SPEC® CFP2006 Result
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ASUSTeK Computer Inc.

ASUS TS300-E6 (P7F-E) server system
(Intel Xeon
X3470)

$SPECfp^®_rate2006 = $ 91.4

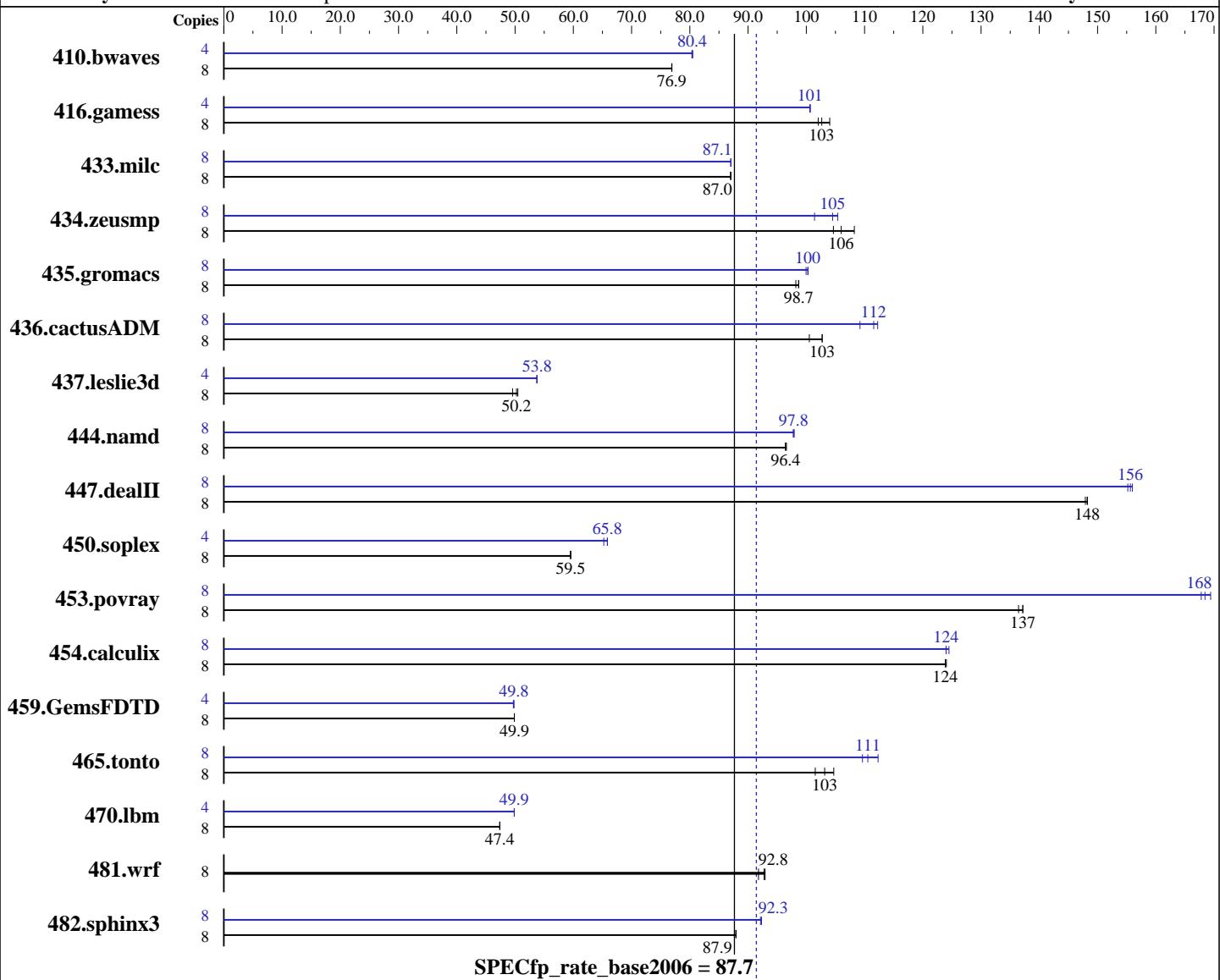SPECfp_rate_base2006 = 87.7

CPU2006 license: 9016

Test sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test date: Oct-2009

Hardware Availability: Sep-2009

Software Availability: Jul-2009

Benchmark	Copies	Result (blue/base)
410.bwaves	4 / 8	80.4 / 76.9
416.gamess	4 / 8	101 / 103
433.milc	8 / 8	87.1 / 87.0
434.zeusmp	8 / 8	105 / 106
435.gromacs	8 / 8	100 / 98.7
436.cactusADM	8 / 8	112 / 103
437.leslie3d	4 / 8	53.8 / 50.2
444.namd	8 / 8	97.8 / 96.4
447.dealII	8 / 8	156 / 148
450.soplex	4 / 8	65.8 / 59.5
453.povray	8 / 8	168 / 137
454.calculix	8 / 8	124 / 124
459.GemsFDTD	4 / 8	49.8 / 49.9
465.tonto	8 / 8	111 / 103
470.lbm	4 / 8	49.9 / 47.4
481.wrf	8	92.8
482.sphinx3	8 / 8	92.3 / 87.9

SPECfp_rate_base2006 = 87.7

SPECfp_rate2006 = 91.4

Hardware

CPU Name: Intel Xeon X3470

CPU Characteristics: Intel Turbo Boost Technology up to 3.6 GHz

CPU MHz: 2933

FPU: Integrated

CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core

CPU(s) orderable: 1 chip

Primary Cache: 32 KB I + 32 KB D on chip per core

Secondary Cache: 256 KB I+D on chip per core

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-default

Compiler: Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20090511   Package ID: l_cproc_p_11.1.040, l_cprof_p_11.1.040

