Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
ProLiant DL580 Gen9  
(2.80 GHz, Intel Xeon E7-8891 v4)

**SPECint®2006** = Not Run  
**SPECint_base2006** = 71.2

CPU2006 license: 3  
Test sponsor: HPE  
Tested by: HPE

**Software**

- Operating System: SUSE Linux Enterprise Server 12 SP1 (x86_64)  
  Kernel 3.12.49-11-default  
- Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux  
- Auto Parallel: Yes  
- File System: xfs  
- System State: Run level 3 (multi-user)  
- Base Pointers: 32/64-bit  
- Peak Pointers: 32/64-bit  
- Other Software: Microquill SmartHeap V10.2

**Hardware**

- CPU Name: Intel Xeon E7-8891 v4  
- CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz  
- CPU MHz: 2800  
- FPU: Integrated  
- CPU(s) enabled: 40 cores, 4 chips, 10 cores/chip  
- CPU(s) orderable: 2,4 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: 60 MB I+D on chip per chip  
- Other Cache: None  
- Memory: 512 GB (32 x 16 GB 2Rx4 PC4-2400T-R, running at 1600 MHz)  
- Disk Subsystem: 1 x 800 GB NVMe PCIe SSD, RAID 0  
- Other Hardware: DL580 Gen9 NVMe SSD Express Bay Enablement Kit
SPEC CINT2006 Result

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

Results Table

<table>
<thead>
<tr>
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</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:
HP Power Profile set to Custom
HP Power Regulator to HP Static High Performance Mode
Minimum Processor Idle Power Core C-State set to C6 State
Minimum Processor Idle Power Package C-State set to Package C6 (retention) State
Energy/Performance Bias set to Maximum Performance
QPI Snoop Configuration set to Home Snoop
Collaborative Power Control set to Disabled
Thermal Configuration set to Maximum Cooling
Processor Power and Utilization Monitoring set to Disabled
Intel Hyperthreading set to Disabled

Sysinfo program /home/intel_binary/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on linux-vi0i Sun May 15 14:15:51 2016

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

Continued on next page
SPEC CINT2006 Result

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CPU2006 license: 3
Test sponsor: HPE
Tested by: HPE

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

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Platform Notes (Continued)

model name : Intel(R) Xeon(R) CPU E7-8891 v4 @ 2.80GHz
4 "physical id"s (chips)
40 "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 : 10
siblings : 10
physical 0: cores 5 9 10 11 13 18 24 26 28 29
physical 1: cores 5 9 10 11 13 18 24 26 28 29
physical 2: cores 5 9 10 11 13 18 24 26 28 29
physical 3: cores 5 9 10 11 13 18 24 26 28 29
cache size : 61440 KB

From /proc/meminfo
MemTotal: 529321304 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 linux-vi0i 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 May 15 13:56

SPEC is set to: /home/intel_binary/cpu2006
  Filesystem Type Size Used Avail Use% Mounted on
  /dev/nvmeOnp4 xfs 703G 23G 681G 4% /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.

Continued on next page
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Platform Notes (Continued)

BIOS HP U17 04/26/2016
Memory:
  64x UNKNOWN NOT AVAILABLE
  32x UNKNOWN NOT AVAILABLE 16 GB 2 rank 2400 MHz, configured at 1600 MHz

(End of data from sysinfo program)
Regarding the sysinfo display about the memory installed, the correct amount of memory is 512 GB and the dmidecode description should have one line reading as:
32x UNKNOWN NOT AVAILABLE 16 GB 2 rank 2400 MHz, configured at 1600 MHz

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/intel_binary/cpu2006/libs/32:/home/intel_binary/cpu2006/libs/64:/home/intel_binary/cpu2006/sh"
OMP_NUM_THREADS = "40"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1

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
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### Base Optimization Flags

C benchmarks:
- -xCORE-AVX2  
  -ipo -O3  
  -no-prec-div  
  -parallel -opt-prefetch  
  -auto-p32

C++ benchmarks:
- -xCORE-AVX2  
  -ipo -O3  
  -no-prec-div  
  -opt-prefetch  
  -auto-p32  
  -Wl,-z,muldefs -L/sh -lsmartheap64

### Base Other Flags

C benchmarks:
- 403.gcc: -Dalloca=_alloca

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:

- [http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-HSW-revE.xml](http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-HSW-revE.xml)

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

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