Fujitsu
PRIMERGY RX2560 M2, Intel Xeon E5-2697 v4, 2.30 GHz

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

SPECfp®2006 = 126
SPECfp_base2006 = 119

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

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;
Compiler: Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux
Auto Parallel: Yes
File System: xfs
System State: Run level 5 (multi-user)
SPEC CFP2006 Result

Fujitsu
PRIMERGY RX2560 M2, Intel Xeon E5-2697 v4, 2.30 GHz

SPECfp2006 = 126
SPECfp_base2006 = 119

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

L3 Cache: 45 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R)
Disk Subsystem: 1 x SATA, 500 GB, 7200 RPM
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>416.gamess</td>
<td>524</td>
<td>37.3</td>
<td>523</td>
<td>37.4</td>
<td>522</td>
<td>37.5</td>
<td>411</td>
<td>47.7</td>
<td>412</td>
<td>47.6</td>
<td>412</td>
</tr>
<tr>
<td>433.milc</td>
<td>127</td>
<td>72.1</td>
<td>126</td>
<td>72.9</td>
<td>127</td>
<td>72.4</td>
<td>127</td>
<td>72.1</td>
<td>126</td>
<td>72.9</td>
<td>127</td>
</tr>
<tr>
<td>434.zesnmp</td>
<td>42.4</td>
<td>214</td>
<td>42.6</td>
<td>214</td>
<td>42.3</td>
<td>215</td>
<td>42.4</td>
<td>214</td>
<td>42.6</td>
<td>214</td>
<td>42.3</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>150</td>
<td>47.5</td>
<td>150</td>
<td>47.5</td>
<td>153</td>
<td>46.6</td>
<td>150</td>
<td>47.5</td>
<td>150</td>
<td>47.5</td>
<td>153</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>12.0</td>
<td>992</td>
<td>12.3</td>
<td>975</td>
<td>12.2</td>
<td>977</td>
<td>12.0</td>
<td>992</td>
<td>12.3</td>
<td>975</td>
<td>12.2</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>24.6</td>
<td>382</td>
<td>24.2</td>
<td>388</td>
<td>24.0</td>
<td>391</td>
<td>24.6</td>
<td>382</td>
<td>24.2</td>
<td>388</td>
<td>24.0</td>
</tr>
<tr>
<td>444.namd</td>
<td>254</td>
<td>31.5</td>
<td>255</td>
<td>31.5</td>
<td>254</td>
<td>31.5</td>
<td>247</td>
<td>32.5</td>
<td>246</td>
<td>32.5</td>
<td>248</td>
</tr>
<tr>
<td>447.dealII</td>
<td>171</td>
<td>67.0</td>
<td>171</td>
<td>67.1</td>
<td>171</td>
<td>67.0</td>
<td>171</td>
<td>67.0</td>
<td>171</td>
<td>67.0</td>
<td>171</td>
</tr>
<tr>
<td>450.soplex</td>
<td>170</td>
<td>49.0</td>
<td>170</td>
<td>49.1</td>
<td>170</td>
<td>49.2</td>
<td>170</td>
<td>49.0</td>
<td>170</td>
<td>49.1</td>
<td>170</td>
</tr>
<tr>
<td>453.povray</td>
<td>83.1</td>
<td>64.1</td>
<td>82.9</td>
<td>64.2</td>
<td>83.1</td>
<td>64.0</td>
<td>73.1</td>
<td>72.8</td>
<td>73.1</td>
<td>72.7</td>
<td>74.5</td>
</tr>
<tr>
<td>454.calculix</td>
<td>152</td>
<td>54.2</td>
<td>152</td>
<td>54.2</td>
<td>152</td>
<td>54.2</td>
<td>133</td>
<td>61.8</td>
<td>134</td>
<td>61.4</td>
<td>134</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>42.6</td>
<td>249</td>
<td>44.0</td>
<td>241</td>
<td>42.6</td>
<td>249</td>
<td>36.3</td>
<td>292</td>
<td>36.0</td>
<td>295</td>
<td>36.5</td>
</tr>
<tr>
<td>465.tonto</td>
<td>236</td>
<td>41.7</td>
<td>237</td>
<td>41.5</td>
<td>246</td>
<td>40.1</td>
<td>168</td>
<td>58.5</td>
<td>168</td>
<td>58.7</td>
<td>169</td>
</tr>
<tr>
<td>470.lbm</td>
<td>14.6</td>
<td>939</td>
<td>14.8</td>
<td>928</td>
<td>14.6</td>
<td>938</td>
<td>14.6</td>
<td>939</td>
<td>14.8</td>
<td>928</td>
<td>14.6</td>
</tr>
<tr>
<td>481.wrf</td>
<td>94.0</td>
<td>119</td>
<td>94.2</td>
<td>119</td>
<td>94.0</td>
<td>119</td>
<td>94.0</td>
<td>119</td>
<td>94.2</td>
<td>119</td>
<td>94.0</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>279</td>
<td>69.8</td>
<td>280</td>
<td>69.7</td>
<td>279</td>
<td>70.0</td>
<td>279</td>
<td>69.8</td>
<td>280</td>
<td>69.7</td>
<td>279</td>
</tr>
</tbody>
</table>

