Supermicro

SuperServer 6017TR-TQF (X9DRT-IBQF, Intel Xeon E5-2620, 2.00 GHz)

SPECint®2006 = 38.9
SPECint_base2006 = 36.5

Hardware

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E5-2620</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 2.50 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>2000</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>12 cores, 2 chips, 6 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1,2 chips</td>
</tr>
<tr>
<td>Primary Cache</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache</td>
<td>256 KB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache</td>
<td>15 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>64 GB (8 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz and CL9)</td>
</tr>
<tr>
<td>Disk Subsystem</td>
<td>1 x 1 TB SATA II, 7200 RPM</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
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Software

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Red Hat Enterprise Linux Server Release 6.2, Kernel 2.6.32-220.el6.x86_64</td>
</tr>
<tr>
<td>Compiler</td>
<td>C/C++: Version 13.0.0.133 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>Yes</td>
</tr>
<tr>
<td>File System</td>
<td>ext4</td>
</tr>
<tr>
<td>System State</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Peak Pointers</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other Software</td>
<td>Microquill SmartHeap V10.0</td>
</tr>
</tbody>
</table>
### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<tbody>
<tr>
<td>400.perlbench</td>
<td>434</td>
<td>22.5</td>
<td>432</td>
<td>22.6</td>
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<td>401.bzip2</td>
<td>588</td>
<td>16.4</td>
<td>589</td>
<td>16.4</td>
<td>588</td>
<td>16.4</td>
<td>572</td>
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<td>572</td>
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<td>403.gcc</td>
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<td>23.4</td>
<td>345</td>
<td>23.4</td>
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<td>337</td>
<td>23.9</td>
<td>336</td>
<td>23.9</td>
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<tr>
<td>429.mcf</td>
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<td>49.4</td>
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<td>49.3</td>
<td>187</td>
<td>48.7</td>
<td>185</td>
<td>49.4</td>
<td>185</td>
<td>49.3</td>
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<tr>
<td>445.gobmk</td>
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<td>17.6</td>
<td>596</td>
<td>17.6</td>
<td>618</td>
<td>17.0</td>
<td>545</td>
<td>19.2</td>
<td>545</td>
<td>19.3</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>245</td>
<td>38.1</td>
<td>245</td>
<td>38.1</td>
<td>245</td>
<td>38.1</td>
<td>246</td>
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<td>458.sjeng</td>
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<td>580</td>
<td>20.8</td>
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<td>20.9</td>
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<td>20.6</td>
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<td>20.6</td>
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<tr>
<td>462.libquantum</td>
<td>17.9</td>
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<td>11.5</td>
<td>1800</td>
<td>10.9</td>
<td>1900</td>
<td>17.9</td>
<td>1160</td>
<td>11.5</td>
<td>1800</td>
</tr>
<tr>
<td>464.h264ref</td>
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<td>33.6</td>
<td>670</td>
<td>33.0</td>
<td>661</td>
<td>33.5</td>
<td>554</td>
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<td>552</td>
<td>40.1</td>
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<tr>
<td>471.omnetpp</td>
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<td>18.5</td>
<td>324</td>
<td>19.3</td>
<td>337</td>
<td>18.5</td>
<td>264</td>
<td>23.6</td>
<td>251</td>
<td>24.9</td>
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<tr>
<td>473.astar</td>
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<td>22.1</td>
<td>320</td>
<td>21.9</td>
<td>319</td>
<td>22.0</td>
<td>318</td>
<td>22.1</td>
<td>320</td>
<td>21.9</td>
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<tr>
<td>483.xalancbmk</td>
<td>181</td>
<td>38.1</td>
<td>182</td>
<td>37.9</td>
<td>181</td>
<td>38.1</td>
<td>176</td>
<td>39.2</td>
<td>175</td>
<td>39.5</td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

### Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

### General Notes

Environment variables set by runspec before the start of the run:
- `LD_LIBRARY_PATH = "/home/cpu2006/libs/32/:/home/cpu2006/libs/64/:/home/cpu2006/sh"
- `OMP_NUM_THREADS = "12"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5

Transparent Huge Pages enabled with:
- `echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled`

runcspec command invoked through numactl i.e.:
- `numactl --interleave=all runspec <etc>`

### Base Compiler Invocation

C benchmarks:
- `icc -m64`

C++ benchmarks:
- `icpc -m64`
**SPEC CINT2006 Result**

Supermicro
SuperServer 6017TR-TQF (X9DRT-IBQF, Intel Xeon E5-2620, 2.00 GHz)

| SPECint2006 | 38.9 |
| SPECint_base2006 | 36.5 |

CPU2006 license: 001176  
Test sponsor: Supermicro  
Tested by: Supermicro  

---

**Base Portability Flags**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>403.gcc</td>
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</tr>
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<td>429.mcf</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>445.gobmk</td>
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</tr>
<tr>
<td>456.hmmer</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>471.omnetpp</td>
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</tr>
<tr>
<td>473.astar</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX</td>
</tr>
</tbody>
</table>

---

**Base Optimization Flags**

C benchmarks:
- -xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:
- -xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64

---

**Base Other Flags**

C benchmarks:
- 403.gcc: -Dalloca=_alloca

---

**Peak Compiler Invocation**

C benchmarks (except as noted below):
- icc -m64
- 400.perlbench: icc -m32
- 445.gobmk: icc -m32
- 464.h264ref: icc -m32

C++ benchmarks (except as noted below):
- icpc -m32
- 473.astar: icpc -m64
Supermicro
SuperServer 6017TR-TQF (X9DRT-IBQF, Intel Xeon E5-2620, 2.00 GHz)

SPECint2006 = 38.9
SPECint_base2006 = 36.5

CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

Test date: Apr-2013
Hardware Availability: Mar-2012
Software Availability: Oct-2012

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch
-ansi-alias

401.bzip2: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div -prof-use(pass 2) -auto-ilp32 -opt-prefetch
-ansi-alias

403.gcc: -xAVX -ipo -O3 -no-prec-div -inline-cALLOC
-opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: -xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias

456.hmmer: -xAVX -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
-ansi-alias

458.sjeng: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll14

462.libquantum: basepeak = yes

464.h264ref: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll12
-ansi-alias

C++ benchmarks:

471.omnetpp: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2)
-opt-ra-region-strategy=block
-ansi-alias
-Wl,-z,muldefs -L/sh -lsmartheap

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SuperServer 6017TR-TQF (X9DRT-IBQF, Intel Xeon E5-2620, 2.00 GHz)

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CPU2006 license: 001176
Test date: Apr-2013
Test sponsor: Supermicro
Hardware Availability: Mar-2012
Tested by: Supermicro
Software Availability: Oct-2012

Peak Optimization Flags (Continued)

473.astar: basepeak = yes
483.xalancbmk: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
&Wl,-z,muldefs -L/sh -lsmartheap

Peak Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.html
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.xml
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revB.xml

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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