

## CHAPTER

## 3

# THE RELEASE 55 DRIVER

This chapter covers the following main topics:

- “Features and Enhancements in the Release 55 Driver” on page 17
- “Hardware and Software Support” on page 19
- “Driver Installation” on page 22

## Features and Enhancements in the Release 55 Driver

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The Release 55 driver offers new features not found in previous releases of the NVIDIA Driver for Windows. The following highlights the new features in Release 55:

### PCI Express Support

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2D and 3D graphics drivers support the PCI Express I/O.

### PAE Support

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2D and 3D graphics driver support systems that utilize physical address extensions (PAE)<sup>1</sup>.

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1. PAE is an extension that enables Intel compatible computers to address more than 4 GB of physical memory.

## **nView Desktop Manager Enhancements**

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- Seamless nView support between 32-bit and 64-bit processes on Windows 64-bit Edition
- Dual NVKeystone support for independent keystone trapezoids under nView Span modes.
- Per-display Desktop Management

## **User Interface Enhancements**

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- New application profiles capability lets you associate a collection of driver settings—such as antialiasing and display quality settings—with an application.
- Easy access standalone panel, independent of the Microsoft Display Properties window.
- Improved multi-adapter support.
- Improved TV and HDTV Controls

## **Video Support Enhancements**

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- Advanced de-interlacing and inverse 3:2 pull-down capability
- Enhanced HDTV and Media Center support

## **3D Graphics API Enhancements**

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### **Direct3D**

- Improved antialiasing performance
- Improved shaders

### **OpenGL**

New extension: `GL_NV_pixel_buffer_object`

## Driver Release History

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Release 55 is the latest NVIDIA driver available. [Table 4.1](#) 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 4.1** NVIDIA Drivers for Windows

Driver	Name	Versions	Comments
Release 50	ForceWare	50.01–54.xx	Releases ongoing
Release 40	Detonator FX	44.03–45.xx	Releases ongoing
Release 40	Detonator 40	40.60–44.02	
Release 35	Detonator 35	35.60–37.80	
Release 25	Detonator 25	26.00–32.90	
Release 20	Detonator XP	21.83–23.xx	
Release 10	Detonator 3 v1x.xx	10.00–17.xx	

## Release 50 Enhancements

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The Release 50 driver offers new features not found in previous releases of the NVIDIA Driver for Windows.

### 64-Bit Support

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Driver Release 50 offers AMD64 and IA64 OS support.

### Dynamic Memory Mapping

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Dynamic memory mapping adds support for 256 MB graphics cards for video, display, and OpenGL drivers.

### NVIDIA Unified Compiler

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As today's GPUs become more and more programmable they are entering a similar era to that of the CPU. For CPUs, it is common for developers to implement code paths specifically optimized for AMD or Intel (e.g MMX and 3DNow!). Programmable GPUs are no different. Because architectures vary, it makes sense that one common assembly language can't cover all the nuances of specific GPU micro-architectures. In fact, different code paths make different GPUs go faster. As a result with the GeForce FX architecture, NVIDIA has implemented a GPU-specific compiler that can be used to optimize application performance.

## Display Driver Changes and New Features

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- **Rotation support**

Added to Windows Me/9x.

- **Custom resolutions**

Provides the user with the ability to construct new modes via the NVIDIA control panel.

- **Screen editing**

Allows removing infrequently used screens by dragging them from the NVIDIA screen menu to a list. Screens can be restored by simply clicking the **Restore Defaults** option or by dragging them back to the menu.

- **Dynamic EDIDs**

Updates the master mode list with new modes contained in the connected device's EDID.

- **Support for special panels and devices**

- Large panels
- Wide panels
- Seamless Span modes in the mode list to support T221 style large panels
- Interlaced modes for HDTV
- DVI device hot plugging

- **Frame Lock functionality**

Enables synchronizing applications across multiple displays for Quadro FX series of GPUs.

- **Edge Blend functionality**

Enables blending the adjacent edges of overlapped displays on projection systems for Quadro FX series of GPUs.

## Video—New Features

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### Video Mixing Renderer (VMR) support

VMR support is provided for full-screen video and Microsoft's DirectX Video Acceleration (DXVA).

## PowerMizer—New Features

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- **Dynamic peak power control**
- **Thermal Protection version 2.0**

## User Interface Changes

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### New Features

- **Dualview**

This feature is available and supported as a single-step process from the nView Display Modes panel and APIs. Switching in and out of all driver modes is possible with several choices for display device pairs:

- Analog display + digital display
  - Digital display + analog display
  - TV + digital display
  - Other combinations
- **Change Resolution panel**
  - **Improved Color Correction panel with enhanced Gamma**
  - **HDTV support**

### Improvements

- **Menus for NVIDIA user components**
- **Easy access to nView Display Mode or Windows Display Properties Settings through the NVIDIA Settings taskbar utility**
- **Panel access for non-administrator users**
- **Tool tips for the scroll bar on the NVIDIA menu**
- **Improved Performance and Quality Settings panel**
- **Improved TV-Out settings panel**
- **Improved device selection (display pairs)**
- **Separate Overlay Controls panel**
- **Separate Full Screen Video settings panel**

### nView

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- **Action Toolbar**
- **Kinematic mouse actions**
- **Resolution per Desktop support**
- **Application monitor exclusions and inclusions**

- **Internet Explorer pop-up prevention**
- **Monitor grids**
- **Keystone luma compensation**
- **Multiview support**
- **nViewCmd**
- **NVManagement**
- **Faster Desktop switching**
- **Integrated control panels**
- **New Setup Wizard**
- **Driver independence**

## **DirectX Graphics**

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- **Floating point render targets**
- **Multi-element textures**
- **Improved antialiasing compatibility**
- **Improved shader handling and stability**
- **Improved render-to-texture performance**

## **OpenGL**

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- **Windows 9x Rotation support**
- **New supported extension: `GL_ARB_occlusion_query`**
- **Faster Vertex Processing Pipeline**  
Improved geometry processing and display list support provided.
- **Faster vertex and fragment program compilers**
- **Improved support for `ARB_vertex_buffer_object` extension (vbo)**
- **Improved stability during mode switches, antialiasing, and UBB**
- **Faster texture downloads**

## Supported Languages

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The Release 55 Drivers for Windows 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)	