



# SPEC® CINT2006 Result

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## Cisco Systems

Cisco UCS B260 M4 (Intel Xeon E7-4809 v2, 1.90 GHz)

SPECint®2006 =

SPECint\_base2006 = NC

CPU2006 license: 9019

Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Apr-2014

Hardware Availability: Dec-2010

Software Availability: Sep-2013

**SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the submitter has notified SPEC that the system was run with a BIOS which included a version of the Intel MRC (Memory Reference Code) that is not supported by Cisco or Intel.**

400.perlbench |

401.bzip2 |

403.gcc |

429.mcf |

445.gobmk |

456.hmmer |

458.sjeng |

462.libquantum |

464.h264ref |

471.omnetpp |

473.astar |

483.xalancbmk |

### Hardware

CPU Name: Intel Xeon E7-4809 v2

CPU Characteristics:

CPU MHz:

FPU:

CPU(s) enabled:

CPU(s) orderable:

Primary Cache:

Secondary Cache:

L3 Cache:

Other Cache:

1900

Integrated

12 cores, 2 chips, 6 cores/chip, 2 threads/core

1,2 chip

32 KB I + 32 KB D on chip per core

256 KB I+D on chip per core

12 MB I+D on chip per chip

None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)  
2.6.32-358.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

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Memory: 256 GB (32 x 8 GB 2Rx4 PC3L-12800R-11, ECC, running at 1333 MHz and CL11)

Disk Subsystem: 1 X 300 GB 15000 RPM SAS

Other Hardware: None

Other Software:

Macmillan SmartHeap V10.0

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio										
400.perlbench	NC	NC										
401.bzip2	NC	NC										
403.gcc	NC	NC										
429.mcf	NC	NC										
445.gobmk	NC	NC										
456.hmmer	NC	NC										
458sjeng	NC	NC										
462.libquantum	NC	NC										
464.h264ref	NC	NC										
471.omnetpp	NC	NC										
473.astar	NC	NC										
483.xalancbmk	NC	NC										

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  
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## Platform Notes (Continued)

\$Rev: 6818 \$ \$Date::: 2012-07-17 #\$ e86d1025726505e4d596a3cee98f191  
running on speccompcpu Thu Apr 24 00:50:23 +14

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 E7-4809 v2 @ 1.90GHz  
 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  
 siblings : 12  
 physical 0: cores 0 1 2 3 4 5  
 physical 1: cores 0 1 2 3 4 5  
cache size : 12288 K

From /proc/meminfo  
MemTotal: 2680280 kB  
HugePages\_Total: 0  
Hugepagesize: 2048 kB  
/usr/bin/lsb\_release -d  
Red Hat Enterprise Linux Server release 6.4 (Santiago)

release\* /etc/\*version\*  
redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)  
system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)  
system-release-cpe: cpe:/o:redhat:enterprise\_linux:6server:ga:server  
uname -i:  
Linux speccompcpu 2.6.32-358.el6.x86\_64 #1 SMP Tue Jan 29 11:47:41 EST 2013  
x86\_64 x86\_64 x86\_64 GNU/Linux

run-level 3 Apr 23 23:18

SPEC is set to: /opt/cpu2006-1.4

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
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## Platform Notes (Continued)

/dev/sda1 ext4 275G 51G 210G 10% /

Additional information from dmidecode:

BIOS Cisco Systems, Inc. EXM4-1.2.2.1 12.01.20142034 01/29/2014

Memory:

32x 8 GB

32x 0xCE00 M393B1K70QB0-YK0 8 GB 1333 MHz 2 rank

16x 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 = "24"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using Redhat EL 6.4

Transparent Huge Page 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: Mon May 5 14:01:08 EDT 2014

Submission: cpu2006-20140505-29482.sub

Submitted\_by: "Sheshgiri I (shei)" <shei@cisco.com>

Submitted: Sat May 24 09:39:27 EDT 2014

Submission: cpu2006-20140505-29482.sub

## Base Compiler Invocation

C benchmarks:

icc -m64

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## 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.hmmmer: -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



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## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

400.perlbench: icc -m32

445.gobmk: icc -m32

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

C benchmarks:

## Peak Optimization Flags

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

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## Peak Optimization Flags (Continued)

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -finline-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.hammer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll12 -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)  
-unroll14

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)  
-unroll12 -ansi-alias

C++ benchmarks:

471.omnetpp: -O3 -f1.2(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



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## 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-PI\\_14.0-official-linux64.20140128.html](http://www.spec.org/cpu2006/flags/Intel-PI_14.0-official-linux64.20140128.html)  
[http://www.spec.org/cpu2006/flags/Cisco-PI\\_14.0-official-lm-Settings-V1.2-revB.html](http://www.spec.org/cpu2006/flags/Cisco-PI_14.0-official-lm-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-PI\\_14.0-official-linux64.20140128.xml](http://www.spec.org/cpu2006/flags/Intel-PI_14.0-official-linux64.20140128.xml)  
[http://www.spec.org/cpu2006/flags/Cisco-PI\\_14.0-official-lm-Settings-V1.2-revB.xml](http://www.spec.org/cpu2006/flags/Cisco-PI_14.0-official-lm-Settings-V1.2-revB.xml)

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

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