

# **Oxygen GVX1 User's Guide**

**Printed in USA November 1999**



**Manufacturing Part Number: HP Part No. A6011-90001**

**Edition 1199**

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USA



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# Contents

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## **Preface**

This document provides an explanation of the features and specifications of the Oxygen GVX1 graphics board. It explains how to install the graphics card and update the driver. There is also a discussion of the graphics board's video memory and video resolutions.

## Bibliography

For more information, you can go to the following web site.

- Oxygen GVX1 graphics controller  
<http://www.3dlabs.com/>

## Important Ergonomic Information

It is strongly recommended that you read the ergonomic information before using your HP VISUALIZE Personal Workstation. Open the **Start** menu in the task bar and select **HP Info**. Then double-click the help topic “Working in Comfort.”

## Installation Notice

Products designated in the applicable Hewlett-Packard price list as customer-installable can be installed by computer-knowledgeable customers who carefully read and follow the instructions provided. Customers who elect to have the product installed by our field personnel are charged the applicable field installation charge, as covered under the standard terms and conditions. For more information, please contact your local sales representative.

## Revision History

The revision history for each edition of the manual is listed below:

| Edition | Revision History |
|---------|------------------|
| E1199   | First Printing   |

## Problems, Questions, and Suggestions

If you have any problems or questions with our hardware, software, or documentation, please contact either your HP Response Center or your local HP representative. If you have access to a web browser, you can get the latest software and hardware patches at the following URL:

<http://www.hp.com/go/visualizesupport>

## Documentation Conventions

Unless otherwise noted in the text, this guide uses the following symbolic conventions.

*user-supplied values*

Italic words or characters in syntax and command descriptions represent values that you must supply. Italics are also used in text for emphasis.

screen display

Information that the system displays, commands that you must use literally, and path names appear in this typeface.

**Enter**

Key caps are presented with a special keycap font as shown in the left column. (In this document, we refer to the **Enter** key. On your keyboard, the key may be labeled either **Enter** or **Return**.)

## **Electrostatic Discharge (ESD) Precautions**

Electrostatic charges can damage the integrated circuits on printed circuit boards. To prevent such damage from occurring, observe the following precautions during board unpacking and installation:

- Stand on a static-free mat.
- Wear a static strap to ensure that any accumulated electrostatic charge is discharged from your body to ground.
- Create a common ground for the equipment you are working on by connecting the static-free mat, static strap, and peripheral units to that piece of equipment.
- Keep uninstalled printed circuit boards in their protective antistatic bags.
- Handle printed circuit boards by their edges, once you have removed them from their protective antistatic bags.

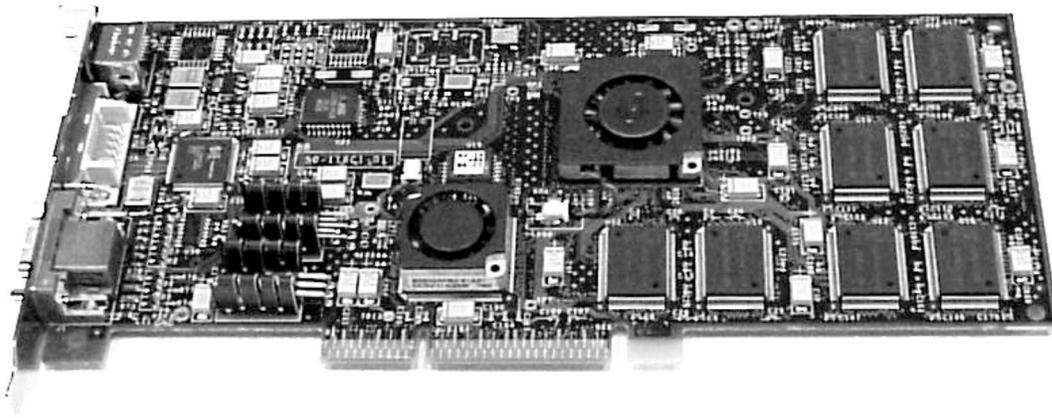
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# **1 Oxygen GVX1**

## Introduction

This section contains a brief overview of the Oxygen GVX1 graphics card. This section then provides important safety instructions that you should follow when handling the Oxygen GVX1 graphics card.

## The Oxygen GVX1 Graphics Card



You have the option of selecting an Oxygen GVX1 graphics card for your HP VISUALIZE Personal Workstation. This graphics card fits in the AGP or AGP Pro accessory slot.

### Features

- GLINT Gamma geometry processing
- Dynamic load balancing
- Digital Flat Panel support
- Quad-buffered stereo.

### Specifications

- 32 MB of video SGRAM memory installed on the graphics card
- GLINT R3 rasterization engine
- PowerThreads SSE geometry processing
- 1920 × 1200 (maximum resolution) 32-bit color
- 16, 24, and 32-bit linear Z-buffer
- Full AGP sideband addressing

## Important Safety Instructions

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**WARNING** If you have any doubt that you can lift the HP VISUALIZE Personal Workstation or display safely, do not try to move it without help.

For your safety, always connect the equipment to a grounded wall outlet. Always use a power cord with a properly grounded plug, such as the one provided with this equipment, or one in compliance with your national regulations. This HP VISUALIZE Personal Workstation is disconnected from the power by removing the power cord from the power outlet. This means the Personal Workstation must be located close to a power outlet that is easily accessible.

For your safety, never remove the HP VISUALIZE Personal Workstation's cover without first removing the power cord from the power outlet, and any connection to the telecommunications network. Always replace the cover on the Personal Workstation before switching it on. Failure to follow these instructions results in the risk of electrical and/or mechanical hazards during the operation.

To avoid electric shocks, do not open the power supply. There are no user-serviceable parts inside.

This HP VISUALIZE Personal Workstation is a Class 1 laser product. Do not attempt to make any adjustment to the laser units.

Before handling the Oxygen GVX1 card, first wait until the card has cooled down completely before touching it. The card can become very hot during use.

