### Fujitsu

**PRIMERGY BX2580 M2, Intel Xeon E5-2695 v4, 2.10 GHz**

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

![Benchmark Scores](image)

#### Hardware

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU Name:</strong></td>
<td>Intel Xeon E5-2695 v4</td>
</tr>
<tr>
<td><strong>CPU Characteristics:</strong></td>
<td>Intel Turbo Boost Technology up to 3.30 GHz</td>
</tr>
<tr>
<td><strong>CPU MHz:</strong></td>
<td>2100</td>
</tr>
<tr>
<td><strong>FPU:</strong></td>
<td>Integrated</td>
</tr>
<tr>
<td><strong>CPU(s) enabled:</strong></td>
<td>36 cores, 2 chips, 18 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td><strong>CPU(s) orderable:</strong></td>
<td>1.2 chip</td>
</tr>
<tr>
<td><strong>Primary Cache:</strong></td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td><strong>Secondary Cache:</strong></td>
<td>256 KB I+D on chip per core</td>
</tr>
<tr>
<td><strong>L3 Cache:</strong></td>
<td>45 MB I+D on chip per chip</td>
</tr>
<tr>
<td><strong>Other Cache:</strong></td>
<td>None</td>
</tr>
<tr>
<td><strong>Memory:</strong></td>
<td>256 GB (16 x 16 GB 2Rx4 PC4-2400T-R)</td>
</tr>
<tr>
<td><strong>Disk Subsystem:</strong></td>
<td>1 x SATA, 1000 GB, 7200 RPM</td>
</tr>
<tr>
<td><strong>Other Hardware:</strong></td>
<td>None</td>
</tr>
</tbody>
</table>

#### Software

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating System:</strong></td>
<td>SUSE Linux Enterprise Server 12 SP1 (x86_64)</td>
</tr>
<tr>
<td></td>
<td>Kernel 3.12.49-11-default</td>
</tr>
<tr>
<td><strong>Compiler:</strong></td>
<td>CIC++: Version 16.0.0.101 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td><strong>Auto Parallel:</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>File System:</strong></td>
<td>xfs</td>
</tr>
<tr>
<td><strong>System State:</strong></td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td><strong>Base Pointers:</strong></td>
<td>32/64-bit</td>
</tr>
<tr>
<td><strong>Peak Pointers:</strong></td>
<td>32/64-bit</td>
</tr>
<tr>
<td><strong>Other Software:</strong></td>
<td>Microquill SmartHeap V10.2</td>
</tr>
</tbody>
</table>
SPEC CINT2006 Result

Fujitsu

PRIMERGY BX2580 M2, Intel Xeon E5-2695 v4, 2.10 GHz

Fujitsu

CPU2006 license: 19
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RESULTS

SPECint2006 = 67.7
SPECint_base2006 = 66.0

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></td>
<td>Base</td>
<td>Peak</td>
<td>Base</td>
<td>Peak</td>
<td>Base</td>
<td>Peak</td>
<td>Base</td>
<td>Peak</td>
<td>Base</td>
<td>Peak</td>
</tr>
<tr>
<td>400.perlbench</td>
<td>256</td>
<td>38.1</td>
<td>252</td>
<td>38.8</td>
<td>254</td>
<td>38.5</td>
<td>233</td>
<td>42.0</td>
<td>232</td>
<td>42.1</td>
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<tr>
<td>401.bzip2</td>
<td>415</td>
<td>23.3</td>
<td>416</td>
<td>23.2</td>
<td>416</td>
<td>23.2</td>
<td>414</td>
<td>23.3</td>
<td>414</td>
<td>23.3</td>
</tr>
<tr>
<td>403.gcc</td>
<td>227</td>
<td>35.5</td>
<td>227</td>
<td>35.5</td>
<td>226</td>
<td>35.6</td>
<td>224</td>
<td>36.0</td>
<td>226</td>
<td>35.7</td>
</tr>
<tr>
<td>429.mcf</td>
<td>148</td>
<td>61.6</td>
<td>147</td>
<td>62.1</td>
<td>146</td>
<td>62.4</td>
<td>148</td>
<td>61.6</td>
<td>147</td>
<td>62.1</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>373</td>
<td>28.2</td>
<td>373</td>
<td>28.1</td>
<td>372</td>
<td>28.2</td>
<td>373</td>
<td>28.2</td>
<td>373</td>
<td>28.1</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>116</td>
<td>80.4</td>
<td>116</td>
<td>80.1</td>
<td>116</td>
<td>80.4</td>
<td>116</td>
<td>80.4</td>
<td>116</td>
<td>80.4</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>366</td>
<td>33.1</td>
<td>366</td>
<td>33.1</td>
<td>366</td>
<td>33.1</td>
<td>361</td>
<td>33.5</td>
<td>362</td>
<td>33.4</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>2.78</td>
<td>7460</td>
<td>2.72</td>
<td>7610</td>
<td>2.71</td>
<td>7630</td>
<td>2.78</td>
<td>7460</td>
<td>2.72</td>
<td>7610</td>
</tr>
<tr>
<td>464.hmmer</td>
<td>429</td>
<td>51.5</td>
<td>429</td>
<td>51.6</td>
<td>428</td>
<td>51.7</td>
<td>429</td>
<td>51.5</td>
<td>429</td>
<td>51.6</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>134</td>
<td>46.6</td>
<td>133</td>
<td>46.8</td>
<td>134</td>
<td>46.7</td>
<td>120</td>
<td>51.9</td>
<td>120</td>
<td>52.0</td>
</tr>
<tr>
<td>473.astar</td>
<td>204</td>
<td>34.5</td>
<td>204</td>
<td>34.5</td>
<td>205</td>
<td>34.3</td>
<td>204</td>
<td>34.5</td>
<td>204</td>
<td>34.5</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>94.6</td>
<td>72.9</td>
<td>94.8</td>
<td>72.8</td>
<td>94.5</td>
<td>73.0</td>
<td>86.2</td>
<td>80.1</td>
<td>86.5</td>
<td>79.8</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-rzz5 Mon Jun 27 10:53:26 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 E5-2695 v4 @ 2.10GHz
        2 "physical id"s (chips)
        72 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
Continued on next page

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
SPEC CINT2006 Result

Fujitsu
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SPECint2006 = 67.7
SPECint_base2006 = 66.0

CPU2006 license: 19
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Platform Notes (Continued)

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: 264512420 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:
    (8d714a0) x86_64 x86_64 x86_64 GNU/Linux

    run-level 3 Jun 27 10:52 last=5

SPEC is set to: /home/SPECcpu2006

Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda3      xfs   331G  130G  202G  40% /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 D3321-B1x
03/17/2016
Memory:

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Fujitsu
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**SPEC CINT2006 Result**

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**Platform Notes (Continued)**

16x Samsung M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz

(End of data from sysinfo program)

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**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 = "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](http://www.fujitsu.com)

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**Base Compiler Invocation**

**C benchmarks:**

- `icc -m64`

**C++ benchmarks:**

- `icpc -m64`

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**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

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**Base Optimization Flags**

**C benchmarks:**


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Base Optimization Flags (Continued)
C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh -1smartheap64

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_LINUX_IA32
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: -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:

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SPEC CINT2006 Result

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SPECint2006 = 67.7
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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: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
   -opt-malloc-options=3 -auto-ilp32

429.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) -unroll14

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: basepeak = yes

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
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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

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Tested with SPEC CPU2006 v1.2.
Originally published on 23 August 2016.