



# SPEC® CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## Fujitsu

PRIMERGY CX2550 M2, Intel Xeon E5-2620 v4, 2.10 GHz

SPECfp®\_rate2006 = 582

SPECfp\_rate\_base2006 = 570

CPU2006 license: 19

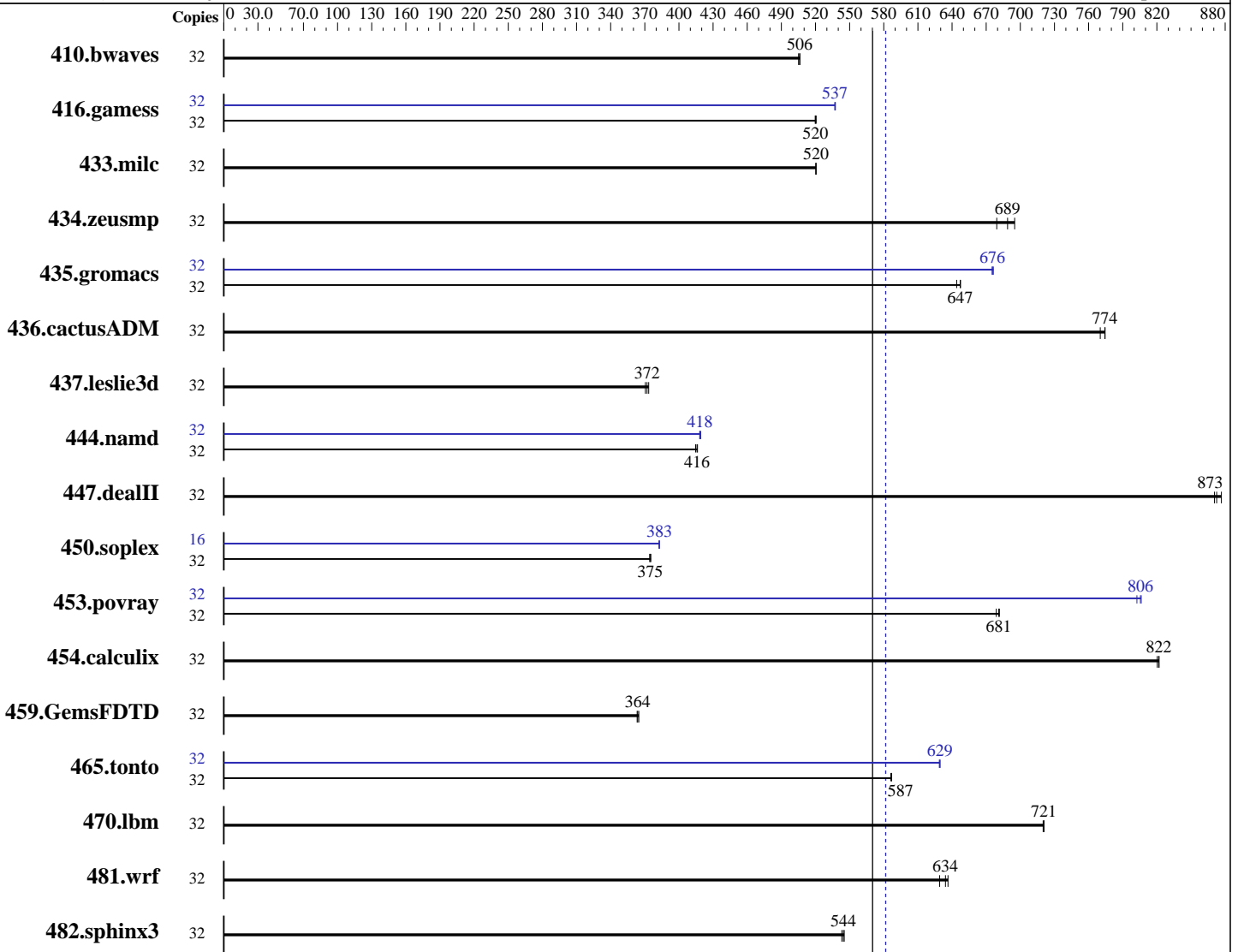
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jun-2016

Hardware Availability: Apr-2016

Software Availability: Sep-2015



SPECfp\_rate\_base2006 = 570

SPECfp\_rate2006 = 582

### Hardware

CPU Name: Intel Xeon E5-2620 v4  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz  
 CPU MHz: 2100  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 2 chips, 8 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 CX2550 M2, Intel Xeon E5-2620 v4, 2.10 GHz

SPECfp\_rate2006 = **582**

SPECfp\_rate\_base2006 = **570**

CPU2006 license: 19

Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jun-2016

Hardware Availability: Apr-2016

Software Availability: Sep-2015

L3 Cache: 20 MB I+D on chip per chip  
Other Cache: None  
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, running at 2133 MHz)  
Disk Subsystem: 1 x SATA, 1000 GB, 7200 RPM  
Other Hardware: None