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**CAUTION** Static electricity can damage electronic components. Therefore, anytime you handle an accessory such as the Oxygen GVX1 card, you should use an electrostatic grounding strap. You should turn all equipment OFF. Do not let your clothes touch the accessory. To equalize the static electricity, rest the antistatic bag on top of the Personal Workstation while you are removing the accessory from the bag. You should also handle the accessory as little as possible and with care.

---

## Installing an Oxygen GVX1 Card

This section contains the following subsections:

- Installing the Oxygen GVX1 Card
- Updating the Oxygen GVX1 Driver
- Configuring the Oxygen GVX1 Driver
- Troubleshooting

### Installing the Oxygen GVX1 Card

1. Before installing your graphics card, disconnect all power, peripheral, and telecommunications cables from the Personal Workstation.

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**WARNING** To avoid electrical shock, make sure that you unplug the power cable from the wall outlet and the Personal Workstation before proceeding.

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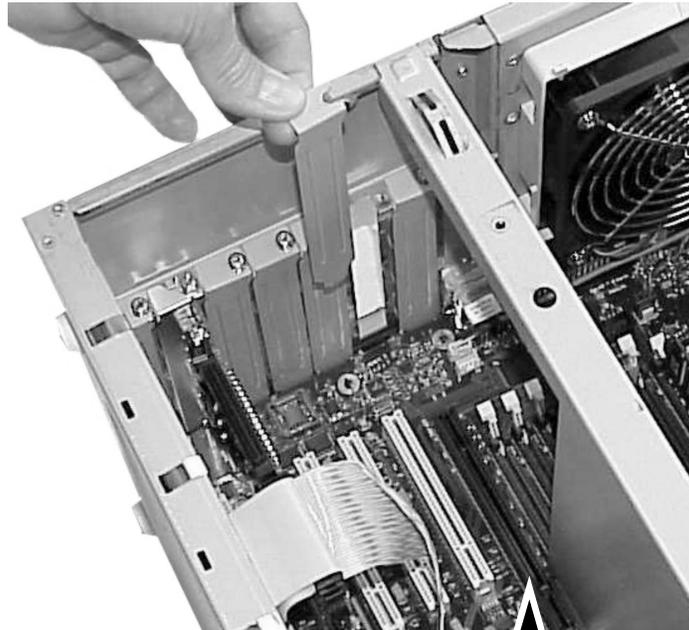
2. To remove the Personal Workstation's cover, refer to the User's Guide that came with your Personal Workstation. Alternatively, you can print out a copy from any of the following sources:
  - Your hard drive's preloaded files
  - The tools and support CD
  - The support website at: [//www.hp.com/go/visualizesupport](http://www.hp.com/go/visualizesupport)
3. Use a static-grounding strap, attaching it to the bare metal chassis of your Personal Workstation before handling the Oxygen GVX1 Card.
4. Place the Personal Workstation on its side on a flat work surface, such as a table top.
5. Ensure that all cables are correctly routed and flat against the system so that they do not obstruct the Oxygen GVX1 Card.

6. Remove the AGP accessory slot screw from the bulkhead.



Oxygen GVX1  
Installing an Oxygen GVX1 Card

7. Remove the bulkhead filler panel from the AGP slot.



AGP or AGP Pro Connector

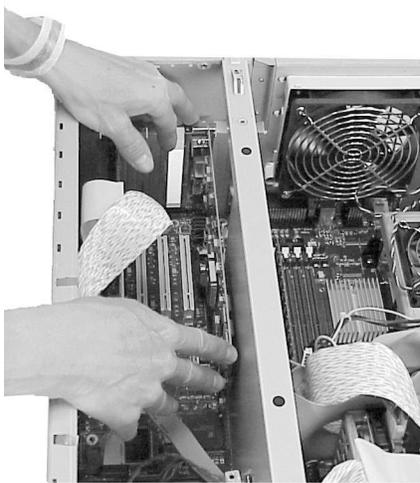
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**NOTE** Your Personal Workstation may look different than the one documented here.

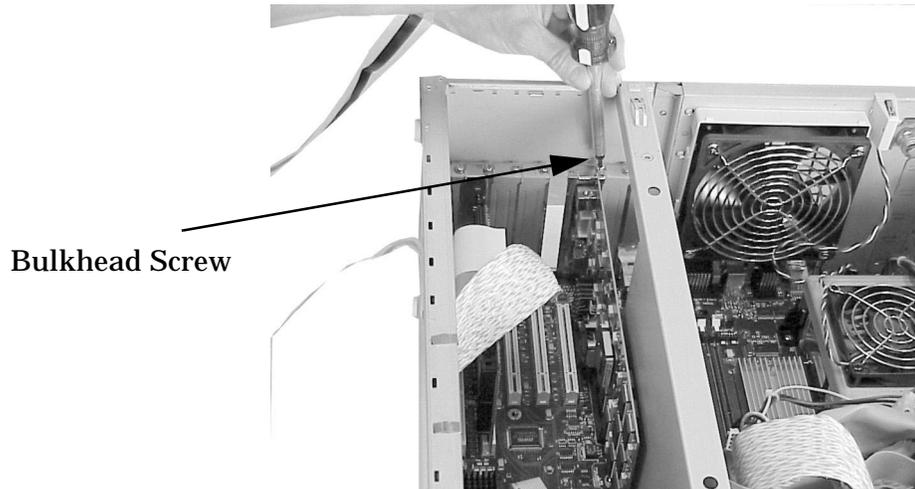
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8. Grasp the graphics card's bulkhead and opposite edges, and align the card's contact fingers with the AGP and AGP Pro connector on the system board. Ensure that the card's contact fingers are fully seated in their connectors.

9. Press the Oxygen GVX1 Card firmly into place.



10. Secure the graphics card to the chassis with the bulkhead screw.



## Updating the Oxygen GVX1 Driver

HP updates the Oxygen GVX1 driver as needed to incorporate feature and performance enhancements, or to fix problems found when running specific applications.

