# SPEC® CINT2006 Result

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## Cisco Systems

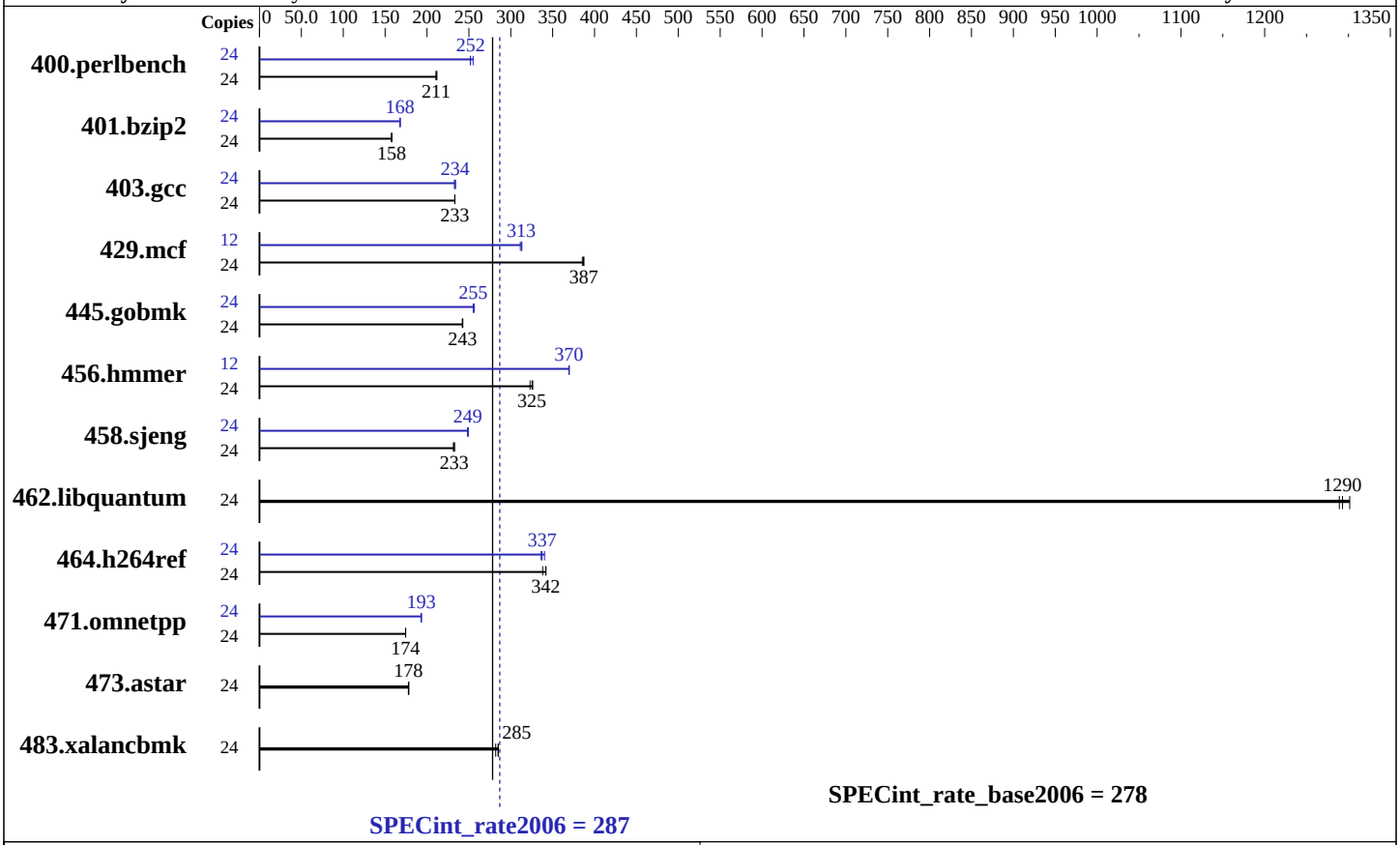
Cisco UCS B230 M1 (Intel Xeon E6540, 2.00 GHz)

SPECint®_rate2006 = 287

SPECint_rate_base2006 = 278

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

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




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E6540 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.27 GHz |
| CPU MHz: | 2000 |
| FPU: | Integrated |
| CPU(s) enabled: | 12 cores, 2 chips, 6 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: | 18 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 128 GB (32 x 8 GB 2Rx4 PC3-10600R-9, ECC) |
| Disk Subsystem: | 128 GB SSD, SATA Gen2, 3Gb/s |
| 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<br>Binaries compiled on RHEL5.5 with binutils-2.17.50.0.6-14.el5 |

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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 | 24 | **1111** | **211** | 1112 | 211 | 1107 | 212 | 24 | **930** | **252** | 919 | 255 | 932 | 252 |
| 401.bzip2 | 24 | **1467** | **158** | 1469 | 158 | 1466 | 158 | 24 | 1382 | 168 | **1379** | **168** | 1378 | 168 |
| 403.gcc | 24 | 828 | 233 | 829 | 233 | **828** | **233** | 24 | **827** | **234** | 830 | 233 | 826 | 234 |
| 429.mcf | 24 | 568 | 385 | **566** | **387** | 565 | 387 | 12 | 349 | 313 | **350** | **313** | 351 | 311 |
| 445.gobmk | 24 | **1038** | **243** | 1037 | 243 | 1040 | 242 | 24 | 987 | 255 | 981 | 257 | **986** | **255** |
| 456.hmmer | 24 | 693 | 323 | **688** | **325** | 686 | 326 | 12 | 303 | 369 | **303** | **370** | 303 | 370 |
| 458.sjeng | 24 | 1255 | 231 | 1248 | 233 | **1248** | **233** | 24 | **1167** | **249** | 1170 | 248 | 1165 | 249 |
| 462.libquantum | 24 | **385** | **1290** | 382 | 1300 | 386 | 1290 | 24 | **385** | **1290** | 382 | 1300 | 386 | 1290 |
| 464.h264ref | 24 | 1571 | 338 | **1554** | **342** | 1553 | 342 | 24 | **1574** | **337** | 1580 | 336 | 1561 | 340 |
| 471.omnetpp | 24 | 860 | 174 | **860** | **174** | 860 | 175 | 24 | 776 | 193 | 778 | 193 | **776** | **193** |
| 473.astar | 24 | 948 | 178 | 945 | 178 | **947** | **178** | 24 | 948 | 178 | 945 | 178 | **947** | **178** |
| 483.xalancbmk | 24 | **581** | **285** | 587 | 282 | 581 | 285 | 24 | **581** | **285** | 587 | 282 | 581 | 285 |

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
```

# 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`


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

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