# SPEC® CINT2006 Result

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## Supermicro

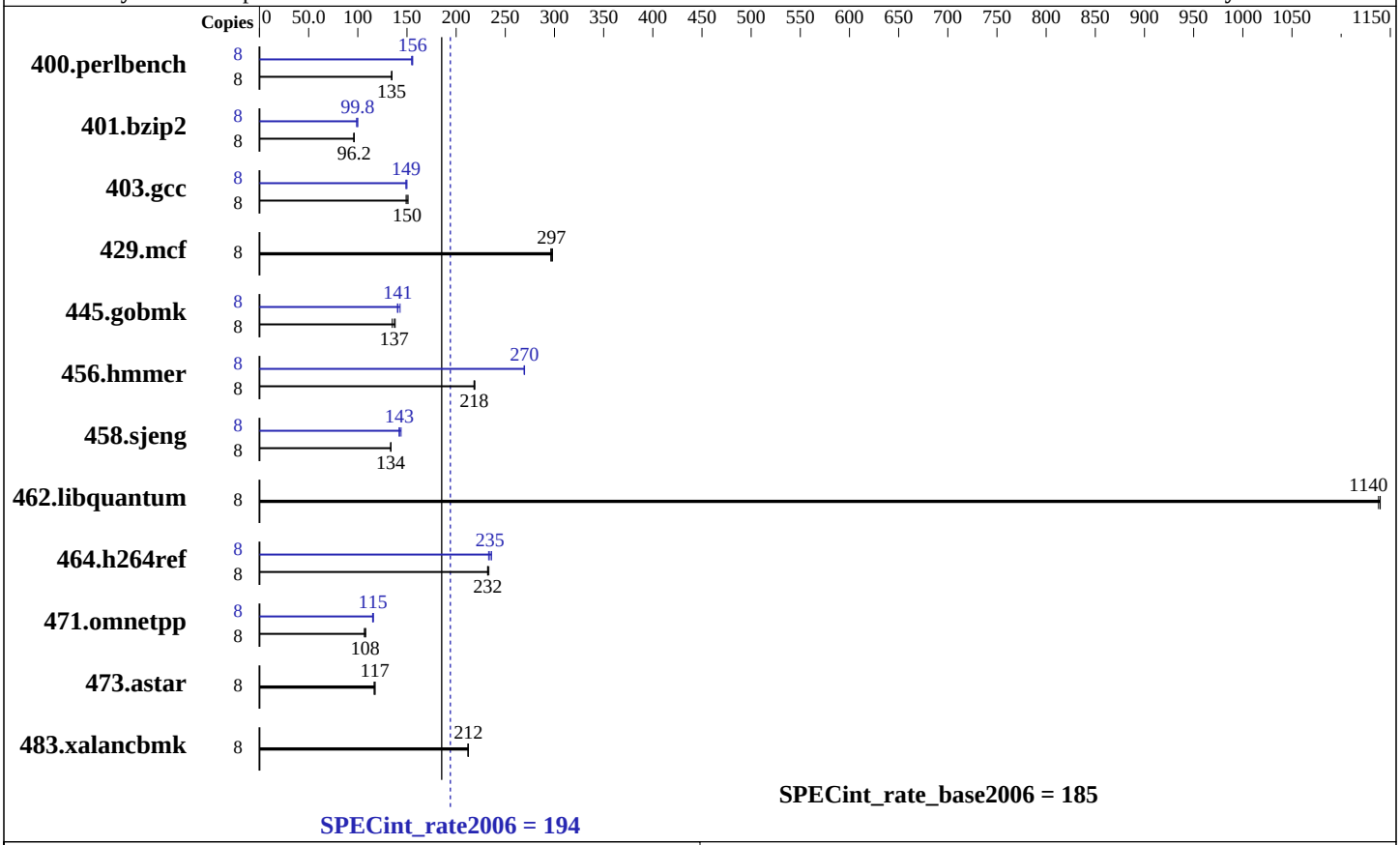
SuperWorkstation 7047GR-TRF (X9DRG-QF, Intel Xeon E5-2637)

