



SPEC[®] CFP2006 Result

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ASUSTeK Computer Inc.

ASUS RS500-E8(Z10PR-D16) Server System (Intel Xeon E5-2699 v3)

SPECfp[®]_rate2006 = 937

SPECfp_rate_base2006 = 907

CPU2006 license: 9016

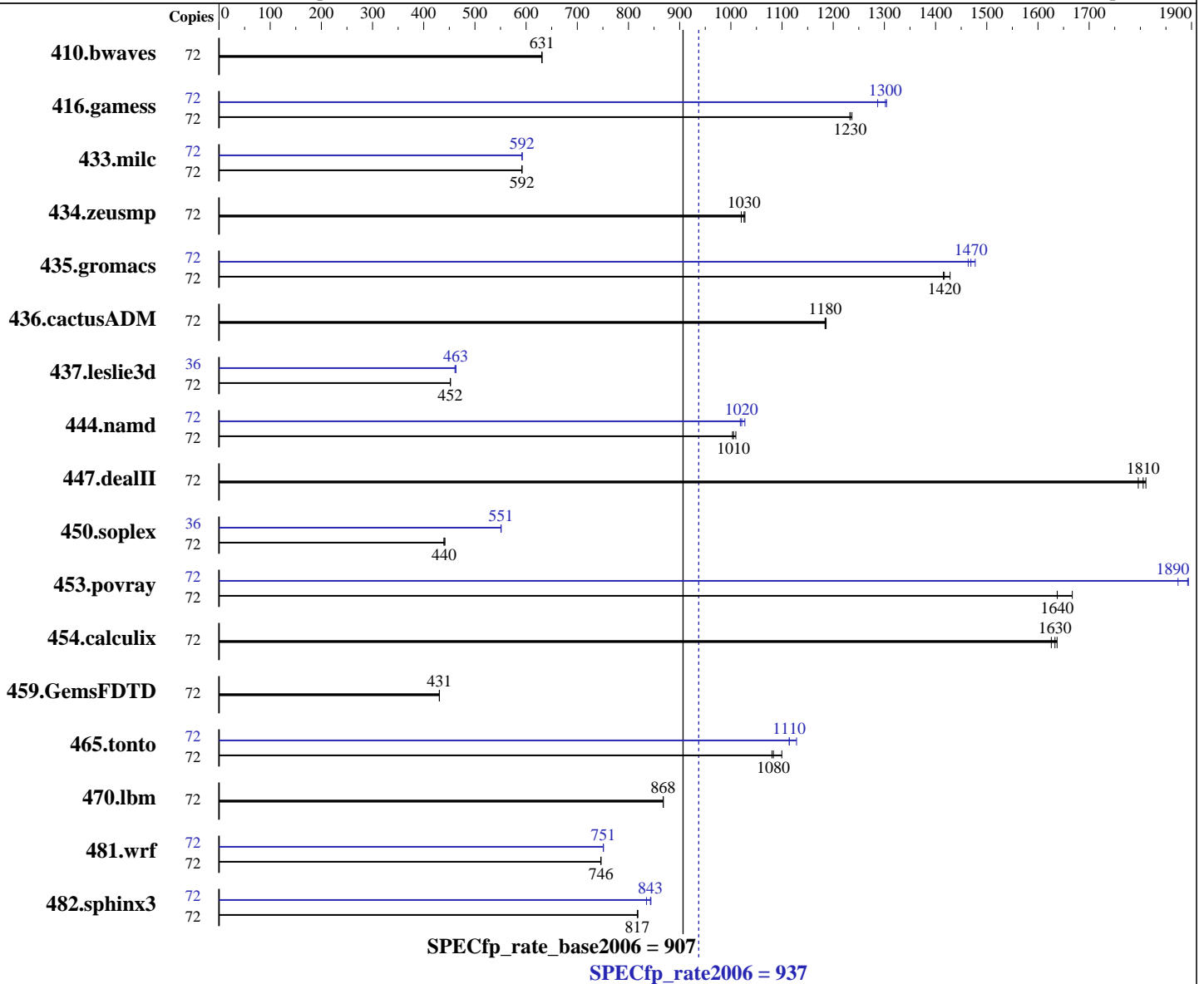
Test sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test date: Sep-2014

Hardware Availability: Sep-2014

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2699 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
 CPU MHz: 2300
 FPU: Integrated
 CPU(s) enabled: 36 cores, 2 chips, 18 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 6.5 (Santiago)
 2.6.32-431.5.1.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: No
 File System: ext4

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SPECfp_rate_base2006 = **907**

CPU2006 license: 9016

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Software Availability: Sep-2013

L3 Cache: 45 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: HITACHI HDP725050GLA380 1 x 500 GB SATA, 7200 RPM
Other Hardware: None

