SPEC® CFP2006 Result

Fujitsu

PRIMERGY RX4770 M1, Intel Xeon E7-4820 v2, 2.50 GHz

$SPECfp^{®}\_rate2006 =$ 867

$SPECfp\_rate\_base2006 =$ 848

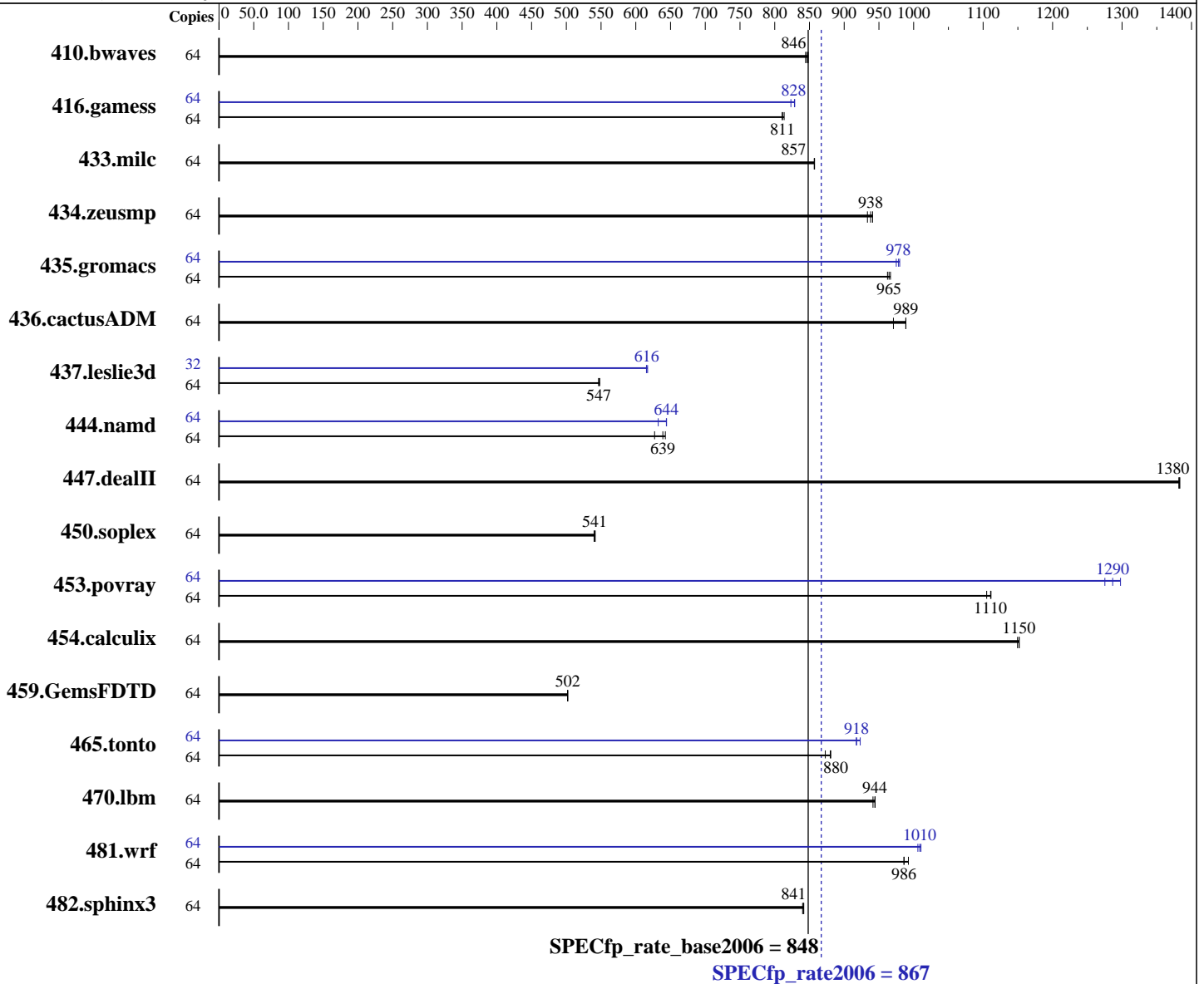| **CPU2006 license:** 19 | **Test date:** Feb-2015 |
| **Test sponsor:** Fujitsu | **Hardware Availability:** Jun-2014 |
| **Tested by:** Fujitsu | **Software Availability:** Jan-2015 |

Copies

Benchmark	Copies	Result
410.bwaves	64	846
416.gamess	64	828
416.gamess	64	811
433.milc	64	857
434.zeusmp	64	938
435.gromacs	64	978
435.gromacs	64	965
436.cactusADM	64	989
437.leslie3d	32	616
437.leslie3d	64	547
444.namd	64	644
444.namd	64	639
447.dealII	64	1380
450.soplex	64	541
453.povray	64	1290
453.povray	64	1110
454.calculix	64	1150
459.GemsFDTD	64	502
465.tonto	64	918
465.tonto	64	880
470.lbm	64	944
481.wrf	64	1010
481.wrf	64	986
482.sphinx3	64	841

SPECfp_rate_base2006 = 848

SPECfp_rate2006 = 867

Hardware

CPU Name:	Intel Xeon E7-4820 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 2.50 GHz
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	32 cores, 4 chips, 8 cores/chip, 2 threads/core
CPU(s) orderable:	4 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 6.5 (Santiago) 2.6.32-431.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

