Configuration Guidance

Engineers should think in terms of the sizes and complexities of the projects to be run when considering a workstation for SOLIDWORKS. A workstation consists of six important components: CPU (speed, cores, and sockets), memory, storage, graphics, OS, and applications.

CPU (speed) – With CAD/modeling, each step depends on processing the previous step in most instances. For these activities, CPU speed is critical for greater productivity.

CPU (cores and sockets) – Simulation, rendering, and ray tracing are often done in parallel. These activities can benefit from more cores (in single and dual sockets).

Memory – The entire model is loaded into memory. Too little memory can hamper productivity. Memory should be at least 2x the size of the largest model to be loaded. All memory slots must be populated evenly.

Storage – Spinning hard drives are one of the slowest components in a workstation. With the high reliability and large sizes of today’s professional series Solid State Drives (SSDs), productive workstations should use SSDs, which offer speeds of up to 10x faster than a mechanical drive. Note that when selecting an SSD, consider features such as self-encryption, data center-grade or workstation-grade reliability and performance (consumer SSDs are not intended for workstation-level usage), and manageability. Intel offers a range of SSDs applicable to workstations.

Graphics – Graphics processing is usually done by the CPU in most CAD software, thus integrated graphics or an entry-level discrete card can satisfy many user needs. For applications needing more performance, selecting a mid-range card instead of a high-end graphics card allows the savings to be applied to a larger SSD where I/O performance is critical.

OS and Applications – Optimized OS and application settings can offer increased productivity, according to Computer Aided Technology, Inc. (CATI), a SOLIDWORKS ISV reseller.

SOLIDWORKS solutions cover all aspects of the product development process with a seamless, integrated workflow. Their rich suite of tools includes 2D/3D design, simulation, assembly, product data management, rendering, and more, allowing designers and engineers to span multiple disciplines with ease and simulate all along the design process.
### 2D/3D Design with Basic Simulation

<table>
<thead>
<tr>
<th></th>
<th>Not Complex*</th>
<th>Complex*</th>
<th>More Complex*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Processor</strong></td>
<td>Intel® Xeon® processor E5-1600 v3 family (min 6 cores)</td>
<td>Intel® Xeon® processor E5-2600 v3 family (min 8 cores)</td>
<td>Intel® Xeon® processor E5-2600 v3 family (min 10 cores)</td>
</tr>
<tr>
<td><strong>Memory</strong></td>
<td>8-12 GB total</td>
<td>2-4 GB/core</td>
<td>6-8 GB/core</td>
</tr>
<tr>
<td><strong>Storage</strong></td>
<td>SSD</td>
<td>SSD</td>
<td>SSD</td>
</tr>
<tr>
<td><strong>Graphics (GPU)</strong></td>
<td>Entry-level</td>
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*Not Complex*
- Parts with up to 100 features, plus:
  - Assembly with up to 100-200 unique components, and/or
  - Up to 5-sheet drawings, and/or
  - Single-part static and/or motion simulation

*Complex*
- Parts with 100-200 features, plus:
  - Assembly with 200-500 unique components, and/or
  - 10-sheet or larger drawings, and/or
  - Static and/or motion assembly simulation of 1-10 components

*More Complex*
- Parts with over 200 features, plus:
  - Assembly with 500-1,000 unique components, and/or

*Total memory* should be at least 2x the size of your largest model. Always populate memory slots evenly.

### Advanced Simulation and Rendering

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<thead>
<tr>
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<th>Not Complex*</th>
<th>Complex*</th>
<th>More Complex*</th>
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</thead>
<tbody>
<tr>
<td><strong>Processor</strong></td>
<td>Intel® Xeon® processor E5-1600 v3 family (min 6 cores)</td>
<td>2x Intel® Xeon® processor E5-2600 v3 family (min 8 cores)</td>
<td>2x Intel® Xeon® processor E5-2600 v3 family (min 10 cores)</td>
</tr>
<tr>
<td><strong>Memory</strong></td>
<td>16 GB total</td>
<td>6 GB/core</td>
<td>8 GB/core</td>
</tr>
<tr>
<td><strong>Storage</strong></td>
<td>SSD</td>
<td>SSD</td>
<td>SSD</td>
</tr>
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</tr>
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</table>

*Not Complex*
- Parts with more than 100 features, plus:
  - Assembly with 500-1000 unique components, and/or
  - 10-sheet or larger drawings, and/or
  - Professional simulation functions: Frequency Analysis and Buckling, and/or
  - Photorealistic rendering of up to 100-component assembly

*Complex*
- Parts with more than 200 features, plus:
  - Assembly with 1,000-2,000 unique components, and/or
  - 30-sheet or larger drawings, and/or

*More Complex*
- Parts with over 200 features, plus:
  - Assembly with over 2,000 unique components, and/or
  - Photorealistic rendering of over 100-component assembly

*Total memory* should be at least 2x the size of your largest model. Always populate memory slots evenly.