# SPEC® CINT2006 Result



## Cisco Systems

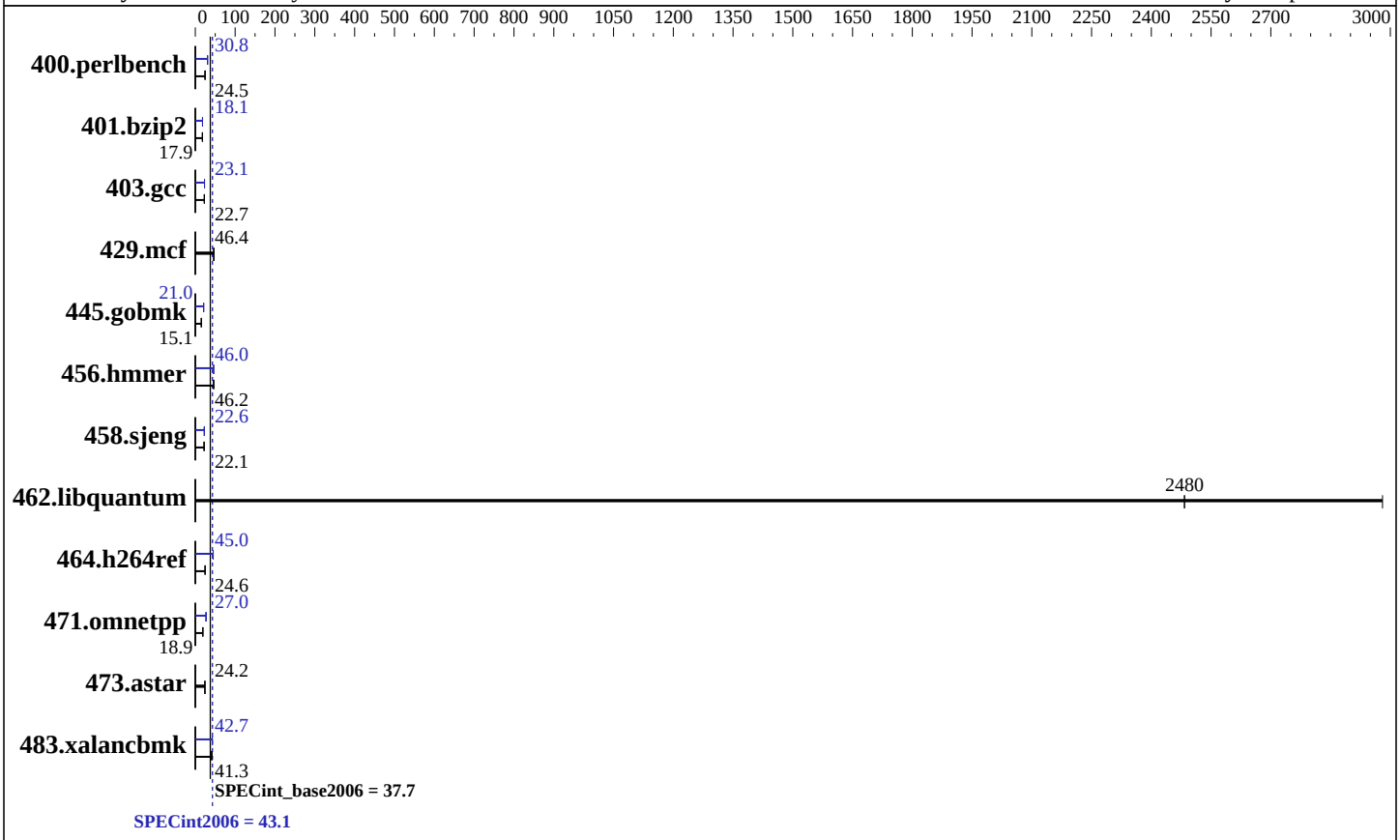
Cisco UCS B460 M4 (Intel Xeon E7-4830 v2 @ 2.20GHz)

