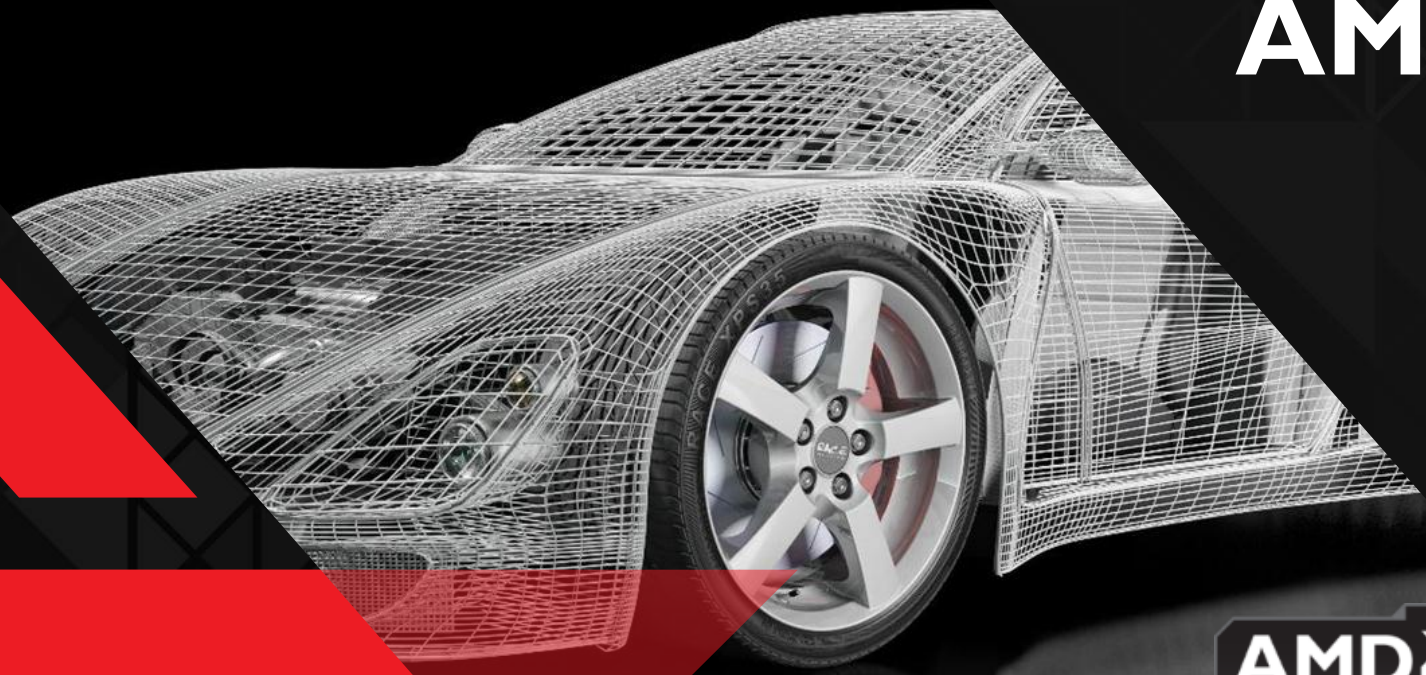


SPECviewperf® 12

BENCHMARK OVERVIEW

AMD RELEASE PACK
DECEMBER 2013

SPECVIEWPERF® 12

THE NEW INDUSTRY STANDARD

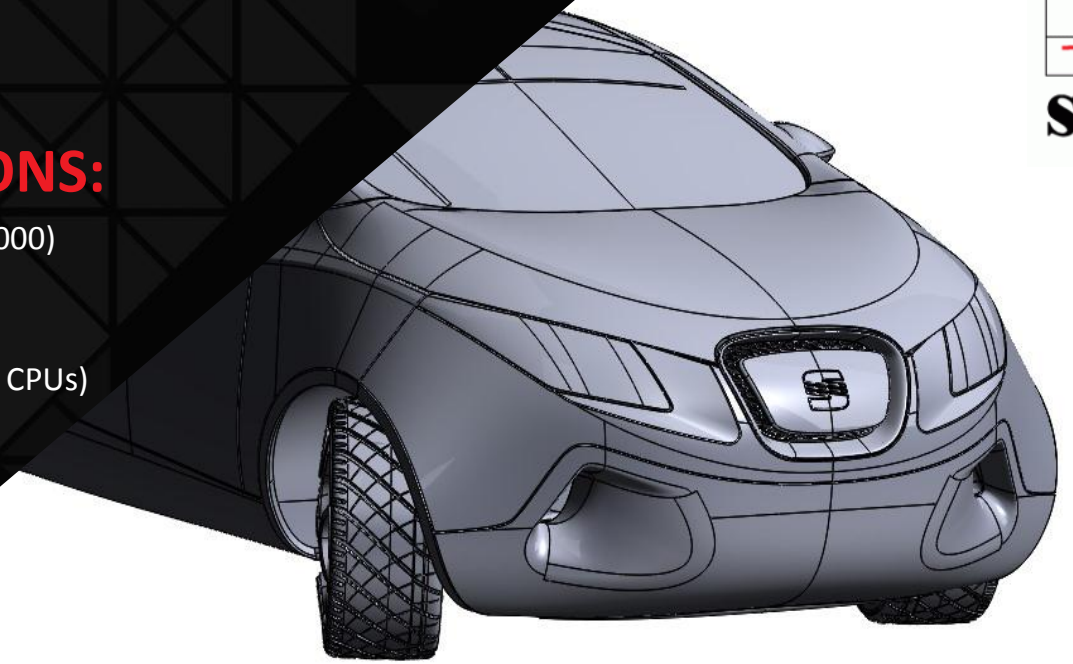
- Modern benchmark based on the latest professional applications
- Replaces SPECviewperf® 11
- Stresses Professional GPU capabilities and closely mimics real applications.

- *See how this new benchmark clearly shows the user benefits of AMD FirePro's long-standing strategy of optimizing our products for real-world professional workflows*

BENCHMARK INFORMATION

SPECVIEWPERF® 12

- **RELEASE DATE:** December 18, 2013
- **DEVELOPER:** Standard Performance Evaluation Corporation (SPEC)
- **WHERE TO DOWNLOAD:** http://spec.org/gwpg/gpc.static/vp12info.html
- **PRICING:** free for non-commercial users and $2,500 for commercial entities
- **OFFICIAL WEBSITE:** http://spec.org
- **AMD RECOMMENDED SYSTEM SPECIFICATIONS:**
  - AMD FirePro™ W5000 (vs Nvidia K2000) or AMD FirePro™ W7000 (vs Nvidia K4000)
  - AMD FirePro driver 13.25.18.1 downloaded from the Beta section at http://support.amd.com/en-us/download (see last slide in deck for more info)
