



# SPEC® CINT2006 Result

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## Cisco Systems

SPECint®\_rate2006 = 526

Cisco UCS B200 M3 (Intel Xeon E5-2667, 2.90 GHz)

SPECint\_rate\_base2006 = 504

CPU2006 license: 9019

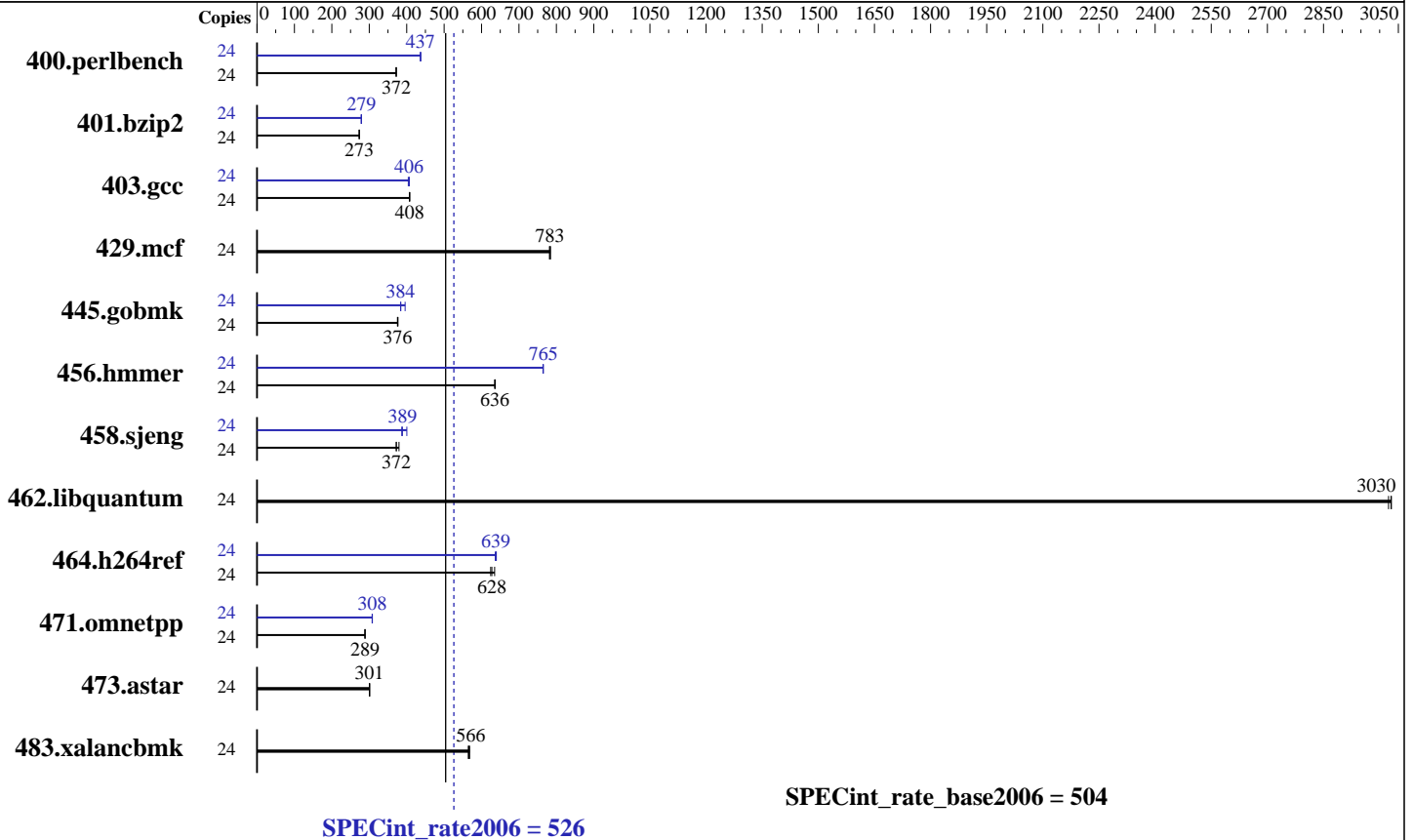
Test date: Dec-2012

Test sponsor: Cisco Systems

Hardware Availability: Sep-2012

Tested by: Cisco Systems

Software Availability: Feb-2012



### Hardware

CPU Name: Intel Xeon E5-2667  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz  
 CPU MHz: 2900  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2 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: 15 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)  
 Disk Subsystem: 1 X 600 GB 10000 RPM SAS  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)  
 2.6.32-220.el6.x86\_64  
 Compiler: C/C++: Version 12.1.3.293 of Intel C++ Studio XE for Linux  
 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  | 24     | <b>630</b> | <b>372</b>  | 630        | 372        | 631        | 372        | 24     | 536        | 438         | <b>537</b> | <b>437</b> | 537        | 437        |
| 401.bzip2      | 24     | 847        | 273         | <b>848</b> | <b>273</b> | 848        | 273        | 24     | 832        | 278         | 829        | 279        | <b>830</b> | <b>279</b> |
| 403.gcc        | 24     | <b>474</b> | <b>408</b>  | 473        | 408        | 474        | 407        | 24     | 478        | 404         | <b>476</b> | <b>406</b> | 475        | 407        |
| 429.mcf        | 24     | <b>280</b> | <b>783</b>  | 279        | 784        | 280        | 782        | 24     | <b>280</b> | <b>783</b>  | 279        | 784        | 280        | 782        |
| 445.gobmk      | 24     | 671        | 375         | 668        | 377        | <b>670</b> | <b>376</b> | 24     | <b>656</b> | <b>384</b>  | 636        | 396        | 656        | 384        |
| 456.hammer     | 24     | <b>352</b> | <b>636</b>  | 352        | 637        | 353        | 635        | 24     | 293        | 764         | <b>293</b> | <b>765</b> | 293        | 765        |
| 458.sjeng      | 24     | 780        | 372         | 765        | 379        | <b>780</b> | <b>372</b> | 24     | 751        | 387         | 725        | 400        | <b>747</b> | <b>389</b> |
| 462.libquantum | 24     | <b>164</b> | <b>3030</b> | 164        | 3020       | 164        | 3030       | 24     | <b>164</b> | <b>3030</b> | 164        | 3020       | 164        | 3030       |
| 464.h264ref    | 24     | <b>846</b> | <b>628</b>  | 836        | 635        | 851        | 624        | 24     | <b>832</b> | <b>639</b>  | 830        | 640        | 834        | 637        |
| 471.omnetpp    | 24     | <b>520</b> | <b>289</b>  | 520        | 289        | 519        | 289        | 24     | 487        | 308         | <b>487</b> | <b>308</b> | 488        | 308        |
| 473.astar      | 24     | 561        | 300         | <b>560</b> | <b>301</b> | 559        | 301        | 24     | 561        | 300         | <b>560</b> | <b>301</b> | 559        | 301        |
