SPEC® CFP2006 Result

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ASUSTeK Computer Inc.

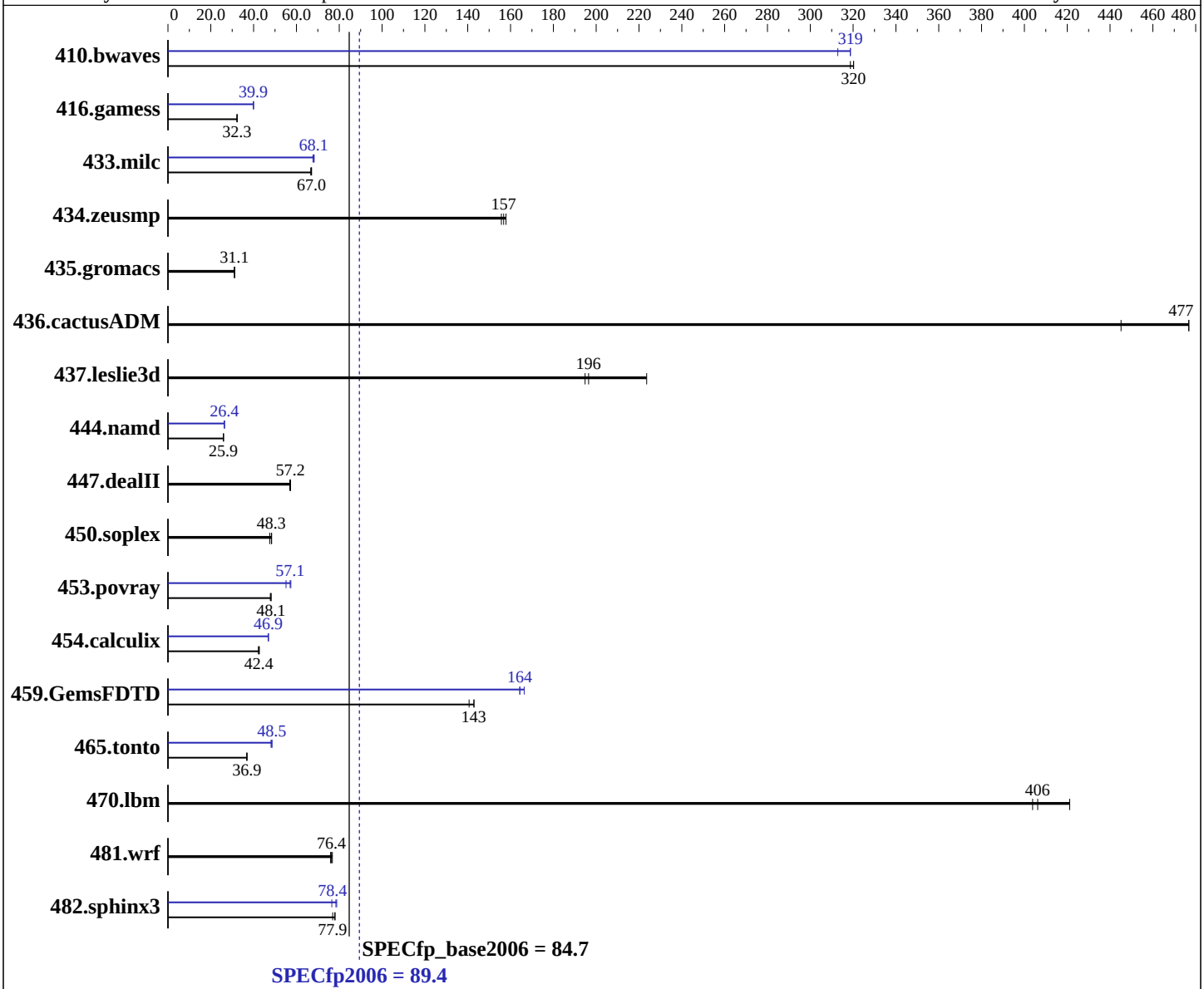
ASUS TS700-E7(Z9PE-D16) Server System
(Intel Xeon E5-2690)

SPECfp®2006 = 89.4

SPECfp_base2006 = 84.7

CPU2006 license: 9016
Test sponsor: ASUSTeK Computer Inc.
Tested by: ASUSTeK Computer Inc.

