

Tekla Structures 14.0 Hardware Recommendation

Guidelines for Choosing Hardware

The main criterion when choosing hardware is reliable performance. Therefore, it is advisable to choose components that are known to perform stably and be compatible with Tekla Structures.

If you are considering a new component, e.g. graphics card, test it beforehand to ensure it fulfils the above mentioned requirements.

Recommendations

Hardware Components

Every component plays a role in the performance and usability of the computer. The important components for performance are memory, graphics card and processor. From an ergonomic point of view, the important components are monitor(s), graphics card, keyboard and mouse.

Memory

When Windows is not able to fit all the data to the memory (RAM), it has to store the rest to the swap file on the hard disk. A hard disk is very slow compared to memory. To avoid using the hard disk as memory extension, you should have enough memory. You can easily check the memory usage with Windows Task Manager (**Ctrl+Alt+Del > Task Manager**). If you have more memory used than your physical memory, you should buy more.

Memory problems are usually difficult to trace. Do not buy the cheapest kind, but consider some quality brand. They are more reliable, and not much more expensive.

Graphics card

The graphics card takes care of displaying the model on the screen, and therefore has great effect on performance in rendered views. Tekla Structures rendering uses OpenGL, and graphics cards with good hardware support for OpenGL give the best performance.

Graphics card manufacturers have slight differences in their OpenGL implementation, which unfortunately may lead to erratic behavior in rendered views with some cards. We do not have resources to test all cards on the market, so we have chosen cards based on NVIDIA graphics processor to be our test platform.

There are many manufacturers making graphics cards based on NVIDIA chips. Although the chip is the same, there might be considerable differences in picture quality. This should be taken into account when evaluating the cards. Graphics card tests in computer magazines are a good source of information on this issue.

Processor

In Tekla Structures 14, some commands, such as clash check, are run as a separate process, so a multi-core processor will provide certain benefit. Also, if you are running multiple software simultaneously you gain benefit.

Monitor(s)

It is recommended to choose a monitor that has a TCO - 03 sign to certify that it fulfils the TCO - 03 requirements, which consider picture quality.

Many customers are already using two monitors with Tekla Structures as it enhances productivity. Therefore we have included two monitors in the recommendation.

To equip the workstation with two monitors you need a graphics card which is capable to drive two monitors. There is a wide selection of dual monitor capable graphics cards on the market, and many of those can combine good performance with reasonable price. We have tested some products based on NVIDIA and ATI chips, and they seem to work without any major problems. You can find more information in computer magazine tests.

Recommended hardware

The following table shows two different hardware configurations. The recommendation is mainly for desktop computers, but the same guidelines can be applied also when purchasing laptops.

The question mark (?) after a graphics card model means that we have not tested that specific model, but we presume it works ok.

	Recommendation	Best performance
Processor	Intel Pentium IV 3.2 – 3.6 GHz AMD Athlon 3800+ – 4000+ *)	Intel Pentium IV 3.73 GHz -> AMD Athlon 4000+ -> *)
Memory	2 GB	2 GB -> (2 GB is Win XP maximum for a single application) **)
Hard disk	150 – 200 GB, 7200 – 10000 rpm	200 GB ->, 10000 rpm -> (S-SATA)
Graphics card	OpenGL support, 256 - 512 MB, e.g. NVIDIA 8800GTS (PCI express), NVIDIA 7800GS (AGP) (?)	OpenGL support, 512 MB, two monitor support, e.g. NVIDIA Quadro FX series (?)
Monitor(s)	21" 1600x1200 or 24" 1920x1200 (one or two)	Two 24" ->, 1920x1200 each
Mouse	3-button wheel mouse, optical	3-button wheel mouse, cordless & optical, e.g. Logitech
Network adapter (multi-user funct.)	100 MB	1 GB Full duplex
Internet connection	DSL 2 MB	DSL 2 MB ->
Backup equipment	DVD-RW	DLT device

	Recommendation	Best performance
Operating system	Windows XP Professional or Microsoft Vista	Windows XP Professional or Microsoft Vista
.NET Framework	.NET Framework version 2.0 ^{***})	.NET Framework version 2.0 ^{***})

*) All Intel CPUs (not Itanium) are supported, the faster the better. When comparing pure Mhzs, core2duo is considerably faster than the old Pentium IV series, so 1.8Ghz Core2Duo corresponds to something like 3Ghz Pentium IV.

**) Memory requirements depend on the Tekla Structures model size. Very big precast models should have proper PC installation to get the most performance out - when possible using 4GB RAM setup plus using the Windows XP 3GB switch. More information:

<http://www.microsoft.com/whdc/system/platform/server/PAE/PAEmem.msp> Computer motherboard must be designed to handle 4GB RAM – which the user needs to check with the corresponding User Guide.

***) .NET Framework 2.0 is needed for the FLEXnet licensing system borrowing and activating tools.

Operating system

Tekla Structures 14.0 is designed to work on Windows XP and Windows Vista.

The FLEXnet licensing system for Tekla Structures supports Windows Vista (Business, Enterprise and Ultimate), XP, Server 2003 and Server 2000.



Tekla Structures versions which use the FLEXnet licensing system work also on 64 bit Windows operating systems, but they are run in 32-bit mode, which means that the maximum virtual memory address space for Tekla Structures is 4 GB. The practical benefit from this is the ability to work with models twice as big as before without the risk of running out of memory.



You will find more information about the FLEXnet licensing system in the FLEXnet User's Guide, available on Tekla Structures Extranet or upon request.

Internet connection

You need to have an Internet connection in order to *activate your Tekla Structures licenses*. You can activate all of your licenses on a server computer to serve licenses for all Tekla Structures workstations in one local area network, or you can activate one license separately on each Tekla Structures workstation.

Direct communication from the license server to the Internet must be allowed during the license activation. Your firewall should not block any incoming or outgoing information during the activation. In the activation, your license server contacts the activation server at Tekla.

Plotters

The principle of plotting in Windows environment is that all applications can use Windows plotters, and the plotter driver takes care of the rest. Software providers may also bypass the Windows driver interface, and write their own plotter-specific drivers, like Autodesk and Bentley have done.

Tekla Structures relies on Windows drivers, which are provided by the hardware manufacturer. The quality and the functionality of the driver is therefore dependant of the hardware manufacturer. Because some manufacturers pay more attention to their Windows drivers than others, the quality of the drivers varies quite much. Therefore it is essential to test the plotter with Tekla Structures before purchasing it.

The Océ Windows Raster Driver supports the install based of wide-format printers (including the Océ 5250, Océ 9300, Océ 9400, Océ 9700 and Océ 9800), as well as legacy operating systems. Its graphic user interface is aligned with the Océ Windows Printer Driver and it possesses advanced color correction capabilities. Can be dopwnloaded from <http://downloads.oce.com/sdds/sddsdw.nsf/>

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