You can download the latest version of the Oxygen GVX1 driver from HP's web site:

<http://www.hp.com/go/visualizesupport>

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**NOTE** A README file is supplied with the driver. Please read it carefully as it provides instructions to install the driver. Moreover, the information contained in the README file supersedes any information contained in this manual.

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To update the driver, follow these instructions:

1. Create a temporary directory such as C:\TEMP\GVX1DRV
2. Download the driver from HP's web site to a temporary folder on your hard disk.
3. Run the executable file to decompress the contained files. You can do this by double-clicking on the file in Windows Explorer.

Follow the instructions provided in the README file that comes with the driver.

## Configuring the Oxygen GVX1 Driver

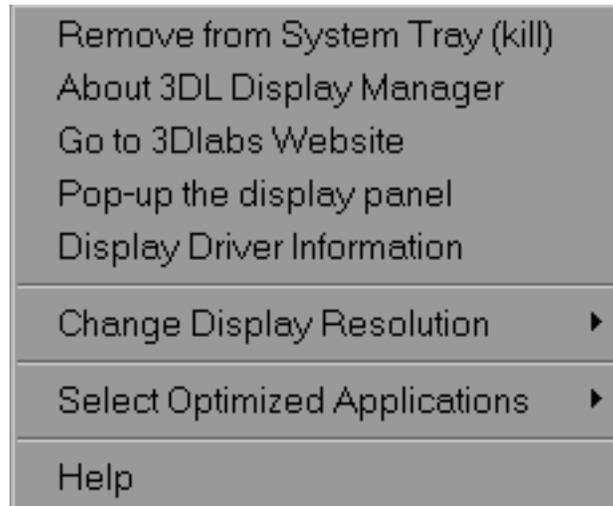
This section explains how to configure your Oxygen GVX1 driver using the **Configuration Manager** on the task bar. See the README file that comes with the driver to obtain additional information.

### The Oxygen GVX1 Driver

The Oxygen driver software lets you optimize the working relationship between your card, your system and your applications. Use the **Configuration Manager** on the Task Bar or the 3Dlabs Display Control Panel screens to customize the driver settings.

## The Configuration Manager on the Task Bar

When you install the Oxygen GVX1 card and software, the 3Dlabs logo appears in your system tray, at one end of the task bar. Click the logo with your right mouse button to access the **Display Configuration Manager** and shortcuts to some of its configuration tools:



Here is a description of the menu items shown above:

**Remove from System Tray** lets you delete this task bar utility from your system. You will still be able to access the driver configuration options with the Display Control Panel.

**About 3DL Display Manager** displays version information for this configuration utility.

**Go to 3Dlabs Website** takes you directly to [www.3dlabs.com](http://www.3dlabs.com) through your existing Internet connection.

**Pop up the Display Panel** reaches the 3Dlabs section on the display control panel.

**Display Driver Information** provides quick access to information about your Oxygen card configuration.

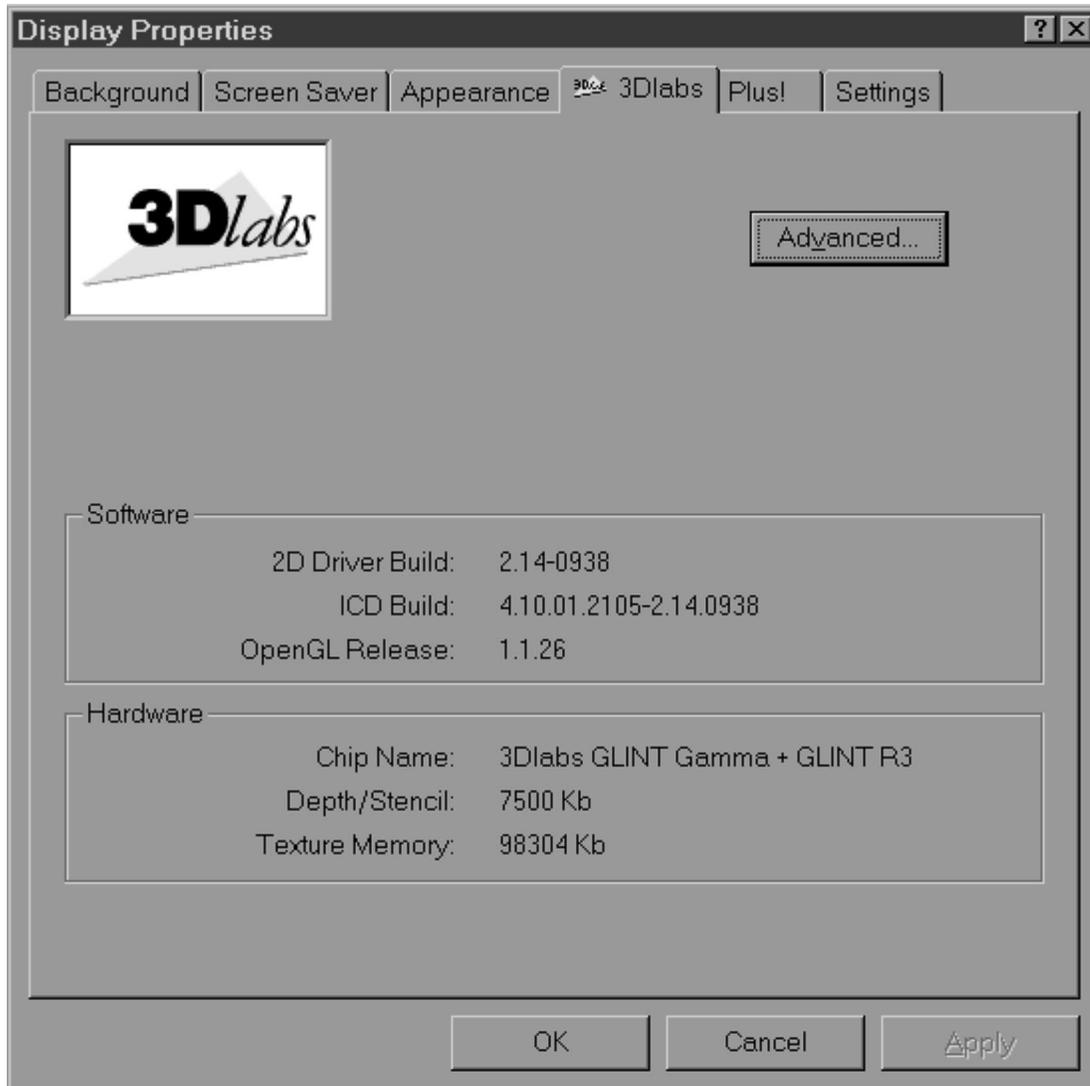
**Change Display Resolution** brings up a pop-up list of supported resolutions. Each resolution has an associated pop-up list of available refresh rates.

