Fujitsu
PRIMERGY CX2550 M2, Intel Xeon E5-2609 v4, 1.70 GHz

SPECint_rate2006 = 433
SPECint_rate_base2006 = 414

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

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

Hardware
- CPU Name: Intel Xeon E5-2609 v4
- CPU Characteristics: 16 cores, 2 chips, 8 cores/chip
- CPU MHZ: 1700
- FPU: Integrated
- 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
- Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, running at 1866 MHz)
- Disk Subsystem: 1 x SATA, 1000 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
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PRIMERGY CX2550 M2, Intel Xeon E5-2609 v4, 1.70 GHz

SPEC CINT2006 Result

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GHz

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Results Table

Benchmark | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio
---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---
400.perlbench | 16 | 519 | 301 | 517 | 302 | 520 | 300 | 16 | 431 | 362 | 430 | 364 | 431 | 363
401.bzip2 | 16 | 843 | 183 | 845 | 183 | 842 | 183 | 16 | 787 | 196 | 788 | 196 | 787 | 196
403.gcc | 16 | 401 | 321 | 401 | 321 | 403 | 320 | 16 | 403 | 319 | 402 | 321 | 401 | 321
429.mcf | 16 | 742 | 226 | 742 | 226 | 742 | 226 | 16 | 726 | 231 | 726 | 231 | 726 | 231
445.gobmk | 16 | 738 | 262 | 739 | 262 | 738 | 262 | 16 | 692 | 280 | 691 | 280 | 691 | 280
456.hmmer | 16 | 251 | 594 | 251 | 594 | 253 | 591 | 16 | 233 | 641 | 233 | 641 | 233 | 640
458.sjeng | 16 | 738 | 262 | 739 | 262 | 738 | 262 | 16 | 692 | 280 | 691 | 280 | 691 | 280
462.libquantum | 16 | 87.5 | 3790 | 87.7 | 3780 | 87.6 | 3780 | 16 | 87.5 | 3790 | 87.7 | 3780 | 87.6 | 3780
464.h264ref | 16 | 715 | 495 | 718 | 493 | 718 | 493 | 16 | 690 | 513 | 691 | 513 | 684 | 517
471.omnetpp | 16 | 408 | 245 | 408 | 245 | 408 | 245 | 16 | 385 | 260 | 383 | 261 | 382 | 261
473.astar | 16 | 472 | 238 | 470 | 239 | 470 | 239 | 16 | 472 | 238 | 470 | 239 | 470 | 239
483.xalancbmk | 16 | 187 | 589 | 188 | 587 | 188 | 588 | 16 | 187 | 589 | 188 | 587 | 188 | 588

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: 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 $$ e3fbb8667b5a285932ceab81e28219e1

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 E5-2609 v4 @ 1.70GHz
2 "physical id"s (chips)

Continued on next page
**Fujitsu**

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**Platform Notes (Continued)**

16 "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 : 8
siblings : 8
physical 0: cores 0 1 2 3 4 5 6 7
physical 1: cores 0 1 2 3 4 5 6 7
cache size : 20480 KB
```

From /proc/meminfo

```
MemTotal:       264322868 kB
HugePages_Total:       0
Hugepagesize:       2048 kB
```

From /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 8 10:48 last=5

SPEC is set to: /home/SPECcpu2006

```
Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda3      xfs   890G  3.7G  886G  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 D3343-B1x

Continued on next page
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Platform Notes (Continued)

03/17/2016
Memory:
16x Hyundai Electronics (Hynix) HMA42GR7AFR4N-UH 16 GB 2 rank 1866 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.:
numactl --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
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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 -Wl,-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_LINUX
464.h264ref: -D_FILE_OFFSET_BITS=64
471.omnetpp: -D_FILE_OFFSET_BITS=64
473.astar: -D_FILE_OFFSET_BITS=64
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Software Availability: Sep-2015

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:threadsafe(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: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
-auto-ilp32 -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(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 -unroll4 -auto-ilp32

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) -unroll2
-auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -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
-ansi-alias

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

473.astar: basepeak = yes

Continued on next page
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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

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