Cisco Systems
Cisco UCS C220 M3 (Intel Xeon E5-2695 v2, 2.40 GHz)

SPECint®2006 = 39.7
SPECint_base2006 = 35.1

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

CPU Name: Intel Xeon E5-2695 v2
CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz
CPU MHz: 2400
FPU: Integrated
CPU(s) enabled: 24 cores, 2 chips, 12 cores/chip, 2 threads/core
CPU(s) orderable: 1.2 chip
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 PC3-14900R-13, ECC)
Disk Subsystem: 1 X 300 GB 15000 RPM SAS
Other Hardware: None

Hardware

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)
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-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V10.0

Software

Test date: Dec-2013
Hardware Availability: Dec-2013
Software Availability: Sep-2013
## Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peaks</th>
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<th>Ratio</th>
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<td>174</td>
<td>39.5</td>
<td>174</td>
<td>39.6</td>
</tr>
</tbody>
</table>

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

BIOS Settings:
- Intel HT Technology = Enabled
- 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
- 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 rhe16.4-speed Fri Dec 20 02:50:02 2013

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 E5-2695 v2 @ 2.40GHz
- 2 "physical id"s (chips)
- 48 "processors"

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Cisco Systems
Cisco UCS C220 M3 (Intel Xeon E5-2695 v2, 2.40 GHz)

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Platform Notes (Continued)

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 : 12
- siblings : 24
- 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: 264455736 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

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

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 rhel6.4-speed 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 Dec 20 02:46

SPEC is set to: /opt/cpu2006-1.2

Additional information from dmidecode:
- BIOS Cisco Systems, Inc. C220M3.1.5.2.27.071120132232 07/11/2013
- Memory:
  16x 0xAD00 HMT42GR7AFR4C-RD 16 GB 1866 MHz 2 rank

(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"
OMP_NUM_THREADS = "48"

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
runcspec command invoked through numactl i.e.:
umactl --interleave=all runspec <etc>
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Base Compiler Invocation

C benchmarks:
  icc  -m64

C++ benchmarks:
  icpc  -m64

Base Portability Flags

C benchmarks
  -DSPEC_CPU_LP64
  -DSPEC_CPU_LINUX_X64

C++ benchmarks
  -DSPEC_CPU_LP64

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

Peak Compiler Invocation

C benchmarks (except as noted below):
  icc  -m64

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Cisco Systems
Cisco UCS C220 M3 (Intel Xeon E5-2695 v2, 2.40 GHz)

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Test date: Dec-2013
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Software Availability: Sep-2013

Peak Compiler Invocation (Continued)

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.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
473.astar: -DSPEC_CPU_LP64
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)
-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-1lp32
-opt-prefetch -ansi-alias

403.gcc: -xSSE4.2 -ipo -o3 -no-prec-div -inline-calloc
-opt-malloc-options=3 -auto-1lp32

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
 -ansi-alias

456.hmmer: -xSSE4.2 -ipo -o3 -no-prec-div -unroll2 -auto-1lp32
 -ansi-alias
Cisco Systems
Cisco UCS C220 M3 (Intel Xeon E5-2695 v2, 2.40 GHz)

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Test date: Dec-2013
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Peak Optimization Flags (Continued)

458.sjeng: -xSSE4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2)
-03 (pass 2) -no-prec-div (pass 2) -prof-use (pass 2)
-unroll4

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2)
-03 (pass 2) -no-prec-div (pass 2) -prof-use (pass 2)
-unroll2 -ansi-alias

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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.20130717.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-V1.2.20130717.xml

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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