**Select Optimized Application** quickly accesses a list of supported applications. Click an application in the list to optimize card settings for your selected option.

**Help** provides standard Windows-style help on the driver and its settings.

## The Display Control Panel

When you first click the **3Dlabs** tab in the **Display Control Panel**, the Display Properties window opens at the page shown below:



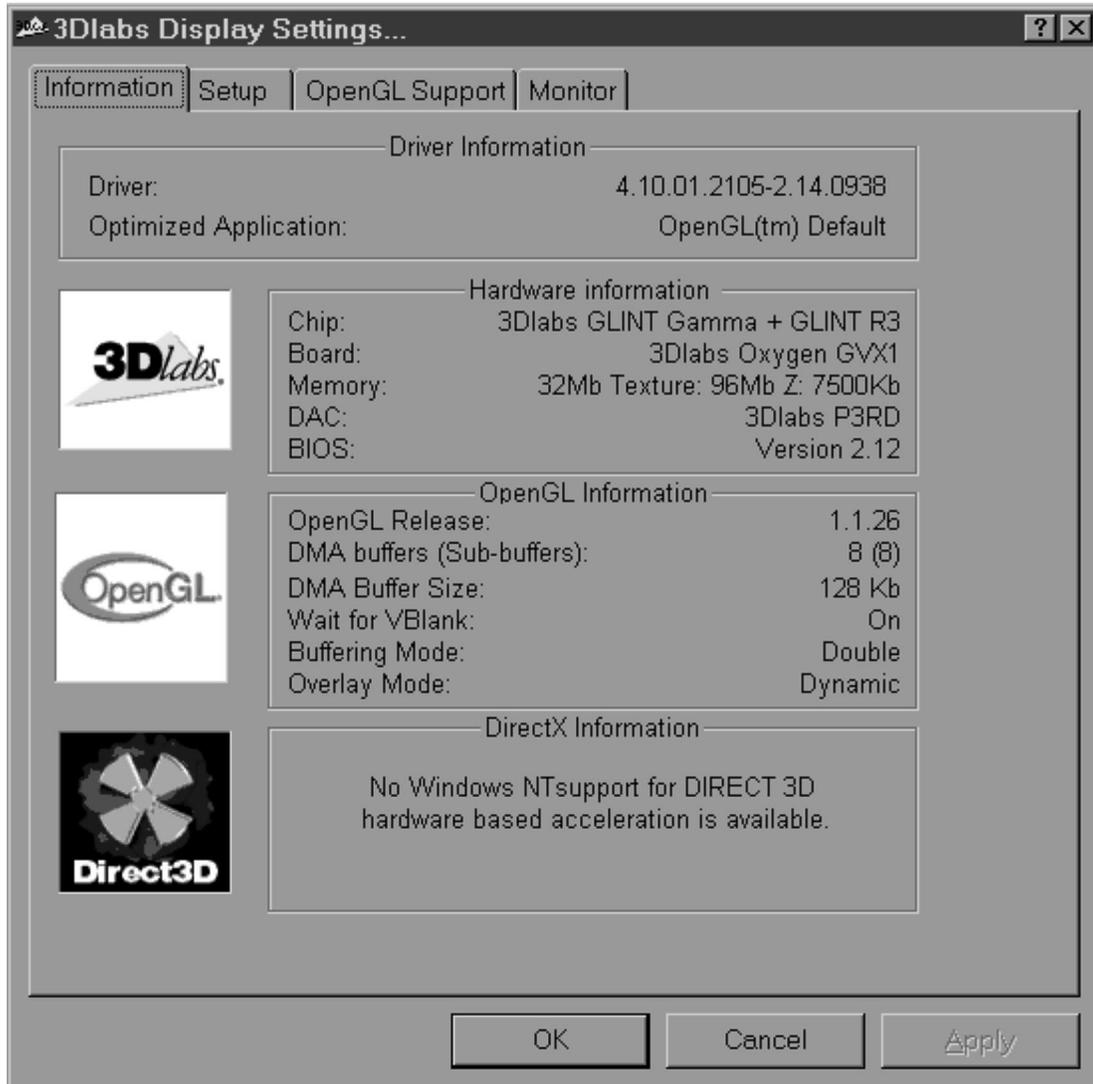
This shows the software version and basic hardware specifications, and provides a point of entry to the full set of Oxygen driver customization tools. Click the **Advanced** button for access to the advanced tools tabs:

- Information
- Setup
- OpenGL Support
- Monitor

The following sections describe each in detail.

## Information Screen

The Information Screen provides in-depth information about your selected (or the default) settings, as well as detailed hardware, software, and Direct 3D specifications. This information can be especially useful if you should need to contact technical support about your Oxygen graphics card.



