the S3 Vision 764 or 765 chips, but is not in the list of supported adapters, it may work with one of the "S3 Trio64" or "S3 Trio64V+" entries listed by the `kdmconfig` program.

- If your video adapter contains the S3 Vision 864 chip, but is not in the list of supported adapters, it may work with one of the "S3 Vision864" entries listed by the `kdmconfig` program.

- If your video adapter contains the S3 Vision 864 chip with S3 SDAC, but is not in the list of supported adapters, it may work with one of the "S3 Vision864 with S3 SDAC" entries listed by the `kdmconfig` program.

- If your video adapter contains the S3 ViRGE (86C325) chip, but is not in the list of supported adapters, it may work with one of the "S3 ViRGE" entries listed by the `kdmconfig` program.

- If your video adapter contains the S3 ViRGE/VX (86C988) chip, but is not in the list of supported adapters, it may work with one of the "S3 ViRGE/VX" entries listed by the `kdmconfig` program.

- If your video adapter contains the Trident TVGA 9000i chip, it may work with the "Trident TVGA9000i(512k)" entry listed by the `kdmconfig` program.

- This Video Driver Update also includes software fixes to some known problems. For a list of the known problems that are fixed in this Video Driver Update, see the README file that gets installed in the patch directory /var/sadm/patch/*patch number*.

Known Problems

- **(4091738)** For the Matrox Mystique 220 video adapter (or motherboards using the MGA1064SG -G or -H graphics chip), do not use a multifrequency monitor selection higher than 80kHz for 1280x1024 resolution or 85kHz for 1600x1200 resolution. Selections of higher refresh rates exceed the capability of the graphics chip and result in screen noise.

- (**4076832**) On boards using Cirrus Logic GD5480 at 1280x1024 resolution with 24-bit color depth, moving windows around 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 the OpenWindows 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.

- **(1200858)** The Diamond Viper SE adapter will not run with a refresh rate above 75 kHz in 1280x1024 resolution. (See the manufacturer's manual to verify the maximum horizontal sync rates.) In the current release, however, it also does not work with a refresh rate of 56 kHz in 1280x1024 resolution. *Workaround*: Use a refresh rate of 64 kHz with 1280x1024 resolution.

- **(1200644)** When using an LCD screen at a resolution of 800x600, in 256 color mode, sometimes the image in the upper left portion of the screen will expand to fill the entire screen.
  Workaround: Press the keys F*n*-LCD/CRT three times to adjust the size and position of the screen.

- **(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 the OpenWindows software, do the following:

  a. **Reboot your system.**

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

  c. **Restart the OpenWindows 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 OpenWindows environment. 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: Be careful when setting `XGLHOME` prior to starting the OpenWindows environment. Prior to running the `openwin` command, 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 OpenWindows software 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 in the OpenWindows environment, 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.

- Wabi™ will not run under 24-bit depth mode.

- 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.

Installing the Video Driver Update

The contents of the Video Driver Update diskettes are installed as a patch on your Solaris 2.5 or Solaris 2.5.1 x86 based system. To do this, you must already have the Solaris 2.5/2.5.1 Driver Update installed and running on your system.

In Video Driver Update 11, there is one patch for all drivers; the patch number is 103500-08.

Each driver is identified by a string with the format

```
category-drivername-version
```

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

```
% pkgparam SUNWxwpls TOPDRVLIST
```

This will provide a sorted list showing all video drivers installed on the system as well as the current version number of each.

Note – When installing the Solaris 2.5/2.5.1 x86 software on a system that contains one of the video cards listed in Table 2-1, if you choose to configure the window system, your card may not be included yet in the list of supported display adapters. However, you can still use a graphics-based interface to the Solaris installation program by choosing the standard 16 colors, 640x480 VGA. Alternatively, you can use a character-based interface by choosing not to configure the window system when asked.

After installing the Video Driver Update software, the installation script will give you the option of configuring the window system by running the kdmconfig program. If you choose to do this, you will be able to configure your keyboard, mouse, and video card again; however, this time you will be able to select from a list that includes the newly supported video cards.

Note – The Video Driver Update is released as two files, one of which is a compressed cpio image file. Consequently, if you are installing from diskettes, a few extra steps are required to retrieve the files.

