SPEC® CFP2006 Result

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ASUSTeK Computer Inc.

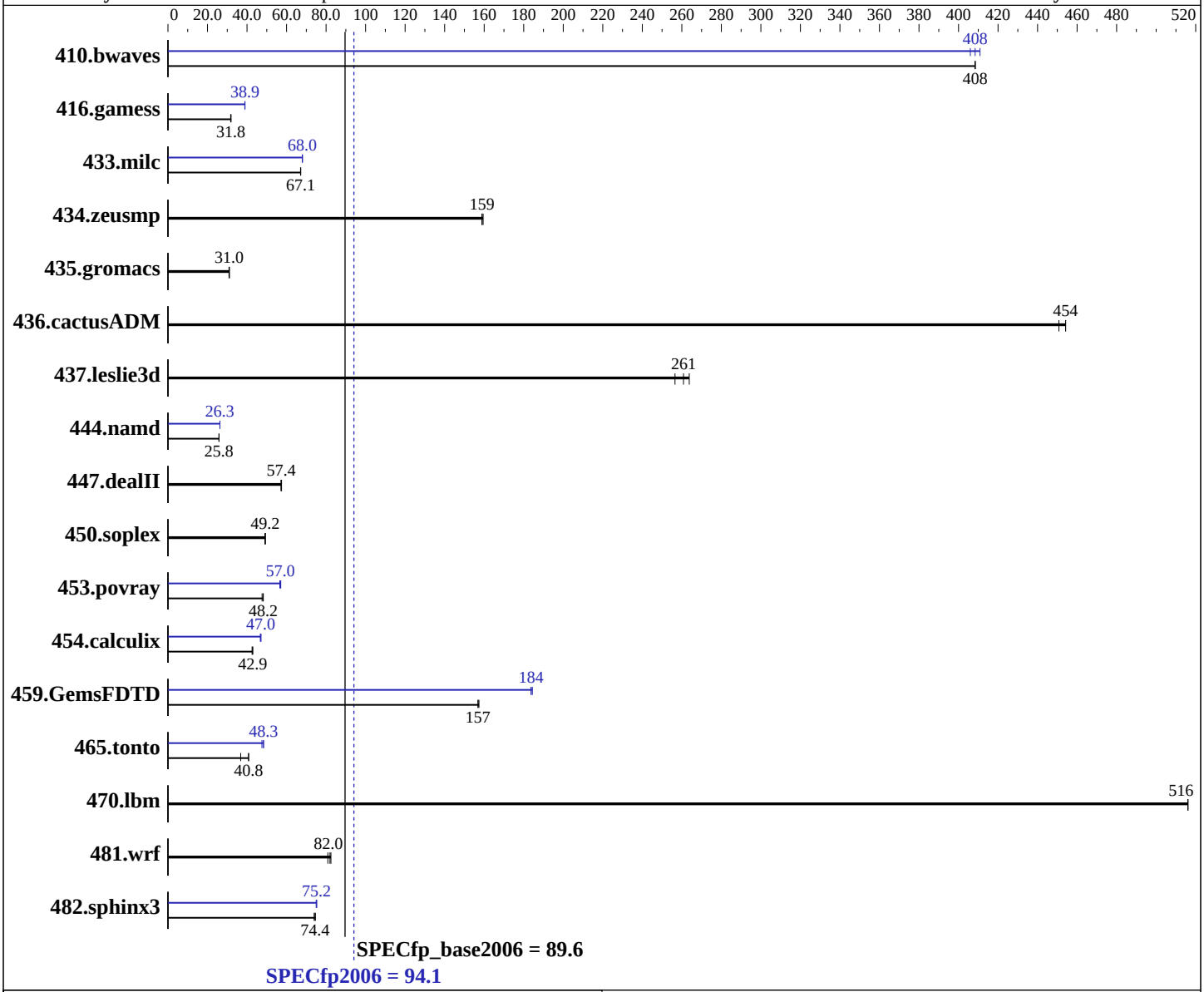
ASUS RS720-E7(Z9PE-D16) Server System
(Intel Xeon E5-2690)

SPECfp®2006 = 94.1

SPECfp_base2006 = 89.6

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

Test date: Apr-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	33.3	408	**33.3**	**408**	33.3	408	33.1	411	33.5	406	**33.3**	**408**
416.gamess	617	31.7	**616**	**31.8**	614	31.9	504	38.9	502	39.0	**503**	**38.9**
433.milc	137	67.2	137	67.1	**137**	**67.1**	135	68.0	**135**	**68.0**	135	68.1
434.zeusmp	57.1	159	57.3	159	**57.3**	**159**	57.1	159	57.3	159	**57.3**	**159**
435.gromacs	**230**	**31.0**	230	31.0	231	30.9	**230**	**31.0**	230	31.0	231	30.9
436.cactusADM	26.5	451	26.3	454	**26.3**	**454**	26.5	451	26.3	454	**26.3**	**454**
437.leslie3d	**36.0**	**261**	35.6	264	36.6	257	**36.0**	**261**	35.6	264	36.6	257
444.namd	310	25.9	311	25.8	**310**	**25.8**	305	26.3	**305**	**26.3**	305	26.3
447.dealII	200	57.2	199	57.5	**199**	**57.4**	200	57.2	199	57.5	**199**	**57.4**
450.soplex	169	49.3	170	49.1	**170**	**49.2**	169	49.3	170	49.1	**170**	**49.2**
453.povray	**110**	**48.2**	112	47.6	110	48.2	94.0	56.6	**93.3**	**57.0**	93.2	57.1
454.calculix	194	42.6	**192**	**42.9**	192	42.9	177	46.7	175	47.1	**176**	**47.0**
459.GemsFDTD	67.6	157	67.4	157	**67.6**	**157**	57.7	184	**57.7**	**184**	57.5	184
465.tonto	**241**	**40.8**	241	40.8	267	36.8	**204**	**48.3**	203	48.4	207	47.5
470.lbm	26.6	516	**26.6**	**516**	26.6	516	26.6	516	**26.6**	**516**	26.6	516
481.wrf	138	80.9	135	82.5	**136**	**82.0**	138	80.9	135	82.5	**136**	**82.0**
482.sphinx3	264	74.0	**262**	**74.4**	261	74.6	260	75.0	259	75.3	**259**	**75.2**

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 Fri Apr 20 16:33:08 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
```

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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:       132144492 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 Apr 20 16:24

 SPEC is set to: /cpu2006
 Filesystem     Type    Size  Used Avail Use% Mounted on
 /dev/sda1      ext4    459G   91G  345G  21% /

 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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