



SPEC® CFP2006 Result

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ASUSTeK Computer Inc.

ASUS RS700-X7(Z9PR-D12) Server System
(Intel Xeon E5-2690)

SPECfp®2006 = 90.6

SPECfp_base2006 = 85.8

CPU2006 license: 9016

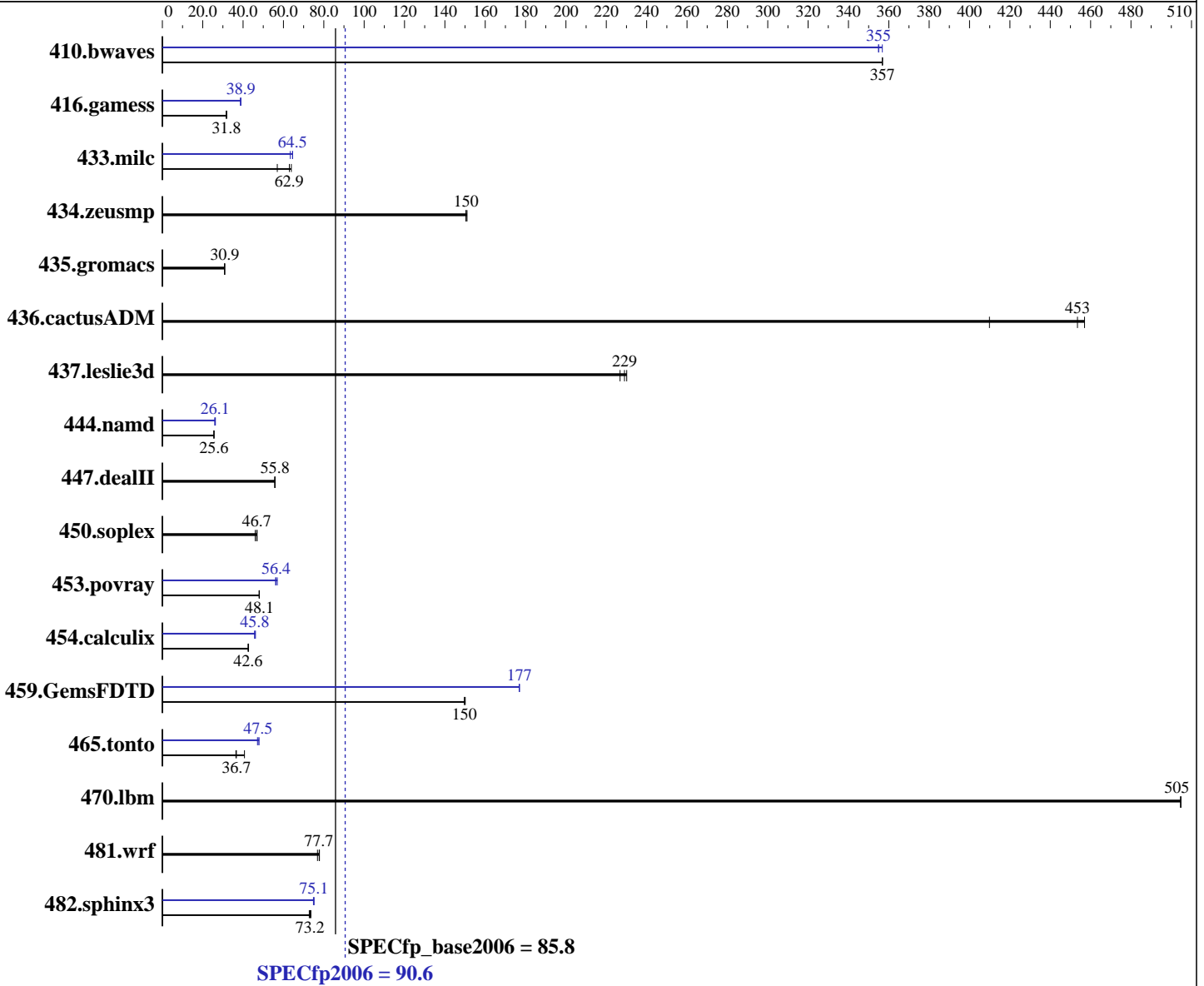
Test sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test date: Jun-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: 96 GB (12 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	38.1	357	38.1	357	<u>38.1</u>	<u>357</u>	38.3	355	<u>38.3</u>	<u>355</u>	38.1	357
416.gamess	<u>616</u>	<u>31.8</u>	615	31.9	619	31.6	504	38.9	<u>504</u>	<u>38.9</u>	506	38.7
433.milc	144	63.9	<u>146</u>	<u>62.9</u>	161	57.0	<u>142</u>	<u>64.5</u>	142	64.5	145	63.4
434.zeusmp	60.5	150	60.3	151	<u>60.5</u>	<u>150</u>	60.5	150	60.3	151	<u>60.5</u>	<u>150</u>
435.gromacs	232	30.8	<u>231</u>	<u>30.9</u>	231	30.9	232	30.8	<u>231</u>	<u>30.9</u>	231	30.9
436.cactusADM	26.1	457	29.2	410	<u>26.4</u>	<u>453</u>	26.1	457	29.2	410	<u>26.4</u>	<u>453</u>
437.leslie3d	40.8	230	41.4	227	<u>41.0</u>	<u>229</u>	40.8	230	41.4	227	<u>41.0</u>	<u>229</u>
444.namd	314	25.6	<u>314</u>	<u>25.6</u>	314	25.6	<u>307</u>	<u>26.1</u>	309	26.0	305	26.3
447.dealII	<u>205</u>	<u>55.8</u>	205	55.8	205	55.7	<u>205</u>	<u>55.8</u>	205	55.8	205	55.7
450.soplex	<u>178</u>	<u>46.7</u>	178	47.0	181	46.0	<u>178</u>	<u>46.7</u>	178	47.0	181	46.0
453.povray	<u>111</u>	<u>48.1</u>	111	47.9	111	48.1	94.8	56.1	<u>94.4</u>	<u>56.4</u>	93.4	57.0
454.calculix	193	42.7	<u>194</u>	<u>42.6</u>	194	42.5	179	46.1	<u>180</u>	<u>45.8</u>	180	45.7
459.GemsFDTD	70.7	150	70.9	150	<u>70.9</u>	<u>150</u>	<u>60.0</u>	<u>177</u>	60.0	177	60.0	177
465.tonto	270	36.4	<u>268</u>	<u>36.7</u>	242	40.7	205	47.9	<u>207</u>	<u>47.5</u>	209	47.1
470.lbm	27.2	505	<u>27.2</u>	<u>505</u>	27.2	505	27.2	505	<u>27.2</u>	<u>505</u>	27.2	505
481.wrf	<u>144</u>	<u>77.7</u>	145	76.9	143	77.8	<u>144</u>	<u>77.7</u>	145	76.9	143	77.8
482.sphinx3	<u>266</u>	<u>73.2</u>	268	72.8	265	73.6	<u>260</u>	<u>75.1</u>	260	74.9	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 Wed Jun 27 22:22:01 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:          99049484 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 Jun 27 16:52

```

SPEC is set to: /cpu2006
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sdal       ext4      459G  116G  320G  27% /

```

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

The ASUS RS700-X7(Z9PR-D12) and the ASUS RS720-X7(Z9PR-D12) models are electronically equivalent.

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General Notes (Continued)

The results have been measured on a ASUS RS720-X7(Z9PR-D12) model.

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

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Base Optimization Flags (Continued)

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`

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Peak Optimization Flags (Continued)

447.deallI: 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

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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