



TRIMECHTM
SOLUTIONS

HARDWARE RECOMMENDATIONS GUIDE

SolidWorks 2012

You have made a serious investment purchasing SolidWorks that will ultimately help your engineers, designers, and drafters to be more productive. With the challenging process of choosing a new CAD system, people often overlook the importance of having the appropriate hardware to support such a powerful tool. To help minimize your frustrations and maximize your capabilities, TriMech has compiled this Recommended Hardware guide to aid you in the process of purchasing new hardware.

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This supplemental training resource is produced by TriMech Solutions, LLC to accompany the SolidWorks Essentials class, providing references and resources TriMech has developed above and beyond those available in the SolidWorks Training manuals. The manual is only available to TriMech Solutions students and is not to be duplicated or reproduced in any part or fashion.

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CORE SYSTEM CONSIDERATIONS

PROCESSOR (CPU)

The processor is the single most influential component to your systems overall performance. Simply stated, the faster the processor, the faster SolidWorks will perform.

- Multi-Processors are not fully utilized within the SolidWorks core program, but more between programs. This means that if you plan to run other programs at the same time as SolidWorks, it will run on one processor freeing up the other applications resulting in a faster system.
- The SolidWorks add-ins, SolidWorks Simulation, PhotoWorks, and PhotoView 360, do utilize multi-processing capabilities. If you have plans on utilizing SolidWorks Simulation and PhotoWorks heavily, you may want to look into a multi-processing system.
- SolidWorks only supports AMD® and Intel® based processors. These include the Xeon, Pentium, Core, Phenom, Turion64, and Athlon64 based processors.
- AMD and Intel processors must support SSE2. Pentium 3 and non-64 Athlons do not support SSE2 computing.
- TriMech Technical Support would generally not recommend any Intel or AMD based computers below a Pentium 4 or Athlon64 at this point. Processors aimed at the economy home market, like the Celeron, Atom, and Sempron, generally do not pack the necessary horsepower to run SolidWorks optimally.

SYSTEM MEMORY (RAM)

System memory is the second most important component for overall system performance. The amount of RAM directly correlates to the number and size of programs and files that can run at any given moment. The more RAM you have, the larger the programs and files you can run at peak performance. Not enough system memory results in poor performance.

- Faster RAM will only help if the system supports the RAM speed.
- Increasing RAM in a system that does not need it, will not speed up the system. RAM only acts as a “ceiling”. If you do not have enough, your system will slow down dramatically.
- Newer operating systems require more RAM simply to run itself. For instance, Windows Vista uses more memory than XP.
- Windows (32-bit) allows a maximum of 3GB of memory for applications and 1GB for system use. Windows x64 Editions do not have this limitation. Read the section under ‘Using Windows x64 Edition for more information.

CORE SYSTEM CONSIDERATIONS (CONTINUED)

VIDEO CARD

Video cards is one of the most commonly overlooked hardware item. Your video card effects how smoothly the graphic images on screen rotate, zoom, pan and refresh. A poor video card choice can result in ghosted images, staggered zooms and rotations, and worst of all, system crashes.

- Video cards designed for video games and home media often do not have the robust features and reliable performance that certified graphics cards possess. Look into getting a workstation class graphics card.
- SolidWorks supports only OpenGL hardware acceleration.
- Check the SolidWorks website for a comprehensive list of compatible video cards and drivers. To view the results, go to:

<http://www.solidworks.com/sw/support/Videocardtesting.html>

- Check the SolidWorks graphics card page (see link above) and use only tested and approved drivers. Newer doesn't always mean better.
- To fully enable RealView graphics, you will need a RealView supported graphics card. Refer to the above link for more details and operating system limitations.

HARD DRIVES

Other than acting as storage space for applications and files, the hard drive can play a vital role in your system's overall performance.