Base Pointers: 32/64-bit  
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	32	<b>859</b>	<b>506</b>	861	505	859	506	32	<b>859</b>	<b>506</b>	861	505	859	506		
416.gamess	32	1204	521	1206	520	<b>1205</b>	<b>520</b>	32	1166	537	<b>1167</b>	<b>537</b>	1167	537		
433.milc	32	<b>564</b>	<b>520</b>	564	520	565	520	32	<b>564</b>	<b>520</b>	564	520	565	520		
434.zeusmp	32	<b>423</b>	<b>689</b>	429	679	419	695	32	<b>423</b>	<b>689</b>	429	679	419	695		
435.gromacs	32	355	644	<b>353</b>	<b>647</b>	353	647	32	338	676	<b>338</b>	<b>676</b>	338	675		
436.cactusADM	32	496	770	494	774	<b>494</b>	<b>774</b>	32	496	770	494	774	<b>494</b>	<b>774</b>		
437.leslie3d	32	<b>809</b>	<b>372</b>	812	371	806	373	32	<b>809</b>	<b>372</b>	812	371	806	373		
444.namd	32	616	416	<b>617</b>	<b>416</b>	619	415	32	612	419	<b>613</b>	<b>418</b>	614	418		
447.dealII	32	<b>420</b>	<b>873</b>	418	877	420	871	32	<b>420</b>	<b>873</b>	418	877	420	871		
450.soplex	32	<b>712</b>	<b>375</b>	713	374	711	375	16	349	383	<b>349</b>	<b>383</b>	349	383		
453.povray	32	<b>250</b>	<b>681</b>	250	682	251	679	32	<b>211</b>	<b>806</b>	211	806	212	802		
454.calculix	32	322	820	<b>321</b>	<b>822</b>	321	822	32	322	820	<b>321</b>	<b>822</b>	321	822		
459.GemsFDTD	32	<b>933</b>	<b>364</b>	935	363	931	365	32	<b>933</b>	<b>364</b>	935	363	931	365		
465.tonto	32	<b>537</b>	<b>587</b>	537	586	537	587	32	501	629	500	629	<b>500</b>	<b>629</b>		
470.lbm	32	611	720	610	721	<b>610</b>	<b>721</b>	32	611	720	610	721	<b>610</b>	<b>721</b>		
481.wrf	32	568	629	562	636	<b>564</b>	<b>634</b>	32	568	629	562	636	<b>564</b>	<b>634</b>		
482.sphinx3	32	<b>1146</b>	<b>544</b>	1144	545	1148	543	32	<b>1146</b>	<b>544</b>	1144	545	1148	543		

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



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## Fujitsu

PRIMERGY CX2550 M2, Intel Xeon E5-2620 v4, 2.10 GHz

SPECfp\_rate2006 = 582

SPECfp\_rate\_base2006 = 570

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

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

### Platform Notes (Continued)

QPI snoop mode: Early Snoop  
COD Enable = Disabled, Early Snoop = Enabled, 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 CX2550M2 Thu Jun 2 03:32:15 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 E5-2620 v4 @ 2.10GHz
 2 "physical id"s (chips)
 32 "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 : 8
  siblings  : 16
  physical 0: cores 0 1 2 3 4 5 6 7
  physical 1: cores 0 1 2 3 4 5 6 7
cache size : 20480 KB
```

```
From /proc/meminfo
MemTotal:      264321204 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="/o:suse:sles:12:sp1"
```

```
uname -a:
Linux CX2550M2 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux
Continued on next page
```



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## Fujitsu

PRIMERGY CX2550 M2, Intel Xeon E5-2620 v4, 2.10 GHz

SPECfp\_rate2006 = 582

SPECfp\_rate\_base2006 = 570

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

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

### Platform Notes (Continued)

```
run-level 3 Jun 1 15:25 last=5
```

```
SPEC is set to: /home/SPECcpu2006
```

```
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3       xfs   890G   32G  858G   4% /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 R1.4.0 for D3343-B1x
03/17/2016
```

```
Memory:
```

```
16x Hyundai Electronics (Hynix) HMA42GR7AFR4N-UH 16 GB 2 rank 2133 MHz
```

```
(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 CX2550 M2, Intel Xeon E5-2620 v4, 2.10 GHz

SPECfp\_rate2006 = 582

SPECfp\_rate\_base2006 = 570

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

Test date: Jun-2016  
Hardware Availability: Apr-2016  
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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

**Fujitsu**

PRIMERGY CX2550 M2, Intel Xeon E5-2620 v4, 2.10 GHz

**SPECfp\_rate2006 = 582**

**SPECfp\_rate\_base2006 = 570**

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

**Test date:** Jun-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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## Fujitsu

PRIMERGY CX2550 M2, Intel Xeon E5-2620 v4, 2.10 GHz

SPECfp\_rate2006 = 582

SPECfp\_rate\_base2006 = 570

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

Test date: Jun-2016  
Hardware Availability: Apr-2016  
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-BDW-RevB.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-BDW-RevB.xml>



# SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

**Fujitsu**

PRIMERGY CX2550 M2, Intel Xeon E5-2620 v4, 2.10 GHz

**SPECfp\_rate2006 = 582**

**SPECfp\_rate\_base2006 = 570**

**CPU2006 license:** 19

**Test sponsor:** Fujitsu

**Tested by:** Fujitsu

**Test date:** Jun-2016

**Hardware Availability:** Apr-2016

**Software Availability:** Sep-2015

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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Tue Jun 28 17:33:37 2016 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 28 June 2016.