Fujitsu
PRIMERGY CX2550 M2, Intel Xeon E5-2697A v4, 2.60 GHz

SPECint®2006 = 72.8
SPECint_base2006 = 70.7

Hardware
CPU Name: Intel Xeon E5-2697A v4
CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz: 2600
FPU: Integrated
CPU(s) enabled: 32 cores, 2 chips, 16 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: 40 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, 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: Yes
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V10.2
SPEC CINT2006 Result

**Fujitsu**
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SPECint2006 = 72.8  
SPECint_base2006 = 70.7

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

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
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<tr>
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<td>41.8</td>
<td>232</td>
<td>42.2</td>
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<td>41.7</td>
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<td>25.3</td>
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<td>25.2</td>
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<td>429.mcf</td>
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<td>462.libquantum</td>
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<td>471.omnetpp</td>
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<td>473.astar</td>
<td>190</td>
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<td>37.1</td>
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<tr>
<td>483.xalancbmk</td>
<td>88.6</td>
<td>77.9</td>
<td>88.5</td>
<td>77.9</td>
<td>90.2</td>
<td>76.5</td>
<td>80.0</td>
<td>86.3</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 CX2550M2 Thu Jun 30 12:03:38 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 E5-2697A v4 @ 2.60GHz
2 "physical id"s (chips)
64 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
Continued on next page
```

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Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.
  cpu cores : 16
  siblings : 32
  physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
  cache size : 40960 KB

From /proc/meminfo
MemTotal: 264383060 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:
(8d714a0) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jun 30 12:02 last=5

SPEC is set to: /home/SPECcpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 890G 47G 843G 6% /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 03/17/2016
Memory:
Fujitsu
PRIMERGY CX2550 M2, Intel Xeon E5-2697A v4, 2.60 GHz

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Platform Notes (Continued)
16x Hyundai Electronics (Hynix) HMA42GR7AFR4N-UH 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 = "32"

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
SPEC CINT2006 Result

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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 -m64 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

C++ benchmarks (except as noted below):
icc -m64 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

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 -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
## SPEC CINT2006 Result

### Fujitsu

**PRIMERGY CX2550 M2, Intel Xeon E5-2697A v4, 2.60 GHz**

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- **Software Availability:** Sep-2015

### 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:
- `basepeak = yes`

#### 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)
- `–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:
- `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`

The flags files that were used to format this result can be browsed at:

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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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For other inquiries, please contact webmaster@spec.org.

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