  - Single CPU system (there is no advantage with SPEC viewperf in having multiple CPUs)
  - Current CPU from this year of at least 3.0GHz so benchmark is not CPU bound
  - Minimum 8GB system memory, but 16GB is recommended
  - Display of at least 1920x1080 resolution
  - Approximately 40GB disk space



BENCHMARK OVERVIEW

SPECVIEWPERF® 12

- Latest version of the SPECviewperf® benchmark
- Released by the Standard Performance Evaluation Committee's (SPEC®) Graphics Performance Characterization (SPECgpc®) working group
  - AMD is a member of SPECgpc®
- Replaces SPECviewperf® 11, which was released in June 2010.
- SPECviewperf 12 includes updated versions of SPECviewperf 11 tests as well as new tests to simulate energy and medical applications.
- SPECviewperf 12 also includes the first DirectX® test from the SPECgpc group.

BENCHMARK OVERVIEW

SPECVIEWPERF® 12

- There are eight (8) tests in SPECviewperf® 12
  - Catia-04
  - Creo-01
  - Energy-01
  - Maya-04
  - Medical-01
  - Showcase-01
  - SNX-02
  - SW-03
- Also includes the first DirectX® test with traces taken from Autodesk's Showcase application.
- Also tests designed to emulate workloads for energy and medical volumetric viewing applications.

