## SPEC® CINT2006 Result

### Hewlett-Packard Company

#### ProLiant DL380p Gen8 (2.70 GHz, Intel Xeon E5-2697 v2)

**SPECint®2006 = 59.9**  
**SPECint_base2006 = 55.2**

**CPU2006 license:** 3  
**Test sponsor:** Hewlett-Packard Company  
**Tested by:** Hewlett-Packard Company  
**Test date:** Sep-2013  
**Hardware Availability:** Sep-2013  
**Software Availability:** Sep-2013

#### Hardware

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E5-2697 v2</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.50 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>2700</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>24 cores, 2 chips, 12 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1.2 chip</td>
</tr>
<tr>
<td>Primary Cache</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache</td>
<td>256 KB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache</td>
<td>30 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC)</td>
</tr>
<tr>
<td>Disk Subsystem</td>
<td>1 x 146 GB 15 K SAS, RAID 0</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
</tr>
</tbody>
</table>

#### Software

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>SUSE Linux Enterprise Server 11 SP3 (x86_64) Kernel version 3.0.76-0.11-default</td>
</tr>
<tr>
<td>Compiler</td>
<td>C++: Version 14.0.0.0.80 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>Yes</td>
</tr>
<tr>
<td>File System</td>
<td>ext3</td>
</tr>
<tr>
<td>System State</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Peak Pointers</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other Software</td>
<td>Microquill SmartHeap V10.0</td>
</tr>
</tbody>
</table>
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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>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>306</td>
<td>32.0</td>
<td>305</td>
<td>32.1</td>
<td>305</td>
<td>32.1</td>
<td>243</td>
<td>40.3</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>410</td>
<td>23.5</td>
<td>410</td>
<td>23.5</td>
<td>410</td>
<td>23.5</td>
<td>407</td>
<td>23.7</td>
</tr>
<tr>
<td>403.mcf</td>
<td>249</td>
<td>32.3</td>
<td>248</td>
<td>32.4</td>
<td>249</td>
<td>32.3</td>
<td>245</td>
<td>32.8</td>
</tr>
<tr>
<td>429.gcc</td>
<td>143</td>
<td>63.8</td>
<td>143</td>
<td>63.8</td>
<td>143</td>
<td>63.8</td>
<td>143</td>
<td>63.8</td>
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<tr>
<td>445.gobmk</td>
<td>436</td>
<td>24.1</td>
<td>436</td>
<td>24.1</td>
<td>437</td>
<td>24.0</td>
<td>382</td>
<td>27.5</td>
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<tr>
<td>456.hmmer</td>
<td>153</td>
<td>60.8</td>
<td>153</td>
<td>61.0</td>
<td>153</td>
<td>61.0</td>
<td>153</td>
<td>61.0</td>
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<tr>
<td>458.sjeng</td>
<td>410</td>
<td>29.5</td>
<td>411</td>
<td>29.4</td>
<td>411</td>
<td>29.5</td>
<td>403</td>
<td>30.0</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>5.30</td>
<td>3910</td>
<td>5.10</td>
<td>4070</td>
<td>5.70</td>
<td>3640</td>
<td>5.30</td>
<td>3910</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>484</td>
<td>45.8</td>
<td>485</td>
<td>45.6</td>
<td>486</td>
<td>45.5</td>
<td>378</td>
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<tr>
<td>471.omnetpp</td>
<td>171</td>
<td>36.5</td>
<td>176</td>
<td>35.6</td>
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<td>35.5</td>
<td>125</td>
<td>50.1</td>
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<tr>
<td>473.astar</td>
<td>219</td>
<td>32.0</td>
<td>219</td>
<td>32.0</td>
<td>219</td>
<td>32.0</td>
<td>219</td>
<td>32.0</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>118</td>
<td>58.3</td>
<td>119</td>
<td>58.2</td>
<td>122</td>
<td>56.5</td>
<td>118</td>
<td>58.3</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"
Reclaim mode enabled with:
  echo 1 > /proc/sys/vm/zone_reclaim_mode
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 --localalloc runspec <etc>

Platform Notes

BIOS Configuration:
  Intel Hyperthreading Options set to Disabled
HP Power Profile set to Maximum Performance
Minimum Processor Idle Power Core State set to C1E state
Minimum Processor Idle Power Package State set to Package C6 (retention) State
Energy/Performance Bias is set to Maximum Performance
Memory Power Savings Mode set to Maximum Performance
Thermal Configuration set to Maximum Cooling
Collaborative Power Control set to Disabled
Dynamic Power Capping Functionality set to Disabled
Processor Power and Utilization Monitoring set to Disabled
Memory Refresh Rate set to 1x

Sysinfo program /cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
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**Platform Notes (Continued)**

running on DL380p-Gen8-0YD Sun Sep 15 17:31:59 2013

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 E5-2697 v2 @ 2.70GHz  
- 2 "physical id"s (chips)  
- 24 "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  
  - cache size: 30720 KB

From /proc/meminfo

- MemTotal: 264512840 kB  
- HugePages_Total: 0  
- Hugepagesize: 2048 kB

From /usr/bin/lsb_release -d  
SUSE Linux Enterprise Server 11 (x86_64)

From /etc/*release* /etc/*version*  
SuSE-release:  
SUSE Linux Enterprise Server 11 (x86_64)  
VERSION = 11  
PATCHLEVEL = 3

uname -a:  
Linux DL380p-Gen8-0YD 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013  
(ccab990) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Sep 15 17:20 last=S

SPEC is set to: /cpu2006  
Filesystem Type Size Used Avail Use% Mounted on  
/dev/sda3 ext3 133G 12G 121G 9% /

Additional information from dmidecode:  
BIOS HP P70 09/08/2013  
Memory:  
- 16x HP 712383-081 16 GB 1866 MHz  
- 8x UNKNOWN NOT AVAILABLE

(End of data from sysinfo program)

Regarding the sysinfo display about the memory installed, the correct amount of memory is 256 GB and the dmidecode description should read as the following:

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Platform Notes (Continued)

16x HP 712383-081 16 GB 1866 MHz
Regarding the sysinfo display about the CPU cores from /proc/cpuinfo, the correct
mapping should display as cores 0 through 11. The mapping should read as the
following:
  physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11
  physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/cpu2006/libs/32:/cpu2006/libs/64:/cpu2006/sh"
OMP_NUM_THREADS = "24"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RedHat EL 6.4

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:
  -xsSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

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Base Optimization Flags (Continued)

C++ benchmarks:
-xSSE4.2 -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
445.gobmk: icc -m32
464.h264ref: icc -m32

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

471.omnetpp: icpc -m32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
473.astar: -DSPEC_CPU_LP64
483.xalanbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

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Peak Optimization Flags (Continued)

400.perlbench: -xSSE4.2 (pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-prefetch -ansi-alias

401.bzip2: -xSSE4.2 (pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32
-opt-prefetch -ansi-alias

403.gcc: -xSSE4.2 -ipo -03 -no-prec-div -inline-calloc
-opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2 (pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias

456.hmmer: -xSSE4.2 -ipo -03 -no-prec-div -unroll2 -auto-ilp32
-ansi-alias

458.sjeng: -xSSE4.2 (pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll4

462.libquantum: basepeak = yes

464.h264ref: -xSSE4.2 (pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xSSE4.2 (pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(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

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca
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The flags files that were used to format this result can be browsed at:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-revB.20131009.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-revB.20131009.xml

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For other inquiries, please contact webmaster@spec.org.

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