



Question:

What are SolidWorks' recommendations for installing SolidWorks on server computers accessed through remote desktop type technology?

The practical side of using SolidWorks usually makes running remote desktop or similar technologies impractical for most commercial use.

SolidWorks heavily stresses a computer it is used on once models become complicated either by the number of features in a part or the number of components in an assembly.

System sizing recommendations for SolidWorks:

- RAM**
- **Minimum:** 512MB RAM
Parts(6) (< 200 features) and assemblies (< 1000 components)
 - **Recommended:** 1GB or more
Parts(6) (> 200 features) and assemblies (> 1000 components)
 - Virtual memory recommended to 2X the amount of RAM

In addition to the memory handling requirements as demonstrated by the above recommendations, SolidWork will heavily stress other sub-systems. The graphics processing requirements leads most customers to purchase high quality workstation graphics cards such a the NVideo Quadro or ATI Fire range. Running SolidWorks remotely does not allow these graphics accelerator cards to be used and hence there is more processing required in SolidWorks and a very high network load as the graphics instructions are sent between the computers.

As with heavy finite element analysis there is a very high mathematical calculation process associated with SolidWorks. There are few programs which will use 100% of a CPU resources for periods of seconds or minutes Finite Element Analysis is one of these and another is the variant 3D modellers such as SolidWorks. There is a difference between analysis and SolidWorks. With an analysis it is normal to leave the program running whilst the program completes, however with SolidWorks this computational load will occur as part of an interactive session. There is likely to be a considerable impact on user productivity with multiple sessions of SolidWorks running on a single server.

On a workstation there is a limit to the number of concurrent running sessions of SolidWorks which can be started. If starting SolidWorks several times a message will display saying that "SolidWorks cannot be started desktop resources have been exceeded". This refers to the number of handles available to control the user interface. It is normal even on highly specified workstations to not be able to run 3 SolidWorks sessions concurrently. SolidWorks does not test running SolidWorks under Terminal services / Remote desktop and this in itself may limit the possibility of running multiple sessions of SolidWorks on a server.

In researching this article, the sizing recommendations for Terminal services under Windows 2000 which would be out of date with respect to current computing technology however the memory recommendations are similar to that used in the help file for terminal services under Windows 2003 server:

<http://www.microsoft.com/technet/prodtechnol/win2kts/maintain/optimize/w2ktscl.msp>

System and User Memory Requirements

Table 2 below contains general guidelines for Windows 2000 Terminal Services memory requirements, based on the results achieved in the performance lab.

Table 2 Recommended Memory

	Structured Task Workers	Knowledge Workers	Data Entry Workers	Data Entry Workers Dedicated
Memory per user (MB)	9.3	8.5	3.5	3.3
System Memory (MB)	128			
Total Memory	System + (# of Users x Memory per User)			

Comparing the recommendation of 9.3 (now 20 MByte under Windows 2003 server) recommendation with the recommendation of at least 512 Mbytes per user with SolidWorks, there is a completely different expected use of systems resources. Please note there was a recent recommended increase in memory made for the use of SolidWorks based on customer feedback on performance experienced with lower memory availability.

Given the problems of using SolidWorks on remote computers – High processor usage, high memory requirements, high network capacity to support the graphics information being sent to the client interface we do not recommend a client server model for SolidWorks. We do not test and hence support using SolidWorks in this environment. SolidWorks is not tested or supported running under a server operating system. We would not expect problems running SolidWorks under these server environments as the operating systems are built on the principle that the base technology is extended in a server environment rather than being changed.

For the reasons given above SolidWorks recommends running SolidWorks on dedicated high quality workstations which meet the published system requirements