



SPEC[®] CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2540 M2, Intel Xeon E5-2640 v4, 2.40 GHz

SPECfp[®]_rate2006 = 711

SPECfp_rate_base2006 = 695

CPU2006 license: 19

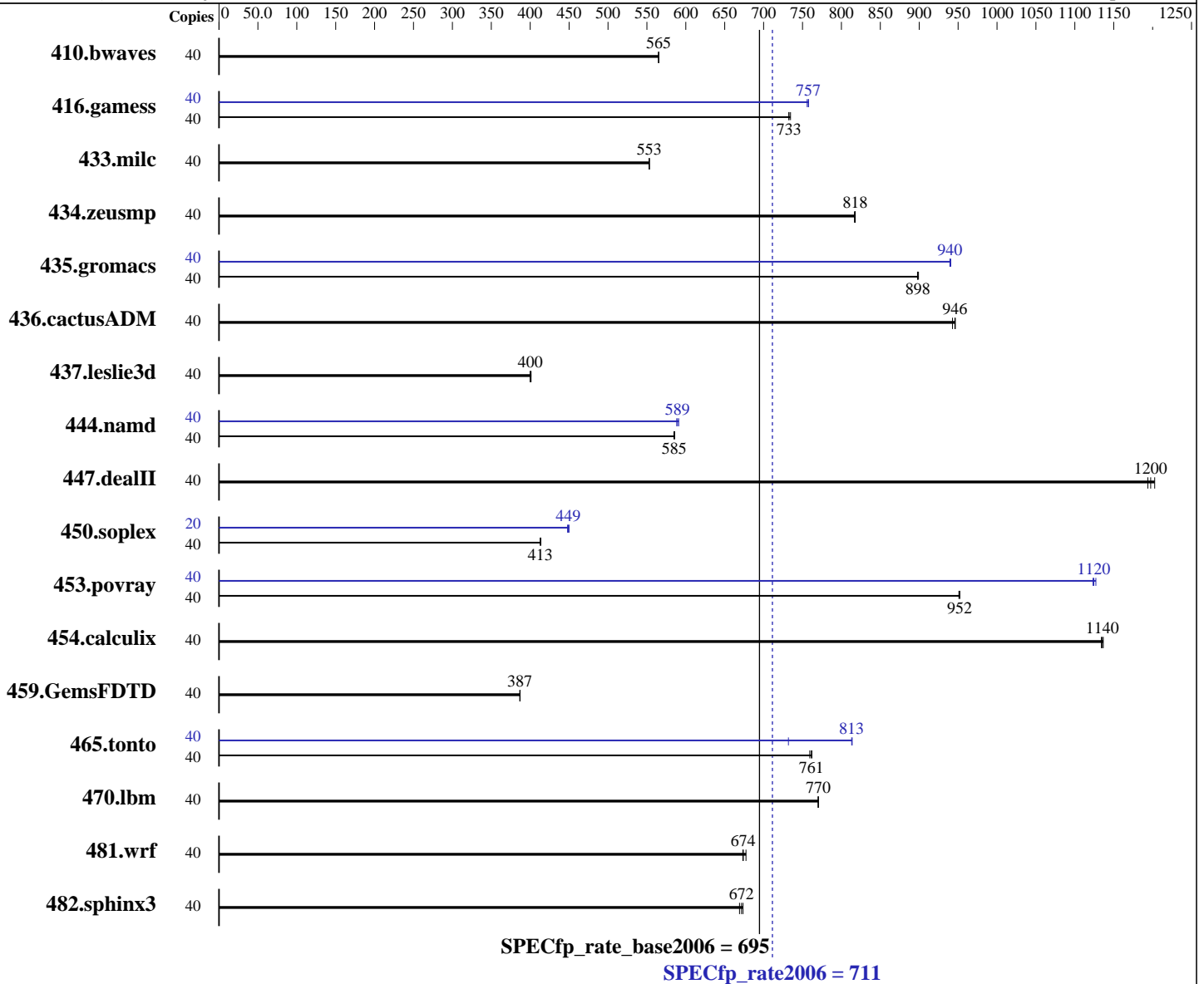
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Mar-2016

Hardware Availability: Apr-2016

Software Availability: Sep-2015



Hardware

CPU Name: Intel Xeon E5-2640 v4
 CPU Characteristics: Intel Turbo Boost Technology up to 3.40 GHz
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 20 cores, 2 chips, 10 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 5 (multi-user)

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2540 M2, Intel Xeon E5-2640 v4, 2.40 GHz

