ForceWare Graphics Drivers
Release 158 Notes

Version 158.24

**For Windows Vista 32-bit
and Windows Vista 64-bit**

**NVIDIA Corporation
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INTRODUCTION TO *RELEASE 158 NOTES*

This edition of *Release 158 Notes* describes the Release 158 ForceWare Graphics Drivers and provides information applicable to all NVIDIA drivers. NVIDIA provides these notes to describe performance improvements and bug fixes in each documented version of the driver.

Structure of the Document

This document is organized in the following sections:

- "Release 158 Driver Changes" on page 3 gives a summary of changes, and fixed and open issues in this version.

- "The Release 158 Driver" on page 39 describes the NVIDIA products and languages supported by this driver, the system requirements, and how to install the driver.

- "Mode Support for Windows" on page 49 lists the default resolutions supported by the driver.

Changes in this Edition

This edition of the *Release 158 Notes* for Windows Vista includes information about NVIDIA ForceWare graphics driver version 158.24, and lists changes made to the driver since versions 100.95, 100.99,101.02, and 101.41. These changes are discussed beginning with the chapter "Release 158 Driver Changes" on page 3.

C H A P T E R

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RELEASE 158 DRIVER CHANGES

This chapter describes open issues for version 158.24, and resolved issues and driver enhancements for versions of the Release 158 driver up to version 158.24. The chapter contains these sections:

Version 158.24 Highlights

This section provides highlights of version 158.24 of the NVIDIA Release 158 Driver for Windows Vista.

- What's New in Version 158.24

- Limitations in This Release

What's New in Version 158.24

Resolved Issues

See "Changes in Version 158.24" on page 9 for a list of resolved issues.

Limitations in This Release

The following are features that are not currently supported or have limited support in this driver release:

- **NVIDIA Quad SLI Technology**

  This driver does not support NVIDIA Quad SLI mode.

- **NVIDIA SLI Antialiasing**

  This driver does not support NVIDIA SLI antialiasing.

- **Refresh Rate Precision**

  The current driver programs the hardware timing for a 59.94 Hz refresh rate to be the same as the timing used for a 60 Hz refresh rate.

- **Pan & Scan**

  This driver does not support the Pan & Scan feature. (Pan & Scan is the process of panning across the desktop in order to display a desktop on a monitor with lower resolution).

- **Full-featured HDMI Support**

  The following are known problems that will be fixed in a future driver version:

  - There are some known image quality issues.
  - Noise and pixel corruption occur under Clone or Dualview modes.
  - Only stereo audio is supported; 5.1 surround is not supported.

- **INF Support for Restricted Timings**

  This driver version does not support the use of Restricted Timing settings (R&T strings) in the INF to control mode validation and/or mode setting for custom mode/adapter/monitor combinations. This capability is planned for a later driver release.

- **Overscan/Underscan Support**

  The ability to display the entire desktop on a TV is not supported—the desktop will be masked instead.

  NVIDIA has not implemented full underscan compensation control in the drivers yet. However, end users can access 8% underscan compensation from the Windows Vista Display Properies Control Panel on an HDTV as follows:

  1 Open the Windows Control Panel, click Classic View, then double-click **Personalization**

2 Click **Display Settings,** then click **Advanced Settings**.

3 Click the Monitor Tab.

4 Clear (uncheck) the **Hide modes that this monitor cannot display** checkbox, then click **OK**.

Once this is done, HDTV users will now see up to two new "underscanned" modes on the Windows Display Settings Control Panel, depending on their HDTV–1176x656 for 720p modes and 1768x992 for 1080i/1080p modes.

To switch between the interlaced and progressive modes for 1768x992,

1 Click **Advanced Settings**, then click the Adapter Tab.

2 Click **List all modes**, then locate the modes that are appended with "interlaced" or "progressive" and click the appropriate mode.

3 Click **OK**, then click **OK** or **Apply**.

- **Advanced Timings, Custom Resolutions**

  This driver does not support adding arbitrary resolutions and timings.

- **Mode Filtering for Custom Policies**

  This driver does not support defining advanced timings and resolution settings.

- **SDI**

  This driver does not support the Serial Display Interface (a standard for driving high color depth displays).

- **Genlock/Frame Lock**

  This driver does not support the ability to synchronize multiple display outputs with an external signal.

- **NVIDIA TurboCache**

  Windows Vista now controls the allocation of system memory to the GPU for TurboCache functions. The Windows Vista Display Properties pages show the shared system memory (SSM), or how much memory is allocated for NVIDIA GPUs to use for TurboCache.

  The current driver allows a maximum amount of shared system memory for each NVIDIA GPU as follows:

  - **GeForce 6** series: Maximum of 495 MB* where the system memory is 2 GB and higher

  - **GeForce 7** series: Maximum of 495 MB* where the system memory is 2 GB and higher

  - **GeForce 8** series: Maximum of 767 MB* where the system memory is 2 GB and higher

  For more information on graphics memory reporting under Windows Vista, visit **http://www.microsoft.com/whdc/device/display/ graphicsmemory.mspx.**

  BIOS Allocation

  * The actual shared system memory allocation is unique on every PC due to SBIOS reserve memory allocation, which is not controlled by the GPU or GPU drivers.

- **NVIDIA nView Desktop Manager**

  The nView Desktop Manager is not included in this driver. The following nView Desktop Manager features will be included in a future driver version:

  - Gridlines

  - Virtual Desktops

  - Window/Dialog Repositioning

  - nView Profiles

Features Not Yet Available in the NVIDIA Control Panel

Support for the following control panel features is under development and not yet available under Windows Vista:

- **Display Category**

  - Run display optimization wizard

  - Move CRT screen position

  - Manage custom timings

  - Run multiple display wizard

- **Video & Television Category**

  - Run television setup wizard

  - Adjust television color settings

  - Adjust screen size and position

- **Workstation Category**

  The Workstation category page is not available with this driver version.

Changes in Version 158.24

The following sections list the changes made and issues resolved since driver version 158.18.

- "Fixed Issues–Windows Vista 32-bit" on page 9

The NVIDIA bug number and driver module are provided for reference.

Fixed Issues—Windows Vista 32-bit

- [SLI], International Driver Versions: NVAPI crashes when reloading the driver in response to NvAPI_SetGpuTopologies(). [310539]

- [SLI], International Driver Versions: The NVIDIA Control panel crashes when enabling SLI mode.[309105]

Changes in Version 158.18

The following sections list the changes made and issues resolved since driver version 158.14.

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The NVIDIA bug number and driver module are provided for reference.

Fixed Issues—Windows Vista 32-bit

Resolved Single-GPU Issues

All GPUs

- Swedish locale: The NVIDIA Control Panel crashes the first time it is opened after installing the driver.[297660]

- After exiting the NVIDIA Control panel Storage page and closing the NVIDIA Control Panel, the page is empty when re-opening.[301557]

- Video WMV playback quality using Windows Media Player is poor. [303109]

- Several resolutions are missing from the mode list.[309404]

  This has been fixed in the WHQL version of the driver.

GeForce 8 Series GPUs

- GeForce 8800 GTX: The displays are not always enumerated after uninstalling the driver, causing subsequent driver installation to fail. [303709]

- GeForce 8800 GTX: Scaling MPEG2 SD content results in video corruption. [299743]

- GeForce 8600: Lineage 2– antialiasing has no visible effect when set to NV-Enhanced 8x or above. [297376]

GeForce 6 Series GPUs

- GeForce 6100/6150: The NVIDIA Control Panel crashes when attempting to open the Storage page (requires installation of NVIDIA MediaShield). [294191]

Resolved SLI Mode Issues

GeForce 8 Series GPUs

- [SLI], GeForce 8800GTX, GeForce 8600: 3DMark05/06–the benchmark hangs with a black screen during the default benchmark run. [300768]

- [SLI], GeForce 8800 GTX: "Display driver has stopped responding" error message appears while playing WMV9 HD files after resuming from standby. [300906]

Fixed Issues—Windows Vista 64-bit

Resolved Single-GPU Issues

GeForce 8 Series GPUs

- GeForce 8500/8400/8300: The screen flashes with playing a video with WinDVD or PowerDVD in full-screen mode at 1920x1200 resolution. [295901]

- GeForce 8800 GTX, GeForce 7900/7800GTX: Film detail, noise reduction and assorted cadence functions fail. [302200]

Changes in Version 158.14

The following sections list the changes made and issues resolved since driver version 101.41.

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The NVIDIA bug number and driver module are provided for reference.

New Features

- **NVIDIA SLI Support for GeForce 8600/8500 GPUs**

- **V-Sync Control**

  V-Sync control through the NVIDIA Control Panel is now supported for DirectX applications.

- **New Version 1.5 of the NVIDIA Control Panel**

  Highlights:

  - The explorer bar on the left-side pane–with Help, Recent Tasks, and Related Tasks sections–has been replaced by a navigation tree that let's you easily locate the page you need for accomplishing tasks.

  - Tasks are still organized by groups, but the navigation tree eliminates the need for the main category pages, reducing the steps needed to get to a task.

  - When you re-open the NVIDIA Control Panel, it remembers the last page you visited.

