



## SOLIDWORKS Performance Test Guide

This document will explain the uses, methodology, and interpretation of the SOLIDWORKS Performance Test.

The primary goal of the Performance Test tool is to benchmark how fast a computer can complete SOLIDWORKS-related tasks. With this test, we can obtain tangible metrics that measure how well our computers perform. Knowing this information can help in understanding how hardware performs relative to expected benchmarks. This will aid in knowing areas of improvement for future hardware purchases. The test also provides an ability to compare your performance score with other users.

The test pushes the computer into hardware-intensive tasks in order to receive better information on limitations. Standard, out-of-the-box settings are used to ensure consistency.

The components of the test are Processor, Graphics, and I/O. If the computer system has the ability, it can also test Rendering and RealView Graphics Performance. Lastly, Simulation can be examined if the computer has SOLIDWORKS Simulation installed. These test components are explained further below.

## Test Components

### Processor

This test concerns CPU-based activities. The score measures how long a computer needs to complete common SOLIDWORKS tasks. CPU-based functions in SOLIDWORKS include activities like rebuilding features and creating drawing views.

### Graphics

This score quantifies the graphics ability of your computer by testing how smoothly a model rotates, zooms, and pans.

### I/O

Also known as Input/Output, this portion of the test determines how long it takes to open and save files to the computer. It measures the read and write speeds of the computer's hard drive.

### Rendering

This score is only available if the computer has PhotoView 360 installed. The test measures the time needed to complete a photo-realistic rendering of a model.

### RealView Graphics Performance

This score will only be available if the computer has a video card that supports RealView graphics. This test is identical to the graphics portion, except with RealView graphics turned on.

It tests rotation, zoom, and panning of a model with RealView enabled.

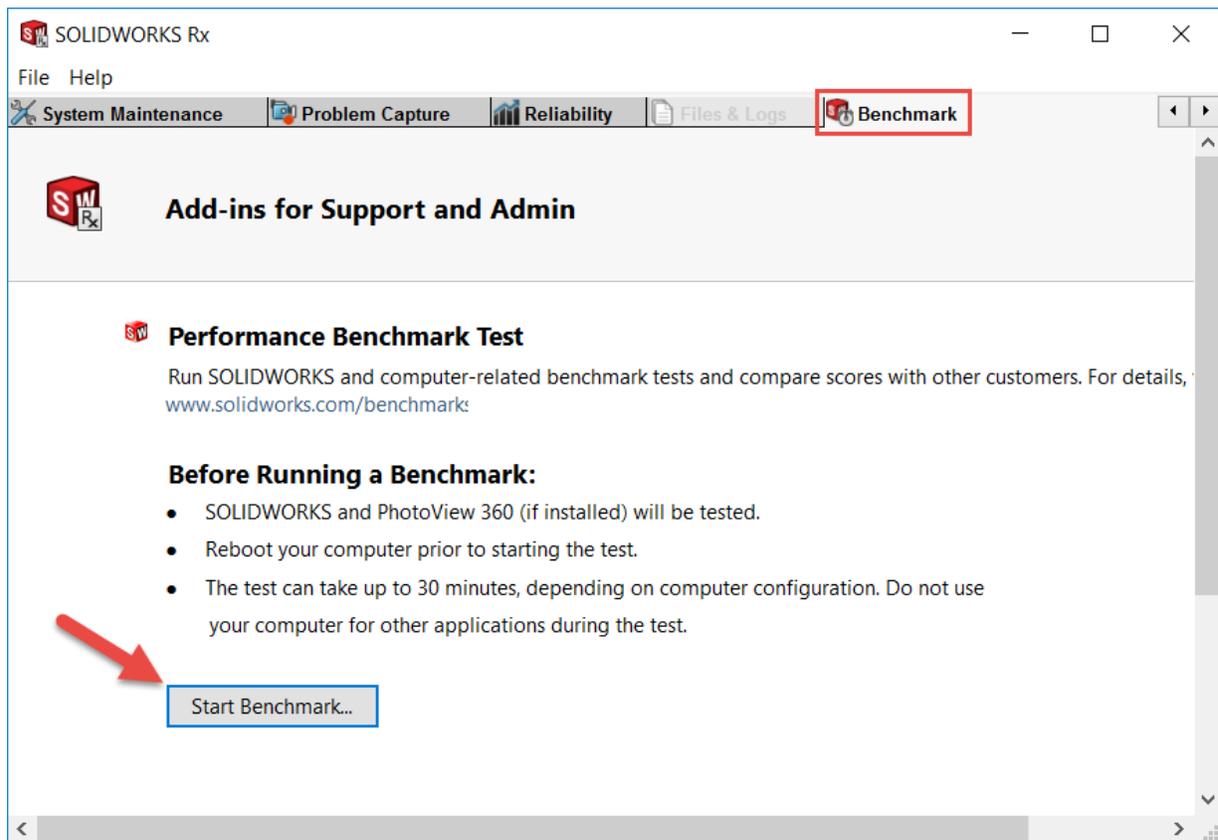
## Simulation

This portion is available if SOLIDWORKS Simulation is installed. The test measures the time to run a static analysis design study.

