Autodesk® Maya® 2008 Extension 2

Graphics Hardware Qualification

Linux® Platform

Last updated: February 12, 2009.

Readme First

The information contained in the Readme First document applies to all hardware qualification executed on the Autodesk Maya 2008 Extension 2 software product release and should be acknowledged by all users prior consulting the qualification charts.

What's New

Make sure you look at our latest additions to this document, which are: NVIDIA® QuadroFX 4800 results.

Linux Qualification Kernels

The following table lists the Linux qualified kernels for the Maya 2008 Extension 2 software product release.

Linux Qualification Kernels				
	Red Hat Enterprise 4.0 (U5) 32-bit OS	Red Hat Enterprise 4.0 (U5) 64-bit OS	Fedora Core 5 32-bit OS	Fedora Core 5 64-bit OS
Kernel	2.6.9-67.0.4.ELsmp	2.6.9-67.0.4.ELsmp	2.6.20-1.2320.FC5	2.6.20-12320.FC5
Xorg	6.8.2	6.8.2	7.0	7.0
Glibc	2.3.4-2.39	2.3.4-2.39	2.4-11	2.4-11

Graphics Cards & Drivers

The following table lists the graphics cards and driver versions for the Maya 2008 Extension 2 software product release.

Table Legend

✓   Qualified.

☝   Qualified with caveats. Refer to Caveats & Limitations.

⧗   Qualification planned. Results coming shortly

☝   Supported (although not yet officially qualified in our lab. Qualification may or may not be planned)

✖   Qualification failed due to serious problems.

•   Un-tested. No qualification planned – not applicable / not available.

Graphics Card & Driver Qualifications for Autodesk Maya 2008 Ext. 2 for Linux					
		Red Hat Enterprise 4.0 (U5)		Fedora Core 5	
Graphics Card	Driver	32-bit OS	64-bit OS	32-bit OS	64-bit OS
NVIDIA					
Quadro® FX 5800	177.82	⧗	⧗	⧗	⧗
Quadro FX 4800	177.82	⧗	☝ (*)	⧗	⧗
Quadro FX 4700x2	177.82	⧗	⧗	⧗	⧗
Quadro FX 3700	169.09	☝	☝	✓	☝
Quadro FX 1700	169.09	☝	☝	✓	☝

Graphics Card & Driver Qualifications for Autodesk Maya 2008 Ext. 2 for Linux					
		Red Hat Enterprise 4.0 (U5)		Fedora Core 5	
Graphics Card	Driver	32-bit OS	64-bit OS	32-bit OS	64-bit OS
Quadro FX 5600	169.09	☞	☞	☞	☞
Quadro FX 4600	169.09	☞	☞	☞	☞
Quadro FX 5500	169.09	☞	☞	☞	☞
Quadro FX 4500	169.09	☞	☞	☞	☞
Quadro FX 4500x2	169.09	☞	☞	☞	☞
Quadro FX 3500	169.09	☞	☞	☞	☞
Quadro FX 1500	169.09	☞	☞	☞	☞
Quadro FX 4400	169.09	☞	☞	☞	☞
Quadro FX 3450	169.09	☞	☞	☞	☞
Quadro FX 3400	169.09	☞	☞	☞	☞
GeForce® GPUs	—	• See Note in [Readme First]			
ATI					
FirePro™ 3D v8700	8.543.1.4	⌛	⌛	•	•
FirePro 3D v5700	8.543.1.4	⌛	⌛	•	•
FireGL™ v7700	8.543.1.4	⌛	⌛	•	•
FireGL v8650	8.443.1	☞	☞	•	•
FireGL v8600	8.443.1	☞	☞	•	•
FireGL v7600	8.443.1	☞	☞	•	•
FireGL v5600	8.443.1	☞	☞	•	•
FireGL v3600	8.443.1	☞	☞	•	•
FireGL v3400	8.443.1	•	☞	•	•
FireGL v7350	8.443.1	☞	☞	•	•
FireGL v7300	8.443.1	•	☞	•	•
FireGL v7200	8.443.1	•	☞	•	•
FireGL v5200	8.443.1	•	☞	•	•
Radeon™ GPUs	—	• See Note in [Readme First]			

Note: (*) this permutation has been performed on Red Hat Enterprise 4 U6

Caveats & Limitations

The following table provides a description of NVIDIA graphics cards caveats and limitations.

