Hewlett-Packard Company
ProLiant BL460c Gen8
(2.50 GHz, Intel Xeon E5-2609 v2)

**SPECint\_rate2006 = 250**
**SPECint\_rate_base2006 = 242**

<table>
<thead>
<tr>
<th>Test sponsor</th>
<th>Hewlett-Packard Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test date</td>
<td>Oct-2013</td>
</tr>
<tr>
<td>Hardware Availability</td>
<td>Sep-2013</td>
</tr>
<tr>
<td>Software Availability</td>
<td>Sep-2013</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 3

<table>
<thead>
<tr>
<th>CPU Name</th>
<th>Intel Xeon E5-2609 v2</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Characteristics:</td>
<td></td>
</tr>
<tr>
<td>CPU MHz</td>
<td>2500</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>8 cores, 2 chips, 4 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>10 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz and CL9)</td>
</tr>
<tr>
<td>Disk Subsystem</td>
<td>1 x 400 GB SAS SSD, RAID 1</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Red Hat Enterprise Linux Server release 6.4 (Santiago)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler</td>
<td>C/C++: Version 14.0.0.080 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>
</tbody>
</table>
Hewlett-Packard Company
ProLiant BL460c Gen8
(2.50 GHz, Intel Xeon E5-2609 v2)

SPEC CINT2006 Result

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Hewlett-Packard Company

SPECint_rate2006 = 250
SPECint_rate_base2006 = 242

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

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
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</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>8</td>
<td>449</td>
<td>174</td>
<td>451</td>
<td>173</td>
<td>450</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>8</td>
<td>632</td>
<td>122</td>
<td>635</td>
<td>121</td>
<td>634</td>
</tr>
<tr>
<td>403.gcc</td>
<td>8</td>
<td>331</td>
<td>195</td>
<td>331</td>
<td>194</td>
<td>332</td>
</tr>
<tr>
<td>429.mcf</td>
<td>8</td>
<td>553</td>
<td>152</td>
<td>553</td>
<td>152</td>
<td>553</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>8</td>
<td>8</td>
<td>180</td>
<td>8</td>
<td>180</td>
<td>180</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>8</td>
<td>234</td>
<td>319</td>
<td>234</td>
<td>318</td>
<td>235</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>8</td>
<td>583</td>
<td>166</td>
<td>583</td>
<td>166</td>
<td>584</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>8</td>
<td>101</td>
<td>1650</td>
<td>102</td>
<td>1630</td>
<td>101</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>8</td>
<td>543</td>
<td>326</td>
<td>543</td>
<td>326</td>
<td>543</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>8</td>
<td>359</td>
<td>139</td>
<td>362</td>
<td>138</td>
<td>362</td>
</tr>
<tr>
<td>473.astar</td>
<td>8</td>
<td>399</td>
<td>141</td>
<td>399</td>
<td>141</td>
<td>399</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>8</td>
<td>190</td>
<td>291</td>
<td>190</td>
<td>291</td>
<td>190</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/redhat_transparent_hugepage/enabled
Filesystem page cache cleared with:
  echo 1 > /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
  numactl --interleave=all runspec <etc>
Used "stop-services" script before the run

Platform Notes

BIOS Configuration:
  HP Power Profile set to Maximum Performance
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

Continued on next page
Hewlett-Packard Company

ProLiant BL460c Gen8
(2.50 GHz, Intel Xeon E5-2609 v2)

SPECint_rate2006 = 250
SPECint_rate_base2006 = 242

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company
Platform Notes (Continued)

Sysinfo program /cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on BL460cGen8-RFP-BAO Wed Oct 16 17:22:16 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 E5-2609 v2 @ 2.50GHz
  2 "physical id"s (chips)
  8 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
cautions.)
  cpu cores : 4
  siblings : 4
  physical 0: cores 0 1 2 3
  physical 1: cores 0 1 2 3
  cache size : 10240 KB

From /proc/meminfo
MemTotal:       132119288 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 BL460cGen8-RFP-BAO 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 Oct 16 17:20

SPEC is set to: /cpu2006

Filesystem  Type  Size  Used Avail Use% Mounted on
/dev/sda3  ext4  360G  8.8G  333G  3% /

Additional information from dmidecode:
BIOS HP I31 09/08/2013
Memory:
  16x HP 689911-071 8 GB 1333 MHz 2 rank

(End of data from sysinfo program)
Hewlett-Packard Company
ProLiant BL460c Gen8
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CPU2006 license: 3
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Software Availability: Sep-2013
Hardware Availability: Sep-2013

General Notes
Environment variables set by runspec before the start of the run:
LD\_LIBRARY\_PATH = "/cpu2006/libs/32:/cpu2006/libs/64:/cpu2006/sh"

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

Base Compiler Invocation

C benchmarks:
cc -m32
C++ benchmarks:
icc -m32

Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32
462.libquantum: -DSPEC\_CPU\_LINUX
483.xalancbmk: -DSPEC\_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

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m32
400.perlbench: icc -m64

Continued on next page
# SPEC CINT2006 Result

## Hewlett-Packard Company
ProLiant BL460c Gen8
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**Tested by:** Hewlett-Packard Company  
**Test date:** Oct-2013  
**Hardware Availability:** Sep-2013  
**Software Availability:** Sep-2013

### Peak Compiler Invocation (Continued)

- `401.bzip2`: `icc -m64`
- `456.hmmer`: `icc -m64`
- `458.sjeng`: `icc -m64`

**C++ benchmarks:**

- `icpc -m32`

### Peak Portability Flags

- `400.perlbench`: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64`
- `401.bzip2`: `-DSPEC_CPU_LP64`
- `456.hmmer`: `-DSPEC_CPU_LP64`
- `458.sjeng`: `-DSPEC_CPU_LP64`
- `462.libquantum`: `-DSPEC_CPU_LINUX`
- `483.xalancbmk`: `-DSPEC_CPU_LINUX`

### Peak Optimization Flags

**C benchmarks:**

- `400.perlbench`: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32`
- `401.bzip2`: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch -auto-ilp32 -ansi-alias`
- `403.gcc`: `basepeak = yes`
- `429.mcf`: `basepeak = yes`
- `445.gobmk`: `-xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3`
- `456.hmmer`: `-xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32`
- `458.sjeng`: `-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto-ilp32`
- `462.libquantum`: `basepeak = yes`

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Peak Optimization Flags (Continued)

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-o3(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)
-o3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
-L/sh -lsmartheap

473.astar: basepeak = yes
483.xalancbmk: basepeak = yes

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/HP-Platform-Flags-Intel-V1.2-revB.html
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html

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-revB.xml
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.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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