**Dell Inc.**

**PowerEdge T630 (Intel Xeon E5-2660 v4, 2.00 GHz)**

<table>
<thead>
<tr>
<th>Benchmark</th>
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**CPU2006 license:** 55

**Test date:** Jan-2017

**Test sponsor:** Dell Inc.

**Hardware Availability:** Jun-2016

**Tested by:** Dell Inc.

**Software Availability:** Sep-2016

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**Hardware**

- **CPU Name:** Intel Xeon E5-2660 v4
- **CPU Characteristics:** Intel Turbo Boost Technology up to 2.40 GHz
- **CPU MHz:** 2000
- **FPU:** Integrated
- **CPU(s) enabled:** 28 cores, 2 chips, 14 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:** 35 MB I+D on chip per chip
- **Other Cache:** None
- **Memory:** 256 GB (16 x 16 GB 2Rx8 PC4-2400T-R)
- **Disk Subsystem:** 300 GB 10000 RPM SAS
- **Other Hardware:** None

**Software**

- **Operating System:** SUSE Linux Enterprise Server 12 SP1 3.12.48-1-default
- **Compiler:** C/C++: Version 17.0.0.098 of Intel C/C++ Compiler 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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SPECint_rate2006 = Not Run

SPECint_rate_base2006 = 1110

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Results Table

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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:
Snoop Mode set to Cluster on Die
Virtualization Technology disabled
System Profile set to Custom
CPU Performance set to Maximum Performance
C States set to Autonomous
C1E disabled
Energy Efficient Turbo enabled
Uncore Frequency set to Dynamic
Energy Efficiency Policy set to Balanced Performance
Memory Patrol Scrub disabled
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on linux Fri Jan 20 10:09:17 2017

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
## Dell Inc. PowerEdge T630 (Intel Xeon E5-2660 v4, 2.00 GHz)

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### Platform Notes (Continued)

http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From `/proc/cpuinfo`
- model name : Intel(R) Xeon(R) CPU E5-2660 v4@ 2.00GHz  
  - 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 : 17920 KB

From `/proc/meminfo`
- MemTotal: 264436488 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:
  Linux linux 3.12.48-1-default #1 SMP Fri Sep 18 13:49:47 UTC 2015 (a83966d)
x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Jan 20 09:29
```

**Warning:** Use caution when you interpret this section. The 'dmidecode' program

Continued on next page
Platform Notes (Continued)

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. 2.3.4 11/09/2016
Memory:
1x 00AD0B300AD HMA82GR7MFR8N-UH 16 GB 2 rank 2400 MHz
9x 00AD063200AD HMA82GR7MFR8N-UH 16 GB 2 rank 2400 MHz
6x 00CE0B300CE M393A2K43BB1-CRC 16 GB 2 rank 2400 MHz
8x Not Specified Not Specified

(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/lib/32:/root/cpu2006-1.2/lib/64:/root/cpu2006-1.2/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:
echo 1> /proc/sys/vm/drop_caches
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

Continued on next page
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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.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.xml