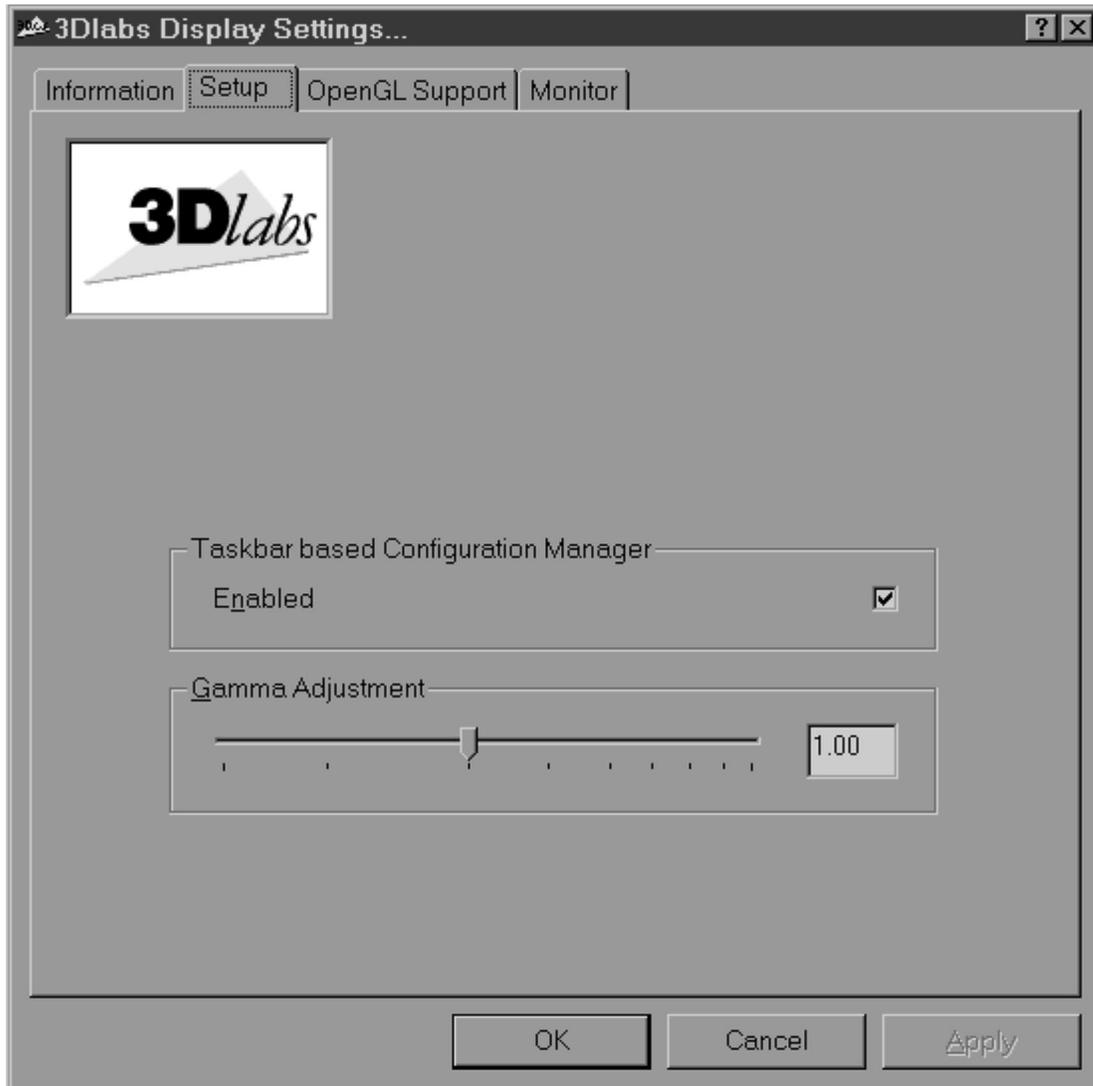
## Setup Screen

The **Setup** screen lets you configure settings that are not specifically related to OpenGL.

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**NOTE** These tools are inactive (greyed out) when the current user does not have Windows NT administrator access.

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You can enable (check) or disable (uncheck) the **Configuration Manager** on the Taskbar with a click. The default setting for the **Configuration Manager** is Enabled.

The **Gamma Adjustment** slider lets you simultaneously adjust RGB color curves and define the color output for you display. You can also enter a precise Gamma value, rather than use the slider, when you know which value is appropriate for you monitor and ambient lighting conditions.

## OpenGL Support Screen

This screen controls OpenGL-application-specific driver settings and enables you to create our own settings. When the panel initially appears the **New** and **Remove Settings** buttons, as well as the Advanced Options section, are hidden. They appear when you click the **Advanced** button at the top of the screen.

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**NOTE** These tools are inactive (greyed out) when the current user does not have Windows NT administrator access.

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Here is a description of the buttons and entry boxes shown above:

The **Driver is optimized for application** section has a drop down list of applications. Select the one you want to use. The rest of your actions on this screen will apply to that choice.

Click **New** to add an application to the list and customize its settings.

**Remove Setting** removes user-created application settings. It does not remove the default application settings installed with the driver.

**Number of DMA Buffers** corresponds to the number of visible 3D windows supported with full speed acceleration. Eight buffers is sufficient for most applications.

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**NOTE** Direct Memory Access (DMA) provides direct access between a device and system memory, leaving the system processor available for other tasks.

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**Size of each DMA Buffer** is the number of bytes in each DMA buffer.

**Number of DMA Sub-Buffers** increases performance by using DMA queuing to reduce latency. To disable DMA queuing, set this to **2**.

**Overlay/Alpha Mode** controls the overlay planes exported in OpenGL pixel formats. Almost all applications use the Dynamic setting. However, two applications require other modes. Maya by Alias/Wavefront requires the Alpha Only Mode when you need alpha plane retention, such as in the particle system package. Pro/3DPaint by Parametric Technology requires Overlay Only Mode.

**Wait for Vblank** configures the driver to try to synchronize screen updates with the vertical blank retrace interval of the monitor. Enabling this option (the default setting) provides smoother 3D animation because it eliminates visible tearing of the display. Disabling this maximizes the rendering frame rates of double buffered applications. For instance, you should disable this when running the Viewperf benchmark.

### Monitor Screen

The monitor type is automatically detected by the system and does not normally require manual selection. If the monitor has not been optimally detected, this screen provides manual selection of monitor type.

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**NOTE** These tools are inactive (greyed out) when the current user does not have Windows NT administrator access.

