

# HP and SOLIDWORKS 2015

Selection of HP Workstations for running SOLIDWORKS 2015



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## What type of application is SOLIDWORKS 2015?

SOLIDWORKS is a 3D CAD design solution for rapid creation of parts, assemblies, and 2D drawings. Additional SOLIDWORKS solutions include data management, photorealistic rendering, sustainable design, and simulation & design validation toolsets. SOLIDWORKS 2015 is supported on Windows 7 and Windows 8.1 (64-bit only).

### **SOLIDWORKS is certified on HP Workstations and professional graphics**

SOLIDWORKS tests and certifies graphics card drivers for each version of SOLIDWORKS and supported operating systems. The results are displayed on the [solidworks.com/sw/support/videocardtesting.html](http://solidworks.com/sw/support/videocardtesting.html) web site. SOLIDWORKS requires professional graphics cards with OpenGL capabilities.

## How to select an HP Workstation for SOLIDWORKS

### **Processor (CPU)**

SOLIDWORKS modeling features are typically serial (executed on a single core/thread) but some modeling tasks can leverage up to 4 cores. SOLIDWORKS PhotoView 360 uses the Luxology rendering engine for lifelike rendering. The rendering engine runs in parallel and can utilize many processor cores. SOLIDWORKS simulation and design validation tools can run in parallel and utilize more processor cores. SOLIDWORKS add-in programs may run in parallel (executed on multiple cores/threads). For this reason, consider the add-in program processor requirements.

Things to consider in processor selection:

- CPU clock frequency (GHz) is a top priority as it impacts all processor operations
- Four or six cores in a single CPU provides the highest clock frequency
- Consider dual CPUs with more cores when using PhotoView 360, Simulation, or add-in programs that run in parallel

### **Memory (RAM)**

Things to consider in memory selection:

- 16 GB of memory is recommended for product design
- 32 GB of memory is recommended for more complex design
- Use HP Performance Advisor to monitor the SLDWORKS.exe memory usage with design loaded
- Fill memory channels and balance across CPU sockets when installing memory DIMMs
- More memory may be required for add-in programs or other applications

### **Graphics (GPU)**

Things to consider in graphics selection:

- RealView display mode is supported only with professional graphics
- RealView display mode may be turned off in large assembly mode
- Consider the graphics frame buffer size for your component count and detail
  - 2 GB frame buffer for 100 – 300 components with transparency
  - 4 GB frame buffer for 500 – 2,000 components with transparency
  - >4 GB frame buffer for > 2,000 components with transparency

### **Storage (SSD, HDD)**

Things to consider in storage selection:

- A solid state drive (SSD) is recommended for optimal performance
- SSDs are commonly used for operating system, application and current dataset documents (Tier 1)
- High capacity hard drives (HDDs) are used to store larger archive dataset documents (Tier 2)
- HP Z Turbo Drive is a fast SSD solution in a PCIe x4 card slot or M.2 socket

## HP Workstation recommendations for SOLIDWORKS 2015



	HP Z230 Workstation		HP Z440 Workstation	HP Z1 G2 Workstation
	<i>2D design</i>	<i>3D design</i>	<i>Advanced design and simulation</i>	<i>Boardroom presentation</i>
<b>Operating system<sup>1</sup></b>	Windows 8.1 Professional 64-bit	Windows 8.1 Professional 64-bit	Windows 8.1 Professional 64-bit	Windows 8.1 Professional 64-bit
<b>Processor<sup>2</sup></b>	Intel® Xeon® E3-1245v3 4-Core 3.4/3.8 GHz with Turbo Boost	Intel® Xeon® E3-1281v3 4-Core 3.7/4.1 GHz with Turbo Boost	Intel® Xeon® E5-1650v3 6-Core 3.5/3.8 GHz with Turbo Boost	Intel® Xeon® E3-1245v3 4-Core 3.4/3.8 GHz with Turbo Boost
<b>Memory<sup>3</sup></b>	16 GB DDR3 1600 MHz ECC	16 GB DDR3 1600 MHz ECC	32 GB DDR4 2133 MHz ECC	16 GB DDR3-1866 ECC
<b>Graphics</b>	Intel® HD P4600	NVIDIA® Quadro® K620 or AMD FirePro™ W2100	NVIDIA® Quadro® K2200 or AMD FirePro™ W5100	NVIDIA® Quadro® K1100M or Intel® HD Graphics P4600
<b>Storage<sup>4</sup></b>	HP Z Turbo Drive 256 GB	HP Z Turbo Drive 256 GB	HP Z Turbo Drive 512 GB	512 GB SSD