- SolidWorks requires at least 5GB of hard drive space simply to install the software onto your system. Make sure there is also enough space to store data files, backups, and other related documents.
- Periodically defragment your hard drive is important for optimal performance.
- Hard drives with little free space tend to fragment more quickly. Make sure there is ample hard drive space to accommodate for the SolidWorks application and other data and that you defragment the drive regularly.
- Consider a Solid State Drive (SSD). Though fairly expensive and performance across manufacturers vary, these memory based hard drives can dramatically improve Input/Output speed for improved boot, file access, installation and "swap" times. As an additional bonus, SSDs do not require you to defragment and use less power.
- RAID configurations can greatly improve Input/Output speed while accessing files and utilizing 'swap' space. Consider this option if you're looking for speedy file access.

SUPPORTING SOFTWARE CONSIDERATIONS

OPERATING SYSTEM

SolidWorks 2012 is only supported under Windows XP Professional, XP x64 Professional, Vista Ultimate, Vista Business, Vista x64, Vista Enterprise Edition, 7 Professional, 7 Ultimate and 7 Business Operating Systems.

- Windows Home, Light, and Media editions are not supported operating systems.
- When running Windows XP Professional, make sure you are running SP2 or higher.
- SolidWorks 2012 will be the last version of SolidWorks to support Windows XP Professional. Solidworks 2013 and future versions will require Windows Vista Pro or newer operating systems.
- eDrawings 2012 is now supported under the MAC OS X (10.5.X - Leopard) or higher operating systems.
- SolidWorks is not supported under OS X in either Boot Camp or other Virtualized environments.

USING WINDOWS X64 EDITIONS

The key benefit of a 64-bit environment for SolidWorks is in the area of memory utilization. Windows XP x64, Vista x64, 7 x64 have the ability to utilize 128GB of RAM (32 time more than 32-bit Windows) and 16 terabytes of virtual memory, enabling applications to run faster when working with large data sets.

- The 64-bit platform is the generally recommended platform for all users.
- Applications can preload substantially more data into virtual memory, allowing rapid access by the x64 processor. This reduces the time for loading data into virtual memory or seeking, reading, and writing to data storage devices, thus making applications run faster and more efficiently.
- In some cases, when dealing with smaller data sets, SolidWorks has been known to operate slightly slower in a x64 environment compared to the traditional 32-bit operating system. Again, the real advantage of x64 will be seen when working with large assemblies and Simulation analyses.
- In order to run a x64 bit version of Windows, you will need hardware that supports x64 instruction sets. Contact your hardware provider for more information.

SUPPORTING SOFTWARE CONSIDERATIONS (CONTINUED)

SOLIDWORKS NETWORK LICENSE SERVER

Many clients prefer their license to be a networked opposed to standalone. Operating system and hardware requirements for license servers are slightly different than the clients.

- SolidWorks Network License Server is only supported under the Windows XP Professional, Vista Professional, 7 Professional, Windows Server 2008, and Windows Server 2003 operating system environments.
- Hardware dongles can be requested as a licensing option for network license servers. Make sure you have the appropriate port for your purchased hardware dongle. (USB or Parallel Port)

SUPPORT SOFTWARE

There are related software packages that work with SolidWorks. Certain older versions of these software packages are not supported by these companies in later revisions of SolidWorks. Check with your reseller or the manufacturer of the software for compatibility and support.

- SolidWorks 2012 supports the use of Microsoft Office 2007 or newer. Word and Excel are needed in order to generate Design Tables, analytical reports, and Excel based BOMs.
- If using SolidWorks 2012 online Help, you will need Internet Explorer 8.0 or later.
- Other support documentation in the PDF format will need to be opened with Adobe Acrobat Reader 6.0 or better. Adobe Acrobat Reader 7.0.7 or higher is recommended.
- Some anti-virus software interferes with the installation and general operation of SolidWorks. Check the SolidWorks system requirements page to see which anti-virus programs are supported.

SOLIDWORKS ADD-IN CONSIDERATIONS

ENTERPRISE PDM SERVER REQUIREMENTS

Enterprise PDM Database and Archive vaults are only supported in the Windows Server 2003 SP1 or higher and Windows Server 2008 operating system environments.

- System memory should be at least 2GB of RAM or greater. TriMech Technical support recommends 4GB of memory or more.
- The Processor should be at least a Pentium 4 1.7GHz or greater. TriMech recommends Quad Core Intel Zion 1.6GHz or higher.
- TriMech Technical Support suggests having at least a 100GB hard drive. Larger is always better. The Enterprise PDM vault will not only save current revision of documents, but EVERY revision of a part, assembly, and drawing document. 200GB or more is recommend.
- Webportal requires the Microsoft Internal Information Service (IIS) to be 5.1 or later.

