SPEC® CINT2006 Result

Hewlett-Packard Company

ProLiant DL580 Gen9
(2.10 GHz, Intel Xeon E7-4830 v3)

SPECint®2006 = 50.9
SPECint_base2006 = 48.7

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

CPU Name: Intel Xeon E7-4830 v3
CPU Characteristics: Intel Turbo Boost Technology up to 2.70 GHz
CPU MHz: 2100
FPU: Integrated
CPU(s) enabled: 48 cores, 4 chips, 12 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: 30 MB I+D on chip per chip
Other Cache: None
Memory: 512 GB (32 x 16 GB 2Rx4 PC4-2133P-R, running at 1333 MHz)
Disk Subsystem: 2 x 400 GB SAS SSD, RAID 1
Other Hardware: None

Operating System: SUSE Linux Enterprise Server 12 (x86_64)
Compiler: C/C++: Version 15.0.0.090 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 V10.0

Software

Hardware
Hewlett-Packard Company
ProLiant DL580 Gen9
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Results Table

<table>
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<tr>
<th>Benchmark</th>
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<th>Ratio</th>
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<td>140</td>
<td>49.4</td>
<td>139</td>
<td>49.7</td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The config file option 'submit' was used.

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:
  Intel Hyperthreading set to Disabled
  HP Power Profile set to Custom
  HP Power Regulator to HP Static High Performance Mode
  Minimum Processor Idle Power Core State set to C6 State
  Energy/Performance Bias set to Maximum Performance
  Collaborative Power Control set to Disabled
  Thermal Configuration set to Maximum Cooling
  Processor Power and Utilization Monitoring set to Disabled
  Memory Refresh Rate set to 1x Refresh
Sysinfo program /home/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on dl580gen9jks Thu Jun 11 16:47:06 2015

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

Continued on next page
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CPU2006 license: 3
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Platform Notes (Continued)

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E7-4830 v3 @ 2.10GHz
  4 "physical id"s (chips)
  48 "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 : 12
    siblings : 12
    physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
    physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
    physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13
    physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13
  cache size : 30720 KB

From /proc/meminfo
  MemTotal:       529320616 kB
  HugePages_Total:       0
  Hugepagesize:       2048 kB

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

From /etc/*release* /etc/*version*
  SuSE-release:
    SUSE Linux Enterprise Server 12 (x86_64)
    VERSION = 12
    PATCHLEVEL = 0
    # 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"
    VERSION_ID="12"
    PRETTY_NAME="SUSE Linux Enterprise Server 12"
    ID="sles"
    ANSI_COLOR="0;32"
    CPE_NAME="cpe:/o:suse:sles:12"

uname -a:
  Linux dl580gen9jks 3.12.28-4-default #1 SMP Thu Sep 25 17:02:34 UTC 2014
    (9879bd4) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jun 11 16:46 last=5

SPEC is set to: /home/cpu2006
  Filesystem      Type  Size  Used Avail Use% Mounted on
  /dev/sda4       xfs   331G  5.9G  325G   2% /home

Additional information from dmidecode:

Continued on next page
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CPU2006 license: 3
Test date: Jun-2015
Test sponsor: Hewlett-Packard Company
Hardware Availability: Jun-2015
Tested by: Hewlett-Packard Company
Software Availability: Oct-2014

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 HP U17 03/13/2015
Memory:
32x HP 752369-081 16 GB 2 rank 2133 MHz, configured at 1333 MHz
64x UNKNOWN NOT AVAILABLE

(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 HP 752369-081 16 GB 2 rank 2133 MHz, configured at 1333 MHz

General Notes
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"
OMP_NUM_THREADS = "48"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB
memory using RedHat EL 7.0

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
### SPEC CINT2006 Result

**Hewlett-Packard Company**

ProLiant DL580 Gen9  
(2.10 GHz, Intel Xeon E7-4830 v3)

| SPECint2006 = | 50.9 |
| SPECint_base2006 = | 48.7 |

**CPU2006 license:** 3  
**Test date:** Jun-2015  
**Test sponsor:** Hewlett-Packard Company  
**Hardware Availability:** Jun-2015  
**Tested by:** Hewlett-Packard Company  
**Software Availability:** Oct-2014

### Base Portability Flags (Continued)

- 483.xalancbmk: --DSPEC_CPU_LP64 --DSPEC_CPU_LINUX

### 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

### Peak Compiler Invocation

**C benchmarks (except as noted below):**
- icc -m64

- 400.perlbench: icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

**C++ benchmarks (except as noted below):**
- icpc -m64

- 471.omnetpp: icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

### Peak Portability Flags

- 400.perlbench: --DSPEC_CPU_LINUX_I686  
- 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  
- 473.astar: --DSPEC_CPU_LP64
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ProLiant DL580 Gen9  
(2.10 GHz, Intel Xeon E7-4830 v3)  

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Peak Portability Flags (Continued)

483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench:  
-xCORE-AVX2(pass 2)  
-prof-gen(pass 1)  
-ipo(pass 2)  
-O3(pass 2)  
-no-prec-div(pass 2)  
-prof-use(pass 2)  
-opt-prefetch -ansi-alias

401.bzip2:  
-xCORE-AVX2(pass 2)  
-prof-gen(pass 1)  
-ipo(pass 2)  
-O3(pass 2)  
-no-prec-div -prof-use(pass 2)  
-auto-ilp32  
-opt-prefetch -ansi-alias

403.gcc:  
-xCORE-AVX2  
-ipo  
-O3  
-no-prec-div -inline-calloc  
-opt-malloc-options=3 -auto-ilp32

429.mcf:  
-xCORE-AVX2  
-ipo  
-O3  
-no-prec-div -parallel  
-opt-prefetch -auto-p32

445.gobmk: basepeak = yes

456.hmmer: basepeak = yes

458.sjeng:  
-xCORE-AVX2(pass 2)  
-prof-gen(pass 1)  
-ipo(pass 2)  
-O3(pass 2)  
-no-prec-div(pass 2)  
-prof-use(pass 2)  
-unroll4

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

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

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes
**SPEC CINT2006 Result**

**Hewlett-Packard Company**
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**SPECint2006 =** 50.9  
**SPECint_base2006 =** 48.7

**Test date:** Jun-2015  
**Hardware Availability:** Jun-2015  
**Software Availability:** Oct-2014

**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-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-HSW-revE.html

You can also download the XML flags sources by saving the following links:

http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.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.

Tested with SPEC CPU2006 v1.2.  