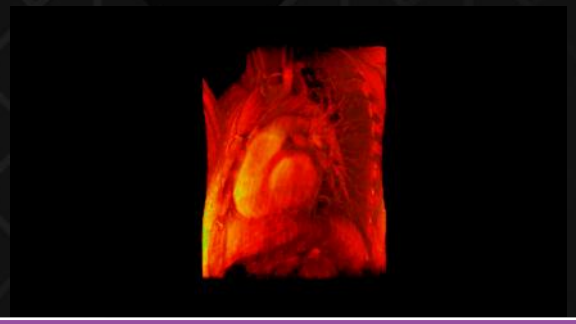
TEST DETAILS

SPECVIEWPERF® 12

Catia-04	Creo-01	Energy-01	Maya-04
• Created from traces of the graphics workload generated by the *CATIA V6 R2012 application from Dassault Systemes* • Model sizes range from 5.1 to 21 million vertices • Viewset includes numerous rendering modes supported by the application including wireframe, anti-aliasing, shaded, shaded with edges, depth of field, ambient occlusion	• Created from traces of the graphics workload generated by the *Creo 2™ application from PTC* • Model sizes range from 20 to 48 million vertices • Viewset includes numerous rendering modes supported by the application including wireframe, anti-aliasing, shaded, shaded with edges, and shaded reflection modes	• Representative of a typical volume rendering application in the seismic and Oil & Gas field • Geophysical surveys generate image slices through the subsurface that are built into a 3d grid. Volume rendering gives as 2D projection or view of this 3D regular volumetric grid for further analysis and interpretation • Makes use of hardware support for 3D textures and therefore trilinear interpolation.	• Created from traces of the graphics workload generated by the *Maya 2013 application from Autodesk* • Model size is 727.5 thousand vertices • Viewset includes numerous rendering modes supported by the application including shaded mode, ambient occlusion, multi-sample antialiasing, and transparency

TEST DETAILS

SPECVIEWPERF® 12



Medical-01	Showcase-01	SNX-02	SW-03
• Representative of a typical volume rendering application that renders a 2D projection of a 3D regular volumetric grid. • A typical 3D grid in this viewset is a group of 3D slices acquired by a scanner (such as CT or MRI). • 2 datasets in this viewset – "4D heart data set (multiple 3d volumes iterated over time) and "Stag Beetle" (workload with larger memory requirement)	• Created from traces of *Autodesk's Showcase 2013 application* • The model used in the viewset consists of 8 million vertices • Viewset is the first viewset in SPECviewperf to feature DX rendering. Rendering modes included in the viewset include shading, projected shadows, and self-shadows	• Created from traces of the graphics workload generated by the *NX 8.0 application from Siemens PLM* • Model sizes range from 7.15 to 8.45 million vertices • Viewset includes numerous rendering modes supported by the application including wireframe, anti-aliasing, shaded, shaded with edges, and studio mode	• Created from traces of *Dassault Systemes' SolidWorks 2013 SP1* • Models used in the viewset consist of 2.1M vertices to 21M vertices • Viewset includes numerous rendering modes supported by the application including shaded mode, shaded with edges, ambient occlusion, shaders, and environment maps

SPECVIEWPERF® 11 VS. SPECVIEWPERF® 12

WHAT ARE THE DIFFERENCES?

SPECviewperf® 11	SPECviewperf® 12
Created by a single member of the SPEC committee with little ability for other committee members to contribute or review the benchmark dataset source or raw trace data.	Consists of viewsets submitted from several committee members, each submitting full source code for the tests that can be easily reviewed by all committee members.
Results do not correlate well with expected raw graphics card performance or benchmarks testing the actual applications traced by SPECviewperf.	Re-architected to decouple the actual tests and data from the test framework.
Released in 2010, with software vendors commonly releasing update versions on an annual basis, SPECviewperf 11 traces are three or more versions behind the currently shipping versions of those applications	SPECviewperf 12 traces are taken from the latest versions of the applications.