EDRAWINGS REQUIREMENTS

eDrawings is only supported in the following environments: XP Professional, XP Professional x64, XP Tablet PC Edition, 2000 Professional, Server 2003, Windows NT 4.0 (SP 6.0), Windows 98 SE, Windows ME, MAC OS X Leopard.

NETWORK CONSIDERATIONS

SOLIDWORKS NETWORK RECOMMENDATIONS

SolidWorks is tested only with Microsoft's Windows Networking and Active Directory network environments. Novell networks and non-Windows based network storage devices are not tested, supported or recommended.

- Though a number of TriMech customers have successfully run SolidWorks in a Novell and non-Windows based network environments, numerous technical support issues have arisen as well.
- TCP/IP network service is required when using Enterprise PDM Workgroup.
- Enterprise PDM Server Access requires 100MB minimum bandwidth.

TRIMECH RECOMMENDED HARDWARE CONFIGURATIONS

Below, TriMech Solutions has compiled general Recommended Hardware requirements. These recommendations are made based on the purchase of a NEW computer.

	Entry Level SolidWorks	Mid-Range Solidworks	High-End SolidWorks
User Needs	Users with light to no analysis tools, assemblies up to 300 parts, some sheet metal and light surfacing.	Assemblies with 500+ part assemblies, somewhat complex parts, demanding sheet metal designs, moderate surfacing analysis.	1000+ part assemblies, complex sheet metal, parts surfaces, and/or FEA/CFD analysis.
Processor¹	Intel Core or AMD Opteron 2.0GHz or better.	Intel Core or AMD Phenom 2.0GHz or better.	Fastest Core, Xeon, or Phenom available; consider multiple processors.
RAM	4GBs	6GBs	8GB or more
Hard Drive²	100+GBs 7200RPM (or faster)	150GBs+ 7200RPM (or faster)	250GB+ 7200RPM (or faster) Consider RAID and SSD storage solutions.
Video Card³	256MB; nVidia Quadro FX380; ATI FireGLv3200; or better.	512MB or up; nVidia Quadro FX 1500, 3500; ATI FireGL v5600; or better.	512MB and up; nVidia Quadro FX 3500, 4500; ATI FireGL V7600; or better.
Operating System⁴	Windows 7 Pro; Vista Pro. (32-bit or 64-bit)	Windows 7 Pro; Vista Pro. (64-bit)	Windows 7 Pro; Vista Pro; or better.(64-bit)
Additional Software	Microsoft Office 2007 or newer; Adobe Acrobat 7.0.7 or newer; Internet Explorer 8.X or newer.	Microsoft Office 2007 or newer; Adobe Acrobat 7.0.7 or newer; Internet Explorer 8.X or newer.	Microsoft Office 2007 or newer; Adobe Acrobat 7.0.7 or newer; Internet Explorer 8.X or newer.
Suggested Desktop Models⁵	Dell Precision T1600, HP Z200 Lenovo ThinkStation S20.	Dell Precision T3500, HP Z400, Lenovo ThinkStation E30.	Dell Precision T3500; HP Z400; Lenovo ThinkStation E30; or better.
Suggested Laptop Models⁵	Dell Precision M4600; HP Elitebook 8460w; Lenovo ThinkPad W520.	Dell Precision M6600; HP Elitebook 8560w; Lenovo ThinkPad W520.	Dell Precision M6600; HP Elitebook 8760w; Lenovo ThinkPad W520 or better.

1. Multi-processing can greatly aid rendering and analysis computations.
2. Requires 5GBs of hard disk space to install application and ample free space for files and swap space.
3. Consult SolidWorks Video Card testing page for exact model numbers.
4. 64-bit systems are required to utilize more than 4GBs of RAM.
5. TriMech does not specifically endorse Dell, HP, or Lenovo products. Suggested manufacturers selected based on perceived popularity among clients. Search hardware vendors on the SolidWorks web page for full list of Certified SolidWorks Partner Products.

