SPEC® CFP2006 Result

Fujitsu

PRIMERGY RX2530 M2, Intel Xeon E5-2697 v4, 2.30 GHz

$SPECfp^®_rate2006 = $ 1050

$SPECfp_rate_base2006 = $ 1020

Benchmark	Copies	Result
410.bwaves	72	702
416.gamess	72	1420
416.gamess	72	1370
433.milc	72	663
434.zeusmp	72	1150
435.gromacs	72	1730
435.gromacs	72	1650
436.cactusADM	72	1310
437.leslie3d	72	499
444.namd	72	1140
444.namd	72	1130
447.dealII	72	2090
450.soplex	36	614
450.soplex	72	519
453.povray	72	2090
453.povray	72	1770
454.calculix	72	2040
459.GemsFDTD	72	481
465.tonto	72	1280
465.tonto	72	1190
470.lbm	72	968
481.wrf	72	831
482.sphinx3	72	938

SPECfp_rate_base2006 = 1020

SPECfp_rate2006 = 1050

Hardware

CPU Name: Intel Xeon E5-2697 v4
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 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 12 SP1 (x86_64) Kernel 3.12.49-11-default
Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux; Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux
Auto Parallel: No
File System: xfs
System State: Run level 3 (multi-user)

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2530 M2, Intel Xeon E5-2697 v4, 2.30 GHz

