Fujitsu
PRIMERGY BX2560 M2, Intel Xeon E5-2643 v4, 3.40 GHz

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

SPECint®_rate2006 = 740
SPECint_rate_base2006 = 704

Hardware

- CPU Name: Intel Xeon E5-2643 v4
- CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz
- CPU MHZ: 3400
- FPU: Integrated
- CPU(s) enabled: 12 cores, 2 chips, 6 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
- L3 Cache: 20 MB I+D on chip per chip
- Other Cache: None
- Memory: 128 GB (8 x 16 GB 2Rx4 PC4-2400T-R)
- Disk Subsystem: 1 x SATA, 500 GB, 7200 RPM
- Other Hardware: None

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
- Auto Parallel: No
- File System: xfs
- System State: Run level 3 (multi-user)
- Base Pointers: 32-bit
- Peak Pointers: 32/64-bit
- Other Software: Microquill SmartHeap V10.2
**SPEC CINT2006 Result**

**Fujitsu**

PRIMERGY BX2560 M2, Intel Xeon E5-2643 v4, 3.40 GHz

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

**Results Table**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400.perlbench</td>
<td>24</td>
<td>466</td>
<td>503</td>
<td>467</td>
<td>502</td>
<td>466</td>
<td>503</td>
<td>24</td>
<td>378</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>24</td>
<td>674</td>
<td>344</td>
<td>676</td>
<td>343</td>
<td>675</td>
<td>343</td>
<td>24</td>
<td>654</td>
</tr>
<tr>
<td>403.gcc</td>
<td>24</td>
<td>372</td>
<td>519</td>
<td>374</td>
<td>516</td>
<td>371</td>
<td>521</td>
<td>24</td>
<td>372</td>
</tr>
<tr>
<td>429.mcf</td>
<td>24</td>
<td>241</td>
<td>909</td>
<td>242</td>
<td>906</td>
<td>241</td>
<td>908</td>
<td>24</td>
<td>241</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>24</td>
<td>550</td>
<td>458</td>
<td>549</td>
<td>458</td>
<td>549</td>
<td>458</td>
<td>24</td>
<td>539</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>24</td>
<td>207</td>
<td>1080</td>
<td>208</td>
<td>1080</td>
<td>208</td>
<td>1080</td>
<td>24</td>
<td>170</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>24</td>
<td>614</td>
<td>473</td>
<td>613</td>
<td>473</td>
<td>613</td>
<td>473</td>
<td>24</td>
<td>410</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>24</td>
<td>70.0</td>
<td>7100</td>
<td>70.1</td>
<td>7100</td>
<td>70.1</td>
<td>7100</td>
<td>24</td>
<td>70.0</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>24</td>
<td>613</td>
<td>866</td>
<td>613</td>
<td>866</td>
<td>619</td>
<td>857</td>
<td>24</td>
<td>602</td>
</tr>
<tr>
<td>471.onnetpp</td>
<td>24</td>
<td>434</td>
<td>345</td>
<td>435</td>
<td>345</td>
<td>435</td>
<td>345</td>
<td>24</td>
<td>410</td>
</tr>
<tr>
<td>473.astar</td>
<td>24</td>
<td>399</td>
<td>422</td>
<td>401</td>
<td>420</td>
<td>402</td>
<td>419</td>
<td>24</td>
<td>399</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>24</td>
<td>188</td>
<td>879</td>
<td>189</td>
<td>878</td>
<td>189</td>
<td>878</td>
<td>24</td>
<td>188</td>
</tr>
</tbody>
</table>

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
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 linux-w3cw Mon Jun 13 11:21:12 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 E5-2643 v4 @ 3.40GHz
2 "physical id"s (chips)
Fujitsu
PRIMERGY BX2560 M2, Intel Xeon E5-2643 v4, 3.40 GHz

SPECint\textsubscript{rate2006} = 740
SPECint\textsubscript{rate\_base2006} = 704

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

Platform Notes (Continued)

24 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
cautions.)
cpu cores : 6
siblings : 12
physical 0: cores 0 1 2 3 6 7
physical 1: cores 0 1 2 3 6 7
cache size : 20480 KB

From /proc/meminfo
MemTotal: 132135784 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 Jun 13 11:17 last=5