SPECfp_rate2006 = 711

SPECfp_rate_base2006 = 695

CPU2006 license: 19

Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Mar-2016

Hardware Availability: Apr-2016

Software Availability: Sep-2015

L3 Cache: 25 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, 500 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	40	<u>962</u>	<u>565</u>	962	565	962	565	40	<u>962</u>	<u>565</u>	962	565	962	565		
416.gamess	40	1069	733	1066	735	<u>1069</u>	<u>733</u>	40	1033	758	<u>1034</u>	<u>757</u>	1036	756		
433.milc	40	664	553	<u>664</u>	<u>553</u>	664	553	40	664	553	<u>664</u>	<u>553</u>	664	553		
434.zeusmp	40	<u>445</u>	<u>818</u>	446	817	445	818	40	<u>445</u>	<u>818</u>	446	817	445	818		
435.gromacs	40	318	899	<u>318</u>	<u>898</u>	318	898	40	304	939	<u>304</u>	<u>940</u>	304	941		
436.cactusADM	40	<u>505</u>	<u>946</u>	505	946	507	943	40	<u>505</u>	<u>946</u>	505	946	507	943		
437.leslie3d	40	<u>939</u>	<u>400</u>	937	401	940	400	40	<u>939</u>	<u>400</u>	937	401	940	400		
444.namd	40	<u>548</u>	<u>585</u>	548	586	549	585	40	543	591	<u>544</u>	<u>589</u>	545	588		
447.dealII	40	383	1190	380	1200	<u>382</u>	<u>1200</u>	40	383	1190	380	1200	<u>382</u>	<u>1200</u>		
450.soplex	40	<u>807</u>	<u>413</u>	808	413	806	414	20	372	448	371	450	<u>371</u>	<u>449</u>		
453.povray	40	<u>224</u>	<u>952</u>	224	951	224	952	40	189	1130	189	1120	<u>189</u>	<u>1120</u>		
454.calculix	40	<u>291</u>	<u>1140</u>	291	1130	290	1140	40	<u>291</u>	<u>1140</u>	291	1130	290	1140		
459.GemsFDTD	40	<u>1097</u>	<u>387</u>	1097	387	1097	387	40	<u>1097</u>	<u>387</u>	1097	387	1097	387		
465.tonto	40	517	762	<u>517</u>	<u>761</u>	518	759	40	538	732	<u>484</u>	<u>813</u>	484	814		
470.lbm	40	713	770	714	770	<u>714</u>	<u>770</u>	40	713	770	714	770	<u>714</u>	<u>770</u>		
481.wrf	40	660	677	664	673	<u>663</u>	<u>674</u>	40	660	677	664	673	<u>663</u>	<u>674</u>		
482.sphinx3	40	1165	669	1157	674	<u>1161</u>	<u>672</u>	40	1165	669	1157	674	<u>1161</u>	<u>672</u>		

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 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2540 M2, Intel Xeon E5-2640 v4, 2.40 GHz

SPECfp_rate2006 = 711

SPECfp_rate_base2006 = 695

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

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

Platform Notes

BIOS configuration:
Energy Performance = Performance
Utilization Profile = Unbalanced
QPI snoop mode: Home Directory Snoop with OSB
COD Enable = Disabled, Early Snoop = Disabled, Home Snoop Dir OSB = Enabled
Sysinfo program /home/SPECcpu2006/config/sysinfo.rev6914
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1
running on RX2540M2 Thu Mar 17 01:34:59 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 E5-2640 v4 @ 2.40GHz
 2 "physical id"s (chips)
 40 "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 : 10
  siblings  : 20
  physical 0: cores 0 1 2 3 4 8 9 10 11 12
  physical 1: cores 0 1 2 3 4 8 9 10 11 12
cache size : 25600 KB
```

```
From /proc/meminfo
MemTotal:      264399696 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:

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2540 M2, Intel Xeon E5-2640 v4, 2.40 GHz

SPECfp_rate2006 = 711

SPECfp_rate_base2006 = 695

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

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

Platform Notes (Continued)

```
Linux RX2540M2 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 5 Mar 16 14:15
```

```
SPEC is set to: /home/SPECcpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda4       xfs   424G   85G  339G  20% /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 D3289-B1x
03/11/2016
```

```
Memory:
16x Micron 36ASF2G72PZ-2G3A3 16 GB 2 rank 2400 MHz, configured at 2133 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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2540 M2, Intel Xeon E5-2640 v4, 2.40 GHz

SPECfp_rate2006 = 711

SPECfp_rate_base2006 = 695

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

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

Base Compiler Invocation (Continued)

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

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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2540 M2, Intel Xeon E5-2640 v4, 2.40 GHz

SPECfp_rate2006 = 711

SPECfp_rate_base2006 = 695

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

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

Peak Compiler Invocation (Continued)

C++ benchmarks (except as noted below):
icpc -m64

450.soplex: icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

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.deall: -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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2540 M2, Intel Xeon E5-2640 v4, 2.40 GHz

SPECfp_rate2006 = 711

SPECfp_rate_base2006 = 695

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

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

Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

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



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Fujitsu

PRIMERGY RX2540 M2, Intel Xeon E5-2640 v4, 2.40 GHz

SPECfp_rate2006 = 711

SPECfp_rate_base2006 = 695

CPU2006 license: 19

Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Mar-2016

Hardware Availability: Apr-2016

Software Availability: Sep-2015

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.20160517.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.20160517.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 May 17 16:50:41 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 17 May 2016.