# SPEC® CINT2006 Result

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## Fujitsu

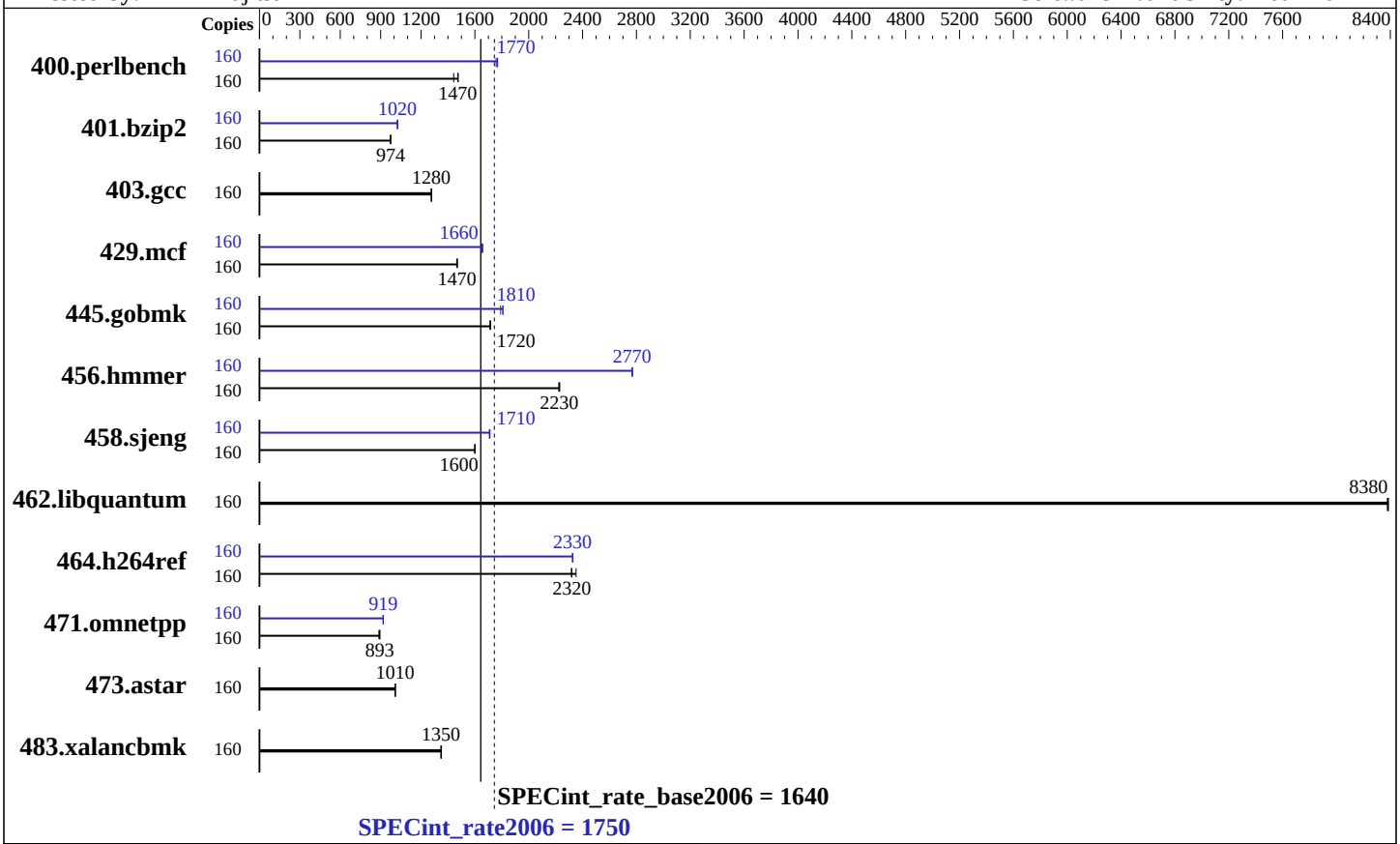
PRIMERGY RX900 S2, Intel Xeon E7-8860, 2.27 GHz

