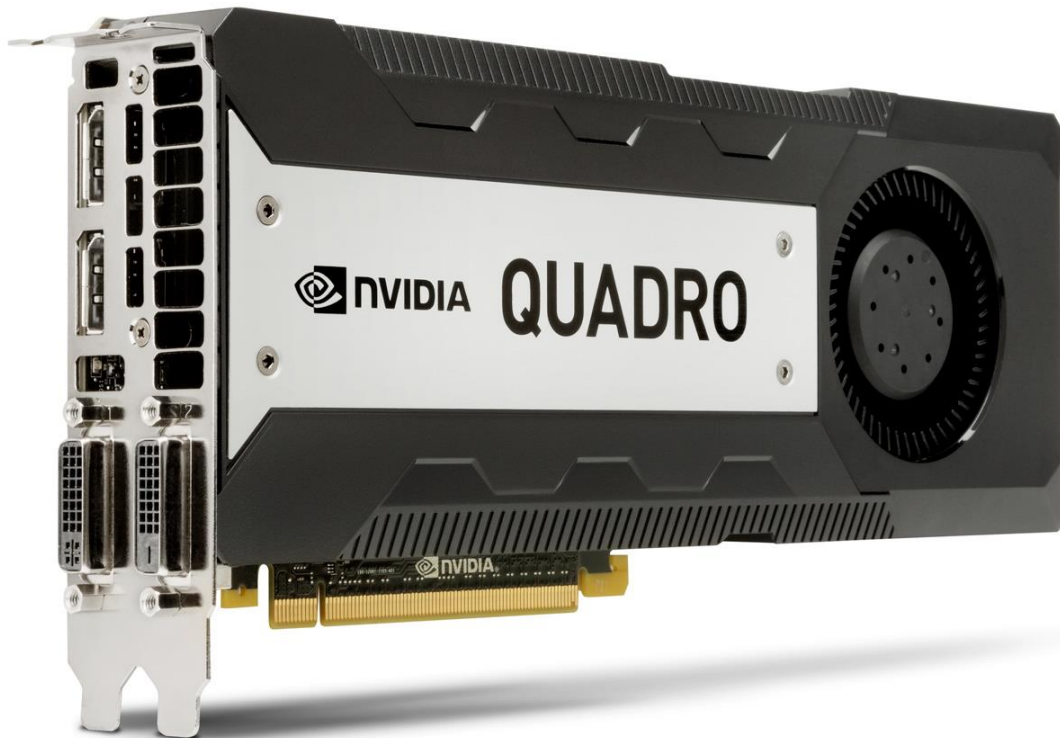


### Overview

### NVIDIA Quadro K6000 12GB Graphics



NVIDIA Quadro K6000 12GB Graphics

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## INTRODUCTION

The NVIDIA Quadro K6000, the top of the line member of the latest NVIDIA® Kepler-based GPU architecture, is a true technological breakthrough, delivering five-times higher compute performance and nearly double the graphics capability of its predecessor, the NVIDIA Quadro 6000 GPU, and features the world's largest and fastest graphics memory.

Combining breakthrough performance and advanced capabilities in a power-efficient design, the Quadro K6000 GPU enables leading organizations to tackle visualization and analysis workloads of unprecedented size and scope.

## PERFORMANCE AND FEATURES

The Quadro K6000 GPU is based on the NVIDIA Kepler™ architecture - the world's fastest, most efficient GPU architecture. Key performance features and capabilities include:

### Overview

- 12GB ultra-fast GDDR5 graphics memory lets designers and animators model and render characters and scenes at unprecedented scale, complexity and richness
- 2,880 streaming multiprocessor (SMX) cores deliver faster visualization and compute horsepower than previous-generation products
- Supports four simultaneous displays and up to 4k resolution with DisplayPort™ 1.2
- Ultra-low latency video I/O and support for large-scale visualizations
- Full PCI Express 3.0 support

The Quadro K6000 is the first NVIDIA Professional solution to incorporate Quadro Boost, a mechanism that automatically maximizes application performance while staying within the specified power envelope. For workloads that do not reach the allowed power level, the GPU clock is automatically increased to "Boost Clock" in order to leverage the remaining power budget for additional increased performance. The GPU will always try to reach the higher "Boost Clock" in order to maximize application performance.

The Quadro Boost feature will disable "Boost Clocking" in the following scenarios:

- If clock jitter sensitive "Workstation features" like Sync, SDI, or SLI is enabled, the Quadro K6000 will clock to Base Clock automatically.
- If the user manually selects the "Prefer Consistent Performance" Control Panel option to lock explicitly to Base Clock (can be useful for performance tuning of applications during development).