Fixed Issues—Windows Vista 32-bit

Resolved Single-GPU Issues

All GPUs

- Oblivion—there is corruption on glowing weapons when HDR is enabled along with antialiasing. [303289]

- "This is not Vista" error message appears when installing Windows Vista 32-bit drivers on a Windows Vista 64-bit operating system.

  The error message did not indicate which operating system (32-bit or 64-bit) is installed. NVIDIA has fixed the installer error message to better tell the end user which version of Windows Vista drivers and operating system are running.

- Black screen results when rebooting the system after the initial driver installation.

- Frame drops occur when playing MPEG2 PCL_VAIO content using WinDVD8.

- Sims 2—"Smooth Edges (AA)" option is not available with Release 100 drivers.

  NVIDIA has worked around this issue in the operating system by changing the way the driver version is reported to this application.

- Warhammer 40k Dawn of War (all versions) does not run with Release 100 drivers.

  NVIDIA has worked around this issue in the operating system by changing the way the driver version is reported to this application.

- Upon restarting the NVIDIA Control Panel, 3D Settings changes made in the NVIDIA Control Panel remain even after they were cancelled

- "Display driver has stopped responding" errors occur repeatedly, eventually leading to a blue-screen crash.

- NVIDIA Control Panel: Color temperature settings should not appear in the "Adjust Video Color Settings" page (Advance View).

- The NVIDIA Control Panel Sedona—TV Format changes do not revert after 15 seconds.

- The driver stops responding after running 3D applications for an extended period of time.

- Dual GPUs: With one display connected to each GPU, the NVIDIA Control Panel rotation function can rotate only one of the GPU's displays.

- NVIDIA Control Panel: The title on the "Adjust television color settings" page is missing when revisiting the page.

- NVIDIA Control Panel antialiasing does not work with games that use *high dynamic range* (HDR) rendering, such as Oblivion and Rainbow Six Vegas.

- Various applications show colored lines (usually black) in the top right corner of screen.

- Ghost Recon: Advanced Warfighter–the game hangs on the second attempt at loading a level after restarting the application.

- Ghost Recon: Advanced Warfighter 2–there is screen corruption in the game.

- Dark Messiah of Might and Magic–the game fails to launch.

GeForce 8 Series GPUs

- GeForce 8800 GTX, GeForce 7900 GTX: Black screen occurs with various Direct3D applications at high resolutions and with antialiasing and anisotropic filtering enabled.

- Dual GeForce 8800 GTX: The NVIDIA Control Panel crashes intermittently after opening the Windows Vista control panel.

- GeForce 8800 GTX: The display becomes corrupted after switching the HD format between 720p and 1080p while playing an HD DVD on the DVI port #1 using the IVI application.

- GeForce 8800 GTX: HD clips drop frames with Inverse Telecine enabled.

- GeForce 8800 GTX: Composite PAL modes are unavailable.

- GeForce 8800 GTX: The gamma and brightness controls in the NVIDIA Control Panel Adjust Desktop Color Settings page do not function or affect the desktop appearance consistently.

- GeForce 8800 GTX/GTS, Windows Vista Ultimate Edition: Text in the Ultimate Game:Hold'em flashes at the start of the game.

- GeForce 8800 GTX: Elder Scrolls: Oblivion–NVIDIA Control Panel antialiasing does not work when HDR is enabled.

- GeForce 8800 GTX: Far Cry–there is a performance drop under Windows Vista compared to Windows XP.

- GeForce 8800: Star Wars: Republic Commando–the application crashes when starting a new game.
- GeForce 8800 GTX: Half Life 2–fog is broken or misapplied.

  This fix requires the user to update their Valve Source-based games to the latest versions of the game engines.
- GeForce 8800 GTX, GeForce 7900 GTX: Serious Sam2–only captions appear in the video under Clone and Dualview modes.
- GeForce 8800 GTX: Serious Sam 2–the game crashes after 5—10 minutes of gameplay.
- GeForce 8800 GTX, Dual Core CPU: Dark Messiah of Might and Magic–the game crashes after the intro videos play if dual core is enabled.
- GeForce 8800 GTX: Call of Duty2 and Blank and White–blank screen results when the in-game resolution is set to 2560x1600 and 4X antialiasing is enabled.
- GeForce 8800 GTX: Splinter Cell Double Agent–there is corruption in the game.
- GeForce 8800 GTX: Black and White 2–the insects have flickering corruption under maximum zoom in.
- GeForce 8600/8500/8400/8300: The user cannot switch out of Dualview mode.
- GeForce 8600: Half Life 2—there are texture seams in the game.

GeForce 7 Series GPUs

- GeForce 8800 GTX, GeForce 7900 GTX: Black screen occurs with various Direct3D applications at high resolutions and with antialiasing and anisotropic filtering enabled.
- GeForce 7 Series: Serious Sam 2 shows flashing corruption when the character moves.
- GeForce 7950 GX2: All the displays are not listed on the NVIDIA Control Panel Setup Multiple Displays page.
- GeForce 7950 GX2: Tiger Woods PGA06–the game crashes.
- GeForce 7900 GT: Rainbow Six: Vegas–red, green, and blue stars appear in the game when the ingame resolution is set to 1600x1200.
- GeForce 7900: Vanguard – some polygons are missing throughout the game world.[289013]

- GeForce 7900 GTX: Sims Life Stories – sound becomes corrupt when the display settings are changed.
- GeForce 7900 GTX: Serious Sam 2–there is corruption and pausing in the game.
- GeForce 7600 GS: Splinter Cell Double Agent–the NVIDIA driver stops responding while changing the antialiasing setting from the game control panel.
- GeForce 7600 GS: Gothic 3 demo–corruption occurs with the default settings.
- GeForce 7600: Serious Sam 2– there is corruption in the intro video.
- GeForce 7300 GT: NVIDIA Control Panel crashes when clicking Change Display Configuration.
- GeForce 7300: Black & White 2 shows flashing corruption.
- GeForce 7300GT: 180 degree rotation using NV Rotate is not saved across system reboots.
- GeForce 7300 GT: Serious Sam 2–flickering occurs when V-Sync is enabled from the game control panel.
- GeForce 7300 GS: Gothic 3 demo–the demo crashes after setting antialiasing using the NVIDIA Control Panel.
- GeForce 7300 GS: Company of Heroes – the game does not start with post processing turned on.
- GeForce 7300 GS: Quake4 – the starting video stutters when enabling in-game antialiasing.

GeForce 6 Series GPUs

- GeForce 6600: The screen splits vertically into two parts when HDTV is connected through the DVI connector.
- GeForce 6600: Age Of Empire3–there is a flickering blank display when starting the game for the first time after installing the driver.
- GeForce 6200: Splinter Cell Double Agent – the game has texture corruption at the default settings.
- GeForce 6200: Far Cry–geometry corruption occurs when the resolution is set to 1600x1200x32, and Texture Filter Quality set to very high, both from the game control panel.
- nForce 680i: Half Life 2 Episode1 and Lost Coast–there is a 15% drop in antialiasing scores compared to Windows XP.

NVIDIA Quadro/Workstation
- Workstation: 3D Stereo is non-functional.

Resolved SLI Mode Issues

All GPUs
- [SLI]: Homeworld 2 –enabling SLI mode results in reduced performance.
- [SLI]: Dark Messiah of Might and Magic–the cursor flickers in the game menu when SLI mode is enabled.
- [SLI]: Vanguard–texture flickering in the application.

GeForce 8 Series GPUs
- [SLI], GeForce 8800 GTX: The system does not resume from S1, S3, or S4 sleep states.
- [SLI], GeForce 8800 GTX: Quake4– images have a jittered, ghostl-like effect when SLI mode is enabled.
- [SLI], GeForce 8800 GTX: 3DMark06–when running Canyon Flight, the bencmark hangs, has corrupt textures, or returns to the desktop.
- [SLI], GeForce 8800 GTX: Tiger Woods 2006–the performance drops when SLI mode is enabled.
- [SLI], GeForce 8800 GTX: FEAR–the game hangs at the startup logo screen.
- [SLI], GeForce 8800 GTX: Battlefield 2142 –performance drops with SLI mode enabled.
- [SLI], GeForce 8800 GTX: Everquest 2–performance under Windows Vista is slower than under Windows XP with SLI mode enabled.
- [SLI], GeForce 8800 GTX: Blu-ray disc playback fails with SLI enabled.
- [SLI], GeForce 8800: The system does not resume from S3 mode when SLI mode is enabled.
- [SLI], GeForce 8800 GTX: Prince of Persia - The Two Thrones, and Halo–corruption and flickering occur with the default settings.
- [SLI], GeForce 8800 GTX: Hitman: Blood Money–graphics corruption occurs with SLi mode enabled.

- [SLI], GeForce 8800 GTX, GeForce 7900 GTX: Company of Heroes – the frame rate drops to one frame-per-second when SLI mode is enabled.

- [SLI], GeForce 8800 GTX: City of Heroes – the game crashes shortly after entering gameplay when SLI mode is enabled.

- [SLI], GeForce 8800: Madden 2007 – the game flickers constantly and eventually crashes to the desktop with SLI mode enabled.

- [SLI], GeForce 8800 GTX, GeForce 7900 GTX: Everquest 2–the waterfall behind the character flickers when SLI mode is enabled.

- [SLI], GeForce 8800 GTX: 3DMark06–"failed lock" error occurs and the benchmark fails to run.