SPECint®_rate2006 = 194

SPECint_rate_base2006 = 185

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

**Test date:** Apr-2012
**Hardware Availability:** Mar-2012
**Software Availability:** Dec-2011




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5-2637 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.50 GHz |
| CPU MHz: | 3000 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 2 chips, 2 cores/chip, 2 threads/core |
| CPU(s) orderable: | 1,2 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 256 KB I+D on chip per core |
| L3 Cache: | 5 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC) |
| Disk Subsystem: | 1 x 1 TB SATA II, 7200 RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | Red Hat Enterprise Linux Server Release 6.2, Kernel 2.6.32-220.el6.x86_64 |
| Compiler: | C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux |
| Auto Parallel: | No |
| File System: | ext4 |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | Microquill SmartHeap V9.01 |

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## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 8 | 582 | 134 | 580 | 135 | **581** | **135** | 8 | **502** | **156** | 502 | 156 | 505 | 155 |
| 401.bzip2 | 8 | **803** | **96.2** | 801 | 96.4 | 806 | 95.8 | 8 | 773 | 99.8 | 782 | 98.7 | **774** | **99.8** |
| 403.gcc | 8 | 426 | 151 | 432 | 149 | **429** | **150** | 8 | **432** | **149** | 432 | 149 | 429 | 150 |
| 429.mcf | 8 | **246** | **297** | 245 | 298 | 246 | 296 | 8 | **246** | **297** | 245 | 298 | 246 | 296 |
| 445.gobmk | 8 | **612** | **137** | 622 | 135 | 608 | 138 | 8 | **596** | **141** | 598 | 140 | 587 | 143 |
| 456.hmmer | 8 | **342** | **218** | 342 | 218 | 341 | 219 | 8 | 277 | 270 | **277** | **270** | 277 | 269 |
| 458.sjeng | 8 | 724 | 134 | 726 | 133 | **725** | **134** | 8 | **679** | **143** | 682 | 142 | 672 | 144 |
| 462.libquantum | 8 | 146 | 1140 | 145 | 1140 | **145** | **1140** | 8 | 146 | 1140 | 145 | 1140 | **145** | **1140** |
| 464.h264ref | 8 | **763** | **232** | 763 | 232 | 759 | 233 | 8 | 760 | 233 | **755** | **235** | 750 | 236 |
| 471.omnetpp | 8 | 469 | 107 | 463 | 108 | **465** | **108** | 8 | 431 | 116 | **433** | **115** | 435 | 115 |
| 473.astar | 8 | 478 | 117 | 482 | 117 | **478** | **117** | 8 | 478 | 117 | 482 | 117 | **478** | **117** |
| 483.xalancbmk | 8 | 261 | 212 | **260** | **212** | 260 | 213 | 8 | 261 | 212 | **260** | **212** | 260 | 213 |

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

## Submit Notes

```
The numactl mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate numactl commands to bind each copy to a specific processor.
For details, please see the config file.
```

## Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

## General Notes

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

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
 Filesystem page cache cleared with:
 echo 1>       /proc/sys/vm/drop_caches
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>
```

## Base Compiler Invocation

C benchmarks:
```
icc  -m32
```

C++ benchmarks:
```
icpc -m32
```

## Base Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
462.libquantum: `-DSPEC_CPU_LINUX`
483.xalancbmk: `-DSPEC_CPU_LINUX`

## Base Optimization Flags

C benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
-Wl,-z,muldefs -L/smartheap -lsmartheap
```

## Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

## Peak Compiler Invocation

C benchmarks (except as noted below):
```
icc  -m32
```

400.perlbench: `icc -m64`

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

C++ benchmarks:
```
icpc -m32
```

## Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
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) -auto-ilp32

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

403.gcc: -xAVX -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3

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

458.sjeng: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto-ilp32

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) -unroll2 -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) -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/smartheap -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

# 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-ic12.1-official-linux64.20111122.html`
`http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-revA.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml`
`http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-revA.xml`


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For other inquiries, please contact webmaster@spec.org.

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