Cisco Systems
Cisco UCS B200 M5 (Intel Xeon Platinum 8164, 2.00 GHz)  

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

SPECint@2006 = Not Run  
SPECint_base2006 = 79.2

Hardware
CPU Name: Intel Xeon Platinum 8164  
CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
CPU MHz: 2000  
FPU: Integrated  
CPU(s) enabled: 52 cores, 2 chips, 26 cores/chip  
CPU(s) orderable: 1,2 chips  
Primary Cache: 32 KB I + 32 KB D on chip per core  
Secondary Cache: 1 MB I+D on chip per core  
L3 Cache: 35.75 MB I+D on chip per core  
Other Cache: None  
Memory: 384 GB (24 x 16 GB 2Rx4 PC4-2666V-R)  
Disk Subsystem: 1 x 900 GB M.2 SATA SSD  
Other Hardware: None

Software
Operating System: Red Hat Enterprise Linux Server release 7.3 (Maipo)  
Compiler: C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux  
Auto Parallel: Yes  
File System: xfs  
System State: Run level 3 (multi-user)  
Base Pointers: 32/64-bit  
Peak Pointers: 32/64-bit  
Other Software: Microquill SmartHeap V10.2
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Test date: Sep-2017
Hardware Availability: Aug-2017
Software Availability: Apr-2017

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<tbody>
<tr>
<td>400.perlbench</td>
<td>208</td>
<td>47.0</td>
<td>209</td>
<td>46.8</td>
<td>209</td>
<td>46.7</td>
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<tr>
<td>401.bzip2</td>
<td>340</td>
<td>28.4</td>
<td>341</td>
<td>28.3</td>
<td>340</td>
<td>28.4</td>
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<tr>
<td>403.gcc</td>
<td>175</td>
<td>45.9</td>
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<td>45.7</td>
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<td>45.7</td>
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<tr>
<td>429.mcf</td>
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<td>80.9</td>
<td>112</td>
<td>81.5</td>
<td>112</td>
<td>81.3</td>
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<tr>
<td>445.gobmk</td>
<td>309</td>
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<td>33.9</td>
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<tr>
<td>456.hmmer</td>
<td>96.5</td>
<td>96.7</td>
<td>96.3</td>
<td>96.8</td>
<td>96.5</td>
<td>96.7</td>
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<td>458.sjeng</td>
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<td>37.6</td>
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<td>462.libquantum</td>
<td>2.10</td>
<td>9870</td>
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<td>9630</td>
<td>2.16</td>
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<td>464.h264ref</td>
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<tr>
<td>471.omnetpp</td>
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<td>45.9</td>
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<td>45.8</td>
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<td>473.astar</td>
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<td>39.5</td>
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<tr>
<td>483.xalancbmk</td>
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<td>86.0</td>
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<td>85.9</td>
<td>80.6</td>
<td>85.6</td>
<td></td>
<td></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 HyperThreading Technology set to Disabled
CPU performance set to Enterprise
Power Performance Tuning set to OS
SNC set to Disabled
IMC Interleaving set to Auto
Patrol Scrub set to Disabled
Sysinfo program /home/cpu2006-1.2/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
runtime on Presidio-srv5 Fri Sep  1 13:24:48 2017

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) Platinum 8164 CPU @ 2.00GHz
  2 "physical id"s (chips)
  52 "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 : 26

Continued on next page
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**SPECint_base2006 = 79.2**

**Platform Notes (Continued)**

siblings : 26
physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 22 24 25 26 27 28 29
physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 22 24 25 26 27 28 29

cache size : 36608 KB

From `/proc/meminfo`
MemTotal: 394835184 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From `/etc/*release* /etc/*version*`
NAME="Red Hat Enterprise Linux Server"
VERSION="7.3 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.3"
PRETTY_NAME="Storage"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.3:ga:server"
redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)

uname -a:
Linux Presidio-srv5 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13 EDT 2016
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 3 15:58

SPEC is set to: /home/cpu2006-1.2
Files system Type Size Used Avail Use% Mounted on
/dev/sdb5 xfs 839G 65G 775G 8% /home

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Cisco Systems, Inc. B200M5.3.2.1d.5.0727171353 07/27/2017
Cisco Systems, Inc. B200M5.3.2.1d.5.0727171353 07/27/2017
Memory:
48x 0xCE00 M393A2G40EB2-CTD 16 GB 2 rank 2666 MHz

(End of data from sysinfo program)

The correct amount of Memory installed is 384 GB (24 x 16 GB)
and the dmidecode is reporting invalid number of DIMMs installed

Installed Memory:
24x 0xCE00 M393A2G40EB2-CTD 16 GB 2 rank 2666 MHz
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**General Notes**

Environment variables set by runspec before the start of the run:

- KMP_AFFINITY = "granularity=fine,compact"
- LD_LIBRARY_PATH = "/home/cpu2006-1.2/lib/ia32:/home/cpu2006-1.2/lib/intel64:/home/cpu2006-1.2/sh10.2"
- OMP_NUM_THREADS = "52"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.2

Transparent Huge Pages enabled by default.

**Base Compiler Invocation**

- C benchmarks:
  - icc -m64

- 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.hmmer: -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:
  - -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -qopt-prefetch
  - -auto-p32

- C++ benchmarks:
  - -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
  - -Wl,-z,muldefs -L/sh10.2 -lsmartheap64
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#### Base Other Flags

C benchmarks:

```
403.gcc -Dalloca=_alloca
```

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: