Lenovo Group Limited
Lenovo System x3850 X6
(Intel Xeon E7-8894 v4, 2.40 GHz)
SPECI2006 = Not Run
SPECI2006_base2006 = 70.1

CPU2006 license: 9017
Test sponsor: Lenovo Group Limited
Tested by: Lenovo Group Limited

Hardware
CPU Name: Intel Xeon E7-8894 v4
CPU Characteristics: Intel Turbo Boost Technology up to 3.40 GHz
CPU MHz: 2400
CPU(s) enabled: 96 cores, 4 chips, 24 cores/chip
CPU(s) orderable: 2 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core
L3 Cache: 60 MB I+D on chip per chip
Other Cache: None
Memory: 512 GB (32 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
Disk Subsystem: 1 x 800 GB SATA SSD
Other Hardware: None

Software
Operating System: SUSE Linux Enterprise Server 12 SP1 (x86_64)
Compiler: C/C++: Version 17.0.0.098 of Intel C/C++ Compiler for Linux
Auto Parallel: Yes
File System: btrfs
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: Not Applicable
Other Software: Microquill SmartHeap V10.2
Lenovo Group Limited

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SPECint_base2006 = 70.1

CPU2006 license: 9017
Test sponsor: Lenovo Group Limited
Tested by: Lenovo Group Limited

Test date: Jan-2017
Hardware Availability: Feb-2017
Software Availability: Sep-2016

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<tbody>
<tr>
<td>400.perlbench</td>
<td>250</td>
<td>39.0</td>
<td></td>
<td></td>
<td>251</td>
<td>38.9</td>
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<tr>
<td>401.bzip2</td>
<td>392</td>
<td>24.6</td>
<td>394</td>
<td>24.5</td>
<td></td>
<td></td>
<td>393</td>
<td>24.5</td>
</tr>
<tr>
<td>403.gcc</td>
<td>216</td>
<td>37.3</td>
<td>216</td>
<td>37.2</td>
<td></td>
<td></td>
<td>217</td>
<td>37.2</td>
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<td>429.mcf</td>
<td><strong>149</strong></td>
<td><strong>61.1</strong></td>
<td>152</td>
<td>60.2</td>
<td>148</td>
<td>61.7</td>
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<tr>
<td>445.gobmk</td>
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<td><strong>29.5</strong></td>
<td>355</td>
<td>29.5</td>
<td>356</td>
<td>29.5</td>
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<td></td>
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<tr>
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<td>83.3</td>
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<td>83.3</td>
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<td>33.0</td>
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<td></td>
<td>367</td>
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<td>10900</td>
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<td><strong>387</strong></td>
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<td>471.omnetpp</td>
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<td>50.4</td>
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<td>49.5</td>
<td>129</td>
<td>48.6</td>
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<tr>
<td>473.astar</td>
<td><strong>205</strong></td>
<td><strong>34.2</strong></td>
<td>204</td>
<td>34.4</td>
<td>205</td>
<td>34.2</td>
<td></td>
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</tr>
<tr>
<td>483.xalancbmk</td>
<td>90.8</td>
<td>76.0</td>
<td>91.8</td>
<td>75.2</td>
<td><strong>91.2</strong></td>
<td><strong>75.6</strong></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.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled

Platform Notes

BIOS configuration:
Memory Mode set to Independent
Operating Mode set to Maximum Performance
Hyper-Threading set to Disable
Sysinfo program /home/cpu2006-1.2-ic17.0/config/sysinfo.rev6993
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
running on Draco Mon Jan 23 20:52:52 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
model name : Intel(R) Xeon(R) CPU E7-8894 v4 @ 2.40GHz
  4 "physical id"s (chips)
  96 "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 : 24
siblings : 24

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CPU2006 license: 9017
Test sponsor: Lenovo Group Limited
Tested by: Lenovo Group Limited

Platform Notes (Continued)

physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
27 28 29
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
27 28 29
physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
27 28 29
physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26
27 28 29
cache size : 61440 KB

From /proc/meminfo
MemTotal: 529159192 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

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:
  Linux Draco 3.12.49-11-default #1 SMP Wed Nov 11 20:52:43 UTC 2015 (8d714a0)
x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Jan 23 20:50

SPEC is set to: /home/cpu2006-1.2-ic17.0
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 btrfs 744G 6.9G 735G 1% /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 LENOVO -(A9E135LUS-3.11)- 11/18/2016
Memory:
  26x Hynix HMA42GR7MFR4N-TF 16 GB 2 rank 2133 MHz, configured at 1600 MHz
  6x Hynix HMA42GR7MFR4N-TFD 16 GB 2 rank 2133 MHz, configured at 1600 MHz
Continued on next page
Lenovo Group Limited

Lenovo System x3850 X6
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SPECint2006 = Not Run
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CPU2006 license: 9017
Test sponsor: Lenovo Group Limited
Tested by: Lenovo Group Limited

Test date: Jan-2017
Hardware Availability: Feb-2017
Software Availability: Sep-2016

Platform Notes (Continued)

64x NO DIMM Unknown

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/cpu2006-1.2-icl7.0/libs/32:/home/cpu2006-1.2-icl7.0/libs/64:/home/cpu2006-1.2-icl7.0/sh10.2"
OMP_NUM_THREADS = "96"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.2

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 -qopt-prefetch -auto-p32
C++ benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
  -Wl,-z,muldefs -L/sh10.2 -lsmartheap64

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
Lenovo Group Limited

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SPEC CINT2006 Result

SPECint2006 = Not Run
SPECint_base2006 = 70.1

CPU2006 license: 9017
Test date: Jan-2017
Test sponsor: Lenovo Group Limited
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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
http://www.spec.org/cpu2006/flags/Lenovo-Platform-Flags-V1.2-BDW-D.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
http://www.spec.org/cpu2006/flags/Lenovo-Platform-Flags-V1.2-BDW-D.xml

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Feb  7 17:01:00 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 7 February 2017.