NVIDIA Graphics Cards Caveats and Limitations				
Graphics Card	Driver	OS	Limitation / Caveat	Status / Workaround
All	169.09	Red Hat Enterprise Linux 4.0 WS U5 32 & 64-bits	Bugs #295677 / #295671 - Tools which rely on overlay planes may not display properly. These include, but are not limited to; paint effects brushes not drawing completely, brushes and texture placements drawn an incorrect color, brushes and texture placements may not refresh properly.	None
Quadro FX 4600, 5600, 1700, 3700	169.09	Red Hat Enterprise Linux 4.0 WS U5 32 & 64-bit Fedora Core 5 64-bit	Bug #286178 - When using the paint effects in the viewport, it may be necessary to click in the viewport once in order for focus to be in the right window.	

The following table provides a description of ATI graphics cards caveats and limitations.

ATI Graphics Cards Caveats and Limitations				
Graphics Card	Driver	OS	Limitation / Caveat	Status / Workaround
All	8.443.1	Red Hat Enterprise Linux 4.0 WS U5 (32-64 bit)	Bug #284643 - When High Quality Rendering is enabled in the viewport, shadows may be displayed incorrectly.	Issue reported to vendor. Tracking #232085.
All	8.443.1	Red Hat Enterprise Linux 4.0 WS U5 (32-64 bit)	Bug #285190 - Bump maps do not render in the High Quality viewport or the Hardware Renderer.	Issue reported to vendor. Will be fixed in next driver release.
FireGL r600 cards	8.443	Red Hat Enterprise	Bug #285895 - Hardware overlays do not display	Switch to resolution

ATI Graphics Cards Caveats and Limitations				
Graphics Card	Driver	OS	Limitation / Caveat	Status / Workaround
		Linux 4.0 WS U5 (32-64 bit)	properly at resolutions above 1280 x 1024.	1280x1024. Issue reported to vendor. Tracking #230541

Operating System Dependent & Miscellaneous Issues

The following limitations/caveats are still being investigated. Autodesk has not identified the precise combination of factors involved. Please refer to the "Release Notes" for further details on known issues with Maya.

Limitation / Caveat		
Bug Number	OS	Description / Workaround
295729	Red Hat Enterprise Linux 4.0 WS U5 32 & 64 bit	Overlays may not be drawn completely and may appear to be cut off. Changing the camera view may fix the problem.
285160	Red Hat Enterprise Linux 4.0 WS U5 32 & 64 bit	Tools which rely on overlay planes may not display properly; Brushes and texture placements drawn in incorrect color or not refreshed properly.
285155	Red Hat Enterprise Linux 4.0 WS U5 & Fedora Core 5	When tracking a point in Maya Live, Fcheck may not launch to show you the results of your track.

Important Linux Notes

The following sections describe important notes related to the Linux operating systems.

Python

Maya 2008 for Linux uses Python 2.5.1 UCS4.

Compiler Requirements

Maya 2008 Extension 2 was compiled using gcc 4.1.2, on a RHEL 4 system. gcc 4.1.2 source code is available from http://gcc.gnu.org/gcc-4.0/.

The options to build the gcc 4.1.2. compiler used for Maya are:

gcc412 –v

Using built-in specs.
Target: x86_64-unknown-linux-gnu
Configured with: ../gcc-4.1.2/configure --prefix=/opt/gcc412 --program-suffix=412 --enable-shared --enable-threads=posix --enable-checking=release --with-system-zlib --

enable-__cxa_atexit --disable-libunwind-exceptions --enable-languages=c,c++ Thread model: posix gcc version 4.1.2

Plugin developers should use the same configuration.

Hardware Overlays on NVIDIA Quadro FX Family

To set hardware overlay planes on NVIDIA quadro cards you will need to enable "ClOverlay" in the 'xorg.conf' file. ex.

Section "Device"

Option "ClOverlay" "on"

Operating Systems

The Linux operating system is extremely flexible with regards to precise versioning of different components, drivers and libraries. Maya may behave very differently on superficially similar systems and while Autodesk will do our best to help solve problems that are probably due to operating system configuration issues, we may be unable to explain or determine the cause of a problem.

