**Hewlett-Packard Company**

ProLiant DL360e Gen8  
(2.20 GHz, Intel Xeon E5-2407)

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU Name:</strong> Intel Xeon E5-2407</td>
<td><strong>Operating System:</strong> Red Hat Enterprise Linux Server release 6.4, (Santiago)</td>
</tr>
</tbody>
</table>
| **CPU Characteristics:** | **Compiler:** C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;  
| **CPU MHz:** 2200 | Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux |
| **FPU:** Integrated | **Auto Parallel:** Yes |
| **CPU(s) enabled:** 4 cores, 1 chip, 4 cores/chip | **File System:** ext4 |
| **CPU(s) orderable:** 1.2 chips | **Primary Cache:** 32 KB I + 32 KB D on chip per core |
| **Primary Cache:** 32 KB I + 32 KB D on chip per core | **Secondary Cache:** 256 KB I+D on chip per core |

**SPECfp®2006 =** Not Run

**SPECfp_base2006 =** 37.5

---

### Performance Results

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>75.2</td>
</tr>
<tr>
<td>416.gamess</td>
<td>45.6</td>
</tr>
<tr>
<td>433.milc</td>
<td>50.9</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>23.7</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>45.0</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>34.9</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>26.5</td>
</tr>
<tr>
<td>444.namd</td>
<td>26.0</td>
</tr>
<tr>
<td>447.dealII</td>
<td>28.4</td>
</tr>
<tr>
<td>450.soplex</td>
<td>31.2</td>
</tr>
<tr>
<td>453.povray</td>
<td>34.6</td>
</tr>
<tr>
<td>454.calculix</td>
<td></td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td></td>
</tr>
<tr>
<td>465.tonto</td>
<td></td>
</tr>
<tr>
<td>470.lbm</td>
<td></td>
</tr>
<tr>
<td>481.wrf</td>
<td></td>
</tr>
<tr>
<td>482.sphinx3</td>
<td></td>
</tr>
</tbody>
</table>

---

**Continued on next page**

---

**Standard Performance Evaluation Corporation**

*info@spec.org*

*http://www.spec.org*
Hewlett-Packard Company

ProLiant DL360e Gen8
(2.20 GHz, Intel Xeon E5-2407)

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

SPECfp2006 = Not Run
SPECfp_base2006 = 37.5

Test date: Sep-2013
Hardware Availability: Jun-2012
Software Availability: Sep-2013

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: Not Applicable
Other Software: None

L3 Cache: 10 MB I+D on chip per chip
Other Cache: None
Memory: 8 GB (2 x 4 GB 1Rx4 PC3-12800R-11, ECC, running at 1066 MHz and CL7)
Disk Subsystem: 2 x 200 GB SAS, RAID 0
Other Hardware: None

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>188</td>
<td>72.5</td>
<td>190</td>
<td>71.6</td>
<td>188</td>
<td>72.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>416.gamess</td>
<td>900</td>
<td>21.8</td>
<td>898</td>
<td>21.8</td>
<td>897</td>
<td>21.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>433.milc</td>
<td>201</td>
<td>45.6</td>
<td>201</td>
<td>45.6</td>
<td>201</td>
<td>45.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>179</td>
<td>50.8</td>
<td>179</td>
<td>50.9</td>
<td>179</td>
<td>50.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>435.gromacs</td>
<td>301</td>
<td>23.7</td>
<td>305</td>
<td>23.4</td>
<td>300</td>
<td>23.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>159</td>
<td>75.2</td>
<td>160</td>
<td>74.7</td>
<td>158</td>
<td>75.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>211</td>
<td>44.6</td>
<td>209</td>
<td>45.0</td>
<td>209</td>
<td>45.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>444.namd</td>
<td>539</td>
<td>14.9</td>
<td>539</td>
<td>14.9</td>
<td>539</td>
<td>14.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>447.dealII</td>
<td>331</td>
<td>34.6</td>
<td>331</td>
<td>34.6</td>
<td>331</td>
<td>34.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>450.soplex</td>
<td>322</td>
<td>25.9</td>
<td>320</td>
<td>26.1</td>
<td>321</td>
<td>26.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>453.povray</td>
<td>187</td>
<td>28.4</td>
<td>187</td>
<td>28.4</td>
<td>189</td>
<td>28.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>454.calculix</td>
<td>264</td>
<td>31.2</td>
<td>264</td>
<td>31.2</td>
<td>264</td>
<td>31.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>304</td>
<td>34.9</td>
<td>304</td>
<td>34.9</td>
<td>304</td>
<td>34.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>465.tonto</td>
<td>370</td>
<td>26.6</td>
<td>379</td>
<td>26.0</td>
<td>371</td>
<td>26.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>470.1bm</td>
<td>183</td>
<td>75.0</td>
<td>186</td>
<td>73.7</td>
<td>183</td>
<td>75.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>481.wrf</td>
<td>215</td>
<td>52.1</td>
<td>215</td>
<td>52.0</td>
<td>214</td>
<td>52.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>435</td>
<td>44.8</td>
<td>436</td>
<td>44.7</td>
<td>439</td>
<td>44.4</td>
<td></td>
<td></td>
<td></td>
<td></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"
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>
## SPEC CFP2006 Result

**Hewlett-Packard Company**

ProLiant DL360e Gen8 (2.20 GHz, Intel Xeon E5-2407)

<table>
<thead>
<tr>
<th>SPECfp2006</th>
<th>Not Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>37.5</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 3  
**Test sponsor:** Hewlett-Packard Company  
**Test date:** Sep-2013  
**Hardware Availability:** Jun-2012  
**Tested by:** Hewlett-Packard Company  
**Software Availability:** Sep-2013

### Platform Notes

**BIOS Configuration:**
- HP Power Profile set to Maximum Performance
- Memory Power Savings Mode set to Maximum Performance
- Collaborative Power Control set to Disabled
- Dynamic Power Capping Functionality set to Disabled
- Thermal Configuration set to Maximum Cooling
- Processor Power and Utilization Monitoring set to Disabled
- Minimum Processor Idle Power Core State set to C6 State
- Minimum Processor Idle Power Packages State set to Package C6 (non-retention) State

**Sysinfo program /cpu2006/config/sysinfo.rev6818**

```
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on DL360e-g8-sr Tue Sep 10 14:49:03 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 E5-2407 0 @ 2.20GHz
  1 "physical id"s (chips)
  4 "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 : 4
  siblings : 4
  physical 0: cores 0 1 2 3
  cache size : 10240 KB
```

**From /proc/meminfo**

```
MemTotal: 8151312 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

**From /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 DL360e-g8-sr 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 Sep 10 10:12**

**SPEC is set to: /cpu2006**

<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>/dev/sda3</td>
<td>ext4</td>
<td>365G</td>
<td>13G</td>
<td>334G</td>
<td>4%</td>
<td>/</td>
</tr>
</tbody>
</table>

Continued on next page
SPEC CFP2006 Result

Hewlett-Packard Company
ProLiant DL360e Gen8 (2.20 GHz, Intel Xeon E5-2407)

SPECfp2006 = Not Run
SPECfp_base2006 = 37.5

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

Platform Notes (Continued)

Additional information from dmidecode:
BIOS HP P73 07/01/2013
Memory:
10x UNKNOWN NOT AVAILABLE
2x UNKNOWN NOT AVAILABLE 4 GB 1067 MHz 1 rank
(End of data from sysinfo program)
Regarding the sysinfo display about the memory installed, the correct amount of memory is 8 GB and the dmidecode description should read as the following:
2x UNKNOWN NOT AVAILABLE 4 GB 1067 MHz 1 rank

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 = "2"

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

Fortran benchmarks:
   ifort -m64

Benchmarks using both Fortran and C:
   icc  -m64 ifort -m64

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64

Continued on next page
Hewlett-Packard Company
ProLiant DL360e Gen8
(2.20 GHz, Intel Xeon E5-2407)

SPECfp2006 = Not Run
SPECfp_base2006 = 37.5

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

Test date: Sep-2013
Hardware Availability: Jun-2012
Software Availability: Sep-2013

Base Portability Flags (Continued)

453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

C++ benchmarks:
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

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/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/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-revB.20131009.xml

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Originally published on 9 October 2013.