# SPEC® CINT2006 Result



## Cisco Systems

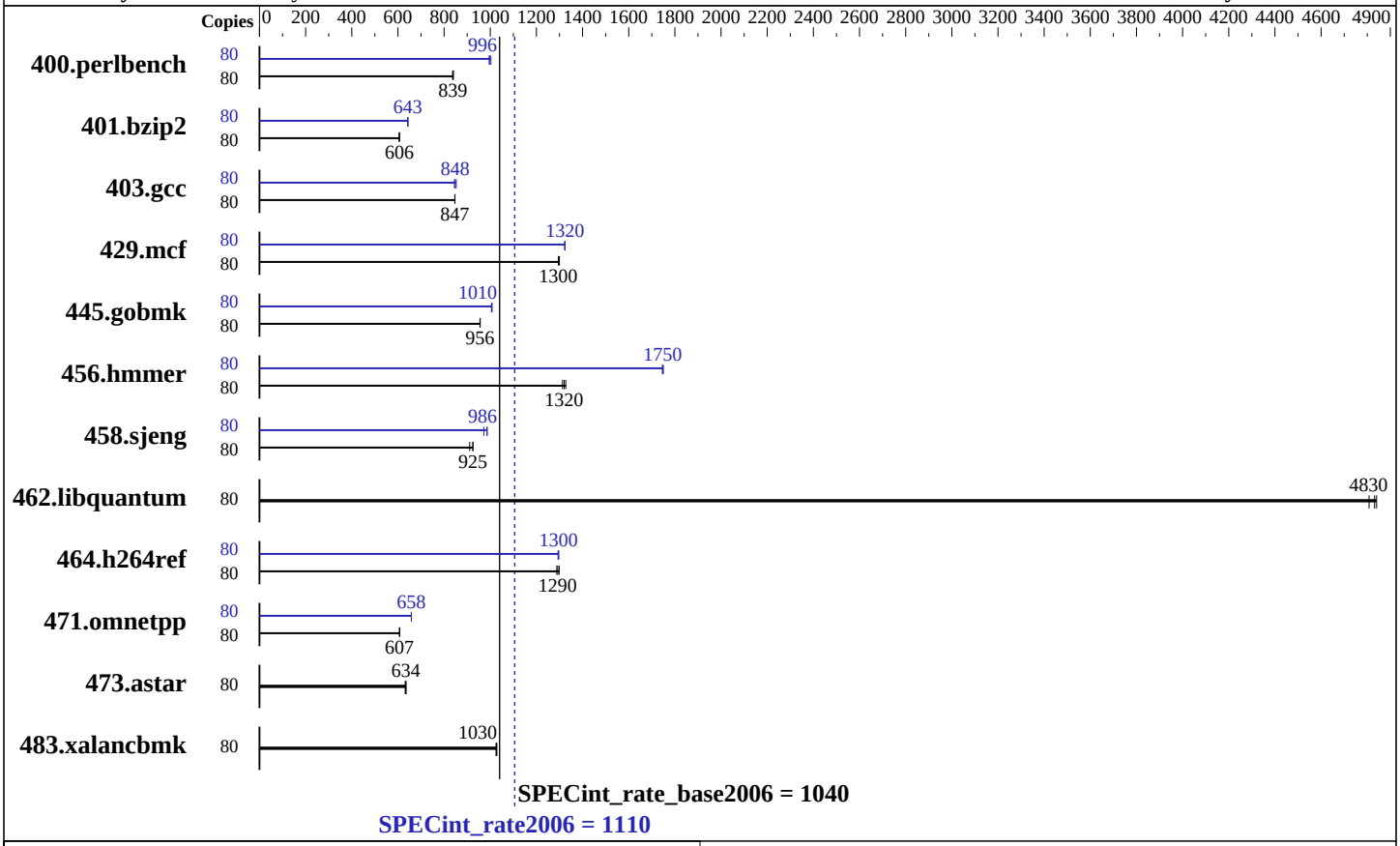
Cisco UCS C460 M2 (Intel Xeon E7-4870, 2.40 GHz)

SPECint®_rate2006 = 1110

SPECint_rate_base2006 = 1040

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

**Test date:** May-2011
**Hardware Availability:** May-2011
**Software Availability:** Mar-2011




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E7-4870 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.80 GHz |
| CPU MHz: | 2400 |
| 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: | 30 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 1 TB (64 x 16 GB 4Rx4 PC3-8500R-9, ECC) |
| Disk Subsystem: | 146 GB SAS, 15K 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: | Intel C++ Compiler XE for applications running on IA-32<br>Version 12.0.1.116 Build 20101116 |
| Auto Parallel: | No |
| File System: | ext3 |
| 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 | **932** | **839** | 930 | 840 | 934 | 837 | 80 | 779 | 1000 | **785** | **996** | 785 | 996 |
| 401.bzip2 | 80 | 1273 | 607 | **1273** | **606** | 1276 | 605 | 80 | 1200 | 643 | 1202 | 642 | **1201** | **643** |
| 403.gcc | 80 | 760 | 847 | 761 | 847 | **761** | **847** | 80 | 755 | 853 | **759** | **848** | 762 | 845 |
| 429.mcf | 80 | **563** | **1300** | 563 | 1300 | 561 | 1300 | 80 | 551 | 1320 | 552 | 1320 | **551** | **1320** |
| 445.gobmk | 80 | **878** | **956** | 878 | 955 | 877 | 956 | 80 | 835 | 1010 | 833 | 1010 | **834** | **1010** |
| 456.hmmer | 80 | 569 | 1310 | **565** | **1320** | 562 | 1330 | 80 | 427 | 1750 | **427** | **1750** | 428 | 1750 |
| 458.sjeng | 80 | **1047** | **925** | 1047 | 925 | 1063 | 911 | 80 | **982** | **986** | 981 | 986 | 996 | 972 |
| 462.libquantum | 80 | 345 | 4810 | 342 | 4840 | **343** | **4830** | 80 | 345 | 4810 | 342 | 4840 | **343** | **4830** |
| 464.h264ref | 80 | 1363 | 1300 | **1369** | **1290** | 1374 | 1290 | 80 | 1369 | 1290 | **1366** | **1300** | 1366 | 1300 |
| 471.omnetpp | 80 | 824 | 607 | 823 | 607 | **824** | **607** | 80 | **760** | **658** | 760 | 658 | 759 | 658 |
| 473.astar | 80 | **885** | **634** | 890 | 631 | 885 | 635 | 80 | **885** | **634** | 890 | 631 | 885 | 635 |
| 483.xalancbmk | 80 | 539 | 1020 | **537** | **1030** | 537 | 1030 | 80 | 539 | 1020 | **537** | **1030** | 537 | 1030 |

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

```
ulimit -s unlimited was used to set the stacksize to unlimited prior to run
Large pages were disabled for this run
```

## Platform Notes

```
BIOS Configuration : Data Reuse Optimization = Disabled
```

## General Notes

```
Binaries compiled on RHEL5.5 with
binutils-2.17.50.0.6-14.el5
```

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

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/Cisco-Platform-Settings.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/Cisco-Platform-Settings.xml`



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

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