# SPEC® CINT2006 Result

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## Cisco Systems

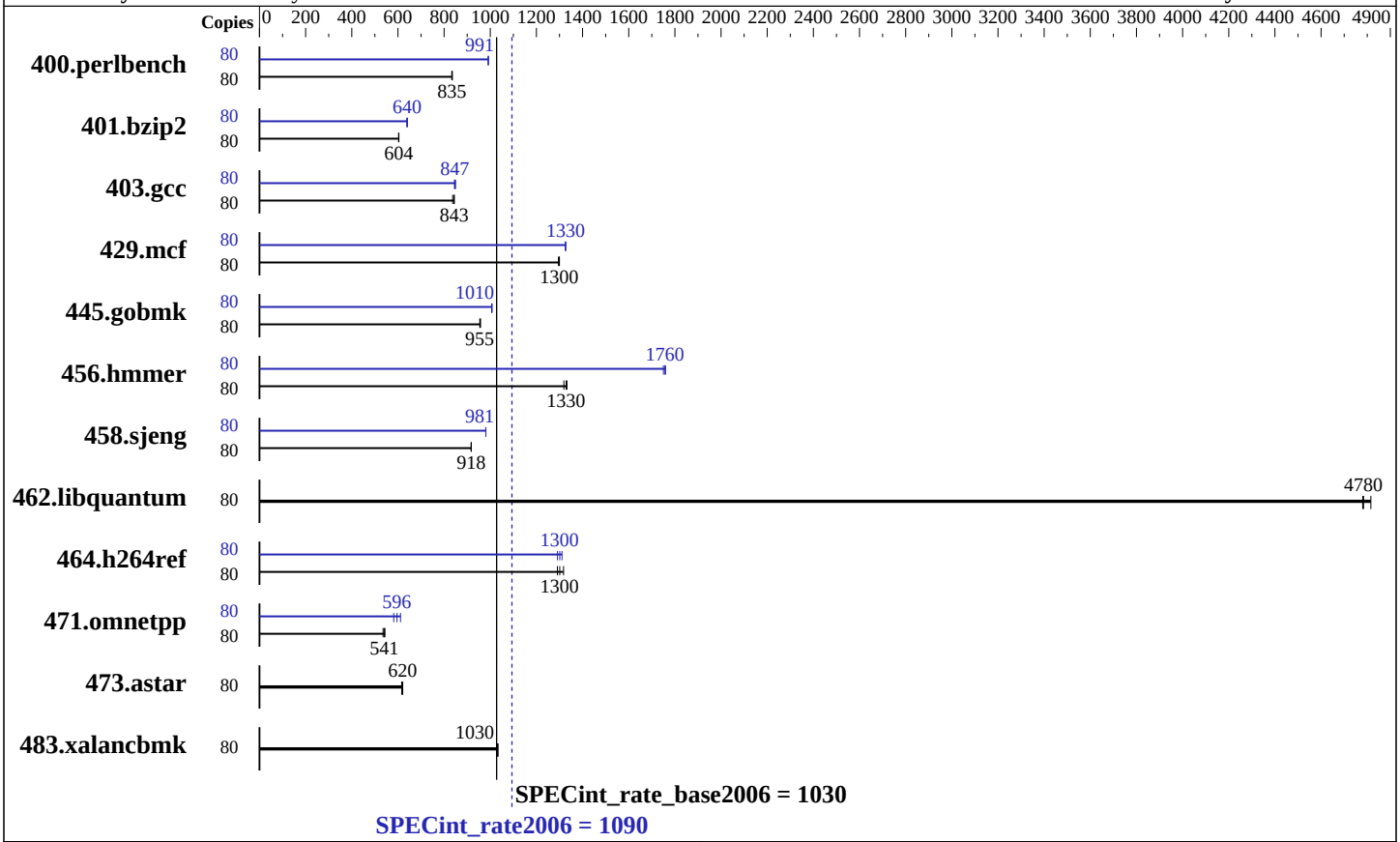
Cisco UCS C460 M2 (Intel Xeon E7-4870, 2.40 GHz)

SPECint®_rate2006 = 1090

SPECint_rate_base2006 = 1030

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

**Test date:** Mar-2011
**Hardware Availability:** May-2011
**Software Availability:** Jan-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: | Redhat Enterprise Linux 6.0, Kernel 2.6.32-71.el6.x86_64 |
| Compiler: | Intel C++ Compiler XE for applications running on IA-32 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 | 936 | 835 | 938 | 833 | **936** | **835** | 80 | 788 | 992 | **788** | **991** | 789 | 991 |
| 401.bzip2 | 80 | 1278 | 604 | **1278** | **604** | 1281 | 603 | 80 | 1204 | 641 | **1206** | **640** | 1209 | 638 |
| 403.gcc | 80 | 763 | 844 | **763** | **843** | 769 | 837 | 80 | **760** | **847** | 762 | 845 | 758 | 850 |
| 429.mcf | 80 | 561 | 1300 | **562** | **1300** | 563 | 1300 | 80 | 550 | 1330 | **550** | **1330** | 550 | 1330 |
| 445.gobmk | 80 | 876 | 958 | 879 | 955 | **879** | **955** | 80 | **834** | **1010** | 834 | 1010 | 833 | 1010 |
| 456.hmmer | 80 | **562** | **1330** | 566 | 1320 | 560 | 1330 | 80 | **425** | **1760** | 424 | 1760 | 426 | 1750 |
| 458.sjeng | 80 | **1055** | **918** | 1056 | 917 | 1055 | 918 | 80 | 987 | 981 | **987** | **981** | 987 | 981 |
| 462.libquantum | 80 | 347 | 4780 | **346** | **4780** | 344 | 4820 | 80 | 347 | 4780 | **346** | **4780** | 344 | 4820 |
| 464.h264ref | 80 | 1344 | 1320 | **1361** | **1300** | 1371 | 1290 | 80 | 1371 | 1290 | **1361** | **1300** | 1351 | 1310 |
| 471.omnetpp | 80 | **925** | **541** | 934 | 535 | 920 | 544 | 80 | 818 | 611 | 860 | 582 | **839** | **596** |
| 473.astar | 80 | 905 | 621 | **905** | **620** | 911 | 616 | 80 | 905 | 621 | **905** | **620** | 911 | 616 |
| 483.xalancbmk | 80 | 535 | 1030 | 534 | 1030 | **535** | **1030** | 80 | 535 | 1030 | 534 | 1030 | **535** | **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 not enabled 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 -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT
```

C++ benchmarks:

```
icpc -m32 -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT
```

## 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`

C++ benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -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 -m64`
`-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT`

403.gcc: `icc -m32`
`-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT`

429.mcf: `icc -m32`

445.gobmk: `icc -m32`

462.libquantum: `icc -m32`
`-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT`

464.h264ref: `icc -m32`

C++ benchmarks (except as noted below):
`icpc -m32 -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT`

471.omnetpp: `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)

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: -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

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 file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.20110303.02.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.20110303.02.xml`


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Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 19:43:32 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 17 May 2011.