



# SPEC® CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M4 (Intel Xeon E5-2670 v3 @ 2.30GHz)

**SPECint®2006 = 58.8**

**SPECint\_base2006 = 56.8**

**CPU2006 license:** 9019

**Test sponsor:** Cisco Systems

**Tested by:** Cisco Systems

**Test date:** Feb-2015

**Hardware Availability:** Sep-2014

**Software Availability:** Sep-2014



### Hardware

**CPU Name:** Intel Xeon E5-2670 v3  
**CPU Characteristics:** Intel Turbo Boost Technology up to 3.10 GHz  
**CPU MHz:** 2300  
**FPU:** Integrated  
**CPU(s) enabled:** 24 cores, 2 chips, 12 cores/chip  
**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:** 30 MB I+D on chip per chip  
**Other Cache:** None  
**Memory:** 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)  
**Disk Subsystem:** 1 x 600GB SAS, 10K RPM  
**Other Hardware:** None

### Software

**Operating System:** Red Hat Enterprise Linux Server release 7.0 (Maipo)  
 3.10.0-123.el7.x86\_64  
**Compiler:** C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux  
**Auto Parallel:** Yes  
**File System:** xfs  
**System State:** Run level 3 (multi-user)  
**Base Pointers:** 32/64-bit  
**Peak Pointers:** 32/64-bit  
**Other Software:** Microquill SmartHeap V10.0



# SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M4 (Intel Xeon E5-2670 v3 @ 2.30GHz)

SPECint2006 = **58.8**

SPECint\_base2006 = **56.8**

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

Test date: Feb-2015  
Hardware Availability: Sep-2014  
Software Availability: Sep-2014

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b><u>269</u></b>	<b><u>36.3</u></b>	269	36.3	271	36.0	<b><u>234</u></b>	<b><u>41.8</u></b>	235	41.6	234	41.8
401.bzip2	432	22.3	<b><u>432</u></b>	<b><u>22.3</u></b>	434	22.2	<b><u>429</u></b>	<b><u>22.5</u></b>	430	22.5	428	22.6
403.gcc	<b><u>250</u></b>	<b><u>32.2</u></b>	249	32.3	250	32.2	244	33.0	243	33.2	<b><u>243</u></b>	<b><u>33.1</u></b>
429.mcf	159	57.5	160	57.1	<b><u>159</u></b>	<b><u>57.2</u></b>	159	57.2	<b><u>160</u></b>	<b><u>57.2</u></b>	160	57.0
445.gobmk	407	25.8	406	25.8	<b><u>406</u></b>	<b><u>25.8</u></b>	<b><u>408</u></b>	<b><u>25.7</u></b>	408	25.7	408	25.7
456.hammer	<b><u>152</u></b>	<b><u>61.6</u></b>	152	61.5	151	61.6	<b><u>157</u></b>	<b><u>59.3</u></b>	157	59.3	159	58.6
458.sjeng	397	30.5	397	30.5	<b><u>397</u></b>	<b><u>30.5</u></b>	396	30.6	<b><u>395</u></b>	<b><u>30.6</u></b>	395	30.6
462.libquantum	3.51	5900	<b><u>3.47</u></b>	<b><u>5970</u></b>	3.46	5990	3.51	5900	<b><u>3.47</u></b>	<b><u>5970</u></b>	3.46	5990
464.h264ref	<b><u>518</u></b>	<b><u>42.8</u></b>	517	42.8	519	42.6	<b><u>518</u></b>	<b><u>42.8</u></b>	517	42.8	519	42.6
471.omnetpp	183	34.1	<b><u>182</u></b>	<b><u>34.4</u></b>	181	34.6	138	45.3	<b><u>137</u></b>	<b><u>45.5</u></b>	132	47.4
473.astar	234	29.9	<b><u>234</u></b>	<b><u>30.0</u></b>	233	30.1	235	29.9	232	30.3	<b><u>234</u></b>	<b><u>30.0</u></b>
483.xalancbmk	116	59.5	116	59.5	<b><u>116</u></b>	<b><u>59.5</u></b>	117	59.0	116	59.3	<b><u>117</u></b>	<b><u>59.1</u></b>

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.

