SPEC® CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY BX920 S3, Intel Xeon E5-2420, 1.90 GHz

$SPECfp®\_rate2006 =$ 290

$SPECfp\_rate\_base2006 =$ 282

CPU2006 license: 19	**Test date:** Apr-2012
Test sponsor: Fujitsu	**Hardware Availability:** May-2012
Tested by: Fujitsu	**Software Availability:** Feb-2012

Copies

Benchmark	Copies	Value
410.bwaves	12	203
410.bwaves	24	193
416.gamess	24	291
416.gamess	24	286
433.milc	24	264
433.milc	24	263
434.zeusmp	24	325
435.gromacs	24	236
435.gromacs	24	231
436.cactusADM	24	389
437.leslie3d	12	206
437.leslie3d	24	193
444.namd	24	229
444.namd	24	228
447.dealII	24	517
450.soplex	12	217
450.soplex	24	194
453.povray	24	447
453.povray	24	382
454.calculix	24	368
459.GemsFDTD	12	181
459.GemsFDTD	24	181
465.tonto	24	337
465.tonto	24	328
470.lbm	24	352
481.wrf	24	333
481.wrf	24	329
482.sphinx3	24	256
482.sphinx3	24	254

SPECfp_rate_base2006 = 282

SPECfp_rate2006 = 290

Hardware

CPU Name:	Intel Xeon E5-2420
CPU Characteristics:	Intel Turbo Boost Technology up to 2.40 GHz
CPU MHz:	1900
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 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

Continued on next page

Software

Operating System:	Red Hat Enterprise Linux Server release 6.2 (Santiago) 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 12.1.0.293 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.0.293 of Intel Fortran Studio XE for Linux
Auto Parallel:	No
File System:	ext4

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY BX920 S3, Intel Xeon E5-2420, 1.90 GHz

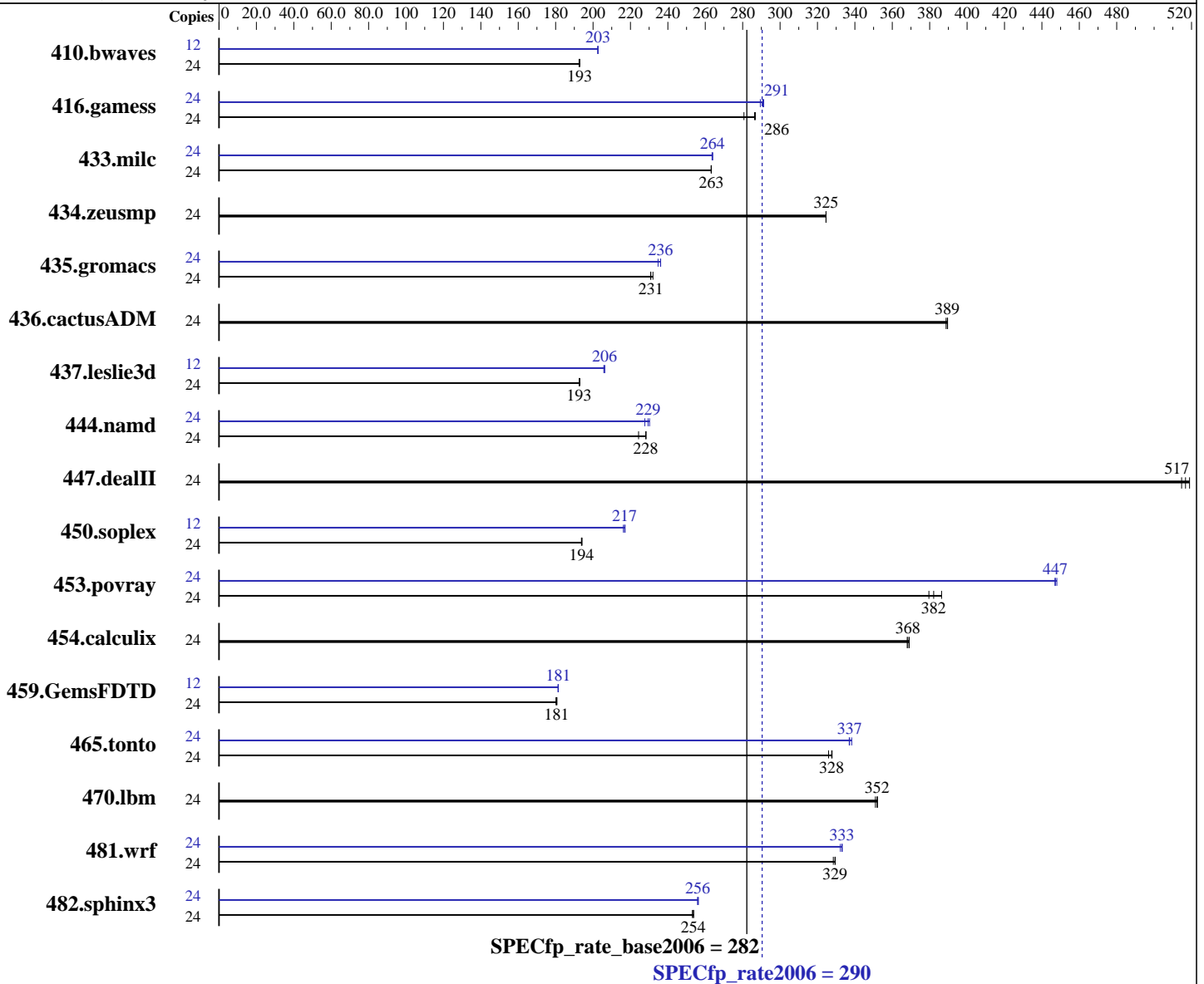|	
SPECfp_rate2006 =	290
SPECfp_rate_base2006 =	282