Test date: Feb-2012
Hardware Availability: Mar-2012
Software Availability: Dec-2011



Hardware

CPU Name:	Intel Xeon E5-2690
CPU Characteristics:	Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz:	2900
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 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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Software

Operating System:	Red Hat Enterprise Linux Server release 6.2 (Santiago) 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4

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L3 Cache:	20 MB I+D on chip per chip
Other Cache:	None
Memory:	128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem:	Seagate ST3500320AS 1 x 500 GB SATA, 7200 RPM
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	**42.4**	**320**	42.4	320	42.6	319	**42.6**	**319**	42.6	319	43.4	313
416.gamess	608	32.2	605	32.3	**606**	**32.3**	**491**	**39.9**	491	39.9	490	40.0
433.milc	138	66.7	**137**	**67.0**	137	67.1	134	68.3	**135**	**68.1**	136	67.7
434.zeusmp	58.4	156	57.6	158	**58.0**	**157**	58.4	156	57.6	158	**58.0**	**157**
435.gromacs	230	31.1	**230**	**31.1**	230	31.1	230	31.1	**230**	**31.1**	230	31.1
436.cactusADM	26.8	445	**25.1**	**477**	25.1	477	26.8	445	**25.1**	**477**	25.1	477
437.leslie3d	48.2	195	**47.8**	**196**	42.0	224	48.2	195	**47.8**	**196**	42.0	224
444.namd	**309**	**25.9**	310	25.9	309	25.9	**304**	**26.4**	304	26.4	304	26.3
447.dealII	200	57.2	**200**	**57.2**	201	56.9	200	57.2	**200**	**57.2**	201	56.9
450.soplex	**173**	**48.3**	175	47.6	172	48.4	**173**	**48.3**	175	47.6	172	48.4
453.povray	111	47.8	110	48.2	**111**	**48.1**	**93.2**	**57.1**	92.7	57.4	96.5	55.1
454.calculix	195	42.3	193	42.7	**194**	**42.4**	176	47.0	**176**	**46.9**	176	46.8
459.GemsFDTD	**74.3**	**143**	75.4	141	74.2	143	**64.6**	**164**	64.6	164	63.8	166
465.tonto	266	36.9	**267**	**36.9**	267	36.8	**203**	**48.5**	203	48.6	204	48.1
470.lbm	**33.8**	**406**	32.6	421	34.0	404	**33.8**	**406**	32.6	421	34.0	404
481.wrf	145	76.8	**146**	**76.4**	147	76.0	145	76.8	**146**	**76.4**	147	76.0
482.sphinx3	253	77.0	250	78.1	**250**	**77.9**	247	78.8	255	76.5	**248**	**78.4**

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 /cpu2006/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on localhost Mon Feb 20 19:25:35 2012

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 E5-2690 @ 2.90GHz
```

Continued on next page

Platform Notes (Continued)

```
 2 "physical id"s (chips)
 32 "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  : 16
 physical 0: cores 0 1 2 3 4 5 6 7
 physical 1: cores 0 1 2 3 4 5 6 7
 cache size : 20480 KB

 From /proc/meminfo
 MemTotal:       132284976 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)
 system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

 uname -a:
 Linux localhost 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 Feb 20 19:17

 SPEC is set to: /cpu2006
 Filesystem     Type    Size  Used Avail Use% Mounted on
 /dev/sda1      ext4    459G   71G  366G  17% /

 Additional information from dmidecode:

 (End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/cpu2006/libs/32:/cpu2006/libs/64"
OMP_NUM_THREADS = "16"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

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 -static -parallel -opt-prefetch
-ansi-alias

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: -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

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

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Peak Optimization Flags (Continued)

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

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-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/ASUSTekPlatform.20120313.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/ASUSTekPlatform.20120313.xml

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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