



# SPEC® CINT2006 Result

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## Cisco Systems

SPECint®\_rate2006 = 388

Cisco UCS C200 M2 (Intel Xeon X5650, 2.67 GHz)

SPECint\_rate\_base2006 = 371

CPU2006 license: 9019

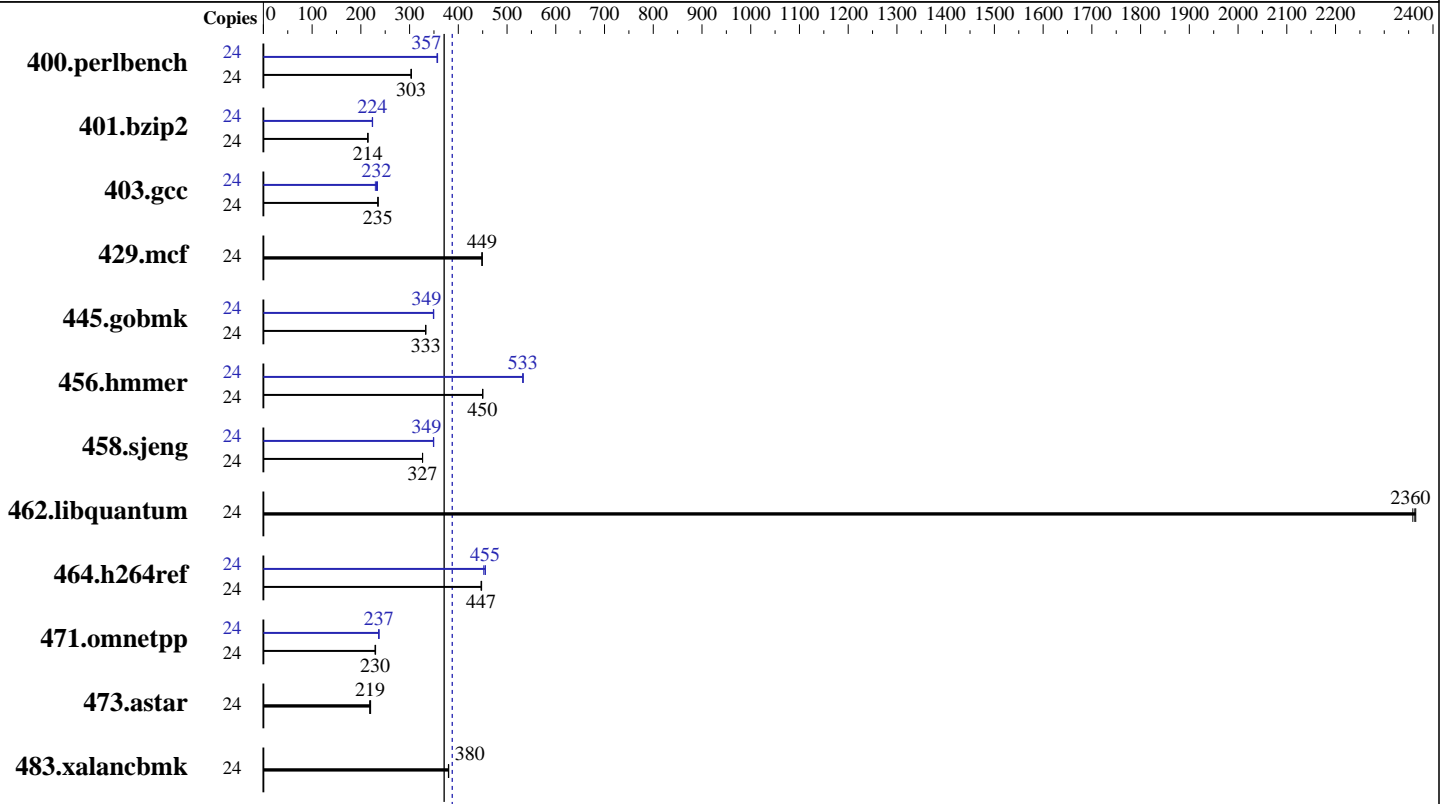
Test date: Jan-2012

Test sponsor: Cisco Systems

Hardware Availability: Mar-2011

Tested by: Cisco Systems

Software Availability: Dec-2011



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### Hardware

CPU Name: Intel Xeon X5650  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.06 GHz  
 CPU MHz: 2667  
 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: 12 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 96 GB (12 x 8 GB 2Rx4 PC3L-10600R-9, ECC)  
 Disk Subsystem: 600 GB SAS 10K RPM  
 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 12.1.0.225 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><u>773</u></b>	<b><u>303</u></b>	774	303	772	304	24	656	358	658	356	<b><u>657</u></b>	<b><u>357</u></b>
401.bzip2	24	<b><u>1081</u></b>	<b><u>214</u></b>	1078	215	1081	214	24	1036	223	1033	224	<b><u>1034</u></b>	<b><u>224</u></b>
403.gcc	24	820	236	822	235	<b><u>822</u></b>	<b><u>235</u></b>	24	825	234	<b><u>832</u></b>	<b><u>232</u></b>	841	230
429.mcf	24	488	448	487	449	<b><u>488</u></b>	<b><u>449</u></b>	24	488	448	487	449	<b><u>488</u></b>	<b><u>449</u></b>
445.gobmk	24	757	333	755	333	<b><u>756</u></b>	<b><u>333</u></b>	24	720	350	722	349	<b><u>721</u></b>	<b><u>349</u></b>
456.hammer	24	<b><u>498</u></b>	<b><u>450</u></b>	497	450	498	450	24	420	533	421	532	<b><u>420</u></b>	<b><u>533</u></b>
458.sjeng	24	889	327	<b><u>889</u></b>	<b><u>327</u></b>	890	326	24	<b><u>831</u></b>	<b><u>349</u></b>	832	349	831	349
462.libquantum	24	211	2360	<b><u>210</u></b>	<b><u>2360</u></b>	210	2360	24	211	2360	<b><u>210</u></b>	<b><u>2360</u></b>	210	2360
464.h264ref	24	1186	448	<b><u>1188</u></b>	<b><u>447</u></b>	1189	447	24	1166	456	<b><u>1168</u></b>	<b><u>455</u></b>	1175	452
