



SPEC[®] CFP2006 Result

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Cisco Systems

Cisco UCS C220 M3 (Intel Xeon E5-2667 v2, 3.30 GHz)

SPECfp[®]2006 = 104

SPECfp_base2006 = 100

CPU2006 license: 9019

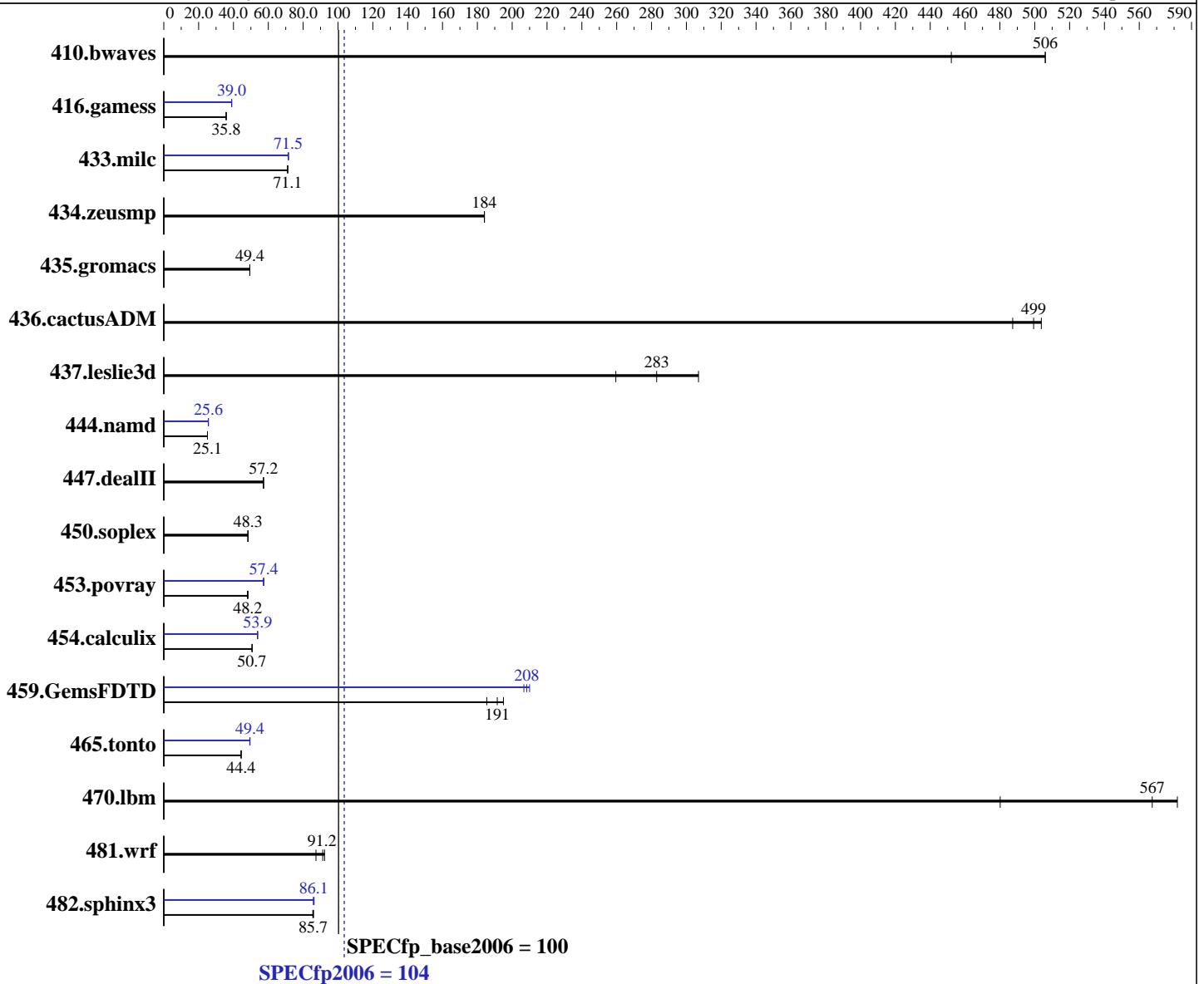
Test sponsor: Cisco Systems

Tested by: Cisco Systems

Test date: Oct-2013

Hardware Availability: Sep-2013

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2667 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 4.00 GHz
 CPU MHz: 3300
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip
 CPU(s) orderable: 1,2 chip
 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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Software

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)
 2.6.32-358.el6.x86_64
 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: Yes
 File System: ext4