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

Operating System Notes

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

Platform Notes

BIOS configuration:
Energy Performance = Performance
Utilization Profile = Unbalanced
QPI snoop mode: Home Snoop
COD Enable = Disabled, Early Snoop = Disabled, Home Snoop Dir OSB = Disabled
CPU C1E Support = Disabled
Sysinfo program /home/SPECcpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb867b5a285932ceab81e28219e1
running on RX2560M2 Thu May 12 13:41:42 2016

Continued on next page
Platform Notes (Continued)

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 : 46080 KB

From /proc/meminfo
MemTotal: 264313116 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:
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:
(x86_64) x86_64 x86_64 GNU/Linux

run-level 5 May 12 13:40

SPEC is set to: /home/SPECcpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 1.8T 5.7G 1.8T 1% /home
Additional information from dmidecode:
Continued on next page
SPEC CFP2006 Result

Fujitsu
PRIMERGY RX2560 M2, Intel Xeon E5-2697 v4, 2.30 GHz

SPECfp2006 = 126
SPECfp_base2006 = 119

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

Platform Notes (Continued)

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 Hynix Semiconductor HMA42GR7AFR4N-UH 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:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/home/SPECcpu2006/libs/32:/home/SPECcpu2006/libs/64:/home/SPECcpu2006/sh"
OMP_NUM_THREADS = "36"

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
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

Continued on next page
SPEC CFP2006 Result

Fujitsu

PRIMERGY RX2560 M2, Intel Xeon E5-2697 v4, 2.30 GHz

SPECfp2006 = 126
SPECfp_base2006 = 119

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

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

Base Portability Flags (Continued)

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
463.tonto: -DSPEC_CPU_LP64
467.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 -parallel -opt-prefetch -ansi-alias

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

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
Fujitsu

PRIMERGY RX2560 M2, Intel Xeon E5-2697 v4, 2.30 GHz

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

SPECfp2006 = 126
SPECfp_base2006 = 119

Peak Portatility Flags

Same as Base Portability Flags

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) -prof-use(pass 2) -fno-alias
            -auto-ilp32
447.dealII: basepeak = yes
450.soplex: basepeak = yes
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) -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: -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 -opt-prefetch -parallel
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) -inline-calloc

Continued on next page
SPEC CFP2006 Result

Fujitsu

PRIMERGY RX2560 M2, Intel Xeon E5-2697 v4, 2.30 GHz

SPECfp2006 = 126
SPECfp_base2006 = 119

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

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

Peak Optimization Flags (Continued)

465.tonto (continued):
- opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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

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 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.
Originally published on 14 June 2016.