SPECint®2006 = 43.1

SPECint_base2006 = 37.7

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

**Test date:** Jul-2014
**Hardware Availability:** May-2014
**Software Availability:** Apr-2014




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E7-4830 v2 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.70 GHz |
| CPU MHz: | 2200 |
| FPU: | Integrated |
| CPU(s) enabled: | 40 cores, 4 chips, 10 cores/chip, 2 threads/core |
| CPU(s) orderable: | 1,2,3,4 chip |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 256 KB I+D on chip per core |
| L3 Cache: | 20 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 512 GB (64 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1066 MHz and CL11) |
| Disk Subsystem: | 1 X 300 GB 15000 RPM SAS |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | Red Hat Enterprise Linux Server release 6.5 (Santiago) 2.6.32-431.el6.x86_64 |
| Compiler: | C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux |
| Auto Parallel: | Yes |
| File System: | ext4 |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32/64-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | Microquill SmartHeap V10.0 |

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## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 399 | 24.5 | 398 | 24.6 | **398** | **24.5** | 317 | 30.8 | **318** | **30.8** | 318 | 30.7 |
| 401.bzip2 | 540 | 17.9 | **540** | **17.9** | 541 | 17.9 | **533** | **18.1** | 533 | 18.1 | 533 | 18.1 |
| 403.gcc | 355 | 22.7 | **355** | **22.7** | 355 | 22.7 | 348 | 23.1 | 348 | 23.1 | **348** | **23.1** |
| 429.mcf | 196 | 46.6 | **197** | **46.4** | 198 | 46.0 | 196 | 46.6 | **197** | **46.4** | 198 | 46.0 |
| 445.gobmk | **693** | **15.1** | 694 | 15.1 | 692 | 15.2 | 500 | 21.0 | **500** | **21.0** | 500 | 21.0 |
| 456.hmmer | 201 | 46.3 | **202** | **46.2** | 205 | 45.6 | 203 | 46.0 | **203** | **46.0** | 203 | 46.0 |
| 458.sjeng | **547** | **22.1** | 547 | 22.1 | 547 | 22.1 | 535 | 22.6 | 535 | 22.6 | **535** | **22.6** |
| 462.libquantum | **8.34** | **2480** | 8.35 | 2480 | 6.95 | 2980 | **8.34** | **2480** | 8.35 | 2480 | 6.95 | 2980 |
| 464.h264ref | 900 | 24.6 | 899 | 24.6 | **899** | **24.6** | 492 | 45.0 | **492** | **45.0** | 492 | 44.9 |
| 471.omnetpp | 329 | 19.0 | **330** | **18.9** | 331 | 18.9 | 230 | 27.2 | **232** | **27.0** | 233 | 26.8 |
| 473.astar | **290** | **24.2** | 290 | 24.2 | 292 | 24.0 | **290** | **24.2** | 290 | 24.2 | 292 | 24.0 |
| 483.xalancbmk | 164 | 42.1 | 170 | 40.5 | **167** | **41.3** | 162 | 42.6 | **162** | **42.7** | 161 | 42.8 |

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

## Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
```

## Platform Notes

```
Intel HT Technology = Enabled
CPU performance set to HPC
Power Technology set to Custom
CPU Power State C6 set to Disabled
CPU Power State C1 Enhanced set to Disabled
Memory RAS configuration set to Maximum Performance
DRAM Clock Throttling Set to Performance
 Sysinfo program /opt/cpu2006-1.4/config/sysinfo.rev6818
 $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
 running on B460M4 Thu Jul 17 19:31:19 2014
 This section contains SUT (System Under Test) info as seen by
 some common utilities.  To remove or add to this section, see:
   http://www.spec.org/cpu2006/Docs/config.html#sysinfo
 From /proc/cpuinfo
    model name : Intel(R) Xeon(R) CPU E7-4830 v2 @ 2.20GHz
       4 "physical id"s (chips)
       80 "processors"
    cores, siblings (Caution: counting these is hw and system dependent.  The
    following excerpts from /proc/cpuinfo might not be reliable.  Use with
    caution.)
       cpu cores : 10
       siblings  : 20
       physical 0: cores 0 1 2 3 4 8 9 10 11 12
```

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## Platform Notes (Continued)