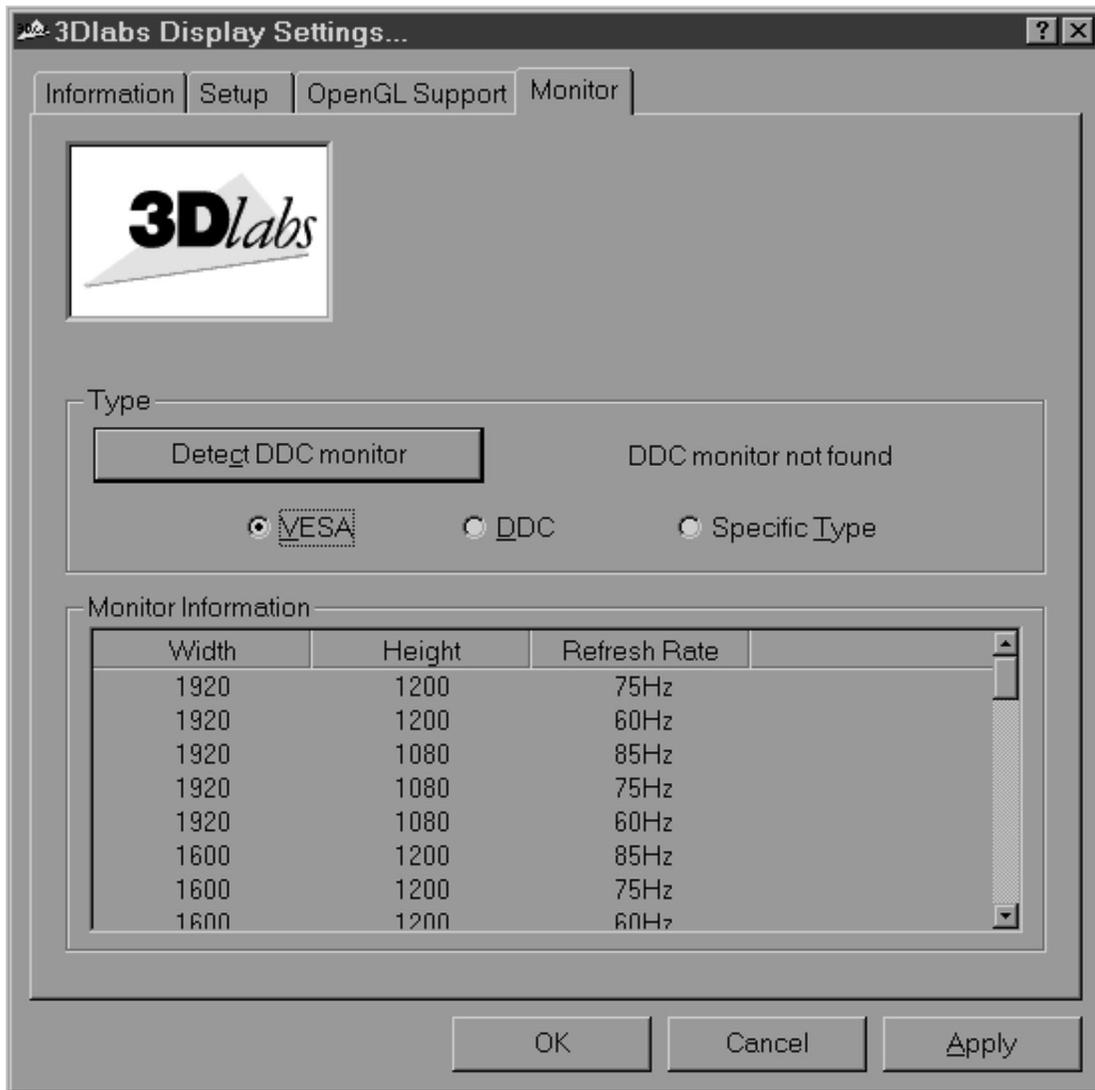
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This screen also displays the settings available for your monitor type.

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**NOTE** You cannot change monitor settings in the **Monitor** screen. To change monitor settings, return to the **Display Properties** window and go into the **Settings** tab.

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The **Type** section shows the monitor type detected when you opened the Display Control Panel. It also allows you to select a different type. The format for information shown in the **Monitor Information** section depends upon the monitor type selected in the **Type** section. If the **VESA** or **DDC** radio button is selected, **Monitor Information** displays available settings, as shown in the above graphic. If the **Specific Type** radio button is selected, you will see a hierarchical list of monitors.

The **VESA** type is used for monitors that are not DDC or do not appear in the **Specific Type** list.

If you swap DDC monitors after the **Display Control Panel** has already been opened, the monitor settings may not be synchronized to the monitor you are currently using. To correct this, click **Detect DDC monitor** for manual detection.

## Troubleshooting

For GVX1 troubleshooting information, you can go to the following websites:

[//www.hp.com/go/visualizesupport](http://www.hp.com/go/visualizesupport)

[//www.3dlabs.com/](http://www.3dlabs.com/)

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## **A Regulatory Information and Warranty**