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

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	72	1551	631	<u>1551</u>	<u>631</u>	1551	631	72	1551	631	<u>1551</u>	<u>631</u>	1551	631
416.gamess	72	1144	1230	<u>1143</u>	<u>1230</u>	1140	1240	72	1095	1290	<u>1083</u>	<u>1300</u>	1081	1300
433.milc	72	<u>1117</u>	<u>592</u>	1117	592	1117	592	72	1116	592	1116	592	<u>1116</u>	<u>592</u>
434.zeusmp	72	638	1030	642	1020	<u>639</u>	<u>1030</u>	72	638	1030	642	1020	<u>639</u>	<u>1030</u>
435.gromacs	72	<u>363</u>	<u>1420</u>	360	1430	363	1420	72	348	1480	351	1460	<u>350</u>	<u>1470</u>
436.cactusADM	72	727	1180	<u>726</u>	<u>1180</u>	725	1190	72	727	1180	<u>726</u>	<u>1180</u>	725	1190
437.leslie3d	72	<u>1498</u>	<u>452</u>	1498	452	1496	452	36	731	463	<u>732</u>	<u>463</u>	734	461
444.namd	72	<u>574</u>	<u>1010</u>	572	1010	576	1000	72	<u>565</u>	<u>1020</u>	567	1020	562	1030
447.dealII	72	<u>456</u>	<u>1810</u>	459	1800	455	1810	72	<u>456</u>	<u>1810</u>	459	1800	455	1810
450.soplex	72	1360	442	<u>1366</u>	<u>440</u>	1366	440	36	545	551	<u>545</u>	<u>551</u>	545	551
453.povray	72	234	1640	<u>234</u>	<u>1640</u>	230	1670	72	204	1870	202	1890	<u>202</u>	<u>1890</u>
454.calculix	72	<u>364</u>	<u>1630</u>	363	1640	365	1630	72	<u>364</u>	<u>1630</u>	363	1640	365	1630
459.GemsFDTD	72	<u>1774</u>	<u>431</u>	1775	430	1774	431	72	<u>1774</u>	<u>431</u>	1775	430	1774	431
465.tonto	72	656	1080	<u>654</u>	<u>1080</u>	644	1100	72	<u>636</u>	<u>1110</u>	636	1110	628	1130
470.lbm	72	1140	868	<u>1140</u>	<u>868</u>	1140	868	72	1140	868	<u>1140</u>	<u>868</u>	1140	868
481.wrf	72	<u>1078</u>	<u>746</u>	1078	746	1078	746	72	1071	751	1071	751	<u>1071</u>	<u>751</u>
482.sphinx3	72	1715	818	1717	817	<u>1717</u>	<u>817</u>	72	1663	844	<u>1665</u>	<u>843</u>	1680	835

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The config file option 'submit' was used.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

BIOS configuration:
Cluster on Die Enable = Enable
Enforce POR = Disabled
Memory Frequency = 2133
Power Boost = Extreme

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Platform Notes (Continued)

```
Sysinfo program /cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Wed Sep 10 08:38:55 2014
```

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 E5-2699 v3 @ 2.30GHz
2 "physical id"s (chips)
72 "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 : 18
siblings  : 36
physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
cache size : 23040 KB
```

```
From /proc/meminfo
MemTotal:      264463752 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

```
/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.5 (Santiago)
```

```
From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

```
uname -a:
Linux localhost.localdomain 2.6.32-431.5.1.el6.x86_64 #1 SMP Fri Jan 10
14:46:43 EST 2014 x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Sep 10 04:05
```

```
SPEC is set to: /cpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdal       ext4  459G  305G  131G   71% /
```

```
Additional information from dmidecode:
BIOS American Megatrends Inc. 08 08/29/2014
Memory:
16x 16 GB
16x Micron 36ASF2G72PZ-2G1A2 16 GB 2133 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 = "/cpu2006/libs/32:/cpu2006/libs/64:/cpu2006/sh"

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

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:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
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Base Optimization Flags (Continued)

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

Peak 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
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64

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Peak Portability Flags (Continued)

465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

433.milc: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
-auto-ilp32

470.lbm: basepeak = yes

482.sphinx3: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-mem-layout-trans=3
-unroll2

C++ benchmarks:

444.namd: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -fno-alias
-auto-ilp32

447.dealIII: basepeak = yes

450.soplex: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
-opt-malloc-options=3

453.povray: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2) -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(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

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Peak Optimization Flags (Continued)

437.leslie3d: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4
-auto -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2)
-opt-mem-layout-trans=3(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32

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/ASUSTek-Platform-Settings-V1.2-HSW-revA.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/ASUSTek-Platform-Settings-V1.2-HSW-revA.xml>

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For other inquiries, please contact webmaster@spec.org.

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