Dell Inc.

PowerEdge R740 (Intel Xeon Gold 5119T, 1.90 GHz)

| Test date: | Sep-2017 |
| Test sponsor: | Dell Inc. |
| Hardware Availability: | Sep-2017 |
| Software Availability: | Nov-2016 |

**SPECint** = Not Run

**SPECint_rate_base2006** = 1180

### CPU2006 license
55

### Test by
Dell Inc.

### Hardware

<table>
<thead>
<tr>
<th>Component</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon Gold 5119T</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.20 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>1900</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>28 cores, 2 chips, 14 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1,2 chip</td>
</tr>
<tr>
<td>Primary Cache</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache</td>
<td>1 MB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache</td>
<td>19.25 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>384 GB (24 x 16 GB 2Rx8 PC4-2666V-R, running at 2400 MHz)</td>
</tr>
<tr>
<td>Disk Subsystem</td>
<td>1 x 960 GB SATA SSD</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Component</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>SUSE Linux Enterprise Server 12 SP2</td>
</tr>
<tr>
<td>Compiler</td>
<td>C/C++: Version 17.0.3.191 of Intel C/C++ Compiler for Linux</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>No</td>
</tr>
<tr>
<td>File System</td>
<td>xfs</td>
</tr>
<tr>
<td>System State</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers</td>
<td>32-bit</td>
</tr>
<tr>
<td>Peak Pointers</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other Software</td>
<td>Microquill SmartHeap V10.2</td>
</tr>
</tbody>
</table>

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SPECint_rate_base2006 = 1180
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SPECint_rate2006 =  Not Run
SPECint_rate_base2006 = 1180

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>56</td>
<td>645</td>
<td>848</td>
<td>641</td>
<td>854</td>
<td>640</td>
<td>854</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>56</td>
<td>1022</td>
<td>529</td>
<td>1031</td>
<td>524</td>
<td>1040</td>
<td>520</td>
</tr>
<tr>
<td>403.gcc</td>
<td>56</td>
<td>502</td>
<td>898</td>
<td>504</td>
<td>895</td>
<td>502</td>
<td>898</td>
</tr>
<tr>
<td>429.mcf</td>
<td>56</td>
<td>291</td>
<td>1750</td>
<td>291</td>
<td>1760</td>
<td>290</td>
<td>1760</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>56</td>
<td>810</td>
<td>726</td>
<td>810</td>
<td>725</td>
<td>810</td>
<td>726</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>56</td>
<td>303</td>
<td>1720</td>
<td>305</td>
<td>1710</td>
<td>303</td>
<td>1730</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>56</td>
<td>868</td>
<td>781</td>
<td>867</td>
<td>781</td>
<td>868</td>
<td>781</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>56</td>
<td>98.4</td>
<td>11800</td>
<td>98.4</td>
<td>11800</td>
<td>98.3</td>
<td>11800</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>56</td>
<td>917</td>
<td>1350</td>
<td>916</td>
<td>1350</td>
<td>920</td>
<td>1350</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>56</td>
<td>537</td>
<td>652</td>
<td>538</td>
<td>651</td>
<td>537</td>
<td>652</td>
</tr>
<tr>
<td>473.astar</td>
<td>56</td>
<td>574</td>
<td>685</td>
<td>576</td>
<td>682</td>
<td>575</td>
<td>684</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>56</td>
<td>261</td>
<td>1480</td>
<td>261</td>
<td>1480</td>
<td>262</td>
<td>1470</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 settings:
Sub NUMA Cluster enabled
Virtualization Technology disabled
System Profile set to Custom
CPU Performance set to Maximum Performance
C States set to Autonomous
C1E disabled
Uncore Frequency set to Dynamic
Energy Efficiency Policy set to Performance
Memory Patrol Scrub disabled
Logical Processor enabled
CPU Interconnect Bus Link Power Management disabled
PCI ASPM L1 Link Power Management disabled
Sysinfo program /root/cpu2006-1.2_ic17u3/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux-wwko Thu Sep 14 10:41:09 2017

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Dell Inc.  
PowerEdge R740 (Intel Xeon Gold 5119T, 1.90 GHz)  

**SPEC CINT2006 Result**  

**SPECint_rate2006 = Not Run**  
**SPECint_rate_base2006 = 1180**

**CPU2006 license:** 55  
**Test date:** Sep-2017  
**Test sponsor:** Dell Inc.  
**Hardware Availability:** Sep-2017  
**Tested by:** Dell Inc.  
**Software Availability:** Nov-2016

### Platform Notes (Continued)

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) Gold 5119T CPU @ 1.90GHz  
2 "physical id"s (chips)  
56 "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 : 14  
siblings : 28  
physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14  
physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14  
cache size : 19712 KB

From `/proc/meminfo`  
MemTotal: 394867840 kB  
HugePages_Total: 0  
Hugepagesize: 2048 kB

`/usr/bin/lsb_release -d`  
SUSE Linux Enterprise Server 12 SP2

From `/etc/*release* /etc/*version*`  
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.

os-release:  
NAME="SLES"  
VERSION="12-SP2"  
VERSION_ID="12.2"  
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  
SPEC is set to: /root/cpu2006-1.2_ic17u3  
Additional information from dmidecode:  
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Platform Notes (Continued)

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 Dell Inc. 1.0.7 07/01/2017
Memory:
24x 00AD00B300AD HMA82GR7AFR8N-VK 16 GB 2 rank 2666 MHz, configured at 2400 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/root/cpu2006-1.2_ic17u3/lib/ia32:/root/cpu2006-1.2_ic17u3/lib/intel64:/root/cpu2006-1.2_ic17u3/sh10.2"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.2
Transparent Huge Pages enabled by default
Filesystem page cache cleared with:
shell invocation of 'sync; echo 3 > /proc/sys/vm/drop_caches' prior to run
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

Base Compiler Invocation

C benchmarks:
icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

C++ benchmarks:
icpc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

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

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**Base Portability Flags (Continued)**

473.astar: -D\_FILE\_OFFSET\_BITS=64
483.xalancbmk: -D\_FILE\_OFFSET\_BITS=64 -DSPEC\_CPU\_LINUX

**Base Optimization Flags**

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

C++ benchmarks:
-xCORE-AVX2 -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

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.xml

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

Tested with SPEC CPU2006 v1.2.
Originally published on  3 October 2017.

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