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L3 Cache: 25 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem: 1 X 300 GB 15000 RPM SAS
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	30.1	452	26.9	506	<u>26.9</u>	<u>506</u>	30.1	452	26.9	506	<u>26.9</u>	<u>506</u>
416.gamess	548	35.7	545	35.9	<u>547</u>	<u>35.8</u>	502	39.0	503	39.0	<u>502</u>	<u>39.0</u>
433.milc	129	71.1	129	71.1	<u>129</u>	<u>71.1</u>	<u>128</u>	<u>71.5</u>	128	71.5	128	71.6
434.zeusmp	49.4	184	49.4	184	<u>49.4</u>	<u>184</u>	49.4	184	49.4	184	<u>49.4</u>	<u>184</u>
435.gromacs	<u>145</u>	<u>49.4</u>	145	49.4	145	49.3	<u>145</u>	<u>49.4</u>	145	49.4	145	49.3
436.cactusADM	<u>23.9</u>	<u>499</u>	24.5	487	23.7	504	<u>23.9</u>	<u>499</u>	24.5	487	23.7	504
437.leslie3d	<u>33.2</u>	<u>283</u>	36.2	259	30.6	307	<u>33.2</u>	<u>283</u>	36.2	259	30.6	307
444.namd	320	25.0	320	25.1	<u>320</u>	<u>25.1</u>	314	25.6	314	25.6	<u>314</u>	<u>25.6</u>
447.dealII	200	57.2	200	57.2	<u>200</u>	<u>57.2</u>	200	57.2	200	57.2	<u>200</u>	<u>57.2</u>
450.soplex	172	48.4	<u>173</u>	<u>48.3</u>	173	48.2	172	48.4	<u>173</u>	<u>48.3</u>	173	48.2
453.povray	<u>110</u>	<u>48.2</u>	110	48.3	111	48.0	93.1	57.2	92.6	57.5	<u>92.7</u>	<u>57.4</u>
454.calculix	162	50.8	<u>163</u>	<u>50.7</u>	163	50.6	153	53.9	<u>153</u>	<u>53.9</u>	154	53.7
459.GemsFDTD	<u>55.4</u>	<u>191</u>	54.4	195	57.2	185	50.5	210	<u>50.9</u>	<u>208</u>	51.3	207
465.tonto	<u>222</u>	<u>44.4</u>	222	44.3	221	44.5	199	49.3	199	49.5	<u>199</u>	<u>49.4</u>
470.lbm	23.6	582	<u>24.2</u>	<u>567</u>	28.6	480	23.6	582	<u>24.2</u>	<u>567</u>	28.6	480
481.wrf	128	87.4	121	92.3	<u>122</u>	<u>91.2</u>	128	87.4	121	92.3	<u>122</u>	<u>91.2</u>
482.sphinx3	227	86.0	228	85.5	<u>227</u>	<u>85.7</u>	227	85.8	226	86.3	<u>226</u>	<u>86.1</u>

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 HT Technology = Disabled
CPU performance set to HPC
Power Technology set to Custom
CPU Power State C6 set to Enabled
CPU Power State C1 Enhanced set to Disabled
Energy Performance policy set to Performance
Memory RAS configuration set to Maximum Performance
DRAM Clock Throttling Set to Performance
LV DDR Mode set to Performance-mode

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Platform Notes (Continued)

DRAM Refresh Rate Set to 1x

Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6818

\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191

running on rhel6.4-speed Fri Oct 11 20:37:42 2013

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 E5-2667 v2 @ 3.30GHz

2 "physical id"s (chips)

16 "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 : 8

siblings : 8

physical 0: cores 1 2 3 4 8 9 10 11

physical 1: cores 1 2 3 4 8 9 10 11

cache size : 25600 KB

From /proc/meminfo

MemTotal: 264459936 kB

HugePages_Total: 0

Hugepagesize: 2048 kB

/usr/bin/lsb_release -d

Red Hat Enterprise Linux Server release 6.4 (Santiago)

From /etc/*release* /etc/*version*

redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)

system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)

system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:

Linux rhel6.4-speed 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013

x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Oct 11 15:03

SPEC is set to: /opt/cpu2006-1.2

Filesystem Type Size Used Avail Use% Mounted on

/dev/sdb1 ext4 275G 71G 190G 28% /

Additional information from dmidecode:

BIOS Cisco Systems, Inc. C220M3.1.5.2.27.071120132232 07/11/2013

Memory:

16x 0xAD00 HMT42GR7AFR4C-RD 16 GB 1866 MHz 2 rank

(End of data from sysinfo program)



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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"
OMP_NUM_THREADS = "16"
```

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4

Transparent Huge Pages enabled with:

```
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

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
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
```



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Base Optimization Flags

C benchmarks:

`-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias`

C++ benchmarks:

`-xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias`

Fortran benchmarks:

`-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch`

Benchmarks using both Fortran and C:

`-xAVX -ipo -O3 -no-prec-div -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) -auto-ilp32
-ansi-alias`

470.lbm: `basepeak = yes`

482.sphinx3: `-xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel`

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Peak Optimization Flags (Continued)

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

447.dealIII: 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: basepeak = yes

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-

434.zeusmp: basepeak = yes

437.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-ic14.0-official-linux64.20140128.html>

<http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2.20130717.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-V1.2.20130717.xml>



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