```
        physical 1: cores 0 1 2 3 4 8 9 10 11 12
        physical 2: cores 0 1 2 3 4 8 9 10 11 12
        physical 3: cores 0 1 2 3 4 8 9 10 11 12
     cache size : 20480 KB
  From /proc/meminfo
     MemTotal:       528550804 kB
     HugePages_Total:       0
     Hugepagesize:       2048 kB
  /usr/bin/lsb_release -d
     Red Hat Enterprise Linux Server release 6.5 (Santiago)
  From /etc/*release* /etc/*version*
     redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
     system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
     system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
  uname -a:
     Linux B460M4 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54 EST 2013 x86_64
     x86_64 x86_64 GNU/Linux
  run-level 3 Jul 15 20:59
  SPEC is set to: /opt/cpu2006-1.4
     Filesystem     Type  Size  Used Avail Use% Mounted on
     /dev/sda1      ext4  275G   85G  176G  33% /
  Additional information from dmidecode:
    BIOS Cisco Systems, Inc. EXM4-1.2.2.1.21.042220141009 04/22/2014
    Memory:
     64x   8 GB
     64x 0xCE00 M393B1K70QB0-YK0 8 GB 1066 MHz 2 rank
     32x NO DIMM NO DIMM
  (End of data from sysinfo program)
```

## General Notes

```
 Environment variables set by runspec before the start of the run:
 KMP_AFFINITY = "granularity=fine,compact,1,0"
 LD_LIBRARY_PATH = "/opt/cpu2006-1.4/libs/32:/opt/cpu2006-1.4/libs/64:/opt/cpu2006-1.4/sh"
 OMP_NUM_THREADS = "80"
  Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
  memory using RedHat EL 6.4
  Transparent Huge Pages enabled with:
  echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
  runspec command invoked through numactl i.e.:
  numactl --interleave=all runspec <etc>
 Submitted_by: "Sheshgiri I (shei)" <shei@cisco.com>
 Submitted: Wed Jul 23 14:31:05 EDT 2014
 Submission: cpu2006-20140723-30549.sub
```

## Base Compiler Invocation

C benchmarks:

```
icc  -m64
```

Continued on next page

## Base Compiler Invocation (Continued)

C++ benchmarks:
icpc -m64

## Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

## Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh -lsmartheap64

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m64

400.perlbench: icc -m32

445.gobmk: icc -m32

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## Peak Compiler Invocation (Continued)

464.h264ref: `icc -m32`

C++ benchmarks (except as noted below):
`icpc -m32`

473.astar: `icpc -m64`

## Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
401.bzip2: `-DSPEC_CPU_LP64`
403.gcc: `-DSPEC_CPU_LP64`
429.mcf: `-DSPEC_CPU_LP64`
456.hmmer: `-DSPEC_CPU_LP64`
458.sjeng: `-DSPEC_CPU_LP64`
462.libquantum: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`
473.astar: `-DSPEC_CPU_LP64`
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) `-opt-prefetch -ansi-alias`

401.bzip2: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div -prof-use`(pass 2) `-auto-ilp32 -opt-prefetch -ansi-alias`

403.gcc: `-xSSE4.2 -ipo -O3 -no-prec-div -inline-calloc -opt-malloc-options=3 -auto-ilp32`

429.mcf: `basepeak = yes`

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

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

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`

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## Peak Optimization Flags (Continued)

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) -opt-ra-region-strategy=block -ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap

## 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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revB.xml



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

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