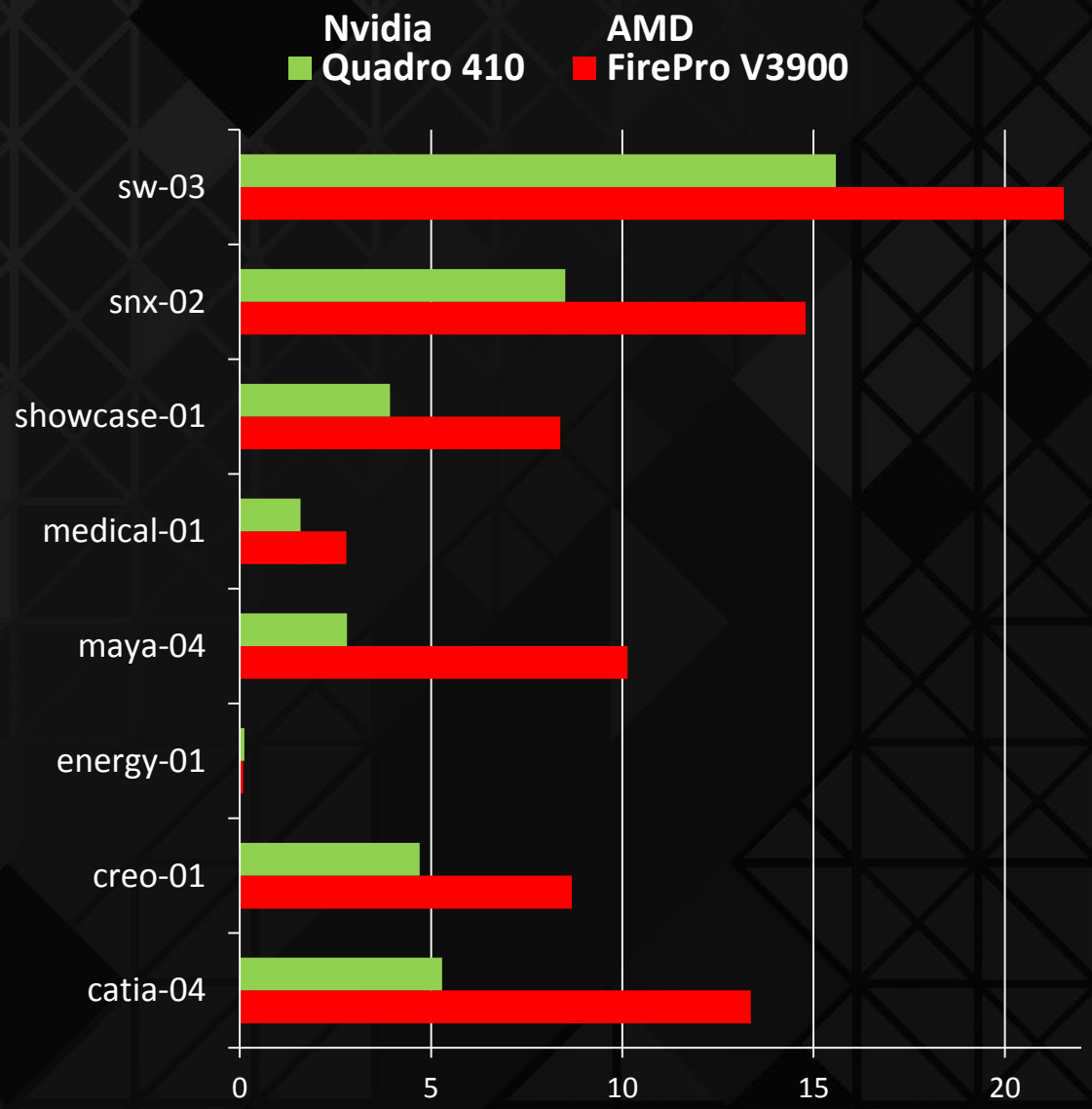
FOCUSING WHERE IT MATTERS MOST

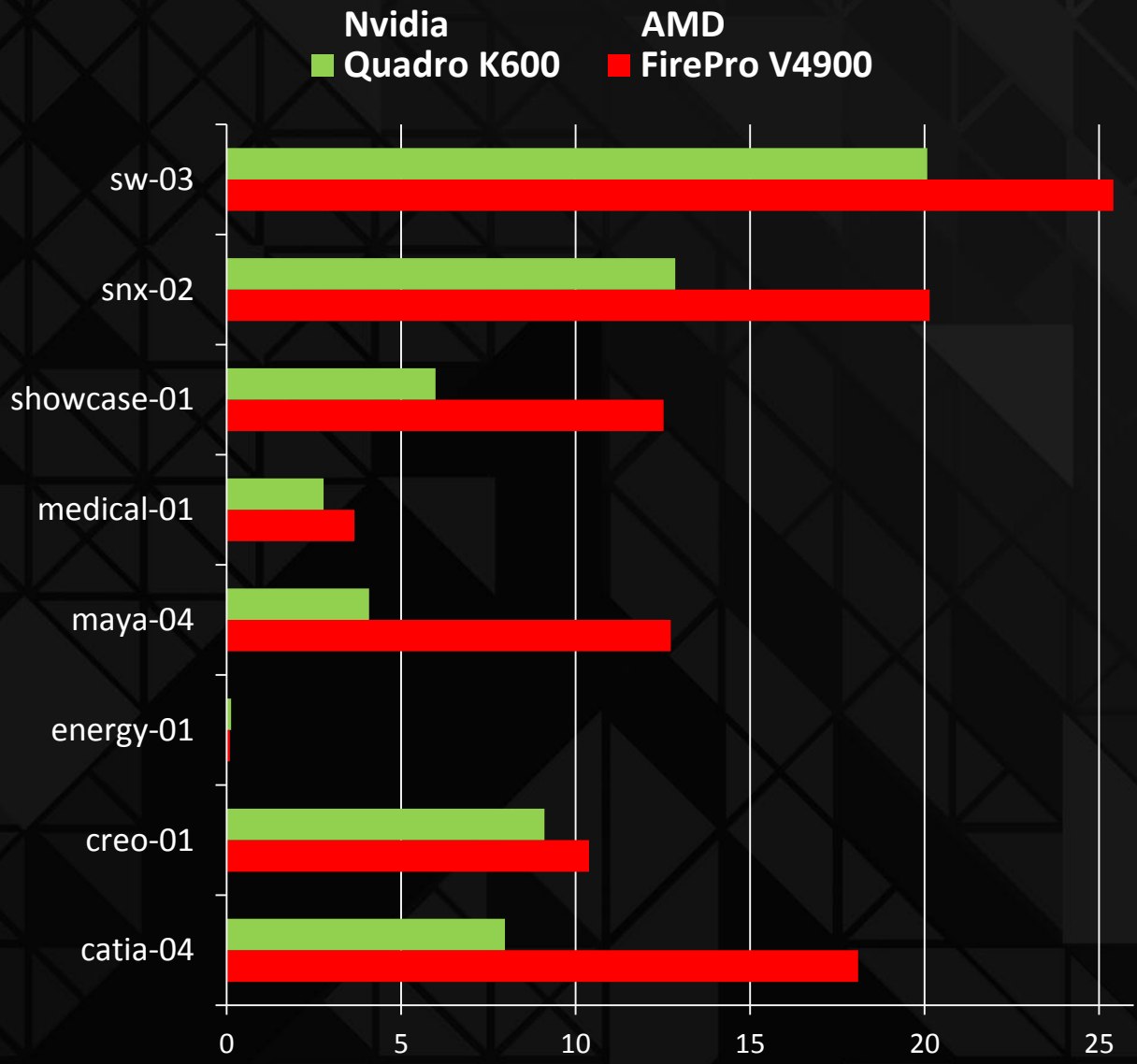
ON KEY PRODUCTS FOR CAD AND M&E WORKFLOWS

- Vast majority of CAD and CAE users purchase entry and mid-range Professional graphics boards
- For M&E users purchase mainly mid-range Professional graphics boards
- SPECviewperf® 12 has focused on the key professional application for these markets
- SPECviewperf® 12 clearly shows the user benefits of AMD FirePro's strategy of optimizing our products for real-world professional workflows ensuring you get optimal performance professional graphics card
- ***Highest productivity for your application workflow and not just great scores from a synthetic benchmark***

WINNING WHERE IT MATTERS MOST: ENTRY LEVEL

AMD FIREPRO™ UP TO 3.6X FASTER!





See "Supporting Information" slide in backup for system specs

WINNING WHERE IT MATTERS MOST: ENTRY / MID-RANGE

AMD FIREPRO™ W5000 **UP TO 2.3X** FASTER!

