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QuickDraw 3D Accelerator Card: Read Me File (11/96)

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TOPIC -----

This article contains the ReadMe file installed with the QuickDraw 3D Accelerator Card.

DISCUSSION -----

Important Information About QuickDraw 3D

QuickDraw 3D enables your Macintosh computer to display three-dimensional graphics, using applications designed to take advantage of QuickDraw 3D. It also provides a common file format, called 3DMF (for "3D metafile"), for exchanging 3D documents and acceleration services which support plug-and-play accelerator cards.

The following are required to install and run QuickDraw 3D and the QuickDraw Accelerator Card:

- A PowerPC based computer equipped with a PCI slot (such as a Power Macintosh 7200, 7500, 8500, or 9500)
- 16 megabytes of random access memory (RAM)
- Macintosh system software version 7.5.2, with System Enabler 1.1, or later
- A system that can display thousands or millions of colors

The QuickDraw 3D Accelerator Card

The QuickDraw 3D Accelerator Card brings workstation-class 3D acceleration to any Power Macintosh or Macintosh Performa computer with a PCI (Peripheral Component Interconnect) slot. Its accelerated 3D rendering allows you to create or work with 3D objects and scenes quickly and efficiently.

Featuring a compact (6.88-inch) design, the QuickDraw 3D Accelerator Card provides exceptional performance. It plugs easily into the PCI slot of your

Power Macintosh (or other PCI-equipped computer running Macintosh system software version 7.5.2 or later), to let you design 3D scenes and shade and texture objects faster than ever before. You can interact smoothly with 3D models that cover the full screen, even when performing Constructive Solid Geometry (CSG) or when positioning texture maps. And you'll find that the motion in your 3D animations flows smoothly and looks natural.

To accomplish this workstation-class performance, the QuickDraw 3D Accelerator Card works in conjunction with QuickDraw 3D, a cross-platform application program interface (API) that is an emerging standard in the area of computer-based 3D graphics and animations. By itself, QuickDraw 3D was designed to take advantage of PowerPC RISC technology to provide real-time, interactive rendering for simple models. The QuickDraw 3D Accelerator Card enhances this capability, enabling you to use your Macintosh computer to work in real time with much larger and more complicated models.

With complex 3D models rapidly becoming the standard in computer-based graphics, high-speed 3D rendering capabilities are increasingly a necessity for many computer users. So whether you're an architect, a graphic artist, a multimedia developer, a scientist who works with visualization, or simply a 3D game enthusiast, the QuickDraw 3D Accelerator Card will make your interactions with on-screen images significantly faster, better—and more satisfying.

Using QuickDraw 3D

The QuickDraw 3D folder includes the following applications, 3D models, and textures that allow you to explore the 3D capabilities of your Macintosh:

- SimpleText version 1.3.1 and Scrapbook version 7.5.1. These applications allow you to open and interact with 3DMF models.
- A game called "Gerbils!" so you can experience the fun side of 3D graphics.
- Cumulus, a multimedia database provided by Canto Software.
- A new Scrapbook File with sample 3DMF models.
- A number of 3DMF models provided by Model Masters and Viewpoint Datalabs International.
- Textures provided by Wraptures and Xaos Tools.

You can expect more applications using QuickDraw 3D in the near future, including new versions of application programs you may already own. Contact your software vendors for more information about their plans to support this new technology.

QuickDraw 3D and Image Quality

QuickDraw 3D has been optimized to display three-dimensional graphics of high quality. To display high-quality images, and obtain the best performance from your system, we recommend that you set your system to display thousands or millions of colors.

The QuickDraw 3D Accelerator Card only accelerates rendering to screens which display thousands or millions of colors. QuickDraw 3D will run if you choose another display format, but rendering will not be accelerated.

Features of Your QuickDraw 3D Accelerator Card

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Workstation-class 3D acceleration

- Accelerates QuickDraw 3D rendering up to 12 times (12X)
- Renders 10 million tri-linearly filtered, bitmapped texture pixels/second
- Renders up to 120 thousand triangles per second
- Accelerates Gouraud shading, texture mapping, transparency, and Constructive Solid Geometry (CSG)
- Tri-linear filtering, mipmapping, and diffuse and specular lighting are always enabled, producing very high-quality texture-mapped images
- Uses high-performance SRAM memory to display up to 12 texture maps in each window
- Outputs an alpha channel, making it fast and easy to transfer images between applications
- Hardware-accelerated per-pixel Z-sorting provides precise rendering of transparent surfaces or CSG, regardless of submission order or interpenetration

Scalability

- A single card accelerates 3D rendering to all frame buffers in the system.
- Hardware rendering performance can be doubled simply by installing a second card.