- [SLI], GeForce 8800 GTX: Flight Simulator X –the NVIDIA driver river stops responding and the screen flickers with SLI mode enabled.

- [SLI], GeForce 8600/GeForce 7900 GTX: "Display driver has stopped responding" error message appears when changing the resolution, or when resuming from Standby\Hibernate.

GeForce 7 Series GPUs

- [SLI], GeForce 8600/GeForce 7900 GTX: "Display driver has stopped responding" error message appears when changing the resolution, or when resuming from Standby\Hibernate.

- [SLI], GeForce 7950 GX2: Everquest 2–the intro video does not render when multi-GPU mode is enabled.

- [SLI], GeForce 7950 GX2: Age of Empires 3–black screen on the intro videos on the initial run after restarting the system with SLI mode enabled.

- [SLI], GeForce 7950 GX2: 3DMark05/3DMark06–the benchmark exits with DEVICELOST message at 2560x1600 when multi-GPU is enabled.

- [SLI], GeForce 7900: Company of Heroes – display turns blank and then appears corrupted during the game.

- [SLI], GeForce 7900 GTX: Serious Sam 2–the NVIDIA driver stops responding after setting 32-bit texture quality with SLI mode enabled.

- [SLI], GeForce 7900 GTX: OpenGL games show corruption and flickering after enabling SLI AA.

- [SLI], GeForce 7900 GTX: Fable-The Lost Chapters– the game crashes after setting the effects detail setting to high in the game control panel with SLI mode enabled.

- [SLI], GeForce 7900 GTX: Black and White 2–the game pauses and has flashing textures when multi-GPU mode is enabled.

- [SLI], GeForce 7900 GT/GTO: Pacific Fighters–the SLI visual indicator color changes.

- [SLI], GeForce 7300 GT: Serious Sam 2–the game menu options flicker.

- [SLI], GeForce 6 and 7 Series: Company of Heroes – performance drop occurs after selecting in-game antialiasing.

GeForce 6 Series GPUs

- [SLI], GeForce 6600: Civilization–there is full-screen corruption at high resolutions and with antialiasing enabled.

- [SLI], GeForce 6 and 7 Series: Company of Heroes – performance drop occurs after selecting in-game antialiasing.

- [SLI], GeForce 6 Series: 3DMark06 – full screen corruption occurs when running the SM2.0 Graphic Tests.

- [SLI], GeForce 6600: Splinter Cell: Double Agent – blue-screen crash occurs when starting a game with the default settings.

Fixed Issues—Windows Vista 64-bit

Resolved Single-GPU Issues

All GPUs

• Windows Vista 64-bit: The desktop stops responding after a couple of minutes when Aero glass and Dual screen are enabled.

GeForce 8 Series GPUs

• GeForce 8800 GTX: The Windows Experience Index tool crashes when trying to refresh the system score.

• GeForce 8800 GTX/GTS, Windows Vista Ultimate Edition: Text in the Ultimate Game:Hold'em flashes at the start of the game.

GeForce 7 Series GPUs

• GeForce 7950 GX2: Blue-screen crash occurs when enabling SLI mode.

Open Issues in Version 158.24

As with every released driver, version 158.24 of the Release 158 driver has open issues and enhancement requests associated with it. This section includes lists of issues that are either not fixed or not implemented in this version. Some problems listed may not have been thoroughly investigated and, in fact, may not be NVIDIA issues. Others may have workaround solutions.

- "NVIDIA Recommendations" on page 21
- "Windows Vista 32-bit Issues" on page 22
- "Windows Vista 64-bit Issues" on page 29

NVIDIA Recommendations

- Running NVIDIA SLI without an over the top SLI connector is not recommended at this time.

Windows Vista 32-bit Issues

Single GPU Issues

All GPUs

- The 'Hide modes that this monitor cannot display' check box is not available, so the user cannot set up custom modes.[309876]

- Flat panel scaling function does not work properly.[306325]

- On resume from sleep state, the monitor screen is black (no video) but computer is still on. [295481]

- Age of Conan–the latest patch for the game crashes the driver.[304675]

- Rainbow Six: Vegas–some shadows do not render when when antialiasing is enabled.[302344]

- Enabling inverse telecine results in an increase in dropped frames on high bitrate 1080p VC-1 titles.[302992]

- Lost Planet–game menu is corrupted.[304037]

- BluRay titles over component-out do not play at 576p.[304186]

- When S-video and DVI displays are set up in Clone mode and rotated 90 degrees, the screen turns black.[304267]

- Video overlay causes speckling within some desktop content.[304799]

- World of Warcraft has low frame rates.[289014]

- Battlefield 2142–the game has flickering textures when the user attempts to switch to the desktop by pressing Alt+Tab.[284674]

GeForce 8 Series GPUs

- GeForce 8800 GTX: 1680x1050 resolution is not available when using the Dell 3007WFP monitor. [284181]

- GeForce 8800 GTX: "Display driver has stopped responding" error message pops up when changing the Dualview primary display during HD DVD playback using the IVI application.[302241]

- GeForce 8800 GTX: HD video playback using Cyberlink is green.[305860]

- GeForce 8800 GTX: Civilization 4–setting in-game 16x antialiasing AA disables all antialiasing.[303283]

- GeForce 8800 GTX: Lost Planet–the driver crashes while playing the game.[304441]
- GeForce 8800 GTX: Flight Simulator–the terrain changes to low resolution when switching from Air Traffic-controlled to player-controlled airplane.[304840]
- GeForce 8800: City of Heroes–there are corrupted textures in certain missions.[290659]
- GeForce 8800 GTX: Scarface–corruption during the game.[290007]
- GeForce 8800 GTX, GeForce 7900 GTX: Company of Heroes crashes when trying to load the Cherbourg level.[284273]
- GeForce 8800 GTX: Changing resolutions within the game Prey results in ghosting.[285214]
- GeForce 8800 GTX, GeForce 7900 GTX, GeForce 7300 GT: nTune fan control does not work properly.[290013]
- GeForce 8800 GTX: After uninstalling the NVIDIA display driver (from add/remove programs), some installation files are left on the system. [273426]
- GeForce 8800 GTX: NVIDIA Froggy demo–textures do not render correctly at the default settings. [299256]
- GeForce 8800 GTX: The NVIDIA Control Panel retains the last set HD format regardless of the display connected. [279710]
- GeForce 8800 GTX: The system does not fully enter S1 Standby mode. Only the monitor shuts off. [295942]
- GeForce 8800 GTX: Two of the options on the Change Flat Panel Scaling page are grayed out. [297974]
- GeForce 8800 GTX: Star Wars: Republic Commando–there is texture corruption on some of the game models. [300610]
- GeForce 8800 GTX: Neverwinter Nights 2–only overlays render when switching to 2560x1600 using 8xAA. [302061]
- GeForce 8800 GTX: Elder Scrolls: Oblivion–animation is visible through the trees when HDR and NVIDIA Control Panel antialiasing are enabled. [296265]
- GeForce 8800 GTX: Command & Conquer:Tiberium Wars–the game crashes. [308248]
- GeForce 8800 GTX, GeForce 8600: Supreme Commander–the game crashes when played with the highest settings.[306352]

- GeForce 7 and 8 series: Lord of the Rings: The Battle for Middle-Earth 2–white pixels appear on the statue when antialiasing is enabled.[271391]

- GeForce 8600: HD resolutions higher than 720p are not available.[308627]

- GeForce 8600: Numerous NVIDIA registry settings are left intact after running the uninstaller. [297478]

- GeForce 8600 GT: The display goes blank after changing the refresh rates.[302624]

- GeForce 8600 GT: OpenGL games drop in performance under Windows Vista compared to Windows XP.[302430]

- GeForce 8600 GT/GTS: OpenGL SDK 10 sample "Transform Feedback Fractal" crashes on launch.[304162]

- GeFore 8600 GT/GTS: Nine Inch Nails–the game crashes when starting to play chapter 10.[304701]

- GeForce 8600 GT/GTS: Chicken Little:Alien Invasion–the game does not start.[304697]

- GeForce 8600 GT/GTS: League of Extraordinary Gentlemen–the Java popup menus are very slow.[304693]

- GeForce 8600 GT/GTS: The system hangs after switching from analog TV to another display while playing a video.[303502]

- GeForce 8600: The system does not resume from S1 or S3 sleep states. [289246]

- GeForce 8600/8500/8400/8300: The system occasionally hangs with an EA error upon resume from S1 sleep state. [278368]

- GeForce 8600: The NVIDIA Control Panel settings are not reset after running the uninstaller. [298266]

- GeForce 8600: Prince of Persia–half the screen turns black and the other half turns white during resolution changes. [299484]

- GeForce 8500/8400/8300: Playing VC-1 titles in full-screen mode results in green flashes. [302116]

GeForce 7 Series GPUs

- Dual GeForce 7950 GX2: The NVIDIA Control Panel crashes when attempting to launch from the Microsoft control panel.[304848]

- Dual GeForce 7950 GX2: NVIDIA Control Panel menu item does not appear in the context menu when right-clicking the desktop.[304844]

