**Hewlett-Packard Company**

ProLiant DL360e Gen8
(2.10 GHz, Intel Xeon E5-2450)

**SPECint_rate2006 = Not Run**

**SPECint_rate_base2006 = 535**

**CPU2006 license:** 3

**Test sponsor:** Hewlett-Packard Company

**Test date:** May-2013

**Hardware Availability:** Jan-2013

**Tested by:** Hewlett-Packard Company

**Software Availability:** Feb-2013

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### Hardware

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E5-2450</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 2.90 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>2100</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>16 cores, 2 chips, 8 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1,2 chips</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>20 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>48 GB (6 x 8 GB 2Rx4 PC3-12800R-11, ECC)</td>
</tr>
<tr>
<td>Disk Subsystem</td>
<td>2 x 300 GB 10 K SAS, RAID 1</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
</tr>
</tbody>
</table>

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### Software

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Red Hat Enterprise Linux Server release 6.4, (Santiago)</td>
</tr>
<tr>
<td>Compiler</td>
<td>C/C++; Version 13.0.0.133 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>No</td>
</tr>
<tr>
<td>File System</td>
<td>ext4</td>
</tr>
<tr>
<td>System State</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers</td>
<td>32-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>
<tr>
<td></td>
<td>HP Array Configuration Utility, CLI version</td>
</tr>
</tbody>
</table>
Hewlett-Packard Company

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(2.10 GHz, Intel Xeon E5-2450)

CPU2006 license: 3
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SPECint_rate2006 = Not Run
SPECint_rate_base2006 = 535

Test date: May-2013
Hardware Availability: Jan-2013
Software Availability: Feb-2013

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Base</td>
<td></td>
<td></td>
<td>Peak</td>
<td></td>
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<tr>
<td>400.perlbench</td>
<td>32</td>
<td>747</td>
<td>419</td>
<td>747</td>
<td>418</td>
<td>748</td>
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<tr>
<td>401.bzip2</td>
<td>32</td>
<td>1041</td>
<td>297</td>
<td>1034</td>
<td>299</td>
<td>1064</td>
<td>290</td>
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<tr>
<td>403.gcc</td>
<td>32</td>
<td>611</td>
<td>422</td>
<td>613</td>
<td>420</td>
<td>612</td>
<td>421</td>
</tr>
<tr>
<td>429.mcf</td>
<td>32</td>
<td>378</td>
<td>773</td>
<td>405</td>
<td>721</td>
<td>399</td>
<td>731</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>32</td>
<td>822</td>
<td>408</td>
<td>808</td>
<td>416</td>
<td>808</td>
<td>416</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>32</td>
<td>420</td>
<td>710</td>
<td>422</td>
<td>707</td>
<td>421</td>
<td>709</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>32</td>
<td>941</td>
<td>412</td>
<td>918</td>
<td>422</td>
<td>939</td>
<td>412</td>
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<tr>
<td>462.libquantum</td>
<td>32</td>
<td>193</td>
<td>3440</td>
<td>193</td>
<td>3440</td>
<td>193</td>
<td>3440</td>
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<tr>
<td>464.h264ref</td>
<td>32</td>
<td>1022</td>
<td>693</td>
<td>992</td>
<td>714</td>
<td>1002</td>
<td>707</td>
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<td>301</td>
<td>666</td>
<td>300</td>
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<tr>
<td>473.astar</td>
<td>32</td>
<td>732</td>
<td>307</td>
<td>731</td>
<td>307</td>
<td>733</td>
<td>306</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>32</td>
<td>422</td>
<td>523</td>
<td>421</td>
<td>524</td>
<td>423</td>
<td>522</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"
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.:
umactl --interleave=all runspec <etc>
Accelerator Ratio for Reads/Writes set to = 100% Read / 0% Write
in HP Array Configuration Utility, CLI version

Platform Notes

BIOS Configuration:
HP Power Profile set to Maximum Performance
Collaborative Power Control set to Disabled
Thermal Configuration set to Maximum Cooling
Processor Power and Utilization Monitoring set to Disabled
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Software Availability:  Feb-2013

Platform Notes (Continued)

running on DL360Gen8-tlm Wed May 22 16:29:00 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 E5-2450 0 @ 2.10GHz
    2 "physical id"s (chips)
    32 "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 : 8
    siblings : 16
    physical 0: cores 0 1 2 3 4 5 6 7
    physical 1: cores 0 1 2 3 4 5 6 7
  cache size : 20480 KB

From /proc/meminfo
  MemTotal:  49385380 kB
  HugePages_Total:       0
  Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
  Red Hat Enterprise Linux Server release 6.4 (Santiago)

From /etc/*release*/etc/*version*
  redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
  system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)

uname -a:
  Linux DL360Gen8-tlm 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013
  x86_64 x86_64 x86_64 GNU/Linux

run-level 3 May 22 16:27

SPEC is set to: /cpu2006
  Filesystem Type Size Used Avail Use% Mounted on
  /dev/sda3 ext4 181G 39G 134G 23% /

Additional information from dmidecode:
  BIOS HP P73 12/14/2012
  Memory:
    6x HP Not Specified 8 GB 1600 MHz 2 rank
    6x UNKNOWN Not Specified

(End of data from sysinfo program)
Regarding the sysinfo display about the memory installed, the correct amount of memory is 48 GB and the dmidecode description should read:
  6x HP Not Specified 8 GB 1600 MHz 2 rank
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General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/cpu2006/libs2/32:/cpu2006/libs2/64"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5

Base Compiler Invocation

C benchmarks:
   icc  -m32

C++ benchmarks:
   icpc  -m32

Base Portability Flags

400.perlbench: -DDSPEC_CPU_LINUX_IA32
462.libquantum: -DDSPEC_CPU_LINUX
483.xalancbmk: -DDSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
   -xSSE4.2  -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:
   -xSSE4.2  -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

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.html
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-A.20120829.html
## SPEC CINT2006 Result

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### SPECint_rate2006

Not Run

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

- [http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.xml](http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.xml)
- [http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-A.20120829.xml](http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-A.20120829.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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