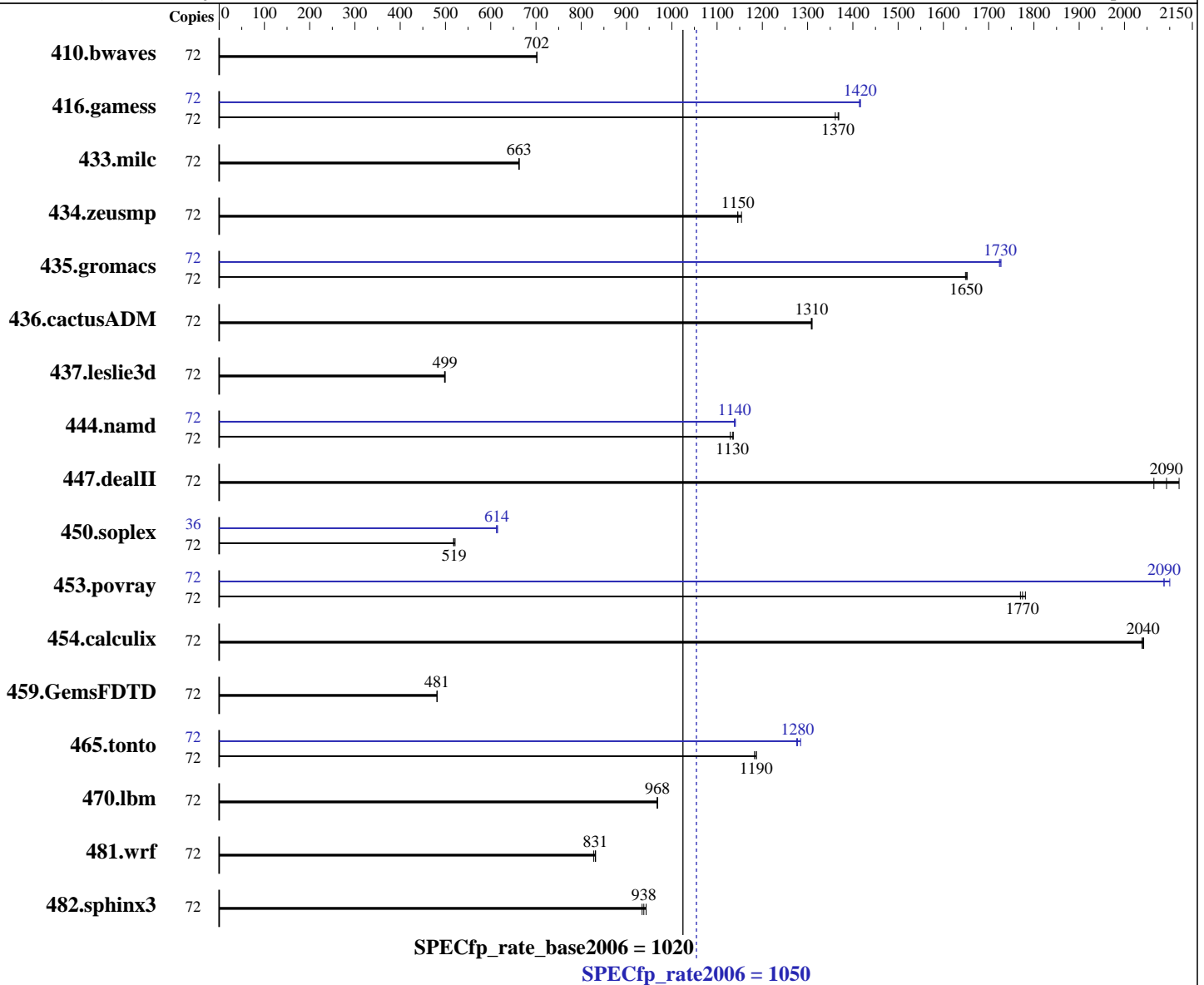$SPECfp_rate2006 = $ 1050

$SPECfp_rate_base2006 = $ 1020

CPU2006 license: 19	**Test date:** May-2016
Test sponsor: Fujitsu	**Hardware Availability:** Apr-2016
Tested by: Fujitsu	**Software Availability:** Sep-2015

L3 Cache:	45 MB I+D on chip per chip	Base Pointers:	32/64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2400T-R)	Other Software:	None
Disk Subsystem:	1 x SATA, 1000 GB, 7200 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	72	1393	702	1395	702	**1394**	**702**	72	1393	702	1395	702	**1394**	**702**
416.gamess	72	1030	1370	**1031**	**1370**	1036	1360	72	**995**	**1420**	995	1420	997	1410
433.milc	72	997	663	**998**	**663**	998	663	72	997	663	**998**	**663**	998	663
434.zeusmp	72	572	1150	**572**	**1150**	568	1150	72	572	1150	**572**	**1150**	568	1150
435.gromacs	72	312	1650	**311**	**1650**	311	1650	72	**298**	**1730**	298	1730	298	1720
436.cactusADM	72	657	1310	**657**	**1310**	658	1310	72	657	1310	**657**	**1310**	658	1310
437.leslie3d	72	1359	498	1356	499	**1356**	**499**	72	1359	498	1356	499	**1356**	**499**
444.namd	72	**509**	**1130**	508	1140	511	1130	72	506	1140	507	1140	**507**	**1140**
447.dealII	72	399	2070	**394**	**2090**	388	2120	72	399	2070	**394**	**2090**	388	2120
450.soplex	72	**1157**	**519**	1152	521	1160	518	36	490	613	**489**	**614**	488	615
453.povray	72	216	1770	215	1780	**216**	**1770**	72	182	2100	184	2090	**183**	**2090**
454.calculix	72	291	2040	291	2040	**291**	**2040**	72	291	2040	291	2040	**291**	**2040**
459.GemsFDTD	72	1586	482	**1587**	**481**	1588	481	72	1586	482	**1587**	**481**	1588	481
465.tonto	72	597	1190	599	1180	**597**	**1190**	72	**555**	**1280**	552	1280	555	1280
470.lbm	72	1021	969	1022	968	**1022**	**968**	72	1021	969	1022	968	**1022**	**968**
481.wrf	72	972	828	967	832	**968**	**831**	72	972	828	967	832	**968**	**831**
482.sphinx3	72	**1496**	**938**	1502	934	1488	943	72	**1496**	**938**	1502	934	1488	943

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"
```

Platform Notes

```
   BIOS configuration:
   Energy Performance = Performance
   Utilization Profile = Unbalanced
```

Continued on next page

Fujitsu

PRIMERGY RX2530 M2, Intel Xeon E5-2697 v4, 2.30 GHz

SPECfp_rate2006 =   1050

SPECfp_rate_base2006 = 1020

CPU2006 license: 19

Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: May-2016

Hardware Availability: Apr-2016

Software Availability: Sep-2015

Platform Notes (Continued)

```
QPI snoop mode: Cluster on Die
    COD Enable = Enabled, Early Snoop = Disabled, Home Snoop Dir OSB = Disabled
CPU C1E Support = Disabled
Sysinfo program /home/SPECcpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on RX2530M2 Thu May  5 00:19:12 2016

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 E5-2697 v4 @ 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
      physical 1: 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:       264320824 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

