Cisco Systems

Cisco UCS C460 M4 (Intel Xeon E7-4809 v2, 1.90 GHz)

<table>
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<tr>
<th>Copies</th>
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<tbody>
<tr>
<td>400.perlbench</td>
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<td>473.astar</td>
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<td>483.xalancbmk</td>
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</tbody>
</table>

**Hardware**

- **CPU Name:** Intel Xeon E7-4809 v2
- **CPU Characteristics:**
  - CPU MHz: 1900
  - FPU: Integrated
  - CPU(s) enabled: 24 cores, 4 chips, 6 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: 12 MB I+D on chip per chip
  - Other Cache: 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:** No
- **File System:** ext4
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 32-bit
- **Peak Pointers:** 32/64-bit

---

**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.**

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Non-Compliant
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Memory: 512 GB (64 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz and CL11)
Disk Subsystem: 1 x 300 GB SAS SATA 15K RPM
Other Hardware: None
Other Software: Microquill SmartHeap V10.0

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"
**SPEC CINT2006 Result**

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<table>
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<tr>
<th>SPECint_rate2006</th>
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<tr>
<td>SPECint_rate_base2006</td>
<td>NC</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 9019  
**Test sponsor:** Cisco Systems  
**Tested by:** Cisco Systems  
**Test date:** May-2014  
**Hardware Availability:** Apr-2014  
**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.**

### Platform Notes

- CPU performance set to HPC
- 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 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191  
running on msc-sbrhel Thu May 1 15:22:06 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 E7-4809 v2 @ 1.90GHz
- 4 "physical id" (chips)
- 48 "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
- Physical 2: cores 0 1 2 3 4 5
- Physical 3: cores 0 1 2 3 4 5
- Cache size : 12288 KB

From /proc/meminfo:

- MemTotal: 529143500 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

```
$ /usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.4 (Santiago)
```
### SPEC CINT2006 Result

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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)`

```
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 May 1 14:51

**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 alway > /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>
```

Submitted by: "Sheshgiri I (shei)" <shei@cisco.com>  
Submitted: Wed May 28 03:16:44 EDT 2014

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General Notes (Continued)

Submission: cpu2006-20140505-29492.sub

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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

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

Continued on next page
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Peak Optimization Flags (Continued)

403gcc: -xSSE4.2 -ipo -O3 -no-prec-div
429mcf: basepeak = yes
445gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -opt-tcm-layout-trns=3
456hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
458sjeng: -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
462libquantum: basepeak = yes
464h264ref: -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:
471omnetpp: -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 -lsmartheap
473astra: basepeak = yes
483xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:
403gcc: -Dalloca=_alloca
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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-revB.html

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-revB.xml