## Operating System Notes

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

## Platform Notes

```

CPU performance set to Enterprise
Power Technology set to Performance
Energy Performance BIAS setting set to Performance
Memory RAS configuration set to Maximum Performance
Intel Hyper-Threading Technology option set to Disabled
QPI Snoop Mode set to Early Snoop
Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on rhel7 Mon Feb 16 23:03:41 2015

```

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 E5-2670 v3 @ 2.30GHz
 2 "physical id"s (chips)
 24 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
Continued on next page

```



# SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M4 (Intel Xeon E5-2670 v3 @ 2.30GHz)

**SPECint2006 = 58.8**

**SPECint\_base2006 = 56.8**

**CPU2006 license:** 9019

**Test sponsor:** Cisco Systems

**Tested by:** Cisco Systems

**Test date:** Feb-2015

**Hardware Availability:** Sep-2014

**Software Availability:** Sep-2014

### Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

```
cpu cores : 12
siblings  : 12
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
cache size : 30720 KB
```

From /proc/meminfo

```
MemTotal:      263867840 kB
HugePages_Total: 0
Hugepagesize:   2048 kB
```

From /etc/\*release\* /etc/\*version\*

```
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server
```

uname -a:

```
Linux rhel7 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57 EDT 2014 x86_64
x86_64 x86_64 GNU/Linux
```

run-level 3 Feb 16 22:59

SPEC is set to: /opt/cpu2006-1.2

```
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sdb2        xfs       439G   66G  373G  15% /
```

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Cisco Systems, Inc. C220M4.2.0.3d.0.111120141447 11/11/2014

Memory:

```
16x 0xCE00 M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz
8x NO DIMM NO DIMM
```

(End of data from sysinfo program)



# SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M4 (Intel Xeon E5-2670 v3 @ 2.30GHz)

**SPECint2006 = 58.8**

**SPECint\_base2006 = 56.8**

**CPU2006 license:** 9019

**Test sponsor:** Cisco Systems

**Tested by:** Cisco Systems

**Test date:** Feb-2015

**Hardware Availability:** Sep-2014

**Software Availability:** Sep-2014

## General Notes

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

KMP\_AFFINITY = "granularity=fine,compact,1,0"

LD\_LIBRARY\_PATH = "/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64:/opt/cpu2006-1.2/sh"

OMP\_NUM\_THREADS = "24"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/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>

## Base Compiler Invocation

C benchmarks:

icc -m64

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:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32

-Wl,-z,muldefs -L/sh -lsmartheap64



# SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M4 (Intel Xeon E5-2670 v3 @ 2.30GHz)

**SPECint2006 = 58.8**

**SPECint\_base2006 = 56.8**

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

**Test date:** Feb-2015  
**Hardware Availability:** Sep-2014  
**Software Availability:** Sep-2014

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

400.perlbench: icc -m32 -L/opt/intel/composer\_xe\_2015/lib/ia32

445.gobmk: icc -m32 -L/opt/intel/composer\_xe\_2015/lib/ia32

C++ benchmarks (except as noted below):

icpc -m32 -L/opt/intel/composer\_xe\_2015/lib/ia32

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  
464.h264ref: -DSPEC\_CPU\_LP64  
473.astar: -DSPEC\_CPU\_LP64  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(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: -xCORE-AVX2(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

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M4 (Intel Xeon E5-2670 v3 @ 2.30GHz)

**SPECint2006 = 58.8**

**SPECint\_base2006 = 56.8**

**CPU2006 license:** 9019

**Test sponsor:** Cisco Systems

**Tested by:** Cisco Systems

**Test date:** Feb-2015

**Hardware Availability:** Sep-2014

**Software Availability:** Sep-2014

## Peak Optimization Flags (Continued)

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc  
-opt-malloc-options=3 -auto-ilp32

429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel  
-opt-prefetch -auto-p32

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias

456.hmmr: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
-ansi-alias

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)  
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)  
-unroll4

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch  
-auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64

483.xalancbmk: -xCORE-AVX2 -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-ic15.0-official-linux64.html>

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

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

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

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



# SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C220 M4 (Intel Xeon E5-2670 v3 @ 2.30GHz)

**SPECint2006 = 58.8**

**SPECint\_base2006 = 56.8**

**CPU2006 license:** 9019

**Test sponsor:** Cisco Systems

**Tested by:** Cisco Systems

**Test date:** Feb-2015

**Hardware Availability:** Sep-2014

**Software Availability:** Sep-2014

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Tue Mar 24 17:18:55 2015 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 24 March 2015.