

AUTODESK® MAYA® 2009

GRAPHICS HARDWARE QUALIFICATION

Linux® Platform

Last updated: March 30, 2009.

Readme First

The information contained in the [Readme First](#) document applies to all hardware qualification executed on the Autodesk Maya 2009 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 5800 results on RedHat.

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Linux Qualification Kernels

The following table lists the Linux qualified kernels for the Maya 2009 software product release.

Linux Qualification Kernels		
Kernel	Red Hat Enterprise 4.o (U6) 64-bit OS	Fedora Core 8 64-bit OS
	2.6.9-78.o.1.ELsmp	2.6.25.14-69.fc8
Xorg	6.8.2	7.2-9
Glibc	2.3.4-2.41	2.7-2

Graphics Cards & Drivers

The following table lists the graphics cards and driver versions for the Maya 2009 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 2009 for Linux			
		Red Hat Enterprise	Fedora Core 8
Graphics Card	Driver	4.o (U6) 64-bit	64-bit
NVIDIA			
Quadro® FX 5800	177.82	✓	⌚
Quadro FX 4800	177.82	✓	⌚
Quadro FX 4700x2	173.14.12	✗	✗
Quadro FX 1700	173.14.12	✓	✓
Quadro FX 3700	173.14.12	✓	✓
Quadro FX 4600	173.14.12	✓	✓
Quadro FX 5600	173.14.12	✓	✓
Quadro FX 1500	173.14.12	✓	✓

Graphics Card & Driver Qualifications for Autodesk Maya 2009 for Linux			
		Red Hat Enterprise	Fedora Core 8
Graphics Card	Driver	4.o (U6) 64-bit	64-bit
Quadro FX 3500	173.14.12	✓	✓
Quadro FX 4500	173.14.12	✓	✓
Quadro FX 4500x2	173.14.12	✗	✗
Quadro FX 5500	173.14.12	✓	✓
GeForce® GPUs	—	● See Note 1 in Readme First	
ATI			
FirePro™ 3D v8700	—	⌚	⌚
FirePro 3D v5700	—	⌚	⌚
FirePro 3D v3700	—	⌚	⌚
FireG™L v8650	—	⌚	⌚
FireGL v8600	—	⌚	⌚
FireGL v7600	—	⌚	⌚
FireGL v5600	—	⌚	⌚
FireGL v3600	—	⌚	⌚
FireGL v7350	—	⌚	⌚

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
Quadro FX 4500x2 Quadro FX 4700x2	173.14.12	Fedora Core 8	Bug #309310 Maya crashes on startup if SLI is enabled on the card.	Turn off SLI and the card will work just fine. Issue reported to vendor and should be fixed in the upcoming NVIDIA driver.

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 U6	Overlays may not be drawn completely and may appear to be cut off. Changing the camera view may fix the problem.
285155	Red Hat Enterprise Linux 4.0 WS U6 & Fedora Core 8	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 2009 for Linux uses Python 2.5.1(r251:54863, Jun 5 2007 [GCC 4.1.2]).

Compiler Requirements

Maya 2009 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

In order to use the color index overlay you will need to disable the "Composite" X extension, otherwise CIOVERLAY will not load properly.

On Quadro FX cards without SLI

```
nvidia-xconfig --cioverlay --no-composite
```

On Quadro FX cards with SLI

```
nvidia-xconfig --cioverlay --no-composite --sls True
```

Alternatively, you can configure these settings in the xorg.conf file:

Section "Screen"

Option "CIOverlay" "on"

Section "Extensions"

Option "Composite" "Disable"

EndSection

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 U6 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 2009 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.

Stereoscopy Qualified Hardware

For information on the graphics hardware qualification for stereo support, please consult the [Autodesk Maya 2009 Graphics Hardware Qualification for Stereo Support for the Linux Platform](#) document.

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