- GeForce 7950 GX2: Flight SimX – water has artifacts. [292168]
- GeForce 7950 GX2: Far Cry–textures are overly bright or missing when HDR is enabled.[291928]
- GeForce 7900 GTX: Frame drops occur when playing an MPEG2 1080i title using Cyberlink application.[304865]
- GeForce 7900 GTX: Half-Life 2–performance drops by 50% at resolution 2048x1536 and 1920x1440 compared to 2560x1600.[304298]
- GeForce 7900 GT: Prey – corruption in the game occurs when antialiasing is enabled. [289003]
- GeForce 7900: Tomb Raider Legend – screen corruption occurs when the user switches to the desktop by pressing Alt+Tab. [289005]
- GeForce 7900 GTX: Fear Extraction Point–shadow textures are stretched or render incorrectly. [289710]
- GeForce 7900 GTX: Windows Media Center stops responding after off-screen occlusion in Dualview mode. [290326]
- GeForce 7800 GTX: Composite TV does not sync. [281672]
- GeForce 7800 GTX: There is no output on the HDTV. [296699]
- GeForce 7300 GT: Windows Vista desktop gadgets are blank (only outline visible) after changing the primary display while playing an HD DVD or BluRay disc.[303482]
- GeForce 7300 GT: DVI + HDMI Clone mode sometimes results in a blank screen on the HDMI display. [290237]
- GeForce 7300 GT: The CRT goes out of sync after resuming from hibernate in Clone mode (HDTV component+CRT). [285859]
- GeForce 7 Series: With TMM enabled, the driver does not detect a hot-plugged VGA (dongle) or DVI connection.[250354 273864]

GeForce 6 Series GPUs

- GeForce 6800 GT: Far Cry–the display occasionally turns blank after switching to high resolution.[304310]
- GeForce 6600: Tiger Woods 2007–the game crashes when set to the default settings. [299991]
- GeForce 6600: The Elder Scrolls 4:Oblivion – the display turns blank when the game is played at 1920x1200 resolution.[289525]
- GeForce 6600: Stars Wars Battlefront2–blue-screen crash occurs when High settings are used.[302213]

- GeForce 6100/6150: Rainbow Six:Vegas–there is corruption in the game at the default settings. [302194]

- GeForce 6100/6150: Rainbow Six: Vegas–there is corruption when using the default settings.[302194]

- GeForce 6100/6150: Sid Meier's Railroads!–the intro video pauses for 2-3 seconds with in-game 4x antialiasing enabled.[303188]

- GeForce 6200: Foxbear–there is corruption on the Dualview secondary display.[302709]

- GeForce 6100/6150: Gothic–there is flickering with a white screen when using the default settings.[303552]

- GeForce 6100/6150: CPU usage jumps to 100 % while playing HD files using Windows Media Player 11, resulting in dropped frames.[304342]

- GeForce 6100/6150: Video noise appears the darker areas of the video while playing VC1 HD file using Windows Media Player 11.[304333]

NVIDIA Quadro/Workstation

- Workstation: Maya 8.5–there is corruption in the Viewports after resuming from standby.[302951]

- Workstation. NVIDIA Control Panel: After changing an application profile and rebooting the system, the profile still indicates the NVIDIA recommended settings.[302939]

- NVIDIA Quadio FX 4600: The NVIDIA Control Panel shows only 2 of 4 monitors on the Change Flat Panel Scaling page.[304166]

SLI Mode Issues

All GPUs

- [SLI]: NVIDIA SLI scaling on some applications under Windows Vista may not be as much as under Windows XP. Some applications include "S.T.A.L.K.E.R., Half-Life 2: Lost Coast, Company of Heroes, Battlefield 2142, Call of Duty 2, Hitman: Blood Money, and Far Cry. NVIDIA is investigating fixing these problems in a future driver. [302534 290803]

GeForce 8 Series GPUs

- [SLI bridgeless], GeForce 8 Series: Dark Messiah–stuttering occurs during the video clips when first launching the game. [304736]

- [SLI], GeForce 8 Series: Stalker–random flickering textures appear in the game.[302124]

- [SLI], GeForce 8800 GTX: Prey–the game crashes when SLI mode is enabled.[301701]

- [SLI], GeForce 8800 GTX: Far Cry–with SLI mode enabled, the trees shimmer when resolution is 2560x1600 and 8x antialiasing is enabled.[304211]

- [Quad SLI], GeForce 8800 GTX/GeForce 7950 GX2: The NVIDIA Control Panel crashes with the user attempts to "Identify Displays". [303702]

- [SLI bridgeless], GeForce 8 Series: Battlefied 2–stuttering occurs when playing the game.[304521]

- [SLI], GeForce 8800: Half -Life 2 – corruption occurs after setting 4xAA from the game settings. [294211]

- [SLI], GeForce 8800: Battlefield 2142 – 8xAA cannot be set from the game control panel.[294231]

- [SLI], GeForce 8800: Age of Empires 3 – in-game antialiasing is not getting applied.[294179]

- [SLI], GeForce 8800: FIFA 2007 – slow performance and garbled audio during the start of the game occur when SLI mode is enabled.[290966]

- [SLI], GeForce 8800 GTX: The system hangs with a blank screen after enabling SLI with a composite output. [300960]

  This issue does not occur when using Component Y Pr Pb output.

- [SLI], GeForce 8800 GTX: Rise of Nations: Rise of Legends–there is flickering at 2560x1600 with SLI mode enabled. [294561]

- [SLI], GeForce 8800 GTX: Flight Simulator X– blocky multicolored textures appear and the game occasionally flickers on and off. [290133]

- [SLI], GeForce 8800 GTX:Battlefield 2 and Battlefield 2142–the games crash when exiting back to the menu after being played at 2048x1536 using 8xAA or higher. [301985]

- [SLI], GeForce 8800 GTX: Test Drive Unlimited–the intro cut scene pauses during transitions when SLI mode is enabled. [301655]

- [SLI] GeForce 8800GTX/GeForce 8600: When trying to enable or disable SLI mode, the "Shut Down Windows" notification may appear, asking if you would like to put your computer in sleep mode or restart your computer. [306630]

  This is a known problem with NVIDIA SLI systems and a solution is being worked on by NVIDIA.

- [SLI], GeForce 8600 GT/GTS: 3D games such as Battlefield 2, Age of Empire 3, Battlefield 2142, Far Cry, and Chronicles of Reddick behave erratically when played while the NVIDIA Control Panel is open.[303662]

- [SLI], GeForce 8600, GeForce 6600: Company of Heroes–there is corruption in the ground textures. [294118]

- GeForce 8500/8400/8300: 3DMark05 benchmark fails to run after being looped for awhile. [301837]

- [SLI], GeForce 8500/8400/8300: The system hangs when toggling a Direct3D 10 sample to full-screen mode while SLI mode is enabled. [296692]

- [SLI], GeForce 8 Series, GeForce 7 Series: Everquest2–part of the desktop is visible during the intro movie when the game resolution is the same as the desktop resolution. [297754]

GeForce 7 Series GPUs

- [Multi-GPU], GeForce 7950 GX2: While installing the driver, the screen may go blank, requiring you to restart the system. This occurs occasionally, usually when the driver is first installed. [310604]

- [SLI], GeForce 7950 GX2: The NVIDIA Control Panel->Set Up Multiple Displays page erroneously gives the user the option of switching displays when Multi-GPU mode is enabled, and no option to switch displays when Multi-monitor mode is enabled. [311020]

- [SLI], GeForce 7900 GTX: Direct3D applications have rolling/flickering corruption with SLI enabled on component/composite/S-Video out. [301608]

  This issue does not occur when using DVI output.

- [SLI], GeForce 7900 GTX: Dungeon Siege 2–there is stuttering in the game after changing the resolution with antialiasing enabled from the NVIDIA Control Panel. [295624]

- [SLI], GeForce 7900 GTX: Sin Episodes:Emergence–there is texture corruption at the default settings. [304299]

- [SLI], GeForce 7650 GS: Serious Sam 2–V-Sync does not work if SLI mode is enabled.[304299]

- [SLI] GeForce 7600 GS: 3DMark05–crashes when the following settings are used: 1920x1200, 4x AA, and 16x AF. [300962]

- [SLI], GeForce 7300 GT: Blue-screen crash occurs after dragging and dropping a few MPEG2 HD files onto Windows Media Player 11. [301420]

GeForce 6 Series GPUs

- [SLI], GeForce 6800 GT: 3D applications show a vibrating screen after enabling SLI mode.[303900]

- [SLI], GeForce 6800 GT: The screen vibrates in 3D applications when SLI mode is enabled. [303900]

Windows Vista 64-bit Issues

Single GPU Issues

- GeForce 7 Series: With TMM enabled, the driver does not detect a hot-plugged VGA (dongle) or DVI connection.[250354 273864]

- GeForce 8800 GTX: The NVIDIA Control Panel retains the last set HD format regardless of the display connected. [279710]

- GeForce 8800 GTX: The NVIDIA Control Panel stops responding when the user clicks "Change the signal or HD format" under CRT+S-Video Clone mode.   [301322]

- GeForce 8600 GT: The display goes blank after changing the refresh rates.[302624]

- GeForce 8800 GTX: DreamScene–running the application results in a "Display driver has stopped responding" error message. [295017]

- GeForce 8600 GT/GTS: Switching from HDTV to DVI leaves blocky corruption on the HDTV display.[303754]

- GeForce 7300 GT: The CRT goes out of sync after resuming from hibernate in Clone mode (HDTV component+CRT). [285859]

- On resume from sleep state, the monitor screen is black (no video) but comptuer is still on. [295481]

- GeForce 7300 GT: DVI + HDMI Clone mode sometimes results in a blank screen on the HDMI display. [290237]

- GeForce 7900 GTX: Windows Media Center stops responding after off-screen occlusion in Dualview mode. [290326]

- Workstation: Maya 8.5–there is corruption in the Viewports after resuming from standby.[302951]

- Workstation. NVIDIA Control Panel: After changing an application profile and rebooting the system, the profile still indicates the NVIDIA recommended settings.[302939]

- NVIDA Quadro FX 3500: Solid Edge v20– 64-bit Solid Edge aborts when you open an existing file.[302470]

SLI Mode Issues

- [309876] The 'Hide modes that this monitor cannot display' check box is not available, so the user cannot set up custom modes.