If you obtained the Video Driver Update files du11vid1.bin and
du11vid2.Z from online sources, become root, use cp to copy the files to the
/tmp directory, and type the following commands:

```
# uncompress du11vid2.Z
# cat du11vid1.bin du11vid2 | cpio -ivcdm
```

This will create a file named vdu11image.Z. You can then proceed directly to
Step 5 below.

If you are obtaining the Video Driver Update image file from diskettes, follow
these steps.

1. **Become root.**

2. **Insert Solaris 2.5/2.5.1 x86 Driver Update 11 VIDEO UPDATE Diskette 1
   into drive 0.**

Note – To see if Volume Management software is running, type:
ps -e | fgrep vold
For more information about managing diskettes and drives, see *System
Administration Guide, Volume I.*

---

3. **First use** cpio **to copy the compressed** cpio **image file off the diskettes.**
   If Volume Management is running, turn it off temporarily.

```
# /etc/init.d/volmgt stop
# mkdir /tmp/Drivers
# cd /tmp/Drivers
# cpio -iduBI /dev/rdiskette0

 End of Medium on "input"
 Change to part 2 and press RETURN key [q]

```

4. **Insert Solaris 2.5/2.5.1 x86 Driver Update 11 VIDEO UPDATE Diskette 2
   into the drive and press Enter.**
   cpio reports the number of blocks copied.

5. **Use** `zcat` **and** `cpio` **to copy the files from the compressed** `cpio` **image file, and run the install script.**
   The name of the compressed `cpio` image file is `vdu11image.Z`.

```
# zcat vdu* | cpio -icudB
# ./installdu.sh
```

6. **If Volume Management was turned off in Step 3, you may turn it on again.**

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

7. **Configure the window system.**
   After the Video Driver Update software has been installed, the installation script asks if you want to configure the window system.

- If you don't want to configure it at this time, you must run the following commands after the installation script ends *and* before you start the OpenWindows software:

```
# kdmconfig -u
# kdmconfig -cf
```

- If you want to configure the window system at this time, the `kdmconfig` program will be started for you. This program will ask you to configure your keyboard, mouse, and display adapter. The list of display adapters will appear alphabetically by vendor. To quickly scroll through the list, type the first few letters of the vendor name. For example, type `mi` to get to the "Micronics Mpower4 Plus" entry. Some of the names of display adapters on the list may be followed by the amount of video memory on the card. For example, "Diamond Stealth 64 (2MB)" indicates 2 Mbytes of memory on the Diamond Stealth 64 card. Be sure to select an entry that matches your configuration.

8. If prompted for this information, select the Correct Screen Size, Color Depth, Resolution, and Monitor from the list displayed by `kdmconfig`**.**
Selecting "8" for color depth means your adapter is capable of 8-bit color (256 colors), whereas "24" means 24-bit color (2^{24} or 16,777,216 colors). After choosing the monitor's screen size, color depth, and resolution, you will be shown a list of supported monitors (unless you have already chosen one of the Diamond Viper card entries). If you have a multisync/multifrequency monitor, check the manufacturer's documentation to find out the maximum horizontal synchronization rate supported by the monitor. For example, if you have a ViewSonic 17 monitor, which has a maximum horizontal sync rate of 82 kHz, select "MultiFrequency-80kHz (up to 1600x1200@60 Hz)" as the monitor type.

Note – In order to support 1152x900 or 1280x1024 resolution on the Intergraph TD-1 display adapter, you must select an interlaced monitor type when configuring the Solaris window system or it will not function properly. Choose "MultiFrequency-56kHz (up to 1280x1024 interlaced)" as the monitor type.

---

9. Remove the diskette from drive 0.

10. Clean up the temporary workspace.

```
# cd /
# rm -fr /tmp/Drivers
```

Installation of the Video Driver Update is complete, and you can now run the `openwin` command to start the window system.

Configuring Secondary Displays

The feature described in "Notebook Support" on page 14 is used to configure a secondary display for a notebook computer that has an external monitor, without changing the default video resolution. Notebook computers that support this feature are listed in Table 2-2.

For more information about configuring notebook computers not listed in Table 2-2, see the online document *Solaris 2.5 x86 Notebook Supplement Guide.*