| 483.xalancbmk  | 24     | <b>292</b> | <b>566</b>  | 291        | 568        | 293        | 565        | 24     | <b>292</b> | <b>566</b>  | 291        | 568        | 293        | 565        |

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

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

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

## Platform Notes

BIOS Configuration:

Processor C6 Report set to Disabled

Processor C1E set to Disabled

CPU Performance set to HPC

LV DDR Mode set to Performance-mode

Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6800

\$Rev: 6800 \$ \$Date:: 2011-10-11 # \$ 6f2ebdff5032aaa42e583f96b07f99d3

running on localhost.localdomain Sun Dec 9 21:57:52 2012

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 E5-2667 0 @ 2.90GHz

2 "physical id"s (chips)

24 "processors"

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info@spec.org

<http://www.spec.org/>



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### Platform Notes (Continued)

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 : 6
siblings  : 12
physical 0: cores 0 1 2 3 4 5
physical 1: cores 0 1 2 3 4 5
cache size : 15360 KB
```

```
From /proc/meminfo
MemTotal:      132100944 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

```
/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.2 (Santiago)
```

```
From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

```
uname -a:
Linux localhost.localdomain 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13
EST 2011 x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Dec 9 21:46
```

```
SPEC is set to: /opt/cpu2006-1.2
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sdal       ext4      550G  9.9G  512G   2% /
```

Additional information from dmidecode:

```
Memory:
16x 0xCE00 M393B1K70DH0-YK0 8 GB 1600 MHz 2 rank
```

(End of data from sysinfo program)

### General Notes

Environment variables set by runspec before the start of the run:

```
LD_LIBRARY_PATH = "/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64"
```

Intel HT Technology=enable

Binaries compiled on a system with 2 X Intel Xeon E5-2690 CPU + 128 GB memory using RHEL 6.2

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
```



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## 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



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## 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

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## Peak Optimization Flags (Continued)

483.xalanbmk: 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-official-linux64.20120425.html>

<http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.20130607.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml>

<http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.20130607.xml>

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