- [308248] GeForce 8800 GTX: Command & Conquer:Tiberium Wars– the game crashes.

- [SLI], GeForce 7950 GX2, GeForce 7900 GTX: SLI mode cannot be enabled on systems with 4 GB of system memory. [307719]

  NVIDIA is investigating this issue.

- [SLI], GeForce 7900 GTX: After disabling SLI mode and then reverting the change without applying, the error message "Nvidia control panel application, 1.4.100.47 has stopped working" appears. [301789]

Not NVIDIA Issues

This section lists issues that are not due to the NVIDIA driver as well as features that are not meant to be supported by the NVIDIA driver for Windows Vista.

- "Windows Vista Limitations" on page 31
- "Unsupported Features" on page 32
- "OpenGL Application Issues" on page 33
- "Application Issues" on page 34

Windows Vista Limitations

These are behaviors that may be different from Windows XP and are related directly to the Windows Vista operating system.

- GeForce 8800 GTS 320MB: The driver reports incorrect video memory (256 MB) in the Windows Vista Display Properties panel. [290811]

  However, the NVIDIA Control Panel properly reports the dedicated video memory as 320 MB.

- World of Warcraft – there is a 60% drop in performance when running the game in windowed mode with SLI or multi-GPU mode enabled. [289427]

  This is due to a limitation of the Windows Vista operating system and affects all multi-GPU systems. NVIDIA is investigating a workaround for this performance problem.

Unsupported Features

The following are features and functionality that were available in driver releases supporting Windows XP, but are not available in driver releases for Windows Vista:

- **High resolution scaling desktop (HRSD)**

- **MultiView Display Mode** (for NVIDIA Quadro NVS graphics cards)

- **NVKeystone**

- **Unified back buffer (UBB) controls**

- **Video Overlays**

  This is an operating system limitation.

  Vista window manager features will provide new ways of accomplishing overlays, but will require application porting.

- **Overclocking**

  GPU overclocking is no longer supported in the default GPU driver control panel. This feature is available in the NVIDIA nTune 5.05 software, which you can download from NVIDIA.com.

- **GPU Temperature Monitoring**

  Temperature monitoring is no longer supported in the default GPU driver control panel. This feature is available in the NVIDIA nTune 5.05 software, which you can download from NVIDIA.com.

  AGP Settings Adjustment

- **Full-screen Video Mirror**

- **Video Zoom**

- **nView Horizontal and Vertical Span Modes**

  Due to architectural changes in the new Windows Vista Window Display Driver Model (WDDM), span mode cannot be supported in NVIDIA graphics drivers. NVIDIA recommends using the built-in Windows Vista multi-display modes.

- **Edge Blending**

- **Display/Connection Wizard** (such as was provided with Windows Media Center Edition)

- **DVD/MPEG Extensions** (such as was provided with Windows Media Center Edition)

- **Audio Extensions** (such as was provided with Windows Media Center Edition)

- **Windowed quad-buffered stereo**

  This is an operating system limitation.

OpenGL Application Issues

The following are known compatibility issues for OpenGL applications developed under Windows XP:

- Mixed GDI and OpenGL rendering does not work.

  A number of applications use GDI to render UI components and object highlighting. This is not supported in the Windows Vista driver model.

  NVIDIA recommends converting GDI rendering to OpenGL.

  The following are some applications that are known to have this issue:

  - Maya 7.01
  - OneSpace Designer Modeling

- Applications, Tools, and Benchmarks not Supported Under Windows Vista

  - GLperf
  - 3ds max 8 (later releases may be supported)
  - CATIA V5R15 (V5R16 is supported)
  - PTC's CDRS 2001

- Front buffered rendering may be slow, especially when DWM is enabled.

  Flushing the rendering queue while rendering to the front buffer may cause the window manager to recomposite. Applications should therefore minimize the frequency with which they flush the rendering queue.

Application Issues

- **General Antialiasing Problem with Top Games**

  We have found that some games running under Windows Vista enable 16x coverage sampling antialiasing (CSAA) when 4xAA is selected in the game menu, resulting in deflated performance on GeForce 8800 cards.

  The problem occurs with NVIDIA Vista drivers 100.54 and later.

  The same effect will occur in future "Release 100" Windows XP drivers.

  Affected applications found to date include:

  - Battlefield 2

  - Battlefield 2142

  - Sin Episodes

  - Half-Life 2

  - Half-Life 2 Lost Coast

  To set standard 4xAA in these applications, please set 4xAA in the game, and also enable "Enhance the application" antialiasing mode with a 4x antialiasing setting in the NVIDIA graphics driver control panel.

  We are working with developers to implement better in-game CSAA support. You can see CSAA menu selections in Half-Life 2: Episode One and Supreme Commander.

- Tiger Woods PGA Tour 2007–Fly-by shot before each hole blacks-out textures. [274697]

  NVIDIA is working with the developer to resolve this issue.

- City of Heroes–The mouse cursor does not display. [259256]

  This is an application issue that can be worked around in full-screen mode by adding "compatiblecursors 1" to the City of Heroes desktop shortcut.

  NVIDIA is pursuing a fix with the application developer.

- Sims 2–"Smooth Edges (AA)" option is not available with Release 100 drivers. [272477]

  This occurs because of an incorrect driver version check in the application.

  NVIDIA has worked around this issue in the operating system by changing the way the driver version is reported to this application.

- Warhammer 40k Dawn of War (all versions) does not run with Release 100 drivers. [273154]

  This occurs because of an incorrect driver version check in the application.

NVIDIA has worked around this issue in the operating system by changing the way the driver version is reported to this application.

- Need for Speed Carbon–After upgrading with patch 1.3, the game crashes when launched. [290506]

  This is an issue with the application patch under Windows Vista.

- Nascar Simracing–the game crashes when launched. [270792]

  This is an issue with the application under Windows Vista.

- Call of Duty 2–Only solid colors render during gameplay when 4xAA is enabled. [257454]

  The application is not applying antialiasing properly. Please try selecting 2x AA, disabling antialiasing, or using NVIDIA Enhanced application or Override antialiasing modes.

  NVIDIA is pursuing a fix with the application developer

- Age of Empires III–the game has rendering artifacts, such as textured squares for smoke. [258036]

- Flight Simulator X–pressing Alt+Tab to switch to the desktop does not work. [293729]

- GeForce 8800: Ghost Recon - Advanced Warfighter–the gadget side bar bleeds through on the right side of the screen during gameplay. [281304]

- GeForce 7900: Flight Simulator X – rendering becomes corrupted after pressing the Windows key.   [293727 296232]

- GeForce 7600: Rainbow Six Vegas – antialiasing is not applied when setting antialiasing override mode in the NVIDIA Control Panel. [294215]

  Antialiasing is supported in this application only on GeForce 8 series and higher GPUs.

- Everquest 2– with NVIDIA driver versions 100.xx, the following error message appears: [273346]

  "You currently have a (7.15.11.120) video card installed. We recommend that you download version 7772 drivers before playing Everquest."

  This occurs because the application is not checking the driver version correctly, but this does not affect gameplay. Please select "Continue Anyway" to launch the game. The problem does not occur with a previous Release 95 driver (xx.xx format).

  NVIDIA is pursuing a fix with the application developer.

- GeForce 8500/8400/8300: Corruption occurs while running MicroSoft SDK Basic HLSL sample application. [302209]

- GeForce 7900 GTX: CPU usage is extremely high during H.264 playback of BluRay disc, resulting in dropped frames. [304480]

- GeForce 7300GS: Rainbow Six Vegas–the display turns black at 1600x1200 resolution.[302319]

- GeForce 7300 GT: Far Cry–geometry is corrupted during rendering of blood.[304348]

- [SLI], GeForce 8800: While uninstalling driver the driver, the error message "Windows host process (Rundll32) has stopped working" appears. [294219 280920]

- [SLI], GeForce 8800: Splinter Cell Double Agent – the game crashes when minimized and then invoked again. [294205]

- [SLI], GeForce 7900:Microsoft Flight simulator X – corruption and flickering occur while flying close to land objects. [293882]

Known Product Limitations

This section describes problems that will not be fixed. Usually, the source of the problem is beyond the control of NVIDIA. Following is the list of problems and where they are discussed in this document:

- "Driver Reports 256 MB Memory on NVIDIA Quadro FX 330 Cards" on page 37

- "Gigabyte GA-6BX Motherboard" on page 37

Driver Reports 256 MB Memory on NVIDIA Quadro FX 330 Cards

- **Problem**

  When a 64 MB NVIDIA Quadro FX 330 card is installed, the driver reports that the card needs 256 MB, causing 256 MB of address space to be consumed.

