# SPEC® CINT2006 Result

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## Cisco Systems

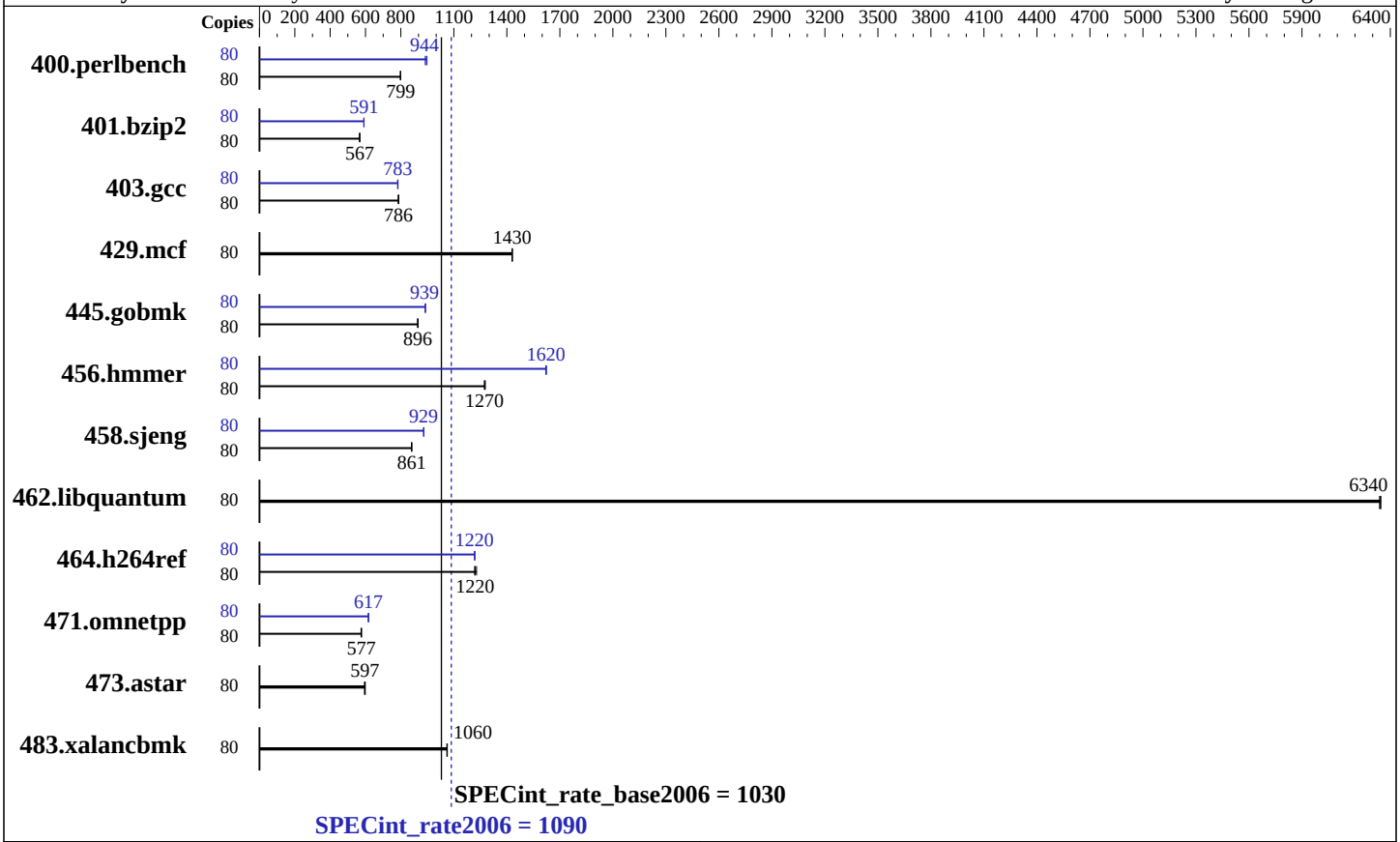
Cisco UCS C460 M2 (Intel Xeon E7-4860, 2.26 GHz)