### COMPATIBILITY

The Quadro K6000 is supported on the following HP Z-Workstations:

- Z420 (AM0 only), Z620, Z820
- Z440, Z640, Z840

### SERVICE AND SUPPORT

The NVIDIA Quadro K6000 has a one-year limited warranty or the remainder of the warranty of the HP product in which it is installed. Technical support is available seven days a week, 24 hours a day by phone, as well as online support forums. Parts and labor are available on-site within the next business day. Telephone support is available for parts diagnosis and installation. Certain restrictions and exclusions apply.

### Technical Specifications

#### TECHNICAL SPECIFICATIONS

<b>Form Factor</b>	4.376" H x 10.5" L Dual Slot Power: 234 Watts Weight: ~880 grams
<b>Graphics Controller</b>	NVIDIA Quadro K6000 Graphics Card based on the GK180 GPU Core Count: 2880 Base Clock: 797 MHz Boost Clock: 902 MHz
<b>Bus Type</b>	PCI Express 3.0 x16
<b>Memory</b>	12GB GDDR5 384-bit memory I/O path 288 GB/s memory bandwidth ECC Memory
<b>Connectors</b>	DVI-I (1), DVI-D (1), DP (2), Optional 3D Stereo bracket with 3-pin mini-DIN connector.  Factory configured option: No adapter included with card. Option Kit: No adaptor included with card.  DVI to VGA, DisplayPort to VGA, DisplayPort to DVI, and DisplayPort to Dual-Link DVI adapters available as accessories.
<b>Image Quality Features</b>	<ul style="list-style-type: none"><li>• DDisplayPort with Multi-Stream Technology (MST) and High Bit Rate 2 (HBR2), HDMI 1.4, and HDCP support</li><li>• NNVIDIA 3D Vision™ technology</li><li>• NNVIDIA Premium Mosaic and nView</li></ul>
<b>Display Output</b>	400 MHz integrated RAMDAC <ul style="list-style-type: none"><li>• Maximum resolution over VGA (through DVI to VGA cable): 2048 × 1536 × 32 bpp at 85 Hz</li></ul> Dual-link internal TMDS (DVI 1.0) <ul style="list-style-type: none"><li>• Maximum resolution over digital port (single GPU and SLI mode): 2560 × 1600 × 32 bpp at 60 Hz (reduced blanking)</li></ul> Single-link internal TMDS (DVI 1.0) <ul style="list-style-type: none"><li>• Maximum resolution over digital port (single GPU and SLI mode): 1920 × 1200 × 32 bpp at 60 Hz (reduced blanking)</li></ul> DisplayPort with MST and HBR2. <ul style="list-style-type: none"><li>• Maximum resolution: 3840 × 2160 × 36 bpp at 60Hz</li></ul> HDMI <ul style="list-style-type: none"><li>• Maximum resolution: 1920 × 1080 × 32 bpp at 60Hz</li></ul>
<b>Shading Architecture</b>	Shader Model 5.0 Full IEEE 754-2008 32-bit and 64-bit precision

### Technical Specifications

**Supported Graphics APIs**

Full OpenGL 4.3  
Full DirectX 11  
CUDA API support includes:  
CUDA C, CUDA C++, DirectCompute 5.0, OpenCL, Java, Python, and Fortran

**Available Graphics Drivers**

Windows 8.1  
Windows 8  
Windows 7 Professional (64-bit and 32-bit)  
Red Hat Enterprise Linux (RHEL) 6 Desktop/Workstation  
SUSE Linux Enterprise Desktop 11 (64-bit and 32-bit)

HP qualified drivers may be preloaded or available from the HP support Web site:

<http://welcome.hp.com/country/us/en/support.html>

Novell SUSE Linux Enterprise drivers may also be obtained from:

<ftp://download.nvidia.com/novell> or <http://www.nvidia.com>

**Notes**

1. NVIDIA GRID VGX Pass Through feature supported on NVIDIA Quadro K6000 to enable direct mapping of GPU to Virtual Machine.
  2. No display output adapter included.
  3. Configurations of a single Quadro K6000 graphics card in HP Z440 Workstation require the HP Z440 Fan and Front Card Guide Kit, configurable from the factory (CTO PN: G8T99AV) or as an Aftermarket Option (AMO PN: J9P80AA).
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### Summary of Changes

<b>Date of change:</b>	<b>Version History:</b>		<b>Description of change:</b>
December 4, 2014	From v1 to v2	Added	Added note for HP Z440 configurations
May 1, 2015	From v2 to v3	Changed	Notes for Technical Specification section.

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