- **Explanation**

  This is not a bug but a product limitation.

  The NVIDIA Quadro FX 330 GPU has some limitations that prevent the card from addressing less than 256 MB of system memory.

Gigabyte GA-6BX Motherboard

This motherboard uses a LinFinity regulator on the 3.3-V rail that is rated to only 5 A—less than the AGP specification, which requires 6 A. When diagnostics or applications are running, the temperature of the regulator rises, causing the voltage to the NVIDIA chip to drop as low as 2.2 V. Under these circumstances, the regulator cannot supply the current on the 3.3-V rail that the NVIDIA chip requires.

This problem does not occur when the graphics board has a switching regulator or when an external power supply is connected to the 3.3-V rail.

3

THE RELEASE 158 DRIVER

This chapter covers the following main topics:

Hardware and Software Support

Supported Operating Systems

The Release 100 driver, version 158.24, has been tested with Microsoft Windows® Vista RTM OS builds version 6000 or higher, and supports both 32-bit and 64-bit versions of Windows Vista Editions:

- Windows Vista Home Basic

- Windows Vista Home Premium

- Windows Vista Business

- Windows Vista Enterprise Edition

- Windows Vista Ultimate

Supported NVIDIA Products

Table 3.1 lists the NVIDIA products supported by the Release 158 driver.

Table 3.1   Supported NVIDIA Products

Consumer Products
GeForce 8800 GTX
GeForce 8800 GTS
GeForce 8800 Ultra
GeForce 8600 GTS
GeForce 8600 GT
GeForce 8500 GT
GeForce 8400 GS
GeForce 8300 GS
GeForce 7950 GX2
GeForce 7950 GT
GeForce 7900 GTX
GeForce 7900 GT
GeForce 7900 GS
GeForce 7800 GTX 512
GeForce 7800 GTX
GeForce 7800 GT
GeForce 7800 GS
GeForce 7600 GT
GeForce 7600 LE
GeForce 7600 GS
GeForce 7500 LE
GeForce 7350 LE
GeForce 7300 LE
GeForce 7300 GS
GeForce 7300 GT
GeForce 7300 SE
GeForce 7100 GS
GeForce 6800 XT
GeForce 6800 XE
GeForce 6800 Ultra
GeForce 6800 LE
GeForce 6800 GT
GeForce 6800 LE
GeForce 6800 GS
GeForce 6800

Table 3.1   Supported NVIDIA Products (continued)

Consumer Products
GeForce 6700 XL
GeForce 6610 XL
GeForce 6600 VE
GeForce 6600 LE
GeForce 6600 GT
GeForce 6600
GeForce 6500
GeForce 6200SE with TurboCache
GeForce 6200 with TurboCache
GeForce 6200 A-LE
GeForce 6200 LE
GeForce 6200
GeForce 6150SE
GeForce 6150 LE
GeForce 6150
GeForce 6100
GeForce 6100 nForce 400
GeForce 6100 nForce 405
GeForce 6100 nForce 420

Supported Languages

The Release 158 ForceWare Graphics Drivers supports the following languages in the main driver Control Panel:

English (USA)	German	Portuguese (Euro/Iberian)
English (UK)	Greek	Russian
Arabic	Hebrew	Slovak
Chinese (Simplified)	Hungarian	Slovenian
Chinese (Traditional)	Italian	Spanish
Czech	Japanese	Spanish (Latin America)
Danish	Korean	Swedish
Dutch	Norwegian	Thai
Finnish	Polish	Turkish
French	Portuguese (Brazil)	

Driver Installation

Minimum Hard Disk Space

The hard disk space requirement is minimum 33 MB for English-only, and 56 MB for International.

Installation Instructions

Please read these instructions carefully before installing any new Windows Vista (32-bit or 64-bit) ForceWare driver. NVIDIA recommends that users bookmark this page to refer to it after downloading the driver.

1 Download the new ForceWare driver kit to your computer.

   Note: Do not install the driver from a shared network location as the install process may not complete.

2 Double-click the driver kit to launch the installation process.

   If previous drivers were installed on your computer, the NVIDIA Setup program will detect these drivers and prompt you to uninstall the drivers.
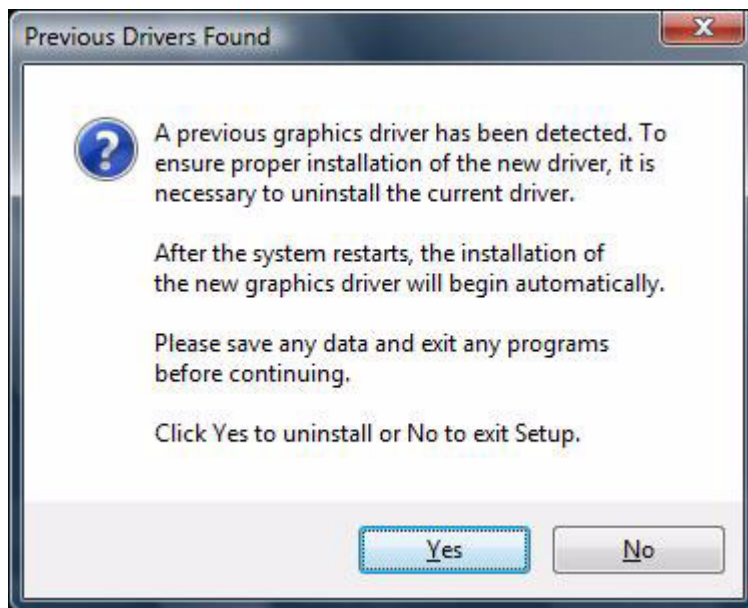
3 Click "Yes" to complete this process and uninstall previous drivers.

The driver uninstaller will now remove previous driver files and when it is complete, it will prompt you to reboot your computer.
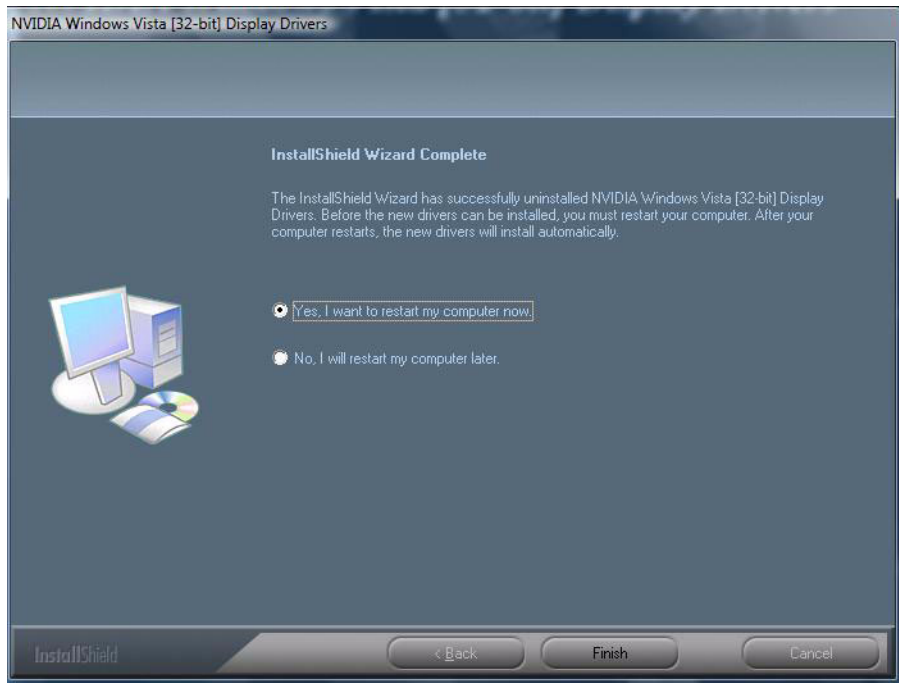
4 Select "Yes, I want to restart my computer now."

Due to changes in how device driver installation occurs on Windows Vista, some users may see the "Previous Driver Found" prompt multiple times after rebooting their computer. This is expected since it is the NVIDIA Setup program removing all previous drivers on your computer.

Continue to repeat the uninstall process until all drivers are removed.

After all drivers have been removed, the NVIDIA Setup program may prompt you that it has detected that the Microsoft hardware installation wizard is active.
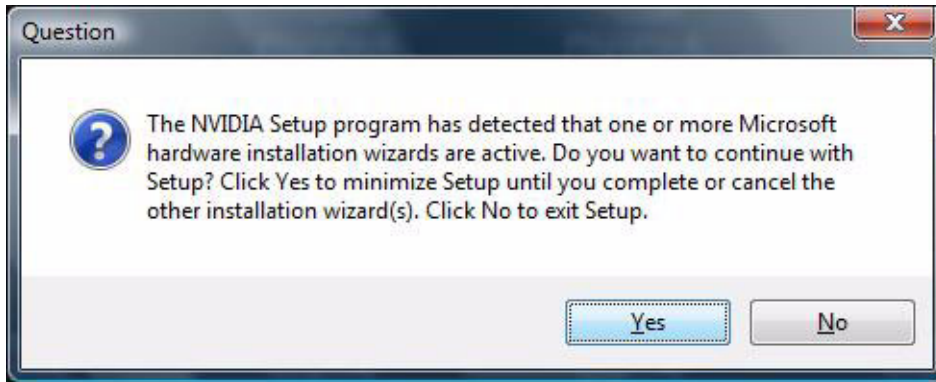
5 Select "Yes" to continue the driver installation.

