



SPEC® CINT2006 Result

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Cisco Systems

Cisco UCS C460 M4 (Intel Xeon E7-4830 v2 @ 2.20GHz)

SPECint®_rate2006 = **NC**

SPECint_rate_base2006 = **NC**

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

Test date: Apr-2014
Hardware Availability: Apr-2014
Software Availability: Sep-2013

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

Non-Compliant

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 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: 20 MB I+D on chip per chip
Other Cache: None

Continued on next page

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: No
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 32-bit
Peak Pointers: 32/64-bit

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Memory: 512 GB (64 x 8 GB 2Rx4 PC3-12800R-11, ECC, and CL11)
Disk Subsystem: 1 x 300 GB SAS SATA 15K RPM
Other Hardware: None

Other Software: Mellanox SmartHeap V10.0

Results Table

Benchmark	Base						Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
401.bzip2	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
403.gcc	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
429.mcf	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
445.gobmk	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
456.hmmer	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
458.sjeng	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
462.libquantum	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
464.h264ref	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
471.omnetpp	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
473.astar	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC
483.xalancbmk	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC

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"



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Platform Notes

```
CPU performance set to Enterprise
Power Technology set to Custom
CPU Power State C6 set to Enabled
CPU Power State C1 Enhanced set to Disabled
Package C State Limit set to C0/C1 State
Energy Performance policy set to Performance
Memory RAS configuration set to Maximum Performance
DRAM Clock Throttling Set to Performance
LV DDR Mode set to Performance-mode
DRAM Refresh Rate Set to 1x
Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-11-17 # $ e86d102572650a6e4d596a3cee98f191
running on msc-sbrhel Sat Apr 19 09:01:56 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" (chips)
80 "processor"
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
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: 529139556 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

```
/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.4 (Santiago)
```

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Platform Notes (Continued)

```

From /etc/*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 -a:
Linux msc-sbrhel 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 19 08:47

SPEC is set to: /opt/cpu2006-1.2
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sdal        ext4      275G      12G   249G   5% /

Additional information from dmidecode:
BIOS Cisco Systems, Inc. C460M4.1.5.5.13.012720142211 01/27/2014
Memory:
64x 8 GB
64x 0xCE00 M3911K70QB1K0 8 GB 1333 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:
LD_LIBRARY_PATH="/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64:/opt/cpu2006-1.2/sh"

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
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.xalanbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -fcommon -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:
-xSSE4.2 -ipo -fcommon -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
-Wl,-z,muldefs -Wl,-z,relro -Wl,-z,now -Wl,-z,defs -Wl,-z,sh -lsmarthheap

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m32

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Peak Compiler Invocation (Continued)

400.perlbench: icc -m64
401.bzip2: icc -m64
456.hmmer: icc -m64
458.sjeng: icc -m64

C++ benchmarks:
icpc -m32

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

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Peak Optimization Flags (Continued)

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -opt-mem-layout-flags=3

456.hmmr: -xSSE4.2 -ipo -O3 -no-prec-div -unroll12 -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)
-unroll14 -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)
-unroll12 -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/sh -lmartheap

473.astar: basepeak = yes

485.xalanbmk: basepeak = yes

Peak Other Flags

C benchmarks:

473.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-V1.2.20140311.html>



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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-V1.2.20130911.xml>

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Fri Sep 19 15:49:28 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 6 May 2014.