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2015 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX4770 M1, Intel Xeon E7-4820 v2, 2.50 GHz

SPECfp_rate2006 =	867
SPECfp_rate_base2006 =	848

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

Test date: Feb-2015
Hardware Availability: Jun-2014
Software Availability: Jan-2015

L3 Cache:	16 MB I+D on chip per chip
Other Cache:	None
Memory:	1 TB (64 x 16 GB 2Rx4 PC3L-12800R-11, ECC, running at 1066 MHz)
Disk Subsystem:	1 x SATA, 500 GB, 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 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	64	1030	844	1025	848	**1028**	**846**	64	1030	844	1025	848	**1028**	**846**
416.gamess	64	1540	814	**1545**	**811**	1546	811	64	1512	829	**1513**	**828**	1522	823
433.milc	64	685	857	686	857	**685**	**857**	64	685	857	686	857	**685**	**857**
434.zeusmp	64	**621**	**938**	624	933	619	941	64	**621**	**938**	624	933	619	941
435.gromacs	64	473	967	475	962	**474**	**965**	64	**467**	**978**	469	975	466	980
436.cactusADM	64	773	989	**774**	**989**	788	971	64	773	989	**774**	**989**	788	971
437.leslie3d	64	1098	548	**1100**	**547**	1101	547	32	**489**	**616**	488	617	489	615
444.namd	64	799	643	**803**	**639**	819	627	64	812	632	797	644	**797**	**644**
447.dealII	64	530	1380	529	1380	**530**	**1380**	64	530	1380	529	1380	**530**	**1380**
450.soplex	64	986	542	989	540	**987**	**541**	64	986	542	989	540	**987**	**541**
453.povray	64	308	1110	306	1110	**307**	**1110**	64	267	1280	**265**	**1290**	262	1300
454.calculix	64	**458**	**1150**	458	1150	459	1150	64	**458**	**1150**	458	1150	459	1150
459.GemsFDTD	64	**1353**	**502**	1353	502	1353	502	64	**1353**	**502**	1353	502	1353	502
465.tonto	64	722	873	**716**	**880**	715	881	64	**686**	**918**	682	923	686	917
470.lbm	64	934	941	931	944	**931**	**944**	64	934	941	931	944	**931**	**944**
481.wrf	64	720	992	**725**	**986**	725	986	64	707	1010	711	1010	**709**	**1010**
482.sphinx3	64	**1483**	**841**	1485	840	1482	842	64	**1483**	**841**	1485	840	1482	842

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"

Fujitsu

PRIMERGY RX4770 M1, Intel Xeon E7-4820 v2, 2.50 GHz

$SPECfp\_rate2006 =$ **867**

$SPECfp\_rate\_base2006 =$ **848**

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

Test date: Feb-2015
Hardware Availability: Jun-2014
Software Availability: Jan-2015

Platform Notes

```
BIOS configuration:
Energy Performance = Performance
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/SPECcpu2006/libs/32:/home/SPECcpu2006/libs/64:/home/SPECcpu2006/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
 Filesystem page cache cleared with:
 echo 1 > /proc/sys/vm/drop_caches
 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
```

Fujitsu

PRIMERGY RX4770 M1, Intel Xeon E7-4820 v2, 2.50
GHz

$SPECfp\_rate2006 = \quad 867$

$SPECfp\_rate\_base2006 = \quad 848$

CPU2006 license: 19		**Test date:**	Feb-2015
Test sponsor:	Fujitsu	**Hardware Availability:**	Jun-2014
Tested by:	Fujitsu	**Software Availability:**	Jan-2015

Base Portability Flags (Continued)

```
        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 -opt-prefetch -auto-p32 -ansi-alias
    -opt-mem-layout-trans=3
```

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

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

Benchmarks using both Fortran and C:
```
    -xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
    -opt-mem-layout-trans=3
```

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
```

SPEC CFP2006 Result
Copyright 2006-2015 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX4770 M1, Intel Xeon E7-4820 v2, 2.50 GHz

$SPECfp_rate2006 = $ 867

$SPECfp_rate_base2006 = $ 848

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

Test date: Feb-2015
Hardware Availability: Jun-2014
Software Availability: Jan-2015

Peak Optimization Flags

C benchmarks:

       433.milc: basepeak = yes

      470.lbm: basepeak = yes

    482.sphinx3: basepeak = yes

C++ benchmarks:

     444.namd: -xAVX(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.dealII: 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) -opt-mem-layout-trans=3(pass 2)
          -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

    410.bwaves: basepeak = yes

    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-

    434.zeusmp: basepeak = yes

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

  459.GemsFDTD: basepeak = yes

     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: -xAVX(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

Continued on next page

Fujitsu

PRIMERGY RX4770 M1, Intel Xeon E7-4820 v2, 2.50 GHz

$SPECfp\_rate2006 = 867$

$SPECfp\_rate\_base2006 = 848$

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

Test date: Feb-2015
Hardware Availability: Jun-2014
Software Availability: Jan-2015

Peak Optimization Flags (Continued)

481.wrf: `-xAVX -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-revB.html`
`http://www.spec.org/cpu2006/flags/Fujitsu-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-revB.xml`
`http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-HSW-RevA.xml`

SPEC and SPECfp are registered trademarks of the Standard Performance
Evaluation Corporation. All other brand and product names appearing in
this result are trademarks or registered trademarks of their respective
holders.

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 Tue Mar 24 17:18:22 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 24 March 2015.