  • After clicking "Yes", the Windows Vista Found New Hardware wizard may prompt you to install driver software for your GPU.
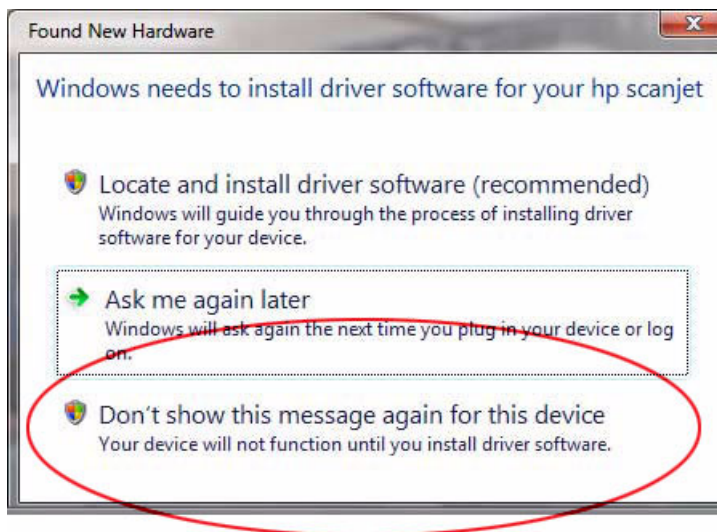
Continue the NVIDIA Setup program by selecting "Don't show this message again for this device".

  • If you are installing a driver that has not received the Windows Hardware Logo Program (WHQL) certification, the Windows Security notification will appear, warning you that "Windows can't verify the publisher of this

driver software." (Drivers with the WHQL certification will not show this notification.)

If you wish to continue the install, select "Install this driver software anyway."

- During the driver installation, your screen may go black for a period of time as the driver loads and detects the monitors connected to your computer. This can happen a few times during install and is normal. This should not occur after the driver has completed installation

- When the driver install is complete, it will prompt you to reboot your computer.
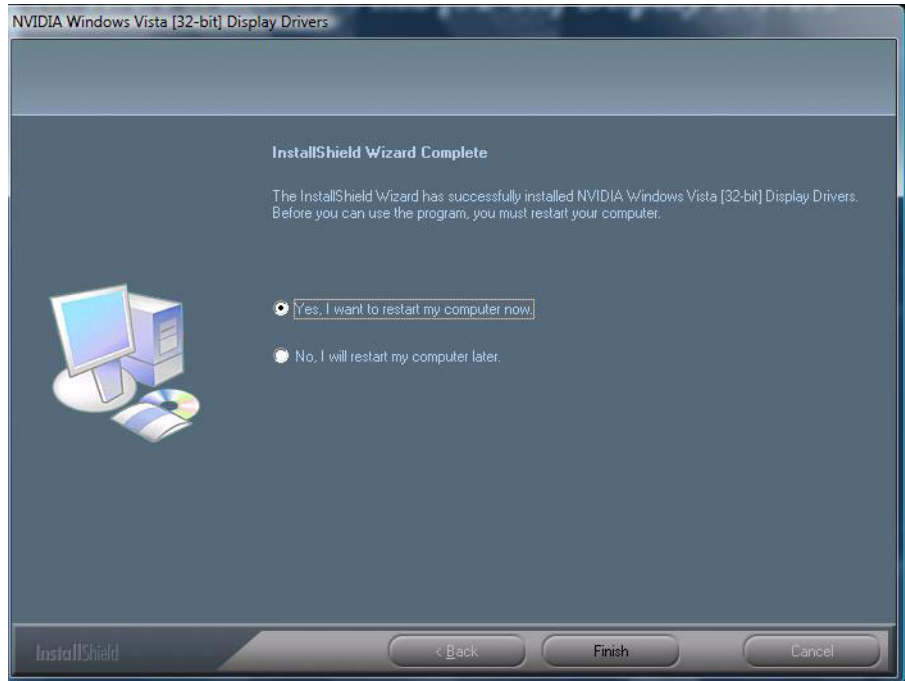
6 Select "Yes, I want to restart my computer now."

Driver installation is now complete.

NVIDIA Driver History

Release 158 is the latest NVIDIA driver available. Table 3.1 contains a summary of some previous driver releases and the versions associated with them. Some versions listed may not have been released outside of NVIDIA.

Table 3.1 NVIDIA Drivers for Windows Vista

Windows Vista Build	NVIDIA ForceWare Driver
RTM OS Builds 6000 or higher	Release 158: Version 158.14, 158.18, 158.24
RTM OS Builds 6000 or higher	Release 100: Version 100.53, 100.54, 100.59, 100.64, 100.65, 101.41 Release 95: Version 97.46
RC2 OS Builds 5744 or higher	Release 95: Version 96.85
RC1 OS Builds 5520.RC1_16384.060812-2235 or higher	Release 95: Version 96.33
Build 5472.WinMain_idx01_5.060713-1900 or higher	Release 95: Versions 95.60–96.00
Windows Vista Beta2	NVIDIA Driver version 88.61
February 06 CTP build 5308.FebCTP_Final.060217-2200 or higher	NVIDIA Drivers 87.15, 87.45
July 05 Vista Beta1	NVIDIA Driver included 'in the box'.
December 05 CTP build 5270.Winmain.051214-1910	NVIDIA Driver included 'in the box'.

A

MODE SUPPORT FOR WINDOWS

This chapter details the Windows modes supported by the Release 158 driver for NVIDIA products. It contains these sections:

General Mode Support Information

The NVIDIA graphics driver includes a standard list of display modes that are supported by default. These modes are listed in the section "Default Modes Supported by GPU" on page 51.

The actual modes available depend on the capabilities of the display. In addition, the NVIDIA graphics driver has a "dynamic EDID detection" capability and will make available *additional* modes that are listed in the display EDID, provided the graphics hardware can support it.

The NVIDIA graphics driver also supports the high resolutions available with the displays listed in Table A.1 as well as the non-standard modes listed in Table A.2.

Table A.1   Modes Supported for High Resolution Displays

Display	Maximum Resolution	Hardware Requirements
Apple 30" Cinema HD Display (Dual link DVI)	2560x1600 @ 60 Hz	• All high-end NVIDIA Quadro FX graphic solutions. • All GeForce 7 series GPUs • GeForce 6800 Ultra 512 • GeForce 6800 with 512 MB
Dell WFP 3007 (Dual Link DVI)	2560x1600 @ 60 Hz	• All High-end NVIDIA Quadro FX graphic solutions. • All GeForce 7 series GPUs • GeForce 6800 Ultra 512 • GeForce 6800 with 512 MB

Table A.2   Non-standard Modes Supported

Resolution
1680 x 1050
1366 x 768

Default Modes Supported by GPU

This section lists the modes that are included by default in the driver INF for the following product families:

Understanding the Mode Format

gives an example of how to read the mode information presented in this section.

```
                    Resolution     Color Depth          Refresh Rates

Example entry: 1024 x 768   32   60 70 72 75 85 100 120 140 144 150 170 200
```

Meaning: Resolution: 1024 x 768
          Color depth: 32 bpp
          Refresh rates: 60 Hz, 70 Hz, 72 Hz, 75 Hz, 85 Hz, 100 Hz, 120 Hz,
                          140 Hz, 144 Hz, 150 Hz, 170 Hz, and 200 Hz
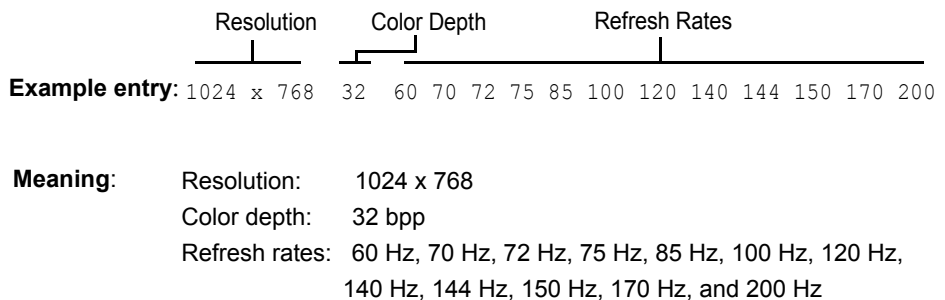
Figure A.1   Mode Format

Note:

- Horizontal spanning modes of 3840x1080 and above, and vertical spanning modes of 1920x2160 and above generally require at least 32 MB of video memory at 32 bpp.
- An "i" next to the refresh rate indicates an interlaced refresh rate.

