Cisco Systems
Cisco UCS C220 M3 (Intel Xeon E5-2680 v2, 2.80 GHz)

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

Hardware
CPU Name: Intel Xeon E5-2680 v2
CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz: 2800
FPU: Integrated
CPU(s) enabled: 20 cores, 2 chips, 10 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: 25 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem: 1 X 146 GB 15000 RPM SAS
Other Hardware: None

Software
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: No
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

SPECint®_rate2006 = 860
SPECint_rate_base2006 = 830

Test date: Oct-2013
Hardware Availability: Sep-2013
Software Availability: Sep-2013
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Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<td>401.bzip2</td>
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<td>403.gcc</td>
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<td>1240</td>
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<td>785</td>
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<td>462.libquantum</td>
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<td>1050</td>
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<td>471.omnetpp</td>
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<td>602</td>
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<td>467</td>
<td></td>
<td>602</td>
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<tr>
<td>483.xalancbmk</td>
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<td>315</td>
<td></td>
<td>875</td>
<td></td>
<td>316</td>
<td></td>
</tr>
</tbody>
</table>

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"

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 localhost.localdomain Fri Oct 18 19:40:44 2013

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
Continued on next page
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Platform Notes (Continued)

http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E5-2680 v2 @ 2.80GHz
    2 "physical id"s (chips)
      40 "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 : 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
    cache size : 25600 KB

From /proc/meminfo
  MemTotal: 132123340 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 localhost.localdomain 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 Oct 18 17:06

SPEC is set to: /opt/cpu2006-1.2
  Filesystem Type Size Used Avail Use% Mounted on
  /dev/sda1 ext4 134G 12G 116G 9% /

Additional information from dmidecode:
  BIOS Cisco Systems, Inc. C220M3.1.5.2.27.071120132232 07/11/2013
  Memory:
    16x 0xAD00 HMT31GR7EFR4C-RD 8 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/lib32:/opt/cpu2006-1.2/lib64:/opt/cpu2006-1.2/sh"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB

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General Notes (Continued)
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>

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.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags
C benchmarks:
  -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
C++ benchmarks:
  -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
  -Wl,-z,muldefs -L/sh -lsmartheap

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

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

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -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)
-unroll4 -auto-ilp32

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Peak Other Flags

C benchmarks:

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The flags files that were used to format this result can be browsed at:

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

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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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