See "Supporting Information" slide in backup for system specs

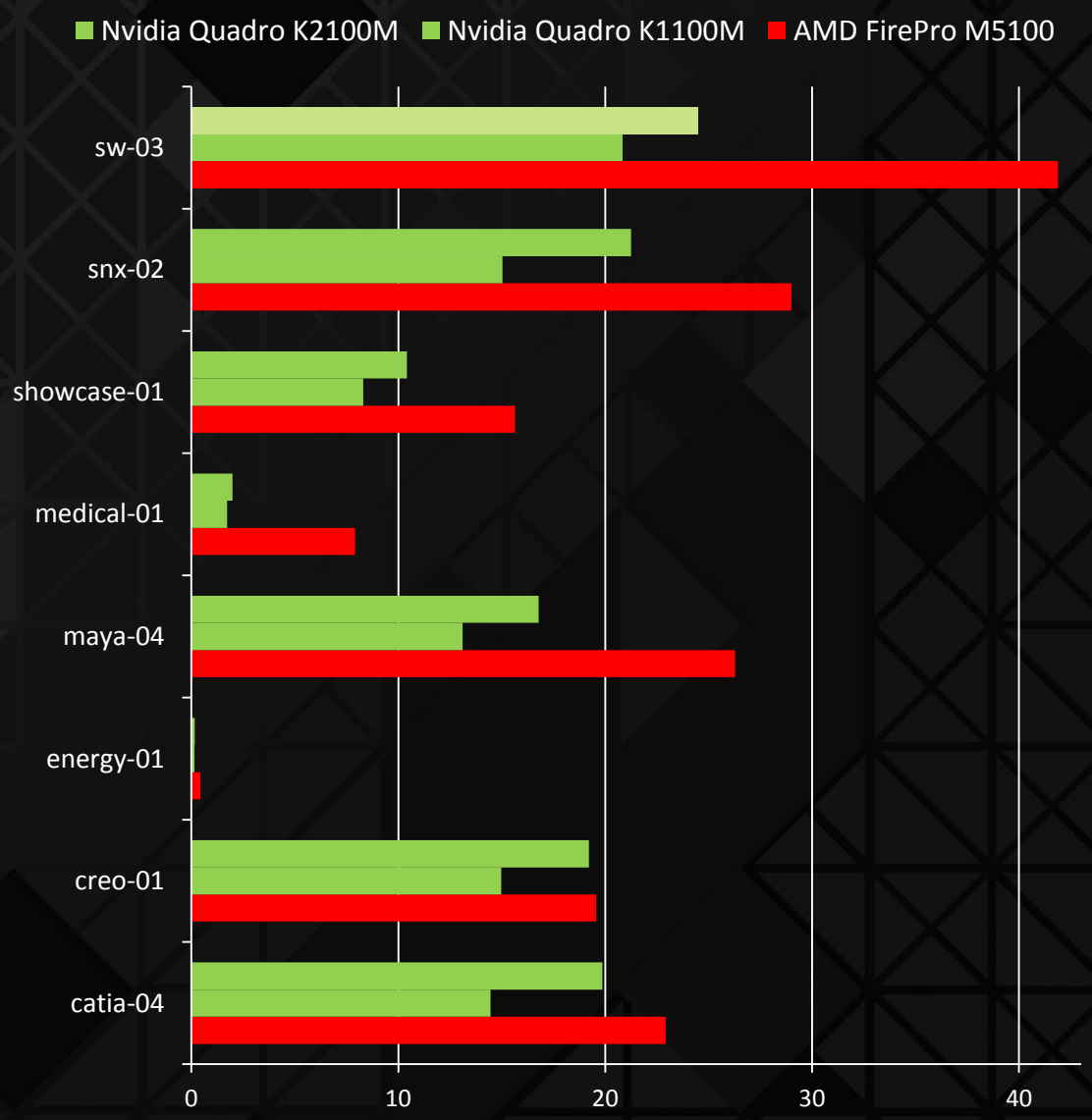