	HP ZBook 15u G2 Mobile Workstation	HP ZBook 15 G2 Mobile Workstation	HP ZBook 17 G2 Mobile Workstation	HP Z640 Workstation
	<i>Field/factory floor</i>	<i>Mobile design</i>	<i>Mobile design and simulation</i>	<i>Expert simulation and visualization</i>
<b>Operating system<sup>1</sup></b>	Windows 8.1 Professional 64-bit	Windows 8.1 Professional 64-bit	Windows 8.1 Professional 64-bit	Windows 8.1 Professional 64-bit
<b>Processor<sup>2</sup></b>	Intel® Core™ i7-5500U 2-Core 2.4/3.0 GHz with Turbo Boost	Intel® Core™ i7-4910MQ 4-Core 2.9/3.9 GHz with Turbo Boost	Intel® Core™ i7-4910MQ 4-Core 2.9/3.9 GHz with Turbo Boost	2x Intel® Xeon® E5-2643v3 6-Core 3.4/3.7 GHz with Turbo Boost
<b>Memory<sup>3</sup></b>	8 GB DDR3L-1600 SDRAM	16 GB GB DDR3L-1600 SDRAM	32 GB GB DDR3L-1600 SDRAM	32 GB DDR4 2133 MHz ECC
<b>Graphics</b>	AMD FirePro™ M4170	NVIDIA® Quadro® K2100M	NVIDIA® Quadro® K4100M	NVIDIA® Quadro® K5200 or AMD FirePro™ W5100
<b>Storage<sup>4</sup></b>	HP Z Turbo Drive 256 GB	HP Z Turbo Drive 256 GB	HP Z Turbo Drive 512 GB	HP Z Turbo Drive 512 GB

## Tips for running SOLIDWORKS 2015

Operating System setting	Default	Recommend
Control Panel/Power options	Balanced	High Performance

BIOS setting	Default	Recommend
Power/OS Power Management/Runtime Power Management	Enable	Enable
Power/OS Power Management/Idle Power Savings	Extended	Normal
Power/OS Power Management/Turbo Mode	Enable	Enable
Advanced/Performance Options/Hyper-Threading	Enable	Disable
Advanced/Performance Options/NUMA (HP Z640 and HP Z840 dual processor)	Enable	Enable
Advanced/Performance Options/QPI Snoop Mode (HP Z640 and Z840 dual processor)	Early Snoop	Early Snoop

### HP Performance Advisor

HP Performance Advisor can be used to install graphics drivers certified for SOLIDWORKS, select system BIOS settings recommended, and help characterize SOLIDWORKS memory usage. Download from: [hp.com/go/hpperformanceadvisor](http://hp.com/go/hpperformanceadvisor)

### Learn more about the HP Workstations family at

[hp.com/go/whitepapers](http://hp.com/go/whitepapers)

[hp.com/go/solidworks](http://hp.com/go/solidworks)


[hp.com/go/thinkhpz](http://hp.com/go/thinkhpz)

*Screen images courtesy of Factory Five Racing, Motus Motorcycles, and Sage Cheshire Aerospace*

- 1 Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers and/or software to take full advantage of Windows functionality. See <http://www.microsoft.com>.
- 2 Multi-Core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. 64-bit computing on Intel® architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers, and applications enabled for Intel® 64 architecture. Processors will not operate (including 32-bit operation) without an Intel® 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. Intel's numbering is not a measurement of higher performance.
- 3 Each processor supports up to 2 channels of DDR3 or DDR4 memory. To realize full performance at least 1 DIMM must be inserted into each channel. Maximum memory capacities assume Windows 64-bit operating systems or Linux.
- 4 For hard drives and solid state drives, 1 GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 10 GB of system disk (for Windows 7) is reserved for system recovery software.

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