471.omnetpp	24	654	229	651	230	<b><u>653</u></b>	<b><u>230</u></b>	24	635	236	632	237	<b><u>633</u></b>	<b><u>237</u></b>
473.astar	24	772	218	<b><u>768</u></b>	<b><u>219</u></b>	766	220	24	772	218	<b><u>768</u></b>	<b><u>219</u></b>	766	220
483.xalancbmk	24	<b><u>436</u></b>	<b><u>380</u></b>	436	380	435	380	24	<b><u>436</u></b>	<b><u>380</u></b>	436	380	435	380

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 : Data Reuse Optimization = Disabled  
Sysinfo program /opt/cpu2006/config/sysinfo.rev6800  
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
running on localhost.localdomain Mon Jan 23 14:39:44 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 X5650 @ 2.67GHz  
2 "physical id"s (chips)  
24 "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 : 6

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## Platform Notes (Continued)

```

siblings : 12
physical 0: cores 0 1 2 8 9 10
physical 1: cores 0 1 2 8 9 10
cache size : 12288 KB

```

From /proc/meminfo

```

MemTotal:          98997788 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 Jan 23 14:07

SPEC is set to: /opt/cpu2006

```

Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sdal        ext4      917G      5.5G  865G   1% /

```

Additional information from dmidecode:

(End of data from sysinfo program)

## General Notes

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

LD\_LIBRARY\_PATH = "/opt/cpu2006/libs/32:/opt/cpu2006/libs/64"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5

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

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>



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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-linux64.20111122.html>

<http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

<http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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