## SPECint®2006 Result

**Fujitsu**

PRIMERGY BX2560 M2, Intel Xeon E5-2690 v4, 2.60 GHz

<table>
<thead>
<tr>
<th>SPECint®2006</th>
<th>71.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_base2006</td>
<td>68.9</td>
</tr>
</tbody>
</table>

### Hardware

<table>
<thead>
<tr>
<th>CPU Name</th>
<th>Intel Xeon E5-2690 v4</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.50 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>2600</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>28 cores, 2 chips, 14 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1.2 chip</td>
</tr>
<tr>
<td>Primary Cache</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache</td>
<td>256 KB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache</td>
<td>35 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>256 GB (16 x 16 GB 2Rx4 PC4-2400T-R)</td>
</tr>
<tr>
<td>Disk Subsystem</td>
<td>1 x SATA, 500 GB, 7200 RPM</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Operating System</th>
<th>SUSE Linux Enterprise Server 12 SP1 (x86_64)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler</td>
<td>C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>Yes</td>
</tr>
<tr>
<td>File System</td>
<td>xfs</td>
</tr>
<tr>
<td>System State</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Peak Pointers</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other Software</td>
<td>Microquill SmartHeap V10.2</td>
</tr>
</tbody>
</table>

Test date: Jul-2016

Hardware Availability: Apr-2016

Software Availability: Sep-2015

---

Standard Performance Evaluation Corporation

info@spec.org

http://www.spec.org/
## SPEC CINT2006 Result

**Fujitsu**

PRIMERGY BX2560 M2, Intel Xeon E5-2690 v4, 2.60 GHz

**SPECint2006 =** 71.8
**SPECint_base2006 =** 68.9

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

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>238</td>
<td>41.0</td>
<td>238</td>
<td>41.1</td>
<td>239</td>
<td>40.9</td>
<td>218</td>
<td>44.8</td>
<td>218</td>
<td>44.9</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>390</td>
<td>24.8</td>
<td>389</td>
<td>24.8</td>
<td>389</td>
<td>24.8</td>
<td>383</td>
<td>25.2</td>
<td>383</td>
<td>25.2</td>
</tr>
<tr>
<td>403.gcc</td>
<td>212</td>
<td>37.9</td>
<td>212</td>
<td>38.0</td>
<td>212</td>
<td>38.0</td>
<td>212</td>
<td>37.9</td>
<td>212</td>
<td>38.0</td>
</tr>
<tr>
<td>429.mcf</td>
<td>347</td>
<td>64.3</td>
<td>142</td>
<td>64.3</td>
<td>143</td>
<td>64.0</td>
<td>142</td>
<td>64.3</td>
<td>142</td>
<td>64.3</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>347</td>
<td>30.2</td>
<td>347</td>
<td>30.2</td>
<td>346</td>
<td>30.3</td>
<td>347</td>
<td>30.2</td>
<td>347</td>
<td>30.2</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>110</td>
<td>85.2</td>
<td>109</td>
<td>85.4</td>
<td>109</td>
<td>85.3</td>
<td>110</td>
<td>85.2</td>
<td>109</td>
<td>85.3</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>347</td>
<td>34.9</td>
<td>347</td>
<td>34.9</td>
<td>348</td>
<td>34.8</td>
<td>344</td>
<td>35.2</td>
<td>344</td>
<td>35.2</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>2.85</td>
<td>7280</td>
<td>2.84</td>
<td>7300</td>
<td>2.84</td>
<td>7290</td>
<td>2.85</td>
<td>7280</td>
<td>2.84</td>
<td>7300</td>
</tr>
<tr>
<td>464.hmmer</td>
<td>380</td>
<td>58.2</td>
<td>380</td>
<td>58.2</td>
<td>380</td>
<td>58.3</td>
<td>380</td>
<td>58.2</td>
<td>380</td>
<td>58.3</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>142</td>
<td>44.0</td>
<td>142</td>
<td>44.0</td>
<td>143</td>
<td>43.8</td>
<td>111</td>
<td>56.4</td>
<td>111</td>
<td>56.3</td>
</tr>
<tr>
<td>473.astar</td>
<td>192</td>
<td>36.5</td>
<td>193</td>
<td>36.3</td>
<td>193</td>
<td>36.4</td>
<td>192</td>
<td>36.6</td>
<td>192</td>
<td>36.6</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>91.6</td>
<td>75.3</td>
<td>91.9</td>
<td>75.1</td>
<td>91.4</td>
<td>75.5</td>
<td>81.0</td>
<td>85.2</td>
<td>80.9</td>
<td>85.3</td>
</tr>
</tbody>
</table>

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

### Submit Notes

The config file option 'submit' was used.

