



SPEC® CFP2006 Result

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Supermicro

SuperServer 1027TR-TF
(X9DRT-F, Intel Xeon E5-2697 v2)

SPECfp®2006 = **97.6**

SPECfp_base2006 = **92.9**

CPU2006 license: 001176

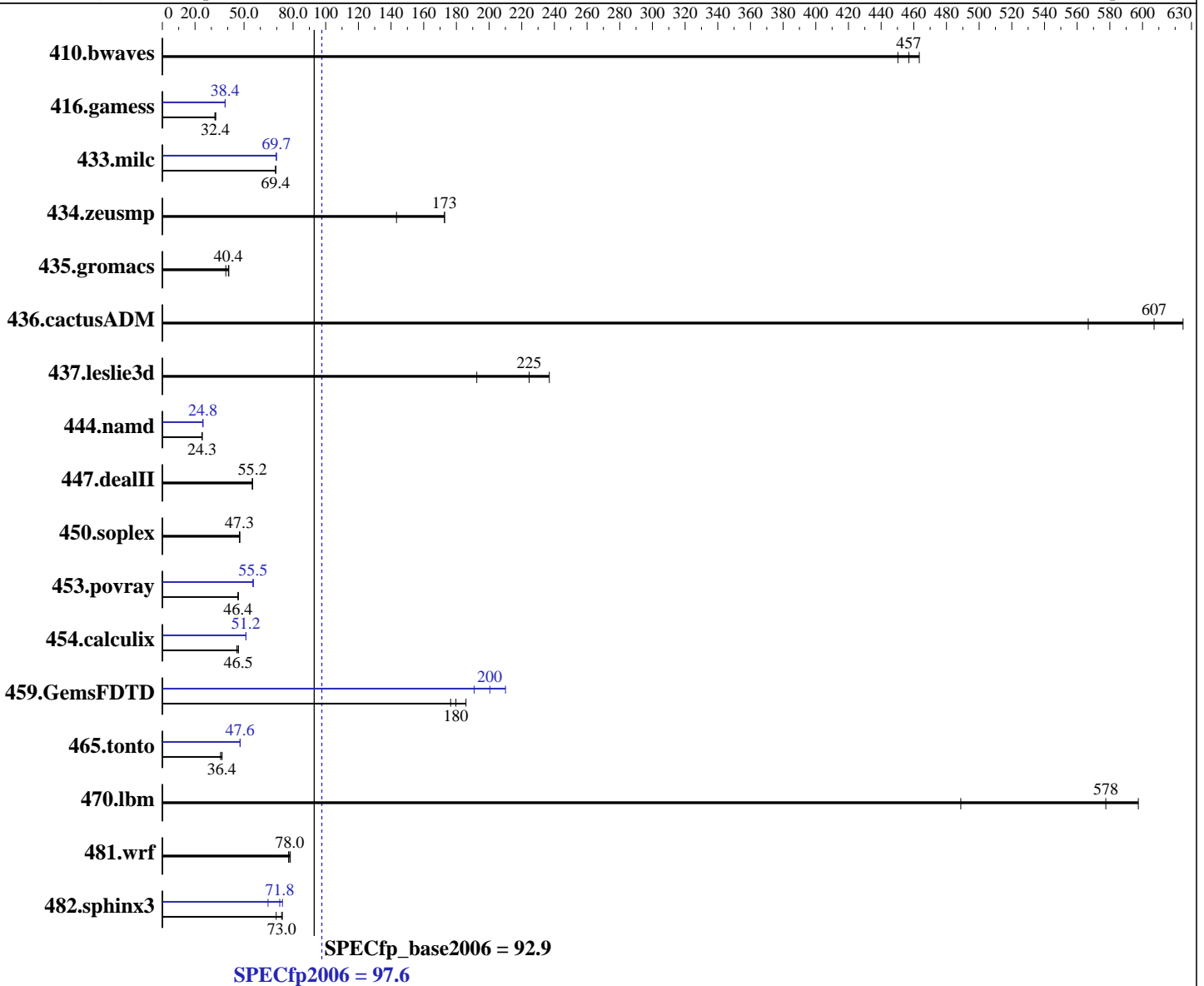
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Sep-2013

Hardware Availability: Sep-2013

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2697 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
 CPU MHz: 2700
 FPU: Integrated
 CPU(s) enabled: 24 cores, 2 chips, 12 cores/chip
 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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Software