Auto Parallel: No

File System: ReiserFS

System State: Run level 3 (multi-user)

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L3 Cache:	8 MB I+D on chip per chip	Base Pointers:	64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	16 GB (4 x 4 GB PC3-10600R, CL=9)	Other Software:	Binutils 2.18.50.0.7.20080502
Disk Subsystem:	HITACHI HDT722525DLA380 250 GB SATAII, 7200RPM		
Other Hardware:	None		

Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	1413	76.9	**1414**	**76.9**	1414	76.9	4	677	80.4	**676**	**80.4**	675	80.5
416.gamess	8	1535	102	1506	104	**1526**	**103**	4	778	101	**778**	**101**	779	101
433.milc	8	**844**	**87.0**	844	87.0	844	87.0	8	844	87.1	**844**	**87.1**	844	87.0
434.zeusmp	8	696	105	673	108	**687**	**106**	8	718	101	**697**	**105**	691	105
435.gromacs	8	579	98.7	**579**	**98.7**	582	98.2	8	571	100	**570**	**100**	569	100
436.cactusADM	8	**931**	**103**	931	103	951	101	8	**857**	**112**	852	112	875	109
437.leslie3d	8	1517	49.6	1490	50.5	**1497**	**50.2**	4	699	53.8	700	53.7	**699**	**53.8**
444.namd	8	**665**	**96.4**	664	96.6	666	96.4	8	656	97.8	**656**	**97.8**	655	97.9
447.dealII	8	619	148	617	148	**618**	**148**	8	587	156	**588**	**156**	590	155
450.soplex	8	1120	59.6	**1121**	**59.5**	1121	59.5	4	**507**	**65.8**	511	65.2	507	65.9
453.povray	8	**310**	**137**	312	136	310	137	8	251	169	254	168	**253**	**168**
454.calculix	8	533	124	**533**	**124**	532	124	8	532	124	530	124	**532**	**124**
459.GemsFDTD	8	**1702**	**49.9**	1702	49.9	1702	49.9	4	854	49.7	852	49.8	**852**	**49.8**
465.tonto	8	752	105	**763**	**103**	775	102	8	718	110	**712**	**111**	701	112
470.lbm	8	**2320**	**47.4**	2320	47.4	2320	47.4	4	**1102**	**49.9**	1102	49.9	1102	49.9
481.wrf	8	**963**	**92.8**	974	91.8	962	92.9	8	**963**	**92.8**	974	91.8	962	92.9
482.sphinx3	8	1773	88.0	**1774**	**87.9**	1779	87.7	8	1692	92.1	**1690**	**92.3**	1689	92.3

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.
     numactl was used to bind copies to the cores

Component Notes

    Tested system case compliance with Intel ATX or SSI spec
    390W or higher ATX Power Supply, 350W or highter SSI Server Power Supply
    System was configured with ASPEED AST2050 VGA (on board VGA)

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Test sponsor:	ASUSTeK Computer Inc.	**Hardware Availability:**	Sep-2009
Tested by:	ASUSTeK Computer Inc.	**Software Availability:**	Jul-2009

General Notes

The ASUS TS300-E6 (Intel Xeon X3470, 2.93 GHz) and
the ASUS RS300-E6 (Intel Xeon X3470, 2.93 GHz) models are electronically equivalent.
The results have been measured on a ASUS RS300-E6 (Intel Xeon X3470, 2.93 GHz) model.

Submitted_by: <East_Zhao@asus.com>
Submitted: Tue Dec 8 02:39:49 EST 2009
Submission: cpu2006-20091120-09032.sub

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:
    -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

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Base Optimization Flags (Continued)

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
```

Fortran benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
```

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 (except as noted below):
```
ifort -m64
```

```
437.leslie3d: ifort -m32
```

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

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Peak Optimization Flags

C benchmarks:

433.milc: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
`-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2)
`-fno-alias`

470.lbm: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
`-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2)
`-opt-prefetch -opt-malloc-options=3 -auto-ilp32`

482.sphinx3: `-xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2`

C++ benchmarks:

444.namd: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
`-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2)
`-fno-alias -auto-ilp32`

447.dealII: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
`-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2)
`-unroll2 -ansi-alias -scalar-rep-`

450.soplex: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
`-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2)
`-opt-malloc-options=3`

453.povray: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
`-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2)
`-unroll4 -ansi-alias`

Fortran benchmarks:

410.bwaves: `-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch`

416.gamess: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
`-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2)
`-unroll2 -Ob0 -ansi-alias -scalar-rep-`

434.zeusmp: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
`-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2)

437.leslie3d: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
`-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2)
`-opt-malloc-options=3 -opt-prefetch`

459.GemsFDTD: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
`-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2)
`-unroll2 -Ob0 -opt-prefetch`

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Peak Optimization Flags (Continued)

465.tonto: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
`-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2)
`-unroll4 -auto`

Benchmarks using both Fortran and C:

435.gromacs: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
`-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2)
`-opt-prefetch -auto-ilp32`

436.cactusADM: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
`-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2)
`-unroll2 -opt-prefetch -auto-ilp32`

454.calculix: `-xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32`

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic11.1-fp-linux64-revF.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.1-fp-linux64-revF.xml`

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

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