WINNING WHERE IT MATTERS MOST: MID-RANGE

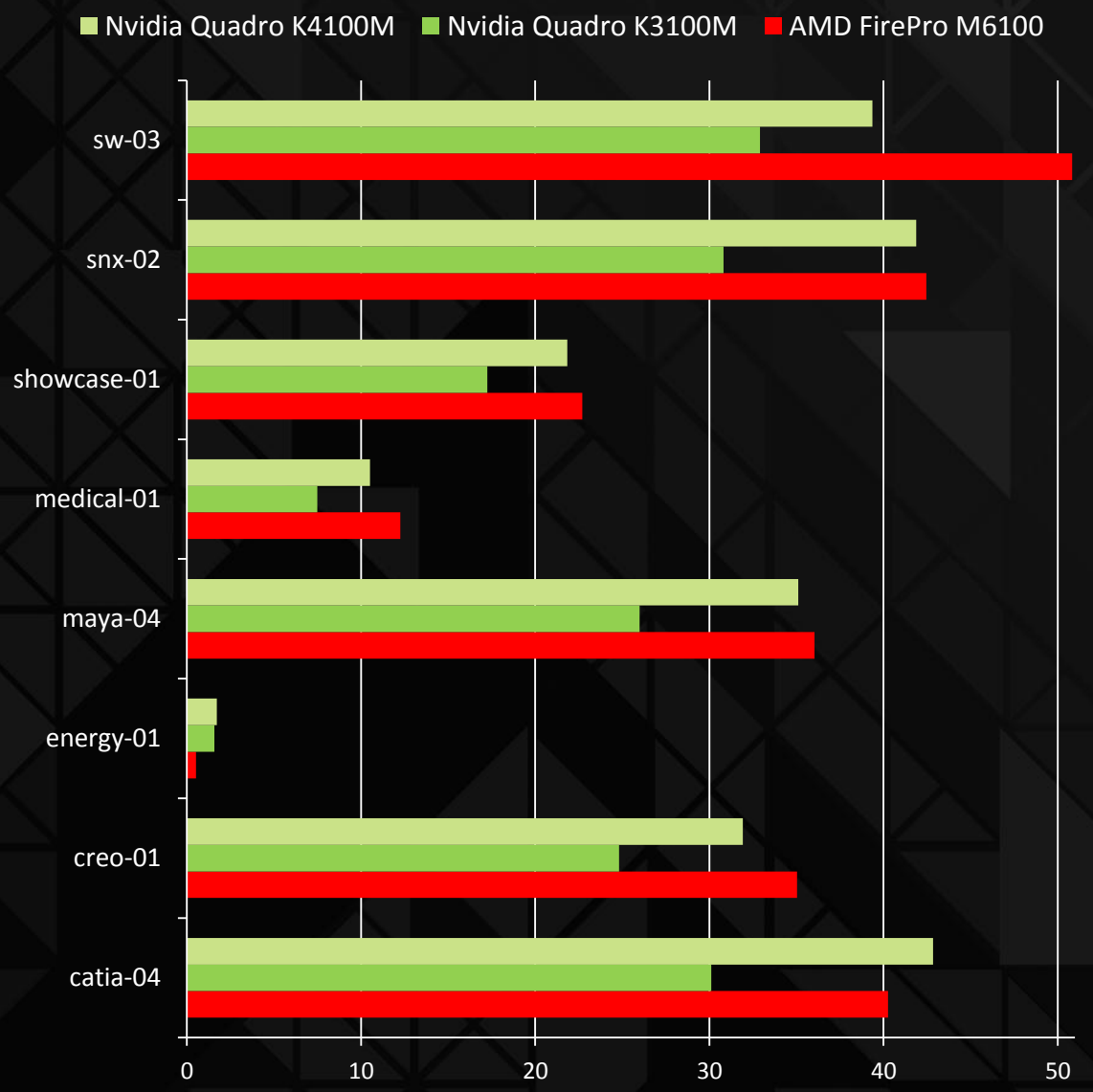
AMD FIREPRO™ W7000 **UP TO 1.7X** FASTER!

