### SPEC® CFP2006 Result

**Cisco Systems**

Cisco UCS B260 M4 (Intel Xeon E7-8890 v4, 2.20 GHz)

**SPECfp®_rate2006 = Not Run**

**SPECfp_rate_base2006 = 1170**

<table>
<thead>
<tr>
<th>Copies</th>
<th>CPU2006 license: 9019</th>
<th>Test date:</th>
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<th>Hardware Availability: Jul-2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>96</td>
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<tr>
<td>416.gamess</td>
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<tr>
<td>482.sphinx3</td>
<td>96</td>
<td></td>
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</tr>
</tbody>
</table>

**Software**

- Operating System: SUSE Linux Enterprise Server 12 SP1 (x86_64) 3.12.49-11-default
- Compiler: C++: Version 16.0.0.101 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

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**Hardware**

- CPU Name: Intel Xeon E7-8890 v4
- CPU Characteristics: Intel Turbo Boost Technology up to 3.40 GHz
- CPU MHZ: 2200
- FPU: Integrated
- CPU(s) enabled: 48 cores, 2 chips, 24 cores/chip, 2 threads/core
- CPU(s) orderable: 1,2 chips
- Primary Cache: 32 KB I + 32 KB D on chip per core
- Secondary Cache: 256 KB I+D on chip per core

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</tbody>
</table>

**Other Cache:** None  
**L3 Cache:** 60 MB I+D on chip per chip  
**Memory:** 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, running at 1600 MHz)  
**Disk Subsystem:** 2 X 400 GB SAS SSD, RAID 0  
**Other Hardware:** None  
**Other Software:** None  

<table>
<thead>
<tr>
<th>Test date:</th>
<th>May-2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Availability:</td>
<td>Jul-2016</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Aug-2015</td>
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</table>

### Results Table

<table>
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<tr>
<th>Benchmark</th>
<th>Base</th>
<th>Peak</th>
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<tbody>
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<td>435.gromacs</td>
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<td>447.dealII</td>
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<td>450.soplex</td>
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<tr>
<td>482.sphinx3</td>
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<td>1862</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"
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CPU2006 license: 9019
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Test date: May-2016
Hardware Availability: Jul-2016
Software Availability: Aug-2015

SPECfp_rate_base2006 = 1170

Platform Notes

CPU performance set to Enterprise
Power Technology set to Performance
Energy Performance BIAS setting set to Balanced Performance
Memory RAS configuration set to Maximum Performance
Memory Power Saving Mode set to Disabled

Sysinfo program /home/cpu2006-1.2/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 $$ e3fbb8667b5a285932ceab81e28219e1
running on linux-xyp1 Fri Jan  1 01:07:52 2010

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 E7-8890 v4 @ 2.20GHz
  2 "physical id"s (chips)
  96 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
cautions.)
cpu cores : 24
siblings : 48
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
  27 28 29
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
  27 28 29
cache size : 61440 KB

From /proc/meminfo
MemTotal:       264174296 kB
HugePages_Total:       0
Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12 SP1

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"

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SPEC CFP2006 Result

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Platform Notes (Continued)

uname -a:
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 31 16:37

SPEC is set to: /home/cpu2006-1.2
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 701G 19G 683G 3% /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. EXM4.31.1.3.042620161123 04/26/2016
Memory:
  16x 0xCE00 M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz, configured at 1600 MHz
  32x NO DIMM NO DIMM

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006-1.2/libs/32:/home/cpu2006-1.2/libs/64:/home/cpu2006-1.2/sh"

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
Filesystem page cache cleared with:
echo 1 > /proc/sys/vm/drop_caches
runcspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:
  icc  -m64

C++ benchmarks:
  icpc  -m64

Fortran benchmarks:
  ifort  -m64

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Base Compiler Invocation (Continued)

Benchmarks using both Fortran and C:
icc  -m64 ifort -m64

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-xCORE-AVX2  -ipo  -O3  -no-prec-div  -opt-prefetch  -auto-p32
-ansi-alias  -opt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2  -ipo  -O3  -no-prec-div  -opt-prefetch  -auto-p32
-ansi-alias  -opt-mem-layout-trans=3

Fortran benchmarks:
-xCORE-AVX2  -ipo  -O3  -no-prec-div  -opt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX2  -ipo  -O3  -no-prec-div  -opt-prefetch  -auto-p32
-ansi-alias  -opt-mem-layout-trans=3

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revE.html
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You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revE.xml

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For other inquiries, please contact webmaster@spec.org.

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