Cisco Systems
Cisco UCS C220 M4 (Intel Xeon E5-2699 v4, 2.20 GHz)

SPECint®2006 = Not Run
SPECint_base2006 = 73.1

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

Hardware
CPU Name: Intel Xeon E5-2699 v4
CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz: 2200
FPU: Integrated
CPU(s) enabled: 44 cores, 2 chips, 22 cores/chip
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 MB I+D on chip per core
L3 Cache: 55 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, ECC)
Disk Subsystem: 1 x 300 GB SAS, 15K RPM
Other Hardware: None

Software
Operating System: SUSE Linux Enterprise Server 12 SP1 (x86_64) 3.12.49-11-default
Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE 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

Test date: Mar-2016
Hardware Availability: Mar-2016
Software Availability: Dec-2015
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Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>401.bzip2</td>
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<td>25.3</td>
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<td>25.1</td>
<td>382</td>
<td>25.3</td>
</tr>
<tr>
<td>403.gcc</td>
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<td>38.7</td>
<td>208</td>
<td>38.8</td>
<td>208</td>
<td>38.7</td>
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<tr>
<td>429.mcf</td>
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<td>64.8</td>
<td>140</td>
<td>65.0</td>
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<td>65.1</td>
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<tr>
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<td>30.8</td>
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<td>30.7</td>
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<td>88.3</td>
<td>106</td>
<td>88.3</td>
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<tr>
<td>458.sjeng</td>
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<td>335</td>
<td>36.1</td>
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<td>36.0</td>
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<td>462.libquantum</td>
<td>2.07</td>
<td>10000</td>
<td>2.05</td>
<td>10100</td>
<td>2.13</td>
<td>9710</td>
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<tr>
<td>464.h264ref</td>
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<td>58.2</td>
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<td>51.2</td>
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<td>50.6</td>
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<tr>
<td>473.astar</td>
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<td>37.4</td>
<td>189</td>
<td>37.2</td>
<td>188</td>
<td>37.4</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>86.1</td>
<td>80.1</td>
<td>87.0</td>
<td>79.3</td>
<td>86.9</td>
<td>79.4</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 Hyper-Threading Technology option set to Disabled
CPU performance set to Enterprise
Power Technology set to Energy Efficient
Energy Performance BIAS setting set to Balanced Performance
Memory RAS configuration set to Maximum Performance
Memory Power Saving Mode set to Disabled
QPI Snoop Mode set to Home Directory Snoop with OSB
Sysinfo program /home/cpu2006-1.2/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on linux-t2je Thu Mar 10 16:29:30 2016

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 E5-2699 v4 @ 2.20GHz
  2 "physical id"s (chips)
  44 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
Cisco Systems
Cisco UCS C220 M4 (Intel Xeon E5-2699 v4, 2.20 GHz)

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CPU2006 license: 9019
Test sponsor: Cisco Systems
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Platform Notes (Continued)

cpu cores : 22
siblings : 22
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27 28
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27 28
cache size : 56320 KB

From /proc/meminfo
MemTotal: 264565824 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 1
# This file is deprecated and will be removed in a future service pack or release.
# Please check /etc/os-release for details about this release.
os-release:
NAME="SLES"
VERSION="12-SP1"
VERSION_ID="12.1"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp1"

uname -a:
Linux linux-t2je 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Mar 10 16:29

SPEC is set to: /home/cpu2006-1.2

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 268G 24G 244G 9% /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. C220M4.2.0.9.42.021920161702 02/19/2016
Memory:
16x 0xCE00 M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz
8x NO DIMM NO DIMM

(End of data from sysinfo program)
### SPEC CINT2006 Result

**Cisco Systems**

Cisco UCS C220 M4 (Intel Xeon E5-2699 v4, 2.20 GHz)

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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/libs/32:/home/cpu2006-1.2/libs/64:/home/cpu2006-1.2/sh"
- `OMP_NUM_THREADS = "44"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1

Transparent Huge Pages enabled with:
- `echo always > /sys/kernel/mm/transparent_hugepage/enabled`

Submitted by: "Rajendra Yogendra (ryogendr)" <ryogendr@cisco.com>
Submitted: Tue Mar 22 00:31:24 EDT 2016
Submission: cpu2006-20160322-39738.sub

### 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`
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- 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 -opt-prefetch -auto-p32`

**C++ benchmarks:**
- `-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32`
- `-Wl,-z,muldefs -L/sh -lsmartheap64`
## SPEC CINT2006 Result

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**Test date:** Mar-2016  
**Hardware Availability:** Mar-2016  
**Software Availability:** Dec-2015

### Base Other Flags

C benchmarks:

- 403.gcc: -Dalloca=_alloca

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

- [https://pro.spec.org/private/osg/submit/cpu2006/flags/Intel-ic16.0-official-linux64.html](https://pro.spec.org/private/osg/submit/cpu2006/flags/Intel-ic16.0-official-linux64.html)

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

- [https://pro.spec.org/private/osg/submit/cpu2006/flags/Intel-ic16.0-official-linux64.xml](https://pro.spec.org/private/osg/submit/cpu2006/flags/Intel-ic16.0-official-linux64.xml)
- [https://pro.spec.org/private/osg/submit/cpu2006/flags/Cisco-Platform-Settings-V1.2-revD.xml](https://pro.spec.org/private/osg/submit/cpu2006/flags/Cisco-Platform-Settings-V1.2-revD.xml)

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

Tested with SPEC CPU2006 v1.2.  
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