# Cisco Systems

Cisco UCS C220 M4 (Intel Xeon E5-2699 v3 @ 2.30GHz)  

<table>
<thead>
<tr>
<th>SPECfp®_rate2006</th>
<th>Not Run</th>
<th>SPECfp_rate_base2006</th>
<th>922</th>
</tr>
</thead>
</table>

## Hardware

- **CPU Name:** Intel Xeon E5-2699 v3  
- **CPU Characteristics:**  
  - Intel Turbo Boost Technology up to 3.60 GHz  
  - CPU MHz: 2300  
  - FPU: Integrated  
  - CPU(s) enabled: 36 cores, 2 chips, 18 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

## Software

- **Operating System:** SUSE Linux Enterprise Server 11 (x86_64) 3.0.76-0.11-default  
- **Compiler:**  
  - C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;  
  - Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux  
- **Auto Parallel:** No  
- **File System:** ext3  
- **System State:** Run level 3 (multi-user)
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SPEC CFP2006 Result

SPECfp_rate2006 = Not Run
SPECfp_rate_base2006 = 922

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

L3 Cache: 45 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: 1 x 300GB SAS, 15K RPM
Other Hardware: None
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<tr>
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<td>829</td>
<td>1689</td>
<td>831</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

CPU performance set to Enterprise
Power Technology set to Energy Efficient
Energy Performance BIAS setting set to Balanced Performance

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
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SPECfp_rate2006 = Not Run
SPECfp_rate_base2006 = 922

CPU2006 license: 9019
Test sponsor: Cisco Systems
Tested by: Cisco Systems
Test date: Jun-2014
Hardware Availability: Sep-2014
Software Availability: Sep-2013

Platform Notes (Continued)

Memory RAS configuration set to Maximum Performance
Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on SLES11-CS Sun Jun 29 11:32:36 2014
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 v3 @ 2.30GHz
  2 "physical id"s (chips)
  72 "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: 18
  siblings: 36
  physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
  physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
  cache size: 23040 KB
From /proc/meminfo
  MemTotal: 264436840 kB
  HugePages_Total: 0
  Hugepagesize: 2048 kB
/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 11 (x86_64)
From /etc/*release* /etc/*version*
  SuSE-release: SUSE Linux Enterprise Server 11 (x86_64)
  VERSION = 11
  PATCHLEVEL = 3
uname -a:
Linux SLES11-CS 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013
  (ccab990) x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Jun 29 05:19 last=S
SPEC is set to: /opt/cpu2006-1.2
Additional information from dmidecode:
  BIOS Cisco Systems, Inc. C220M4.2.0.2.68.073120141827 07/31/2014
  Memory:
    16x 0xCE00 M393A2G40DB0-CPB 16 GB 2133 MHz
    8x 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 = "/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64:/opt/cpu2006-1.2/sh"
Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RedHat EL 6.4
Transparent Huge Pages enabled with:

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

General Notes (Continued)

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  -m64

C++ benchmarks:
    icpc  -m64

Fortran benchmarks:
    ifort  -m64

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 -nofor_main
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

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<th>CPU2006 license: 9019</th>
<th>Test date: Jun-2014</th>
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<tbody>
<tr>
<td>Test sponsor: Cisco Systems</td>
<td>Hardware Availability: Sep-2014</td>
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<tr>
<td>Tested by: Cisco Systems</td>
<td>Software Availability: Sep-2013</td>
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</tbody>
</table>

**Base Optimization Flags (Continued)**

C++ benchmarks:
- -xCORE-AVX2 -ipo -03 -no-prec-div -opt-prefetch -auto-p32
- -ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:
- -xCORE-AVX2 -ipo -03 -no-prec-div -opt-prefetch

Benchmarks using both Fortran and C:
- -xCORE-AVX2 -ipo -03 -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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revC.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-revC.xml

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

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