## Regulatory Information

| <b>Declaration of Conformity</b><br>according to ISO/IEC Guide 22 and EN 45014  |   |
|---|---|
| <b>Manufacturer:</b>  | Hewlett-Packard Company<br>3404 East Harmony Rd.<br>Fort Collins, CO 80528<br>USA   |
| <b>Declares that the:</b>   |   |
| <b>Product Name:</b>  | Oxygen GVX1 Graphics Board  |
| <b>Model Number:</b>  | A6011A  |
| <b>Product Options:</b>   | All   |
| <b>Conforms to the following specifications:</b>  |   |
| Safety.   | IEC 950:1991+A1+A2+A3+A4+A11/EN 60950:1992+A1+A2+A3+A4  |
| EMC.  | CISPR 22: 1993+A1+A2 / EN 55022: 1994+A1+A2 Class A conducted emissions<br>CISPR 22: 1997 / EN 55022: 1998 Class A radiated emissions<br>EN 55024: 1998 / EN 61000-4-2: 1999 - 4kV CD, 8kV AD<br>EN 55024: 1998 / EN 61000-4-3: 1995 - 10 v/m<br>EN 55024: 1998 / EN 61000-4-4: 1995 - 2kV Signal, 4kV Power Lines<br>US FCC Part 15, Level A<br>Japan VCCI Class A |
| <b>and is certified by:</b>   |   |
|   | Australia/New Zealand AS/NZS 3548: 1995<br>HP Fort Collins CCQD HTC   |
| <b>Supplementary information:</b>   |   |
| The product herewith complies with the requirements of the following Directives and carries the CE marking accordingly:   |   |
| - the EMC directive 89/336/EEC and 92/31/EEC and 93/68/EEC<br>- the Low Voltage Directive 73/23/EEC and 93/68/EEC   |   |
| This product was tested in a typical Hewlett-Packard workstation configuration.   |   |
| Original signed by Ruth Lutes, Site Quality Manager, Fort Collins, CO, USA  |   |
| <b>For Compliance Information ONLY, contact:</b>  |   |
| European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department HQ-TRE Standard Europe, Herrenberger Straße 130, D-71034 Böblingen (FAC: +49-7031-14-3143). |   |
| Americas Conact: Hewlett-Packard, Fort Collins Site Quality Manager, mail stop 46, 3404 E. Harmony Rd., Fort Collins, CO 80528, USA   |   |

## FCC

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules and the Canadian Department of Communications. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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**NOTE** You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

---

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Hewlett-Packard's FCC Compliance Tests were conducted with HP-supported peripheral devices and HP shielded cables, such as those you received with your system. Changes or modifications not expressly approved by Hewlett-Packard could void the user's authority to operate the equipment.

### Notice for Japan (Class A)

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づきクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

## HP Hardware Warranty

Important: This is your hardware product warranty statement. Please, read it carefully.

Warranty terms may be different in your country. If so, your Authorized HP Dealer or Hewlett-Packard Sales and Service Office can give you details.

HP products may contain remanufactured parts equivalent to new in performance or may have been subject to incidental use.

HP products external to the system processor unit —such as external storage subsystems, displays, printers, and other peripherals— are covered by the applicable warranties for those products; HP software is covered by the HP Software Product Limited Warranty

FOR CONSUMER TRANSACTIONS IN AUSTRALIA AND NEW ZEALAND: THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

## HP Year 2000 Warranty

This HP Year 2000 Warranty is in addition to the HP Standard Commercial Warranties contained in Exhibit E16, HP Terms and Conditions of Sale and Service. HP warrants that each HP hardware, software, and firmware Product delivered under this HP Year 2000 Warranty will be able to accurately process date data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000, including leap year calculations, when used in accordance with the Product documentation provided by HP (including any instructions for installing patches or upgrades), provided that all other products (e.g. hardware, software, firmware) used in combination with such HP Product(s) properly exchange date data with it.

If the Specifications require that specific HP Products must perform as a system in accordance with the foregoing warranty, then that warranty will apply to those HP Products as a system, and Customer retains sole responsibility to ensure the Year 2000 readiness of its information technology and business environment. The duration of this warranty extends through January 31, 2001. The remedies available under this warranty will be defined in, and subject to, the terms and limitations of the warranties contained in HP's standard commercial warranties. To the extent permitted by local law, this warranty applies only to branded HP Products and not to products manufactured by others that may be sold or distributed by HP. This HP Year 2000 Warranty applies only to HP Products shipped after the effective date, July 01, 1998, of this warranty. Nothing in this warranty will be construed to limit any rights or remedies provided elsewhere in the HP Terms and Conditions of Sale and Service with respect to matters other than Year 2000 compliance.

## Three Year Limited Hardware Warranty

Hewlett-Packard (HP) warrants this hardware product against defects in materials and workmanship for a period of three years from receipt by the original end-user purchaser.

The three year warranty includes on-site service during the first year of use (free parts and labor), and parts service provided by an HP Service Center or a participating Authorized

HP Personal Computer Dealer Repair Center, during the second and third years of use.

If HP receives notice of above defined defects during the warranty period, HP will either, at its option, repair or replace products, which prove to be defective.

Should HP be unable to repair or replace the product within a reasonable amount of time, the customer's alternate exclusive remedy shall be a refund of the purchase price upon return of the product.

The system processor unit, keyboard, mouse, and Hewlett-Packard accessories inside the system processor unit —such as video adapters, mass storage devices, and interface controllers— are covered by this warranty.

This warranty is extended worldwide under certain conditions (please check with your local HP office) to products purchased from HP or an Authorized HP Personal Computer Dealer which are reshipped by the original purchaser either for use by the original purchaser or provided as an incidental part of systems integrated by the original purchaser. When available in the country of use, service is provided in the same manner as if the product was purchased in that country and can only be provided in countries where the product is designed to operate. If the product is not normally sold by HP in the country of use, it must be returned to the country of purchase for service. Response time for on-site service, and parts delivery turn-around time for parts service, are subject to changes from standard conditions based upon non-local parts availability.

## **Limitation of Warranty**

The above warranty shall not apply to defects resulting from: misuse; unauthorized modification; operation or storage outside the environmental specifications for the product; in-transit damage; improper maintenance; or defects resulting from use of non-HP software, accessories, media, supplies, consumables, or such items not designed for use with the product.

Reloading the bundled or pre-loaded software on your Personal Workstation is not covered by the HP warranty.

HP MAKES NO OTHER EXPRESS WARRANTY, WHETHER WRITTEN OR ORAL, WITH RESPECT TO THIS PRODUCT. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS IS LIMITED TO THE THREE-YEAR DURATION OF THIS WRITTEN WARRANTY. SOME STATES OR PROVINCES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

This warranty gives you specific legal rights, and you may also have other rights, which vary, from state to state, or province to province.

## **Limitation of Liability and Remedies**

THE REMEDIES PROVIDED ABOVE ARE THE CUSTOMER'S SOLE AND EXCLUSIVE REMEDIES. IN NO EVENT SHALL HP BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON WARRANTY, CONTRACT, TORT, OR ANY OTHER LEGAL THEORY.

