Dell Inc.

PowerEdge T430 (Intel Xeon E5-2603 v4, 1.70 GHz)

SPECint_rate2006 = 328
SPECint_rate_base2006 = 313

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

Dell Inc.
PowerEdge T430 (Intel Xeon E5-2603 v4, 1.70 GHz)

SPECint_rate2006 = 328
SPECint_rate_base2006 = 313

CPU Name: Intel Xeon E5-2603 v4
CPU Characteristics:
CPU MHz: 1700
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip
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: 15 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (8 x 16 GB 2Rx8 PC4-2400T-R, running at 1866 MHz)
Disk Subsystem: 1 x 250 GB 7200 RPM SATA HDD
Other Hardware: None

Operating System: SUSE Linux Enterprise Server 12 SP1 3.12.49-11-default
Compiler: C/C++: Version 16.0.2.181 of Intel C++ Studio XE for Linux
Auto Parallel: No
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V10.2
Dell Inc.

PowerEdge T430 (Intel Xeon E5-2603 v4, 1.70 GHz)

SPECint_rate2006 = 328
SPECint_rate_base2006 = 313

CPU2006 license: 55
Test sponsor: Dell Inc.
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Results Table

<table>
<thead>
<tr>
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<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<td>471.omnetpp</td>
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<tr>
<td>483.xalancbmk</td>
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<td>446</td>
<td>185</td>
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<td>12</td>
<td>186</td>
<td>446</td>
<td>185</td>
<td>448</td>
<td>185</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:
- Snoop Mode set to Cluster on Die
- Virtualization Technology disabled
- System Profile set to custom
- CPU Power Management set to Hardware P States
- C States set to Autonomous
- C1E disabled
- Energy Efficient Turbo disabled
- Uncore Frequency set to Dynamic
- Energy Efficiency Policy set to Balanced Performance
- Memory Patrol Scrub disabled
- Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on linux-iq8 Sat May 21 16:01:51 2016

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 T430 (Intel Xeon E5-2603 v4, 1.70 GHz) SPECint_rate2006 = 328 SPECint_rate_base2006 = 313

CPU2006 license: 55 Test sponsor: Dell Inc. Test date: May-2016
Tested by: Dell Inc. Hardware Availability: Jun-2016

Software Availability: Dec-2015

Platform Notes (Continued)

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

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E5-2603 v4 @ 1.70GHz
  2 "physical id"s (chips)
  12 "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 : 6
siblings : 6
  physical 0: cores 0 1 2 3 4 5
  physical 1: cores 0 1 2 3 4 5
cache size : 15360 KB

From /proc/meminfo
  MemTotal: 132054328 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="SUSE"
    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 May 21 15:51

SPEC is set to: /root/cpu2006-1.2
  Filesystem Type  Size  Used Avail Use% Mounted on
/dev/sda2 ext4 221G 8.6G 212G 4% /

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program continued on next page
SPEC CINT2006 Result

Dell Inc.
PowerEdge T430 (Intel Xeon E5-2603 v4, 1.70 GHz)  

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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. 2.0.1 04/11/2016
Memory:
  4x 00AD063200AD HMA82GR7MFR8N-UH 16 GB 2 rank 2400 MHz, configured at 1866
    MHz
  4x 00CE00B300CE M393A2K43BB1-CRC 16 GB 2 rank 2400 MHz, configured at 1866
    MHz
  4x 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/libs/32:/root/cpu2006-1.2/libs/64:/root/cpu2006-1.2/sh"

Binaries compiled on a system with 1x Intel Core i7-4790K CPU + 32GB
memory using RedHat EL 7.2 glibc 2.17
Transparent Huge Pages enabled with:
  echo always > /sys/kernel/mm/transparent_hugepage/enabled
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_2016/linux/compiler/lib/ia32_lin
C++ benchmarks:
  icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

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
SPEC CINT2006 Result

Dell Inc.

PowerEdge T430 (Intel Xeon E5-2603 v4, 1.70 GHz)

| SPECint_rate2006 = 328 |
| SPECint_rate_base2006 = 313 |

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

Test date: May-2016  
Hardware Availability: Jun-2016  
Software Availability: Dec-2015

Base Portability Flags (Continued)

464.h264ref: -D_FILE_OFFSET_BITS=64
471.omnetpp: -D_FILE_OFFSET_BITS=64
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 -opt-prefetch
-opt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

400.perlbench: icc -m64
401.bzip2: icc -m64
456.hmmer: icc -m64
458.sjeng: icc -m64

C++ benchmarks:
icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

Peak Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64

Continued on next page
Peak Portability Flags (Continued)

- 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 -DSPEC_CPU_LP64
- 458.sjeng: -D_FILE_OFFSET_BITS=64
- 462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
- 462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
- 464.h264ref: -D_FILE_OFFSET_BITS=64
- 471.omnetpp: -D_FILE_OFFSET_BITS=64
- 473.astar: -D_FILE_OFFSET_BITS=64
- 483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

- 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 2) -prof-use(pass 2) -auto-ilp32

- 401.bzip2: -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 2) -prof-use(pass 2) -opt-prefetch
- auto-ilp32 -ansi-alias

- 403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div

- 429.mcf: basepeak = yes

- 445.gobmk: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
- prof-use(pass 2) -par-num-threads=1(pass 1) -ansi-alias
- opt-mem-layout-trans=3

- 456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

- 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
- auto-ilp32

- 462.libquantum: basepeak = yes

- 464.h264ref: -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) -unroll2
- -ansi-alias

C++ benchmarks:
SPEC CINT2006 Result

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Peak Optimization Flags (Continued)

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen:threadsafepass 1
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -ansi-alias
-opt-ra-region-strategy=block -Wl,-z,muldefs
-L/sh -lsmartheap

473.astar: basepeak = yes
483.xalancbmk: basepeak = yes

Peak 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-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/Dell-Platform-Settings-V1.2-revD.20151006.xml

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