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)
 2.6.32-358.18.1.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: 30 MB I+D on chip per chip
Other Cache: None
Memory: 64 GB (8 x 8 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem: 1 x 400 GB SATA III, SSD
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	30.2	450	29.3	463	<u>29.7</u>	<u>457</u>	30.2	450	29.3	463	<u>29.7</u>	<u>457</u>
416.gamess	599	32.7	609	32.2	<u>603</u>	<u>32.4</u>	510	38.4	<u>509</u>	<u>38.4</u>	509	38.5
433.milc	<u>132</u>	<u>69.4</u>	132	69.4	132	69.4	<u>132</u>	<u>69.7</u>	132	69.7	132	69.8
434.zeusmp	63.5	143	52.7	173	<u>52.7</u>	<u>173</u>	63.5	143	52.7	173	<u>52.7</u>	<u>173</u>
435.gromacs	<u>177</u>	<u>40.4</u>	175	40.7	184	38.9	<u>177</u>	<u>40.4</u>	175	40.7	184	38.9
436.cactusADM	19.1	625	21.1	567	<u>19.7</u>	<u>607</u>	19.1	625	21.1	567	<u>19.7</u>	<u>607</u>
437.leslie3d	39.7	237	<u>41.9</u>	<u>225</u>	48.8	192	39.7	237	<u>41.9</u>	<u>225</u>	48.8	192
444.namd	329	24.3	<u>330</u>	<u>24.3</u>	330	24.3	323	24.8	<u>323</u>	<u>24.8</u>	323	24.8
447.dealII	207	55.2	<u>207</u>	<u>55.2</u>	208	55.1	207	55.2	<u>207</u>	<u>55.2</u>	208	55.1
450.soplex	176	47.4	<u>176</u>	<u>47.3</u>	177	47.2	176	47.4	<u>176</u>	<u>47.3</u>	177	47.2
453.povray	<u>115</u>	<u>46.4</u>	115	46.3	114	46.5	95.6	55.7	<u>95.8</u>	<u>55.5</u>	95.8	55.5
454.calculix	181	45.6	177	46.6	<u>178</u>	<u>46.5</u>	<u>161</u>	<u>51.2</u>	161	51.2	161	51.2
459.GemsFDTD	60.1	176	57.1	186	<u>59.0</u>	<u>180</u>	<u>52.9</u>	<u>200</u>	50.5	210	55.6	191
465.tonto	<u>271</u>	<u>36.4</u>	269	36.6	277	35.6	207	47.5	206	47.7	<u>207</u>	<u>47.6</u>
470.lbm	23.0	597	<u>23.8</u>	<u>578</u>	28.1	489	23.0	597	<u>23.8</u>	<u>578</u>	28.1	489
481.wrf	143	78.3	145	77.2	<u>143</u>	<u>78.0</u>	143	78.3	145	77.2	<u>143</u>	<u>78.0</u>
482.sphinx3	280	69.7	265	73.5	<u>267</u>	<u>73.0</u>	<u>271</u>	<u>71.8</u>	265	73.5	301	64.7

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

Sysinfo program /home/cpu2006/config/sysinfo.rev6818
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
running on X9-CPU2006-2 Wed Sep 11 14:41:19 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 E5-2697 v2 @ 2.70GHz
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Platform Notes (Continued)

```
2 "physical id"s (chips)
24 "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 : 12
siblings  : 12
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
cache size : 30720 KB
```

```
From /proc/meminfo
MemTotal:      66003860 kB
HugePages_Total: 0
Hugepagesize:  2048 kB
```

```
/usr/bin/lsc_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 X9-CPU2006-2 2.6.32-358.18.1.el6.x86_64 #1 SMP Wed Aug 28 09:02:47 CEST
2013 x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Sep 11 14:35
```

```
SPEC is set to: /home/cpu2006
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/vg_x9cpu20062-lv_home
ext4            287G     4.2G 268G   2% /home
```

```
Additional information from dmidecode:
BIOS American Megatrends Inc. 3.0 09/11/2013
Memory:
1x 16 MB
8x 8 GB
8x Hynix Semiconductor HMT31GR7CFR4C-RD 8 GB 1866 MHz 1 rank
1x Micron/Numonyx 25Q Series 16 MB 33 MHz
```

(End of data from sysinfo program)

General Notes

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

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General Notes (Continued)

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

Base Optimization Flags

C benchmarks:
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

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Base Optimization Flags (Continued)

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

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: 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/Supermicro-Platform-Settings-V1.2-revB.20130719.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/Supermicro-Platform-Settings-V1.2-revB.20130719.xml>



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Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 16:49:27 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 1 November 2013.