# SPEC® CFP2006 Result

Cisco Systems

Cisco UCS B200 M3 (Intel Xeon E5-2637, 3.0 GHz)

<table>
<thead>
<tr>
<th>SPECfp®2006</th>
<th>68.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>66.6</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 9019

**Test sponsor:** Cisco Systems

**Tested by:** Cisco Systems

**Test date:** Nov-2012

**Hardware Availability:** Jun-2012

**Software Availability:** Dec-2011

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### Hardware

<table>
<thead>
<tr>
<th>CPU Name:</th>
<th>Intel Xeon E5-2637</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 3.50 GHz</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>3000</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>4 cores, 2 chips, 2 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>1,2 chip</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache:</td>
<td>256 KB I+D on chip per core</td>
</tr>
</tbody>
</table>

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### Software

<table>
<thead>
<tr>
<th>Operating System:</th>
<th>Red Hat Enterprise Linux Server release 6.2 (Santiago) 2.6.32-220.el6.x86_64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 12.1.3.293 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.3.293 of Intel Fortran Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel:</td>
<td>Yes</td>
</tr>
<tr>
<td>File System:</td>
<td>ext4</td>
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</table>

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### Benchmark Results

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Result</th>
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<tbody>
<tr>
<td>410.bwaves</td>
<td>36.8</td>
</tr>
<tr>
<td>416.gamess</td>
<td>33.8</td>
</tr>
<tr>
<td>433.milc</td>
<td>63.0</td>
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<tr>
<td>434.zeusmp</td>
<td>62.4</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>36.5</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td></td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>111</td>
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<tr>
<td>444.namd</td>
<td>24.2</td>
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<tr>
<td>447.dealII</td>
<td>56.4</td>
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<tr>
<td>450.soplex</td>
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<tr>
<td>453.povray</td>
<td>52.9</td>
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<td>454.calculix</td>
<td>44.5</td>
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<tr>
<td>459.GemsFDTD</td>
<td>95.1</td>
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<tr>
<td>465.tonto</td>
<td>43.4</td>
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<tr>
<td>470.lbm</td>
<td>40.9</td>
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<tr>
<td>481.wrf</td>
<td>75.5</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>63.2</td>
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**SPECfp_base2006 = 66.6**

**SPECfp2006 = 68.3**
Cisco Systems

Cisco UCS B200 M3 (Intel Xeon E5-2637, 3.0 GHz)

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<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<th>Ratio</th>
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<td>63.7</td>
<td>310</td>
<td>62.9</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 Configuration:
- Processor C6 Report set to Disabled
- Processor CIE set to Disabled
- CPU Performance set to HPC
- LV DDR Mode set to Performance-mode
- Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6800

Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6800

$Rev: 6800 $ $Date:: 2011-10-11 $$ 6f2ebdf5032aa42e583f96b07f99d3

running on localhost.localdomain Wed Nov 28 21:49:03 2012

This section contains SUT (System Under Test) info as seen by

Continued on next page
Cisco Systems

Cisco UCS B200 M3 (Intel Xeon E5-2637, 3.0 GHz)

SPECfp2006 = 68.3
SPECfp_base2006 = 66.6

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

Test date: Nov-2012
Hardware Availability: Jun-2012
Software Availability: Dec-2011

Platform Notes (Continued)

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 E5-2637 0 @ 3.00GHz
  2 "physical id"s (chips)
  8 "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 : 2
  siblings : 4
  physical 0: cores 0 1
  physical 1: cores 0 1
  cache size : 5120 KB

From /proc/meminfo
  MemTotal: 132102444 kB
  HugePages_Total: 0
  Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
  Red Hat Enterprise Linux Server release 6.2 (Santiago)

From /etc/*release* /etc/*version*
  redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
  system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)

uname -a:
  Linux localhost.localdomain 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13
  EST 2011 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Nov 28 21:46

SPEC is set to: /opt/cpu2006-1.2
  Filesystem Type  Size  Used  Avail  Use%  Mounted on
  /dev/sda1   ext4  550G  9.9G  512G  2%  /

Additional information from dmidecode:
  Memory:
    16x 0xCE00 M393B1K70DH0-YK0 8 GB 1600 MHz 2 rank

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
  KMP_AFFINITY = "granularity=fine,compact,1,0"
  LD_LIBRARY_PATH = "/opt/cpu2006-1.2/libs32:/opt/cpu2006-1.2/libs64"
  OMP_NUM_THREADS = "4"

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General Notes (Continued)

Intel HT Technology = disable
Binaries compiled on a system with 2 X Intel Xeon E5-2690 CPU + 128 GB memory using RHEL 6.2
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#

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 -nofor_main
  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:
  -xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
  -ansi-alias

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**Base Optimization Flags (Continued)**

C++ benchmarks:
- `xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias`

Fortran benchmarks:
- `xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Benchmarks using both Fortran and C:
- `xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`
- `ansi-alias`

**Peak Compiler Invocation**

C benchmarks:
- `icc -m64`

C++ benchmarks:
- `icpc -m64`

Fortran benchmarks:
- `ifort -m64`

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

**Peak Portability Flags**

Same as Base Portability Flags

**Peak Optimization Flags**

C benchmarks:
- `433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
  - `no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32`
  - `ansi-alias`

- `470.lbm: basepeak = yes`

- `482.sphinx3: basepeak = yes`

C++ benchmarks:
- `444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
  - `no-prec-div(pass 2) -prof-use(pass 2) -fno-alias`
  - `auto-ilp32`

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Peak Optimization Flags (Continued)

447.dealII: basepeak = yes
450.soplex: basepeak = yes
453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:
410.bwaves: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel
            -static
416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
            -inline-level=0 -scalar-rep -static
343.zeusmp: basepeak = yes
347.leslie3d: basepeak = yes
459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                 -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
                 -inline-level=0 -opt-prefetch -parallel
465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
             -no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc
             -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:
435.gromacs: basepeak = yes
436.cactusADM: basepeak = yes
454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias
            481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.20130607.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.20130607.xml
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For other inquiries, please contact webmaster@spec.org.

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