/usr/bin/lsb_release -d
   SUSE Linux Enterprise Server 12 SP1

From /etc/*release* /etc/*version*
   SuSE-release:
      SUSE Linux Enterprise Server 12 (x86_64)
      VERSION = 12
      PATCHLEVEL = 1
      # This file is deprecated and will be removed in a future service pack or
      release.
      # Please check /etc/os-release for details about this release.
   os-release:
      NAME="SLES"
      VERSION="12-SP1"
      VERSION_ID="12.1"
      PRETTY_NAME="SUSE Linux Enterprise Server 12 SP1"
      ID="sles"
      ANSI_COLOR="0;32"
      CPE_NAME="cpe:/o:suse:sles:12:sp1"

uname -a:
   Linux RX2530M2 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
   (8d714a0) x86_64 x86_64 x86_64 GNU/Linux
```

SPEC CFP2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2530 M2, Intel Xeon E5-2697 v4, 2.30 GHz

$SPECfp_rate2006 = $ 1050

$SPECfp_rate_base2006 = $ 1020

CPU2006 license:	19	**Test date:**	May-2016
Test sponsor:	Fujitsu	**Hardware Availability:**	Apr-2016
Tested by:	Fujitsu	**Software Availability:**	Sep-2015

Platform Notes (Continued)

```
  run-level 3 May 4 12:56 last=5

  SPEC is set to: /home/SPECcpu2006
     Filesystem       Type   Size   Used  Avail  Use%  Mounted on
     /dev/sda3        xfs    890G   65G   825G   8%   /home
  Additional information from dmidecode:

     Warning: Use caution when you interpret this section. The 'dmidecode' program
     reads system data which is "intended to allow hardware to be accurately
     determined", but the intent may not be met, as there are frequent changes to
     hardware, firmware, and the "DMTF SMBIOS" standard.

  BIOS FUJITSU // American Megatrends Inc. V5.0.0.11 R1.6.0 for D3279-B1x
  03/11/2016
  Memory:
   16x Micron 36ASF2G72PZ-2G3A3 16 GB 2 rank 2400 MHz
   8x NO DIMM NO DIMM

  (End of data from sysinfo program)
```

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 Intel Core i5-4670K CPU + 32GB
 memory using RedHat EL 7.1
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/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
```

SPEC CFP2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2530 M2, Intel Xeon E5-2697 v4, 2.30 GHz

SPECfp_rate2006 =   1050

SPECfp_rate_base2006 = 1020

CPU2006 license: 19	**Test date:** May-2016
Test sponsor: Fujitsu	**Hardware Availability:** Apr-2016
Tested by: Fujitsu	**Software Availability:** Sep-2015

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
```

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:
```
    icc   -m64
```

C++ benchmarks (except as noted below):
```
    icpc  -m64
```
```
    450.soplex: icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

SPEC CFP2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2530 M2, Intel Xeon E5-2697 v4, 2.30 GHz

$SPECfp\_rate2006 =$ 1050

$SPECfp\_rate\_base2006 =$ 1020

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

Test date: May-2016
Hardware Availability: Apr-2016
Software Availability: Sep-2015

Peak Compiler Invocation (Continued)

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
   450.soplex: -D_FILE_OFFSET_BITS=64
   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
```

Peak Optimization Flags

C benchmarks:

```
      433.milc: basepeak = yes

      470.lbm: basepeak = yes

   482.sphinx3: basepeak = yes
```

C++ benchmarks:

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

      447.dealII: basepeak = yes
```

Fujitsu

PRIMERGY RX2530 M2, Intel Xeon E5-2697 v4, 2.30 GHz

$SPECfp\_rate2006 =$ 1050

$SPECfp\_rate\_base2006 =$ 1020

CPU2006 license: 19	**Test date:** May-2016
Test sponsor: Fujitsu	**Hardware Availability:** Apr-2016
Tested by: Fujitsu	**Software Availability:** Sep-2015

Peak Optimization Flags (Continued)

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

> 453.povray: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
> -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
> -par-num-threads=1(pass 1) -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:threadsafe(pass 1)
> -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
> -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2
> -inline-level=0 -scalar-rep-

> 434.zeusmp: basepeak = yes

> 437.leslie3d: basepeak = yes

> 459.GemsFDTD: basepeak = yes

> 465.tonto: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
> -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
> -par-num-threads=1(pass 1) -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:threadsafe(pass 1)
> -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
> -par-num-threads=1(pass 1) -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: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.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-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-HSW-RevA.xml

SPEC CFP2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2530 M2, Intel Xeon E5-2697 v4, 2.30 GHz

$SPECfp\_rate2006 =$ 1050

$SPECfp\_rate\_base2006 =$ 1020

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

Test date: May-2016
Hardware Availability: Apr-2016
Software Availability: Sep-2015

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 Wed Jun 1 19:10:21 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 1 June 2016.