SPEC is set to: /home/SPECcpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/md126p3 xfs 424G 3.4G 420G 1% /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 D3320-B1x

Continued on next page
Fujiitsu
PRIMERGY BX2560 M2, Intel Xeon E5-2643 v4, 3.40 GHz

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

SPECint_rate2006 = 740
SPECint_rate_base2006 = 704

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

Platform Notes (Continued)

03/17/2016
Memory:
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:
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.:
=echo "--interleave=all runspec <etc>"
For information about Fujitsu please visit: http://www.fujitsu.com

Base Compiler Invocation

C benchmarks:
=icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

C++ benchmarks:
icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

Base Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
401.bzip2: -D_FILE_OFFSET_BITS=64
403.gcc: -D_FILE_OFFSET_BITS=64
429.mcf: -D_FILE_OFFSET_BITS=64
445.gobmk: -D_FILE_OFFSET_BITS=64
456.hmmer: -D_FILE_OFFSET_BITS=64
458.sjeng: -D_FILE_OFFSET_BITS=64
462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
464.h264ref: -D_FILE_OFFSET_BITS=64
471.omnetpp: -D_FILE_OFFSET_BITS=64
473.astar: -D_FILE_OFFSET_BITS=64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
Fujitsu

PRIMERGY BX2560 M2, Intel Xeon E5-2643 v4, 3.40 GHz

SPECint\_rate2006 = 740
SPECint\_rate\_base2006 = 704

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3 -W1,-z,muldefs -L/sh -lsmartheap

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

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

400.perlbench: icc -m64
401.bzip2: icc -m64
456.hmmer: icc -m64
458.sjeng: icc -m64

C++ benchmarks:
icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

Peak Portability Flags

400.perlbench: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64
401.bzip2: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64
403.gcc: -D\_FILE\_OFFSET\_BITS=64
429.mcf: -D\_FILE\_OFFSET\_BITS=64
445.gobmk: -D\_FILE\_OFFSET\_BITS=64
456.hmmer: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64
458.sjeng: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64
462.libquantum: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LP64
464.h264ref: -D\_FILE\_OFFSET\_BITS=64
471.omnetpp: -D\_FILE\_OFFSET\_BITS=64
473.astar: -D\_FILE\_OFFSET\_BITS=64
<table>
<thead>
<tr>
<th>Test Sponsor: Fujitsu</th>
<th>Test date: Jun-2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Availability: Apr-2016</td>
<td></td>
</tr>
<tr>
<td>Software Availability: Sep-2015</td>
<td></td>
</tr>
</tbody>
</table>

**Peak Portability Flags (Continued)**

483.xalancbmk: `-D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX`

### Peak Optimization Flags

**C benchmarks:**

400.perlbench: `-xCORE-AVX2(pass 2) -prof-gen:threadsafepass (pass 1)
  -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
  -par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32`

401.bzip2: `-xCORE-AVX2(pass 2) -prof-gen:threadsafepass (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
  -auto-ilp32 -ansi-alias`

403.gcc: `basepeak = yes`

429.mcf: `basepeak = yes`

445.gobmk: `-xCORE-AVX2(pass 2) -prof-gen:threadsafepass (pass 1)
  -prof-use(pass 2) -par-num-threads=1(pass 1) -ansi-alias
  -opt-mem-layout-trans=3`

456.hmmer: `-xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32`

458.sjeng: `-xCORE-AVX2(pass 2) -prof-gen:threadsafepass (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-ilp32`

462.libquantum: `basepeak = yes`

464.h264ref: `-xCORE-AVX2(pass 2) -prof-gen:threadsafepass (pass 1)
  -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
  -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2
  -ansi-alias`

**C++ benchmarks:**

471.omnetpp: `-xCORE-AVX2(pass 2) -prof-gen:threadsafepass (pass 1)
  -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
  -par-num-threads=1(pass 1) -prof-use(pass 2) -ansi-alias
  -opt-ra-region-strategy=block -Wl,-z,muldefs
  -L/sh -lsmartheap`

473.astar: `basepeak = yes`
SPEC CINT2006 Result

Fujitsu
PRIMERGY BX2560 M2, Intel Xeon E5-2643 v4, 3.40 GHz

SPECint_rate2006 = 740
SPECint_rate_base2006 = 704

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)

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

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 16:57:08 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 6 September 2016.