Fujitsu
PRIMEQUEST 3800B, Intel Xeon Platinum 8153, 2.00GHz

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

Copies: 0 10 20 30 40 50 60 70 80 90 100
SPECint_rate_base2006 = 5700

SPECint_rate2006 = Not Run

Hardware
CPU Name: Intel Xeon Platinum 8153
CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz: 2000
FPU: Integrated
CPU(s) enabled: 128 cores, 8 chips, 16 cores/chip, 2 threads/core
CPU(s) orderable: 2,4,6,8 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 1 MB I+D on chip per core
L3 Cache: 22 MB I+D on chip per chip
Other Cache: None
Memory: 1536 GB (96 x 16 GB 2Rx4 PC4-2666V-R)
Disk Subsystem: 768 GB tmpfs
Other Hardware: 1 x SAS HDD, 600 GB, 10.5K RPM, used for swap

Software
Operating System: SUSE Linux Enterprise Server 12 SP2 4.4.21-69-default
Compiler: C/C++: Version 18.0.0.128 of Intel C/C++ Compiler for Linux
Auto Parallel: No
File System: tmpfs
System State: Run level 3 (multi-user)
Base Pointers: 32-bit
Peak Pointers: Not Applicable
Other Software: Microquill SmartHeap V10.2
SPEC CINT2006 Result

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Test date: Nov-2017
Hardware Availability: Jul-2017
Software Availability: Sep-2017

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
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<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<tbody>
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<td>400.perlbench</td>
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<td>471.omnetpp</td>
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<td>502</td>
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<td>3130</td>
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</tr>
<tr>
<td>483.xalancbmk</td>
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<td>253</td>
<td>6950</td>
<td>253</td>
<td>6950</td>
<td></td>
<td></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"
Set Kernel Boot Parameter : nohz_full=1-255 isolcpus=1-255
Set CPU frequency governor to maximum performance with:
cupower -c all frequency-set -g performance
Set tmpfs filesystem with:
mkdir /home/memory
mount -t tmpfs -o size=768g, rw tmpfs /home/memory
Process tuning settings:
echo 10000000 > /proc/sys/kernel/sched_min_granularity_ns
echo 15000000 > /proc/sys/kernel/sched_wakeup_granularity_ns
echo 1 > /proc/sys/kernel/numa_balancing
echo always > /sys/kernel/mm/transparent_hugepage/enabled
cpu idle state set with:
cupower idle-set -d 2
cupower idle-set -d 3
set affinity of rcu threads to the cpu0:
for i in `pgrep rcu`; do taskset -pc 0 $i; done
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**Platform Notes**

BIOS configuration:
- Intel Virtualization Technology = Disabled
- HWPM Support = Disabled
- DCU Streamer Prefetcher = Disabled
- Stale AtoS = Enabled
- LLC dead line alloc = Disabled
- Sub NUMA Clustering = Enabled
- Fan Control = Full

Sysinfo program /home/memory/speccpu/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-k55j Wed Nov 8 06:21:00 2017

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

```plaintext
model name : Intel(R) Xeon(R) Platinum 8153 CPU @ 2.00GHz
8 "physical id"s (chips)
256 "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 : 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
physical 2: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 3: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 4: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 5: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 6: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 7: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
```

cache size : 22528 KB

From /proc/meminfo

```plaintext
MemTotal: 1583837096 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

From /etc/*release* /etc/*version*

```plaintext
SuSE-release:
SuSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 2
# 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.
```

Continued on next page
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**Platform Notes (Continued)**

```
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp2"

uname -a:
(9464f67) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Nov 8 06:03

SPEC is set to: /home/memory/speccpu

Filesystem     Type   Size  Used Avail Use% Mounted on
tmpfs          tmpfs  768G  9.7G  759G   2% /home/memory

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 V1.0.0.0 R1.21.0 for D3858-A1x            09/15/2017

Memory:
45x Hynix HMA42GR7BJR4N-VK 16 GB 2 rank 2666 MHz
51x Samsung M393A2G40EB2-CTD 16 GB 2 rank 2666 MHz

(End of data from sysinfo program)
```

**General Notes**

Environment variables set by runspec before the start of the run:

```
LD_LIBRARY_PATH = "/home/memory/speccpu/icc2018lib/ia32:/home/memory/speccpu/icc2018lib/intel64"
```

Binaries compiled on a system with 2x Intel Xeon Platinum 8180 CPU + 384GB RAM
memory using SUSE Linux Enterprise Server 12 SP2

Transparent Huge Pages enabled with:

```
echo always > /sys/kernel/mm/transparent_hugepage/enabled
```

Filesystem page cache cleared with:

```
sync; echo 3 > /proc/sys/vm/drop_caches
```

runspec command invoked through numactl i.e.:
```
umactl --interleave=all runspec <etc>
```

**Base Compiler Invocation**

```
C benchmarks:
icc -m32 -L/opt/intel/compilers_and_libraries_2018.0.128/linux/compiler/lib/ia32

C++ benchmarks:
icpc -m32 -L/opt/intel/compilers_and_libraries_2018.0.128/linux/compiler/lib/ia32
```
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### Base Portability Flags

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### Base Optimization Flags

**C benchmarks:**

- `-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch`
- `-qopt-mem-layout-trans=3`

**C++ benchmarks:**

- `-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch`
- `-qopt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh10.2 -lsmartheap`

### Base Other Flags

**C benchmarks:**

- `403.gcc: -Dalloca=_alloca`

---

### Other Flags

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


You can also download the XML flags sources by saving the following links:

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

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