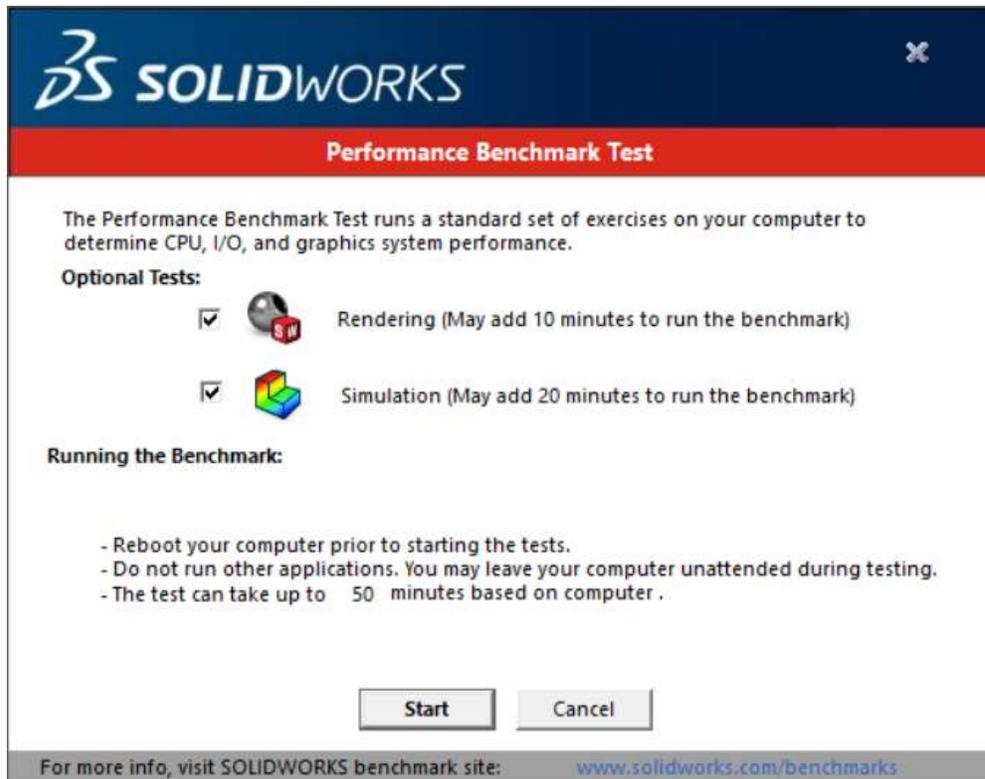
## Running the Test

To benchmark SOLIDWORKS software performance on your machine:

1. Close all applications and reboot your computer.
2. Before you open any applications, from the Windows Start menu, click All Programs > SOLIDWORKS version > SOLIDWORKS Tools > SOLIDWORKS Performance Test. This can also be accessed from SOLIDWORKS Rx.



3. In the SOLIDWORKS Performance Test dialog box, read the instructions and click Start.



4. Address any prompts that appear to complete the benchmarking.

Expect approximately 30 minutes to benchmark a computer. Faster systems will have a shorter test time.

## Test Steps

Listed below are the specific tasks that the Performance Test will conduct. The test will run through 5 identical iterations of these tasks. The associated Test Component is listed in brackets [ ] after the test task.

<ul style="list-style-type: none"> <li>• Open Assembly [I/O]</li> <li>• Force Rebuild [CPU]</li> <li>• Rotate/ zoom assembly [Graphics]</li> <li>• Rotate and zoom assembly (w/ RealView) [CPU/Graphics]</li> <li>• Close Assembly [I/O]</li> </ul>	<ul style="list-style-type: none"> <li>• Open assembly drawing [I/O]</li> <li>• Zoom/pan assembly drawing [Graphics]</li> <li>• Add sheet and view [CPU/Graphics]</li> <li>• Close SOLIDWORKS</li> </ul>	<ul style="list-style-type: none"> <li>• Start SOLIDWORKS</li> <li>• Open part [I/O]</li> <li>• Rebuild part [CPU]</li> <li>• Rotate/zoom part [Graphics]</li> <li>• Render part [CPU w/Multi-Threading]</li> </ul>	<ul style="list-style-type: none"> <li>• Open part drawing [I/O]</li> <li>• Zoom and pan part drawing [Graphics]</li> <li>• Close SOLIDWORKS</li> </ul>	<ul style="list-style-type: none"> <li>• Start SOLIDWORKS</li> <li>• Open Simulation part [I/O]</li> <li>• Simulation mesh and run [CPU w/ Multi-threading]</li> <li>• Simulation close part [I/O]</li> <li>• Close SOLIDWORKS</li> </ul>
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## Interpreting Results

### Processor

The processor-related tasks performed by this test are typical SOLIDWORKS functions. These are single threaded tasks, meaning they do not take advantage of multiple processor cores. This means that the single most important component that affects this score is the CPU clock speed. If this number is low, the biggest culprit is the clock speed of the processor.

Since CPU is used in nearly all operations, improving the CPU score can improve other scores downstream as well.

### Graphics

A fast time here indicates better ability to zoom, pan, and rotate complex and large models with less visible lag.

Graphics manipulation depends on both the CPU and video card. This performance can be improved with a faster video card and/or a faster CPU.

### I/O

This score only applies to files saved to and opened from a local drive. It does not account for network speeds or any PDM environment. It is not a good indicator of open and save times from network environments.



### Rendering

PhotoView 360 does take advantage of multiple cores of processors, if they exist. This is referred to as CPU Multi-Threading. Adding CPU cores or improving their clock speed will improve render times.

This type of rendering is also independent from the video card; it is exclusively worked through the processor.

### RealView Graphics Performance

A fast time here indicates better ability to zoom, pan, and rotate complex and large models with less visible lag when RealView Graphics are turned on.

RealView graphics performance depends on both the CPU and the video card, but with greater dependency on video card than standard graphics. RealView graphics performance can be improved with a faster video card and/or a faster CPU.

### Simulation

SOLIDWORKS Simulation does use multiple processors (multi-threading), if they exist. More and faster CPU's will improve the time to run a study. SOLIDWORKS Simulation also requires frequent writes to disk, so hard drive becomes a factor as well.