Fujitsu

PRIMERGY RX2530 M2, Intel Xeon E5-2650 v4, 2.20 GHz

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

CPU Name: Intel Xeon E5-2650 v4
CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz
CPU MHZ: 2200
FPU: Integrated
CPU(s) enabled: 24 cores, 2 chips, 12 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: 30 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

SPECint®2006 = 60.1
SPECint_base2006 = 57.7
Fujitsu
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RESULTS

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

Results Table

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<tr>
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<td>64.6</td>
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<td>71.3</td>
<td>96.8</td>
<td>71.3</td>
<td>96.6</td>
<td>71.4</td>
</tr>
</tbody>
</table>

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 Snooz = Disabled, Home Snoop Dir OSB = Enabled
CPU C1E Support = Disabled
Sysinfo program /home/SPECcpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a2859932ceab81e28219e1
running on RX2530M2 Wed Apr 6 09:32:06 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 E5-2650 v4@ 2.20GHz
2 "physical id"s (chips)
48 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The Continued on next page
SPEC CINT2006 Result

Fujitsu
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Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
cpu cores : 12
siblings : 24
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
cache size : 30720 KB

From /proc/meminfo
MemTotal: 264516224 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 Apr 6 09:26 last=5

SPEC is set to: /home/SPECcpu2006

filesystem type size Used Avail Use% mounted on
/dev/md126p1 xfs 391G 88G 303G 23% /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 R1.6.0 for D3279-B1x
03/11/2016
Memory:

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## SPEC CINT2006 Result

**Fujitsu**

PRIMERGY RX2530 M2, Intel Xeon E5-2650 v4, 2.20 GHz

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### Platform Notes (Continued)

16x Hynix Semiconductor HMA42GR7AFR4N-UH 16 GB 2 rank 2400 MHz
8x NO DIMM NO DIMM

(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 = "24"

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)

### 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`

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SPEC CINT2006 Result

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| SPECint2006 | 60.1 |
| SPECint_base2006 | 57.7 |

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_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:

Continued on next page
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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:** `basepeak = yes`

- **429.mcf:** `-xCORE-AVX2` `-ipo` `-O3` `-no-prec-div` `-parallel`  
  `-opt-prefetch` `-auto-p32`

- **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`

#### Peak Other Flags

- **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`

- **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

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-HSW-RevA.20160517.xml

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