Troubleshooting 3D Acceleration

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If 3D rendering does not appear to be accelerated, check the following:

- Check that your system is set to display thousands or millions of colors. These are the only display modes in which acceleration can occur.
- Check that your application uses QuickDraw 3D. Some older 3D applications don't use QuickDraw 3D for rendering, and can not be accelerated.
- Some applications allow you to switch hardware acceleration on or off. Check your application's documentation to be sure that hardware acceleration is enabled (on).
- Check that the following files are in the Extensions Folder, inside the System Folder:

Apple QD3D HW Driver
Apple QD3D HW Plug-In

- The performance advantage of any 3D accelerator varies depending on the type of scene being rendered. You may find that some applications show the benefits of acceleration more than others. If you want to verify that acceleration is working, try the Gerbils! application (included on your installer CD-ROM) – it runs much faster when the QuickDraw 3D Accelerator Card is installed.

Turning Off 3D Acceleration

If you need to turn off the QuickDraw 3D Accelerator Card (for example, to compare accelerated performance with software-only rendering), follow these steps:

Step 1

Quit all applications that use QuickDraw 3D.

Step 2

Create an empty folder on the desktop.

Step 3

Move the file named "Apple QD3D HW Plug-In" from the Extensions Folder (inside the System Folder) into the empty folder. The accelerator card is now disabled.

Step 4

Restart QuickDraw 3D applications.

To turn the QuickDraw 3D Accelerator Card back on, follow these steps:

Step 1

Quit all applications that use QuickDraw 3D.

Step 2

Move the file named "Apple QD3D HW Plug-In" back into the Extensions Folder.

Step 3

Restart QuickDraw 3D applications.

General Troubleshooting

For better performance, we recommend that Virtual Memory be turned off. If your system has only 16 megabytes of RAM, leaving Virtual Memory enabled can cause unexpected crashes. For 16-megabyte systems, make sure to turn Virtual Memory off before starting any application that uses QuickDraw 3D.

If you try to start an application that uses QuickDraw 3D and get the message "The application '<application name>' could not be launched because QuickDraw 3D could not be found," make sure that the following files are in the Extensions Folder, inside the System Folder:

- QuickDraw 3D
- QuickDraw 3D Accelerator
- QuickDraw 3D Viewer

If the files are there and you still get the message, it means that you don't have enough memory to run the application. You may be able to open the application if you try one or more of the following:

- Quit other open applications.
- Reduce the amount of memory allocated to the application. Take these steps to reduce it:
 1. Select the application's icon in the Finder.
 2. Choose Get Info from the File menu.
 3. Type a lower number in the boxes for Minimum Size and Preferred Size.
- Install more memory (RAM.)

If you would like to use the Scrapbook File supplied in the QuickDraw 3D folder instead of your existing Scrapbook File, you must copy the Scrapbook File from the QuickDraw 3D Folder to the System Folder on your Macintosh. Note that this will replace your existing Scrapbook File in the System Folder, thus erasing any previously stored contents.

How QuickDraw 3D Uses Memory

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QuickDraw 3D is a shared library. When no applications that rely on QuickDraw 3D are open, the library does not take up random access memory (RAM) space. Once a QuickDraw 3D-based application is open, the amount of memory taken up by the shared library doesn't increase if other QuickDraw 3D-based applications are launched. Of course, each application will take up memory according to their size and the complexity of the files being used. The memory taken up by QuickDraw 3D becomes available when you quit all QuickDraw 3D-based applications.

While a QuickDraw 3D application is open, the QuickDraw 3D library allocates memory from "temporary memory." When you choose About This Macintosh from the Apple (🍏) menu, it is shown as memory used by the System. After you quit the application, the memory becomes available, but the size shown in the About This Macintosh window may not reflect this. The memory previously used by QuickDraw 3D is, nonetheless, available for other applications (it is released to the applications as needed).

If You Need to Reinstall QuickDraw 3D

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If you need to reinstall QuickDraw 3D, follow these steps:

Step 1

Open the QuickDraw 3D Install folder and double-click the Installer icon.

Step 2

After installing QuickDraw 3D, restart your computer.

Step 3

If you want the items in the QuickDraw 3D Extras folder, drag the folder to the newly-created QuickDraw 3D Folder inside the Apple Extras folder.

Removing QuickDraw 3D

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If you wish to remove QuickDraw 3D, follow these steps:

Step 1

Insert the CD that contains the QuickDraw 3D software.

Step 2

Open the QuickDraw 3D Install folder and double-click the Installer icon.

Step 3

Choose Custom Remove from the pop-up menu.

Step 4

Click the box next to each item to put a check in it.

Step 5

Click Remove.

Step 6

Restart your computer.

Article Change History:

21 Nov 1996 - Corrected typographical error and updated format.

27 Oct 1995 - Changed distribution status.

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