## SPEC® CINT2006 Result

### Hewlett-Packard Company

#### ProLiant BL460c G7

(3.06 GHz, Intel Xeon X5675)

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>405</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>388</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 3  
**Test sponsor:** Hewlett-Packard Company  
**Tested by:** Hewlett-Packard Company  
**Test date:** Mar-2012  
**Hardware Availability:** Feb-2011  
**Software Availability:** Dec-2011

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**Hardware**

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon X5675</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 3.46 GHz</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>3067</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>12 cores, 2 chips, 6 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>12 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>96 GB (12 x 8 GB 2Rx4 PC3-10600R-9, 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>Version/Build</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System:</td>
<td>Red Hat Enterprise Linux Server release 6.2,</td>
</tr>
<tr>
<td></td>
<td>Kernel 2.6.32-220.el6.x86_64</td>
</tr>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 12.1.0.225 of Intel Compiler XE</td>
</tr>
<tr>
<td></td>
<td>Build 20110803</td>
</tr>
<tr>
<td>Auto Parallel:</td>
<td>No</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-bit</td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other Software:</td>
<td>Microquill SmartHeap V9.01</td>
</tr>
</tbody>
</table>

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The SPECint rate2006 is calculated based on the performance of various benchmarks run on the system. The page also includes details about the hardware and software configuration of the system, which are essential for understanding the results obtained.
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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>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>24</td>
<td>724</td>
<td>324</td>
<td>728</td>
<td>322</td>
<td>728</td>
<td>322</td>
<td>24</td>
<td>618</td>
<td>379</td>
<td>618</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>24</td>
<td>1032</td>
<td>224</td>
<td>1036</td>
<td>224</td>
<td>1035</td>
<td>224</td>
<td>24</td>
<td>993</td>
<td>233</td>
<td>996</td>
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<td>403.gcc</td>
<td>24</td>
<td>804</td>
<td>240</td>
<td>805</td>
<td>240</td>
<td>810</td>
<td>239</td>
<td>24</td>
<td>804</td>
<td>240</td>
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<tr>
<td>429.mcf</td>
<td>24</td>
<td>486</td>
<td>450</td>
<td>487</td>
<td>449</td>
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<td>450</td>
<td>24</td>
<td>486</td>
<td>450</td>
<td>487</td>
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<tr>
<td>445.gobmk</td>
<td>24</td>
<td>705</td>
<td>357</td>
<td>706</td>
<td>357</td>
<td>707</td>
<td>356</td>
<td>24</td>
<td>672</td>
<td>375</td>
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<tr>
<td>456.hmmer</td>
<td>24</td>
<td>481</td>
<td>466</td>
<td>480</td>
<td>466</td>
<td>481</td>
<td>465</td>
<td>24</td>
<td>416</td>
<td>539</td>
<td>416</td>
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<tr>
<td>458.sjeng</td>
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<td>349</td>
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<td>348</td>
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<td>776</td>
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<tr>
<td>462.libquantum</td>
<td>24</td>
<td>198</td>
<td>2510</td>
<td>196</td>
<td>2530</td>
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<td>2520</td>
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<td>464.h264ref</td>
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<td>486</td>
<td>1086</td>
<td>489</td>
<td>1092</td>
<td>486</td>
<td>24</td>
<td>1062</td>
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<tr>
<td>471.omnetpp</td>
<td>24</td>
<td>648</td>
<td>232</td>
<td>649</td>
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<td>231</td>
<td>24</td>
<td>630</td>
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<tr>
<td>473.astar</td>
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<td>732</td>
<td>230</td>
<td>735</td>
<td>229</td>
<td>733</td>
<td>230</td>
<td>24</td>
<td>732</td>
<td>230</td>
<td>735</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>24</td>
<td>423</td>
<td>391</td>
<td>423</td>
<td>392</td>
<td>423</td>
<td>392</td>
<td>24</td>
<td>423</td>
<td>391</td>
<td>423</td>
</tr>
</tbody>
</table>

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

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Submit Notes

The config file option 'submit' was used.
numactl was used to bind copies to the cores

---

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
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

---

Platform Notes

BIOS configuration:
HP Power Profile set to Maximum Performance
Thermal Configuration set to Increased Cooling
Data Reuse set to Disabled
Sysinfo program /cpu2006/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 $6f2ebdff5032aaa42e583f96b07f99d3
running on bl460g7-bid Thu Mar  8 16:27:46 2012

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 X5675 @ 3.07GHz
Continued on next page
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Platform Notes (Continued)

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
cautions.)
cpu cores : 6
siblings : 12
physical 0: cores 0 1 2 8 9 10
physical 1: cores 0 1 2 8 9 10
cache size : 12288 KB

From /proc/meminfo
MemTotal: 99058244 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.2 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)

uname -a:
Linux bl460g7-bid 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011
x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Mar 8 16:11

SPEC is set to: /cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 ext3 273G 28G 232G 11% /

Additional information from dmidecode:
BIOS HP I27 05/05/2011
Memory:
12x Not Specified Not Specified 8 GB 1333 MHz 2 rank

(End of data from sysinfo program)

General Notes

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

C benchmarks:
  icc  -m32

C++ benchmarks:
  icpc -m32

Base Portability Flags

-DSPEC_CPU_LINUX_IA32
-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/smartheap -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
401.bzip2: icc -m64
456.hmmer: icc -m64
458.sjeng: icc -m64

C++ benchmarks:
  icpc -m32
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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)
-03(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)
-03(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 -03 -no-prec-div -unroll2 -auto-ilp32

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 -auto-ilp32

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)
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
-/-/smartheap -lsmartheap

473.astar: basepeak = yes

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Peak Optimization Flags (Continued)

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-A.html
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.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-A.xml
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml

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