# Hardware of SuperMUC-NG

<table>
<thead>
<tr>
<th>Compute Nodes</th>
<th>Thin Nodes</th>
<th>Fat Nodes</th>
<th>Total (Thin + Fat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Intel Skylake Xeon Platinum 8174</td>
<td>Intel Skylake Xeon Platinum 8174</td>
<td>Intel Skylake Xeon Platinum 8174</td>
</tr>
<tr>
<td>Cores per Node</td>
<td>48</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>Memory per node (GByte)</td>
<td>96</td>
<td>768</td>
<td>NA</td>
</tr>
<tr>
<td>Number of Nodes</td>
<td>6,336</td>
<td>144</td>
<td>6,480</td>
</tr>
<tr>
<td>Number of Cores</td>
<td>304,128</td>
<td>6,912</td>
<td>311,040</td>
</tr>
<tr>
<td>PEAK @ nominal (PFlop/s)</td>
<td>26.3</td>
<td>0.6</td>
<td>26.9</td>
</tr>
<tr>
<td>Linpack (PFlop/s)</td>
<td>TBD</td>
<td>TBD</td>
<td>19.476</td>
</tr>
<tr>
<td>Memory (TByte)</td>
<td>608</td>
<td>111</td>
<td>719</td>
</tr>
</tbody>
</table>

**Filesystems**

- High Performance Parallel Filesystem: 50 PB @ 500 GB/s
- Data Science Storage: 20 PB @ 70 GB/s
- Home Filesystem: 256 TB

**Infrastructure**

- Cooling: Direct warm water cooling
- Waste Heat Reuse: Reuse for producing cold water with adsorption coolers

**Software**

- Operating System: Suse Linux (SLES)
- Batch Scheduling System: SLURM
- High Performance Parallel Filesystem: IBM Spectrum Scale (GPFS)
- Programming Environment: Intel Parallel Studio XE, GNU compilers
- Message Passing: Intel MPI, (OpenMPI)

Additionally to SuperMUC-NG itself, some cloud nodes have been purchased. The Compute Cloud currently consists of:

<table>
<thead>
<tr>
<th>Cloud Node Type</th>
<th>Number of Nodes</th>
<th>CPU (Cores)</th>
<th>RAM (GB)</th>
<th>GPUs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloud Compute Node</td>
<td>82</td>
<td>40 (@ 2.4 GHz)</td>
<td>192 GB</td>
<td></td>
</tr>
<tr>
<td>Cloud GPU Node</td>
<td>32</td>
<td>40 (@ 2.4 GHz)</td>
<td>768 GB</td>
<td>2x Nvidia Tesla V100</td>
</tr>
<tr>
<td>Cloud Huge Node</td>
<td>1</td>
<td>192 (@ 2.1 GHz)</td>
<td>6,000 GB</td>
<td>16 GB</td>
</tr>
</tbody>
</table>

See also:

- [Compute Cloud of SuperMUC-NG](#)
- [Details of Compute Nodes](#)