GeForce 7 Series and GeForce 6 Series GPUs

This sections lists the supported display resolutions, color depths, and refresh rates for the following products:

- NVIDIA GeForce 7950 GX2 /GT
- NVIDIA GeForce 7900 GS / GT / GTX
- NVIDIA GeForce 7800 GS / GT / GTX / GTX 512
- NVIDIA GeForce 7600 GT / GS
- NVIDIA GeForce 7500 LE
- NVIDIA GeForce 7350 LE
- NVIDIA GeForce 7300 GS / LE / GT / SE
- NVIDIA GeForce 6800 GT / GS / LE / XT/ XE
- NVIDIA GeForce 6800 Ultra
- NVIDIA GeForce 6800
- NVIDIA GeForce 6700 XL
- NVIDIA GeForce 6610 XL
- NVIDIA GeForce 6600 GT / LE / VE
- NVIDIA GeForce 6600
- NVIDIA GeForce 6500
- NVIDIA GeForce 6200 A-LE
- NVIDIA GeForce 6200 LE
- NVIDIA GeForce 6200 w/TurboCache™
- NVIDIA GeForce 6200SE w/TurboCache™
- NVIDIA GeForce 6200
- NVIDIA GeForce 6150
- NVIDIA GeForce 6150SE
- NVIDIA GeForce 6150 LE
- NVIDIA GeForce 6100

Standard Modes

```
 640 x  480   8   60
 800 x  600   8   60 70 75 85 100
 848 x  480   8   60 70 75 85 100
 960 x  600   8   60 70 75 85 100
1024 x  768   8   60 70 75 85 100
1152 x  864   8   60 70 75 85 100
1280 x  768   8   60
1280 x  800   8   60
1280 x  960   8   60 70 75 85 100
1280 x 1024   8   60 70 75 85 100
1360 x  768   8   60
1600 x 1200   8   60 70 75 85 100
1920 x 1200   8   60
1920 x 1440   8   60 70 75 85 100
2048 x 1536   8   60 70 75 85 100
--------------------------------------------------------------------
 640 x  480  16   60
 800 x  600  16   60 70 75 85 100
 848 x  480  16   60 70 75 85 100
 960 x  600  16   60 70 75 85 100
1024 x  768  16   60 70 75 85 100
1152 x  864  16   60 70 75 85 100
1280 x  768  16   60
1280 x  800  16   60
1280 x  960  16   60 70 75 85 100
1280 x 1024  16   60 70 75 85 100
1360 x  768  16   60
1600 x 1200  16   60 70 75 85 100
1920 x 1200  16   60
1920 x 1440  16   60 70 75 85 100
2048 x 1536  16   60 70 75 85 100
--------------------------------------------------------------------
 640 x  480  32   60
 800 x  600  32   60 70 75 85 100
 848 x  480  32   60 70 75 85 100
 960 x  600  32   60 70 75 85 100
1024 x  768  32   60 70 75 85 100
```

```
1152 x  864   32   60 70 75 85 100
1280 x  768   32   60
1280 x  800   32   60
1280 x  960   32   60 70 75 85 100
1280 x 1024   32   60 70 75 85 100
1360 x  768   32   60
1600 x 1200   32   60 70 75 85 100
1920 x 1200   32   60
1920 x 1440   32   60 70 75 85 100
2048 x 1536   32   60 70 75 85 100
```

GeForce 8 Series GPUs

This sections lists the supported display resolutions, color depths, and refresh rates for the following products:

- NVIDIA GeForce 8800 GTX
- NVIDIA GeForce 8800 GTS
- NVIDIA GeForce 8800 Ultra
- NVIDIA GeForce 8600 GTS
- NVIDIA GeForce 8600 GT
- NVIDIA GeForce 8500 GT
- NVIDIA GeForce 8400 GS
- NVIDIA GeForce 8300 GS

Standard Modes

```
 640 x  480    8   60
 800 x  600    8   60 70 75 85 100
 848 x  480    8   60 70 75 85 100
 960 x  600    8   60 70 75 85 100
1024 x  768    8   60 70 75 85 100
1152 x  864    8   60 70 75 85 100
1280 x  768    8   60
1280 x  800    8   60
1280 x  960    8   60 70 75 85 100
1280 x 1024    8   60 70 75 85 100
1360 x  768    8   60
```

```
1600 x 1200   8   60 70 75 85 100
1920 x 1200   8   60
1920 x 1440   8   60 70 75 85 100
2048 x 1536   8   60 70 75 85 100
-----------------------------------------------------------------
 640 x  480  16   60
 800 x  600  16   60 70 75 85 100
 848 x  480  16   60 70 75 85 100
 960 x  600  16   60 70 75 85 100
1024 x  768  16   60 70 75 85 100
1152 x  864  16   60 70 75 85 100
1280 x  768  16   60
1280 x  800  16   60
1280 x  960  16   60 70 75 85 100
1280 x 1024  16   60 70 75 85 100
1360 x  768  16   60
1600 x 1200  16   60 70 75 85 100
1920 x 1200  16   60
1920 x 1440  16   60 70 75 85 100
2048 x 1536  16   60 70 75 85 100
-----------------------------------------------------------------
 640 x  480  32   60
 800 x  600  32   60 70 75 85 100
 848 x  480  32   60 70 75 85 100
 960 x  600  32   60 70 75 85 100
1024 x  768  32   60 70 75 85 100
1152 x  864  32   60 70 75 85 100
1280 x  768  32   60
1280 x  800  32   60
1280 x  960  32   60 70 75 85 100
1280 x 1024  32   60 70 75 85 100
1360 x  768  32   60
1600 x 1200  32   60 70 75 85 100
1920 x 1200  32   60
1920 x 1440  32   60 70 75 85 100
2048 x 1536  32   60 70 75 85 100
-----------------------------------------------------------------
 640 x  480  64   60
 800 x  600  64   60 70 75 85 100
```

```
 848 x  480  64    60 70 75 85 100
 960 x  600  64    60 70 75 85 100
1024 x  768  64    60 70 75 85 100
1152 x  864  64    60 70 75 85 100
1280 x  768  64    60
1280 x  800  64    60
1280 x  960  64    60 70 75 85 100
1280 x 1024  64    60 70 75 85 100
1360 x  768  64    60
1600 x 1200  64    60 70 75 85 100
1920 x 1200  64    60
1920 x 1440  64    60 70 75 85 100
2048 x 1536  64    60 70 75 85 100


----------------------------------------------------------------
```

Modes Supported by DACs and TV Encoders

This section lists the supported modes and formats for the following:

External DAC Mode Support

Fairchild FMS3815 Modes Supported

Table A.3 shows the refresh rates for various resolutions of the Fairchild FMS3815 external DAC, which is commonly used on GeForce2 MX and Quadro2 MXR boards to drive a secondary CRT.

Table A.3 External DAC Modes (Fairchild FMS3815)

Resolution 64	Supported Rates (Hz) 288
640x480	60, 70, 72, 75, 85, 100, 120, 140, 144, 150, 170
800x600	60, 70, 72, 75, 85, 100, 120, 140, 144, 150, 170
1024x768	60, 70, 72, 75, 85, 100, 120
1152x864	60, 70, 72, 75, 85
1280x720	60, 70, 72, 75, 85, 100
1280x960	60, 70, 72, 75
1280x1024	60, 70, 72, 75
1360x768	60, 70, 72, 75, 85
1600x900	60, 70
1600x1200	—

Analog Devices ADV-7123 Modes Supported

Table A.4 shows the refresh rates for various resolutions of the Analog Devices ADV-7123 external DAC, which is commonly used on the GeForce2 MX and the Quadro2 MXR boards to drive a secondary CRT.

Table A.4 External DAC Modes (Analog Devices ADV-7123)

Resolution	Supported Rates (Hz)
640x480	60, 70, 72, 75, 85, 100, 120, 140, 144, 150, 170
800x600	60, 70, 72, 75, 85, 100, 120, 140, 144, 150, 170
1024x768	60, 70, 72, 75, 85, 100, 120
1152x864	60, 70, 72, 75, 85, 100
1280x720	60, 70, 72, 75, 85, 100

Table A.4   External DAC Modes (Analog Devices ADV-7123) (continued)

Resolution	Supported Rates (Hz)
1280x960	60, 70, 72, 75, 85, 90
1280x1024	60, 70, 72, 75, 85
1360x768	60, 70, 72, 75, 85, 100
1600x900	60, 70, 75
1600x1200	—

TV-Out Mode Support

Table A.5 and Table A.6 list the NTSC, PAL, and HDTV TV-Out modes supported by the NVIDIA driver.

Table A.5   Mode Support for S-Video and Composite Out

Resolution	Bit depth	Comments
320x200	8, 16, 32	DirectDraw mode; not selectable as a Windows desktop
320x240	8, 16, 32	DirectDraw mode; not selectable as a Windows desktop
640x400	8, 16, 32	DirectDraw mode; not selectable as a Windows desktop
640x480	8, 16, 32	
720x480	8, 16, 32	Overscans (for video)
720x576	8, 16, 32	Overscans (for video)
800x600	8, 16, 32	
1024x768	8, 16, 32	Conexant 25871 only

Table A.6   Mode Support for Component YPrPb Out and DVI Out

Resolution	Comments
480i (SDTV)	
480p (EDTV)	
720p (HDTV)	Supported on graphics boards with Conexant 875 or Philips 7108 TV encoders and compatible connectors, and compatible GeForce 6 Series
1080i (HDTV)	and GeForce 7 Series GPUs.
576i (PAL)	
576p (PAL)	

The driver supports manual overscan correction for component and DVI outputs. See the *ForceWare Graphics Driver User's Guide* for instructions on how to use the overscan correction features in the control panel.