Internally at Autodesk we have stabilized on the following configurations. We provide this list for the purpose of aiding our customers, but we can make no guarantees to the reliability, stability or availability of these components. This is not a complete list of Linux configurations choices. This list includes important components that significantly affect Maya.

1. Due to the many operating system and architecture differences between the supported platforms, the results of some operations will differ on different platforms. This is most noticeable with operations which iterate to reach their results -- leading to cumulatively large difference -- e.g., dynamics, some rendering. You may not be able to "mix and match" renderings on different platforms.

2. We do not recommend saving data directly from Maya to NFS or other remote mounted file systems. We strongly recommend that you save the files locally and then copy the data to the mounted storage system.

3. When texture images are stored on systems remote from the rendering process, depending on network speed, specifications and load, it is possible that the renderer may be unable to access a texture file on demand and may 'drop' individual textures on a frame by frame basis. To reduce this occurrence store textures on a system local to the rendering process.

4. Maya is not linked to be compatible with SELinux. If SELinux does not need to be enabled, don't enable it. The SELinux requirement may be addressed via two mechanisms after Maya has been installed.

    a. If you do not wish to use SELinux enforcement, you can disable it by running the `setenforce 0` command before starting X, or by adding selinux=0 to the end of the kernel line in /etc/grub.conf or change /etc/selinux/config and reboot.

b. It may be possible to change the security context of the Maya libraries, with the chcon command. This has not been tested.

5. KDE klipper is known to have focusing issues with Maya, which may contribute to application instability. We recommend removing the applet from the panel and editing the config file, (~/.kde/share/config/klipperrcv), to disable KDE klipper.

[$Version]
update_info=klipperrc.upd:25082001,klipperrc.upd:kde3.1 ral]
AutoStart=false

Limitation / Caveat & Solutions		
OS	Description	Solution
Red Hat Enterprise Linux WS 4.0 U5 64-bit	While many NFS issues with Irix file servers were fixed in Redhat 7.2, issues are still occurring on Redhat 7.2 and 7.3 when exporting to 64-bit file systems (e.g. IRIX).	Exporting with the 32bitclients attribute sometimes helps. Check your /etc/exports file and append ,32bitclients on each line that exports to a 64-bit file system. E.g.; /var -access=hosts,32bitclients Note: with this setting you will not be able to access files larger than 2GB.
Non-Red Hat Systems	Maya may not run on systems that do not have compatible runtime libraries, including glibc compiled with the __cxa_atexit option. Maya includes the C++ runtime libraries libstdc++.so.6, and libgcc_s.so.1 within the Maya "lib" directory, as well as the required Motif 2.2.3 runtime library libXm.so.3.	It is possible to copy selected .so files, however the precise files and locations vary on different versions of Linux and we are unable to provide replacement .so files, precise instructions nor provide Support on how to resolve this.

OpenMotif 2.2.3

Maya 2008 Extension 2 uses OpenMotif 2.2.3 as its GUI framework. The version used is OpenMotif 2.2.3 from ICS with additional updates from the OpenMotif CVS. Maya includes the library in its default lib directory. No action is required to use the proper library.

For more information, see http://www.motifzone.com/.

OpenGL Visuals

Maya's choice of OpenGL visuals is RGBA 8/8/8/8 double buffer with depth buffer of 24 where applicable. Visuals available from the XServer can be found using the command glxinfo.

If Maya cannot obtain its preferred visual, it will fall back as possible to lower values. A warning will be issued in this case.

Set up the XServer so it is using direct rendering to get as many visuals as possible. Use a depth setting of 24, to enable 8 bits per component.

Window Manager

Qualification tests listed in this document have been performed under KDE version 3.5.X. Other window managers are likely to work just fine although they have not been tested and therefore they cannot be listed as "Qualified".

Sound

Autodesk is aware that sound reproduction inside Maya (scrubbing and playback) doesn't work on many sound cards on Linux. At this time, sound reproduction may not be adequate for your purposes. Sound playback does behave correctly on some cards and some on-board/built-in sound devices.

SoundBlaster Live cards are currently known to provide inadequate performance for interactive sound playback, particularly scrubbing.

Autodesk is also aware that sound will not work on some sounds cards (e.g. SoundBlaster 16) when another application is already using the sound system.

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