SPECint®_rate2006 = 1090

SPECint_rate_base2006 = 1030

**CPU2006 license:** 9019
**Test sponsor:** Cisco Systems
**Tested by:** Cisco Systems

**Test date:** Sep-2011
**Hardware Availability:** Jul-2011
**Software Availability:** Aug-2011




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E7-4860 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.66 GHz |
| CPU MHz: | 2266 |
| FPU: | Integrated |
| CPU(s) enabled: | 40 cores, 4 chips, 10 cores/chip, 2 threads/core |
| CPU(s) orderable: | 1,2,3,4 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 (64 x 16 GB 4Rx4 PC3-10600R-9, ECC, running at 1067 MHz) |
| Disk Subsystem: | 146 GB SAS, 10K RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | Red Hat Enterprise Linux Server release 6.1 beta<br>Kernel 2.6.32-130.el6.x86_64 |
| Compiler: | C/C++: Version 12.0.1.116 of<br>Intel Compiler XE<br>Build 20101116 |
| 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 | 80 | **979** | **799** | 978 | 799 | 981 | 797 | 80 | **828** | **944** | 833 | 938 | 825 | 948 |
| 401.bzip2 | 80 | **1361** | **567** | 1360 | 568 | 1363 | 566 | 80 | 1308 | 590 | 1304 | 592 | **1305** | **591** |
| 403.gcc | 80 | 817 | 789 | 820 | 785 | **819** | **786** | 80 | 822 | 784 | **822** | **783** | 824 | 782 |
| 429.mcf | 80 | 510 | 1430 | 510 | 1430 | **510** | **1430** | 80 | 510 | 1430 | 510 | 1430 | **510** | **1430** |
| 445.gobmk | 80 | **937** | **896** | 938 | 895 | 935 | 898 | 80 | **894** | **939** | 894 | 939 | 895 | 938 |
| 456.hmmer | 80 | 584 | 1280 | **586** | **1270** | 586 | 1270 | 80 | 460 | 1620 | 461 | 1620 | **460** | **1620** |
| 458.sjeng | 80 | 1123 | 862 | 1124 | 861 | **1124** | **861** | 80 | 1041 | 930 | 1042 | 929 | **1041** | **929** |
| 462.libquantum | 80 | **261** | **6340** | 261 | 6350 | 261 | 6340 | 80 | **261** | **6340** | 261 | 6350 | 261 | 6340 |
| 464.h264ref | 80 | 1454 | 1220 | 1441 | 1230 | **1450** | **1220** | 80 | 1452 | 1220 | **1454** | **1220** | 1455 | 1220 |
| 471.omnetpp | 80 | 866 | 578 | **867** | **577** | 870 | 575 | 80 | 810 | 618 | **810** | **617** | 812 | 616 |
| 473.astar | 80 | **940** | **597** | 945 | 594 | 938 | 598 | 80 | **940** | **597** | 945 | 594 | 938 | 598 |
| 483.xalancbmk | 80 | 520 | 1060 | **520** | **1060** | 519 | 1060 | 80 | 520 | 1060 | **520** | **1060** | 519 | 1060 |

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

```
 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 = "/opt/cpu2006/smartheap:/opt/cpu2006/ic12.1-libs/ia32/:/opt/cpu2006/ic12.1-libs/intel64"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5 with binutils-2.17.50.0.6-14.el5
 Stack size set to unlimited using "ulimit -s unlimited"
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 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:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:
-xSSE4.2 -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: -xSSE4.2(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: -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

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

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

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

473.astar: basepeak = yes

Continued on next page

## Peak Optimization Flags (Continued)

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-linux64.html`
`http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings.20111118.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/Intel-ic12.1-linux64.xml`
`http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings.20111118.xml`


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

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