SPEC® CFP2006 Result
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Fujitsu Siemens Computers

PRIMERGY RX200 S4, Intel Xeon processor X5460, 3.16 GHz

$SPECfp®\_rate2006 =$ 78.4

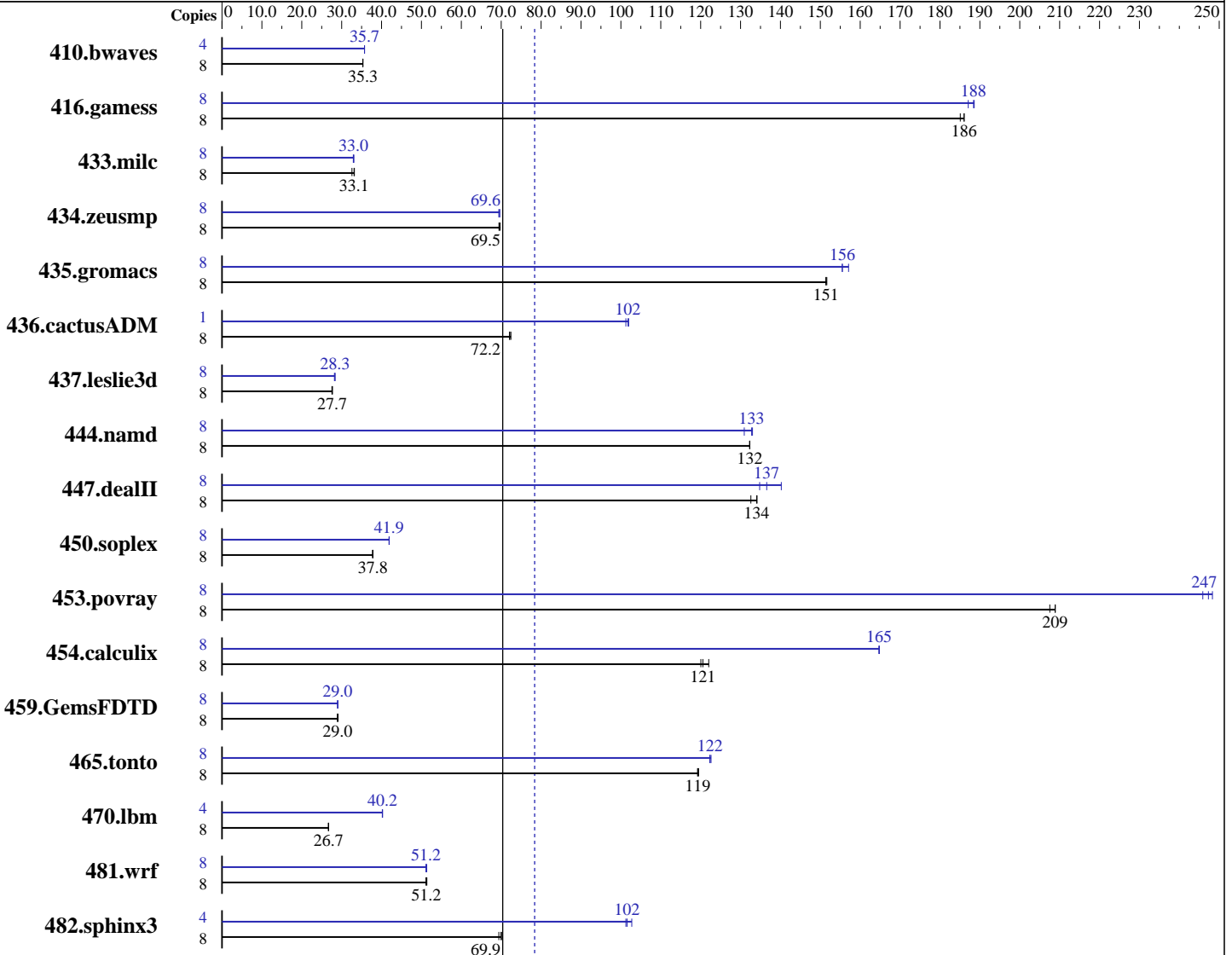SPECfp_rate_base2006 = 70.4

CPU2006 license: 22

Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Oct-2007

Hardware Availability: Dec-2007

Software Availability: Nov-2007

SPECfp_rate_base2006 = 70.4

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Hardware

CPU Name: Intel Xeon X5460

CPU Characteristics: 1333 MHz system bus

CPU MHz: 3167

FPU: Integrated

CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip

CPU(s) orderable: 1,2 chips

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

Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp

Compiler: Intel C++ and Fortran Compiler for Linux32 and Linux64 Version 10.1 - Build 20070725