The foregoing limitation of liability shall not apply in the event that any HP product sold hereunder is determined by a court of competent jurisdiction to be defective and to have directly caused bodily injury, death, or property damage; provided, that in no event shall HP's liability for property damage exceed the greater of \$50,000 or the purchase price of the specific product that caused such damage.

Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages—including lost profit—so the above limitation or exclusion may not apply to you.

## **Obtaining On-Site Warranty Service**

To obtain on-site warranty service, the customer must contact an HP Sales and Service Office (in the US, call the HP Customer Support Center at (970) 635-1000) or a participating Authorized HP Personal Computer Dealer Repair Center. The customer must be prepared to supply proof of the purchase date.

The system processor unit, keyboard, mouse, and Hewlett-Packard accessories inside the system processor unit—such as video adapters, mass storage devices, and interface controllers—are covered by this warranty.

During the on-site warranty period, customer-replaceable components may be serviced through expedited part shipment. In this event, HP will prepay shipping charges, duty, and taxes; provide telephone assistance on replacement of the component when necessary; and pay shipping charges, duty, and taxes for any part that HP asks to be returned.

On-site visits caused by non-Hewlett-Packard products—whether internal or external to the system processor unit—are subject to standard per-incident travel and labor charges.

On-site service for this product is restricted or unavailable in certain locations. In HP Excluded Travel Areas—areas where geographical obstacles, undeveloped roads, or unsuitable public transportation prohibit routine travel—service is provided on a negotiated basis at extra charge.

Response time for HP on-site service in an HP Service Travel Area is normally next business day (excluding HP holidays) for HP Travel Zones 1-3 (generally 100 miles or 160 Km from the HP office). Response time is second business day for Zones 4 and 5 (200 miles, 320 Km); third business day for Zone 6 (300 miles, 480 Km); and negotiated beyond Zone 6. Worldwide Customer Support Travel information is available from any HP Sales and Service Office.

Travel restrictions and response time for dealer or distributor service are defined by the participating dealer or distributor.

Service contracts which provide after-hour or weekend coverage, faster response time, or service in an Excluded Travel Area are often available from HP, an authorized dealer, or authorized distributor at additional charge.

## **Customer Responsibilities**

The customer may be required to run HP-supplied diagnostic programs before an on-site visit or replacement part will be dispatched.

The customer is responsible for the security of its proprietary and confidential information

and for maintaining a procedure external to the products for reconstruction of lost or altered files, data, or programs.

The customer must provide: access to the product; adequate working space and facilities within a reasonable distance of the product; access to and use of all information and facilities determined necessary by HP to service the product; and operating supplies and consumables such as the customer would use during normal operation.

A representative of the customer must be present at all times. The customer must state if the product is being used in an environment which poses a potential health hazard to repair personnel; HP or the servicing dealer may require that the product be maintained by customer personnel under direct HP or dealer supervision.

### **Obtaining Parts Warranty Service**

When parts warranty service applies, the customer may be required to run HP-supplied diagnostic programs before a replacement part will be dispatched. The customer must be prepared to supply proof of purchase.

The customer shall return some defective parts upon HP demand. In that case, HP will prepay shipping charges for parts returned to the HP parts service center.

### **HP Telephone Support Services**

HP Free telephone support for your Personal Workstation is available during the first year from date of purchase. This service will also provide technical assistance with the basic configuration and setup of your HP VISUALIZE Personal Workstation and for the bundled or pre-loaded operating system.

Telephone support is available at the end of the first year from date of purchase, via the Lifeline program, which is a fee-based service (North America and Europe only).

HP does NOT provide telephone support for Personal Workstations configured as network servers. We recommend HP NetServers for your network server requirements.

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### **HP Software Product License Agreement and Software Product Limited Warranty**

Your HP VISUALIZE Personal Workstation contains preinstalled software programs. Please read the Software License Agreement before proceeding.

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**PRODUCT RECOVERY CD-ROM.** If your computer was shipped with a product recovery CD-ROM: (i) The product recovery CD-ROM and/or support utility software may only be used for restoring the hard disk of the HP computer with which the product recovery CD-ROM was originally provided. (ii) The use of any operating system software by Microsoft contained in any such product recovery CD-ROM shall be governed by the Microsoft End User License Agreement (EULA).

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**Ninety-Day Limited Software Warranty.** HP warrants for a period of NINETY (90) DAYS from the date of the purchase that the software product will execute its programming instructions when all files are properly installed. HP does not warrant that the software will be uninterrupted or error free. In the event that this software product fails to execute its programming instructions during the warranty period, Customer's remedy shall be a refund or repair. Should HP be unable to replace the media within a reasonable amount of time, Customer's alternate remedy shall be a refund of the purchase price upon return of the product and all copies.

**Removable Media (If supplied).** HP warrants the removable media, if supplied, upon which this product is recorded to be free from defects in materials and workmanship under normal use for a period of NINETY (90) DAYS from the date of purchase. In the event the media proves to be defective during the warranty period, Customer's remedy shall be to return the media to HP for replacement. Should HP be unable to replace the media within a reasonable amount of time, Customer's alternate remedy shall be a refund of the purchase price upon return of the product and destruction of all other non removable media copies of the software product.

**Notice of Warranty Claims.** Customer must notify HP in writing of any warranty claim not later than thirty (30) days after the expiration of the warranty period.

**Limitation of Warranty.** HP makes no other express warranty, whether written or oral with respect to this product. Any implied warranty of merchantability or fitness for a particular purpose is limited to the 90-day duration of this written warranty. Some states or provinces do not allow limitations on how long an implied warranty lasts, so the above limitation or exclusion may not apply to you. This warranty gives specific legal rights, and you may also have other rights which vary from state to state, or province to province.

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**Obtaining Warranty Service.** Warranty service may be obtained from the nearest HP sales office or other location indicated in the owner's manual or service booklet.

**Consumer transactions in Australia and the United Kingdom:** The disclaimers and limitations above shall not apply and shall not affect the statutory rights of a Consumer.

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