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Apr-2012
Hardware Availability: May-2012
Software Availability: Feb-2012

L3 Cache:	15 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	32/64-bit
Memory:	96 GB (12 x 8 GB 2Rx4 PC3L-12800R-11, ECC, running at 1333 MHz and CL9)	Peak Pointers:	32/64-bit
		Other Software:	None
Disk Subsystem:	1 x SATA, 500 GB, 7200 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	24	**1692**	**193**	1691	193	1694	193	12	805	203	805	203	**805**	**203**
416.gamess	24	**1641**	**286**	1639	287	1674	281	24	1624	289	**1616**	**291**	1613	291
433.milc	24	**837**	**263**	837	263	837	263	24	**835**	**264**	836	264	835	264
434.zeusmp	24	**673**	**325**	673	325	673	325	24	**673**	**325**	673	325	673	325
435.gromacs	24	743	231	**742**	**231**	739	232	24	730	235	**726**	**236**	726	236
436.cactusADM	24	**736**	**389**	738	389	736	390	24	**736**	**389**	738	389	736	390
437.leslie3d	24	1169	193	1172	193	**1171**	**193**	12	**547**	**206**	548	206	547	206
444.namd	24	843	228	858	224	**844**	**228**	24	836	230	**839**	**229**	845	228
447.dealII	24	**531**	**517**	529	519	533	515	24	**531**	**517**	529	519	533	515
450.soplex	24	1033	194	1031	194	**1032**	**194**	12	463	216	**462**	**217**	461	217
453.povray	24	336	380	**334**	**382**	330	386	24	286	447	285	448	**285**	**447**
454.calculix	24	**538**	**368**	536	369	538	368	24	**538**	**368**	536	369	538	368
459.GemsFDTD	24	**1411**	**181**	1413	180	1409	181	12	702	181	**702**	**181**	702	181
465.tonto	24	725	326	720	328	**721**	**328**	24	**700**	**337**	701	337	698	338
470.lbm	24	937	352	**937**	**352**	940	351	24	937	352	**937**	**352**	940	351
481.wrf	24	**814**	**329**	814	330	816	328	24	804	333	807	332	**805**	**333**
482.sphinx3	24	1843	254	1848	253	**1844**	**254**	24	1825	256	**1827**	**256**	1828	256

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

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

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

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY BX920 S3, Intel Xeon E5-2420, 1.90 GHz

$SPECfp\_rate2006 =$ 290

$SPECfp\_rate\_base2006 =$ 282

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64"

 Binaries compiled on a system with 2x E5-2650 CPU + 96 GB
 memory using RHEL6.2
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>
 For information about Fujitsu please visit: http://www.fujitsu.com
```

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
```

Fujitsu

PRIMERGY BX920 S3, Intel Xeon E5-2420, 1.90 GHz

$SPECfp\_rate2006 =$ 290

$SPECfp\_rate\_base2006 =$ 282

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Apr-2012
Hardware Availability: May-2012
Software Availability: Feb-2012

Base Optimization Flags

C benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

Fortran benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xAVX -ipo -O3 -no-prec-div -static -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
```

Continued on next page

Fujitsu

PRIMERGY BX920 S3, Intel Xeon E5-2420, 1.90 GHz

$SPECfp\_rate2006 =$ 290

$SPECfp\_rate\_base2006 =$ 282

CPU2006 license: 19	**Test date:** Apr-2012
Test sponsor: Fujitsu	**Hardware Availability:** May-2012
Tested by: Fujitsu	**Software Availability:** Feb-2012

Peak Portability Flags (Continued)

```
454.calculix: -DSPEC_CPU_LP64 -nofor_main
  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: -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
          -opt-mem-layout-trans=3

 470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2
```

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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3

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(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -prof-use(pass 2) -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: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
              -no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3
```

Fujitsu

PRIMERGY BX920 S3, Intel Xeon E5-2420, 1.90 GHz

$SPECfp\_rate2006 =$ 290

$SPECfp\_rate\_base2006 =$ 282

CPU2006 license: 19	**Test date:**	Apr-2012
Test sponsor: Fujitsu	**Hardware Availability:**	May-2012
Tested by: Fujitsu	**Software Availability:**	Feb-2012

Peak Optimization Flags (Continued)

465.tonto: `-xAVX(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: `-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch`
`-auto-p32 -ansi-alias -opt-mem-layout-trans=3`

436.cactusADM: `basepeak = yes`

454.calculix: `basepeak = yes`

481.wrf: `-xAVX -ipo -O3 -no-prec-div -static -auto-ilp32`
`-opt-mem-layout-trans=3`

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/Fujitsu-Platform.20120320.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/Fujitsu-Platform.20120320.xml

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

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 08:42:12 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 19 June 2012.