See "Supporting Information" slide in backup for system specs

WINNING WHERE IT MATTERS MOST: MOBILE WORKSTATION

AMD FIREPRO™ UP TO 2X FASTER!





See "Supporting Information" slide in backup for system specs

AMD
AMD
FIREPRO
THANK YOU

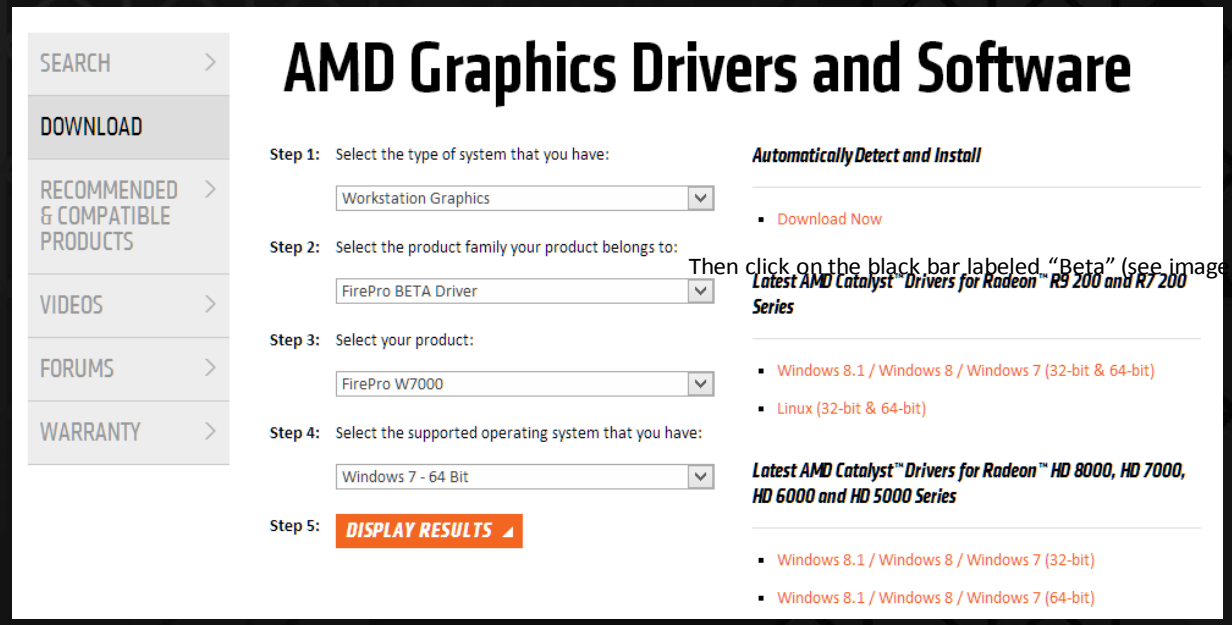
SUPPORTING INFORMATION

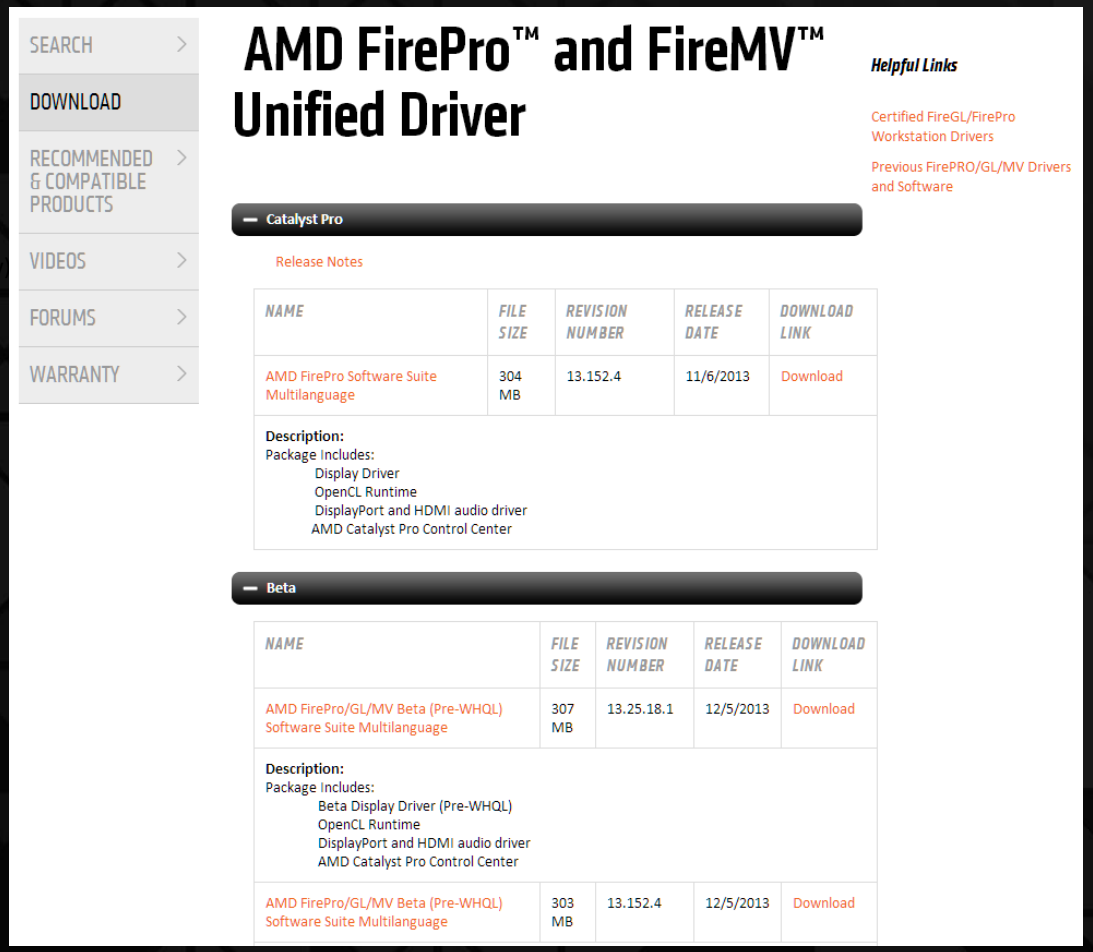
- Workstation:
  - System Configuration: Intel E5-1660 3.30GHz, 16GB RAM, Win7 64-bit SP1
  - AMD 13.25.18.1 Nvidia 331.82

- Mobile Workstation:
  - Intel i7-4900MQ for M5100/K1100M/K2100M
  - Intel i7-4930MX for M6100/K3100M/K4100M/K5100M
  - 16GB RAM, Win7-64
  - AMD 13.25.18.1, Nvidia 312.32 for K1100M/K2100M and 327.62 for K3100M/K4100M/K5100M

HOW TO DOWNLOAD DRIVER

- Go to the following link: http://support.amd.com/en-us/download
- Click on “Display Results”:



Then click on the black bar labeled “Beta” (see image below)

- Click on the black bar labeled “Beta”: