# SPEC® CINT2006 Result

## Hewlett-Packard Company

ProLiant ML350p Gen8  
(2.00 GHz, Intel Xeon E5-2620)

**SPECint_rate2006** = Not Run  
**SPECint_rate_base2006** = 374

<table>
<thead>
<tr>
<th>CPU2006 license:</th>
<th>3</th>
<th>Test date:</th>
<th>Sep-2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor:</td>
<td>Hewlett-Packard Company</td>
<td>Hardware Availability:</td>
<td>Jun-2012</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Hewlett-Packard Company</td>
<td>Software Availability:</td>
<td>Mar-2012</td>
</tr>
</tbody>
</table>

### Hardware

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon E5-2620</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 2.50 GHz</td>
</tr>
<tr>
<td>CPU MHZ:</td>
<td>2000</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>15 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>64 GB (8 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz and CL9)</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>2 x 300 GB 15 K SAS, RAID 1</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
</tr>
</tbody>
</table>

### Software

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System:</td>
<td>Red Hat Enterprise Linux Server release 6.2, (Santiago)</td>
</tr>
<tr>
<td>Kernel:</td>
<td>2.6.32-220.el6.x86_64</td>
</tr>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 12.1.2.273 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 V9.01</td>
</tr>
<tr>
<td></td>
<td>HP Array Configuration Utility, CLI version</td>
</tr>
</tbody>
</table>

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Standard Performance Evaluation Corporation  
info@spec.org  
http://www.spec.org/
**Hewlett-Packard Company**

ProLiant ML350p Gen8  
(2.00 GHz, Intel Xeon E5-2620)

<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>400.perlbench</td>
<td>24</td>
<td>872</td>
<td>269</td>
<td>872</td>
<td>269</td>
<td>871</td>
<td>269</td>
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<tr>
<td>401.bzip2</td>
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<td>203</td>
<td>1144</td>
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<td>403.gcc</td>
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<td>308</td>
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<td>309</td>
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<td>429.mcf</td>
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<td>607</td>
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<td>445.gobmk</td>
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<td>278</td>
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<td>275</td>
<td>932</td>
<td>270</td>
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<tr>
<td>456.hmmer</td>
<td>24</td>
<td>490</td>
<td>457</td>
<td>490</td>
<td>457</td>
<td>489</td>
<td>458</td>
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<tr>
<td>458.sjeng</td>
<td>24</td>
<td>1060</td>
<td>274</td>
<td>1056</td>
<td>275</td>
<td>1080</td>
<td>269</td>
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<tr>
<td>462.libquantum</td>
<td>24</td>
<td>228</td>
<td>2180</td>
<td>228</td>
<td>2190</td>
<td>228</td>
<td>2180</td>
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<tr>
<td>464.h264ref</td>
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<td>455</td>
<td>1172</td>
<td>453</td>
<td>1159</td>
<td>458</td>
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<tr>
<td>471.omnetpp</td>
<td>24</td>
<td>658</td>
<td>228</td>
<td>659</td>
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<td>658</td>
<td>228</td>
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<td>473.astar</td>
<td>24</td>
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<td>224</td>
<td>749</td>
<td>225</td>
<td>749</td>
<td>225</td>
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<tr>
<td>483.xalancbmk</td>
<td>24</td>
<td>402</td>
<td>412</td>
<td>401</td>
<td>413</td>
<td>404</td>
<td>410</td>
</tr>
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</table>

**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  
runcspec command invoked through numactl i.e.:  
numactl --localalloc runspec <etc>  
Drive Write Cache set to Enabled in HP Array Configuration Utility, CLI version  
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 Custom  
Thermal Configuration set to Maximum Cooling  
Collaborative Power Control set to Disabled  
Processor Power and Utilization Monitoring set to Disabled
Hewlett-Packard Company
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CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
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Platform Notes (Continued)
Sysinfo program /cpu2006/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebddf5032aaa42e583f96b07f99d3
running on ml350pGen8 Mon Sep 24 06:12:11 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 E5-2620 0 @ 2.00GHz
  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 : 6
    siblings : 12
    physical 0: cores 0 1 2 3 4 5
    physical 1: cores 0 1 2 3 4 5
    cache size : 15360 KB

From /proc/meminfo
  MemTotal: 65937904 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 ml350pGen8 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011
  x86_64 x86_64 GNU/Linux

run-level 3 Sep 23 22:27

SPEC is set to: /cpu2006

filesystem type size used avail use% mounted on
/dev/sda3 ext4 273G 36G 224G 14% /

Additional information from dmidecode:
  BIOS HP P72 02/21/2012
  Memory:
    8x Not Specified Not Specified 8 GB 1600 MHz 2 rank

(End of data from sysinfo program)
**Hewlett-Packard Company**  
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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/libgs2/32:/cpu2006/libgs2/64"

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: `-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/smartheap -lsmartheap`

### Base Other Flags

**C benchmarks:**
- 403.gcc: `-Dalloca=_alloca`

The flags files that were used to format this result can be browsed at:

You can also download the XML flags sources by saving the following links:
- [http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml](http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.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 other inquiries, please contact webmaster@spec.org.

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