Auto Parallel: Yes

File System: ext2

System State: Multiuser, Runlevel 3

Base Pointers: 64-bit

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L3 Cache:	None
Other Cache:	None
Memory:	16 GB (8x2 GB PC2-5300F, 2 rank, CAS 5-5-5, with ECC)
Disk Subsystem:	Seagate ST973451SS (SAS, 73GB, 15000rpm)
Other Hardware:	None
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	8	**3079**	**35.3**	3079	35.3	3077	35.3	4	1521	35.7	**1521**	**35.7**	1522	35.7
416.gamess	8	**842**	**186**	842	186	846	185	8	**831**	**188**	837	187	831	189
433.milc	8	2254	32.6	**2218**	**33.1**	2213	33.2	8	2231	32.9	2221	33.1	**2228**	**33.0**
434.zeusmp	8	1044	69.7	**1047**	**69.5**	1048	69.4	8	1046	69.6	**1046**	**69.6**	1049	69.4
435.gromacs	8	**377**	**151**	377	152	377	151	8	364	157	367	155	**367**	**156**
436.cactusADM	8	1327	72.1	**1325**	**72.2**	1320	72.4	1	118	101	117	102	**117**	**102**
437.leslie3d	8	**2720**	**27.7**	2729	27.6	2718	27.7	8	2668	28.2	**2655**	**28.3**	2653	28.3
444.namd	8	**485**	**132**	485	132	485	132	8	490	131	**483**	**133**	482	133
447.dealII	8	682	134	**683**	**134**	690	133	8	653	140	679	135	**670**	**137**
450.soplex	8	1762	37.9	1768	37.7	**1765**	**37.8**	8	**1592**	**41.9**	1591	41.9	1594	41.9
453.povray	8	**204**	**209**	204	209	205	208	8	**172**	**247**	173	246	171	248
454.calculix	8	541	122	**547**	**121**	550	120	8	**401**	**165**	401	165	401	165
459.GemsFDTD	8	**2931**	**29.0**	2916	29.1	2933	28.9	8	2923	29.0	**2925**	**29.0**	2931	29.0
465.tonto	8	**660**	**119**	660	119	659	119	8	642	123	**643**	**122**	644	122
470.lbm	8	**4116**	**26.7**	4117	26.7	4116	26.7	4	1365	40.3	**1366**	**40.2**	1368	40.2
481.wrf	8	1748	51.1	1740	51.4	**1744**	**51.2**	8	1741	51.3	1747	51.2	**1747**	**51.2**
482.sphinx3	8	**2229**	**69.9**	2225	70.1	2246	69.4	4	770	101	**768**	**102**	759	103

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

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

General Notes

This result has been produced with binaries provided and compiled by Intel.

All binaries were built with 64-bit Intel compiler except:
437.leslie3d, 450.soplex, 470.lbm and 482.sphinx3 in peak were built with
32-bit Intel compiler by changing the path for include and library files.

BIOS configuration:
Hardware Prefetch = Disable, Adjacent Sector Prefetch = Disable

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General Notes (Continued)

```
   For information about Fujitsu Siemens Computers please see:
   http://www.fujitsu-siemens.com
```

Base Compiler Invocation

C benchmarks:
```
icc
```

C++ benchmarks:
```
icpc
```

Fortran benchmarks:
```
ifort
```

Benchmarks using both Fortran and C:
```
icc ifort
```

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:
```
-fast
```

C++ benchmarks:
```
-fast
```

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Base Optimization Flags (Continued)

Fortran benchmarks:
```
-fast
```

Benchmarks using both Fortran and C:
```
-fast
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

   433.milc: `icc`

C++ benchmarks (except as noted below):
```
icpc
```

   450.soplex: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icpc`
```
            -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
            -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

Fortran benchmarks (except as noted below):
```
ifort
```

   437.leslie3d: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/ifort`
```
            -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
            -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

Benchmarks using both Fortran and C:
```
icc ifort
```

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
```

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Peak Portability Flags (Continued)

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

Peak Optimization Flags

C benchmarks:

```
433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
          -auto-ilp32

470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
         -scalar-rep- -prefetch -opt-malloc-options=3

482.sphinx3: -fast -unroll2
```

C++ benchmarks:

```
444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
          -auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
            -ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast
            -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4
            -ansi-alias
```

Fortran benchmarks:

```
410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
            -ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
              -opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
              -prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto
```

Benchmarks using both Fortran and C:

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Peak Optimization Flags (Continued)

435.gromacs: `-prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -auto-ilp32`

436.cactusADM: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -prefetch -parallel -auto-ilp32`

454.calculix: `-fast -unroll-aggressive -auto-ilp32`

481.wrf: `-fast -auto-ilp32`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.05.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.05.xml`

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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 14:26:35 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 27 November 2007.