### 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 Directory Snoop with OSB
  - COD Enable = Disabled, Early Snoop = Disabled, Home Snoop Dir OSB = Enabled
  - CPU C1E Support = Disabled
  - Sysinfo program /home/SPECcpu2006/config/sysinfo.rev6914
  - $Rev: 6914 $ $Date:: 2014-06-25#$ e3fbb8667b5a285932ceab81e28219e1
  - running on linux-w3cw Mon Jul 4 12:17:26 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 E5-2690 v4@ 2.60GHz
- 2 "physical id"s (chips)
- 56 "processors"
- cores, siblings (Caution: counting these is hw and system dependent. The Continued on next page
Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

cpu cores : 14
siblings : 28
physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14

From /proc/meminfo
MemTotal: 264514592 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 linux-w3cw 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 3 Jul 4 12:15 last=5

SPEC is set to: /home/SPECcpu2006

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 D3320-B1x 03/17/2016
Memory:
Fujitsu

PRIMERGY BX2560 M2, Intel Xeon E5-2690 v4, 2.60 GHz

SPECint2006 = 71.8
SPECint_base2006 = 68.9

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

Platform Notes (Continued)

8x Micron Technology 36ASF2G72PZ-2G3A3 16 GB 2 rank 2400 MHz
8x Samsung M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/SPECcpu2006/libs/32:/home/SPECcpu2006/libs/64:/home/SPECcpu2006/sh"
OMP_NUM_THREADS = "28"

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

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

Continued on next page
Fujitsu
PRIMERGY BX2560 M2, Intel Xeon E5-2690 v4, 2.60 GHz

SPECint2006 = 71.8
SPECint_base2006 = 68.9

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

Base Optimization Flags (Continued)

C++ benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
  -Wl,-z,muldefs -L/sh -lsmartheap64

Base Other Flags

C benchmarks:
  403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
  icc -m64

  400.perlbench: icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

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

  473.astar: icpc -m64

Peak Portability Flags

  400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
  401.bzip2: -DSPEC_CPU_LP64
  403.gcc: -DSPEC_CPU_LP64
  429.mcf: -DSPEC_CPU_LP64
  445.gobmk: -DSPEC_CPU_LP64
  456.hmmer: -DSPEC_CPU_LP64
  458.sjeng: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
  462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
  464.h264ref: -DSPEC_CPU_LP64
  471.omnetpp: -D_FILE_OFFSET_BITS=64
  473.astar: -DSPEC_CPU_LP64
  483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

Continued on next page
Peak Optimization Flags (Continued)

400.perlbench: -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) -opt-prefetch
-ansi-alias

401.bzip2: -xCORE- AVX2(pass 2) -prof-gen:threadsafe(pass 1)
-ipo(pass 2) -O3(pass 2) -no-prec-div
-par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32
-opt-prefetch -ansi-alias

403.gcc: basepeak = yes
249.mcf: basepeak = yes
445.gobmk: basepeak = yes
456.hmmer: basepeak = yes

458.sjeng: -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

462.libquantum: basepeak = yes
464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -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)
-opt-ra-region-strategy=block -ansi-alias
-Wl,-z,muldefs -L/sh -lsmartheap

473.astar: -xCORE- AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64

483.xalancbmk: -xCORE- AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca
Fujitsu

PRIMERGY BX2560 M2, Intel Xeon E5-2690 v4, 2.60 GHz

SPECint2006 = 71.8
SPECint_base2006 = 68.9

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

Test date: Jul-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-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 and SPECint 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 Sep 6 16:56:54 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 6 September 2016.