SPECint®_rate2006 = 1750

SPECint_rate_base2006 = 1640

**CPU2006 license:** 19
**Test sponsor:** Fujitsu
**Tested by:** Fujitsu

**Test date:** Apr-2011
**Hardware Availability:** Jun-2011
**Software Availability:** Jan-2011




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E7-8860 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.67 GHz |
| CPU MHz: | 2267 |
| FPU: | Integrated |
| CPU(s) enabled: | 80 cores, 8 chips, 10 cores/chip, 2 threads/core |
| CPU(s) orderable: | 4,6,8 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: | 24 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 1 TB (128 x 8 GB 4Rx8 PC3-10600R-9, ECC, running at 1066 MHz) |
| Disk Subsystem: | 2 x 147 GB (SAS, 15000RPM, RAID0) |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 11 SP1(x86_64), Kernel 2.6.32.12-0.7-default |
| Compiler: | Intel C++ Compiler XE for applications running on IA-32 Version 12.0.1.116 Build 20101116 |
| Auto Parallel: | No |
| File System: | ext2 |
| 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 | 160 | 1059 | 1480 | 1084 | 1440 | **1061** | **1470** | 160 | **885** | **1770** | 889 | 1760 | 884 | 1770 |
| 401.bzip2 | 160 | **1585** | **974** | 1585 | 974 | 1587 | 973 | 160 | 1505 | 1030 | 1507 | 1020 | **1507** | **1020** |
| 403.gcc | 160 | 1010 | 1280 | **1009** | **1280** | 1007 | 1280 | 160 | 1010 | 1280 | **1009** | **1280** | 1007 | 1280 |
| 429.mcf | 160 | 996 | 1470 | **994** | **1470** | 993 | 1470 | 160 | **881** | **1660** | 882 | 1660 | 881 | 1660 |
| 445.gobmk | 160 | 978 | 1720 | 980 | 1710 | **978** | **1720** | 160 | **929** | **1810** | 937 | 1790 | 928 | 1810 |
| 456.hmmer | 160 | 672 | 2220 | **670** | **2230** | 669 | 2230 | 160 | **539** | **2770** | 540 | 2770 | 539 | 2770 |
| 458.sjeng | 160 | **1210** | **1600** | 1212 | 1600 | 1209 | 1600 | 160 | 1134 | 1710 | **1131** | **1710** | 1131 | 1710 |
| 462.libquantum | 160 | 396 | 8380 | 395 | 8390 | **396** | **8380** | 160 | 396 | 8380 | 395 | 8390 | **396** | **8380** |
| 464.h264ref | 160 | 1506 | 2350 | 1528 | 2320 | **1526** | **2320** | 160 | 1523 | 2320 | 1521 | 2330 | **1522** | **2330** |
| 471.omnetpp | 160 | 1118 | 894 | 1127 | 887 | **1120** | **893** | 160 | **1088** | **919** | 1087 | 920 | 1089 | 918 |
| 473.astar | 160 | 1114 | 1010 | **1114** | **1010** | 1113 | 1010 | 160 | 1114 | 1010 | **1114** | **1010** | 1113 | 1010 |
| 483.xalancbmk | 160 | **818** | **1350** | 819 | 1350 | 817 | 1350 | 160 | **818** | **1350** | 819 | 1350 | 817 | 1350 |

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

## Submit Notes

```
The config file option 'submit' was used.
 numactl was used to bind copies to the cores
```

## Operating System Notes

```
Large pages were not enabled for this run

The following command was used prior to run
   ulimit -s unlimited
   echo 1 > /proc/sys/vm/zone_reclaim_mode
```

## General Notes

```
Binaries were compiled on RHEL5.5

For information about Fujitsu please visit: http://www.fujitsu.com
```

## 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:
`-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch`
`-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT`

C++ benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs`
`-L/smartheap -lsmartheap`
`-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT`

## 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`

Continued on next page

## Peak Portability Flags (Continued)

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: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

401.bzip2: -xSSE4.2(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
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

403.gcc: basepeak = yes

429.mcf: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-ansi-alias -auto-ilp32

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -auto-ilp32

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll4 -auto-ilp32
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2(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: -xSSE4.2(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

Continued on next page

## Peak Optimization Flags (Continued)

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-ic12.0-linux64-revB.html`
`http://www.spec.org/cpu2006/flags/RX900S2_Platform.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml`
`http://www.spec.org/cpu2006/flags/RX900S2_Platform.xml`


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

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