Hewlett-Packard Company
ProLiant DL380e Gen8
(2.30 GHz, Intel Xeon E5-2470)

SPECint_rate2006 = 590
SPECint_rate_base2006 = 574

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

Hardware
CPU Name: Intel Xeon E5-2470
CPU Characteristics: Intel Turbo Boost Technology up to 3.10 GHz
CPU MHz: 2300
FPU: Integrated
CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip, 2 threads/core
CPU(s) orderable: 1.2 chip
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core
L3 Cache: 20 MB I+D on chip per chip
Other Cache: None
Memory: 96 GB (12 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem: 1 x 300 GB 15 K SAS, RAID 0
Other Hardware: None

Software
Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)
Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
Auto Parallel: No
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V10.0
## Hewlett-Packard Company

### SPEC CINT2006 Result

**ProLiant DL380e Gen8**  
(2.30 GHz, Intel Xeon E5-2470)

**SPECint_rate2006 = 590**  
**SPECint_rate_base2006 = 574**

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

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlb</td>
<td>32</td>
<td>701</td>
<td>446</td>
<td>702</td>
<td>445</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>32</td>
<td>958</td>
<td>322</td>
<td>959</td>
<td>322</td>
</tr>
<tr>
<td>403.gcc</td>
<td>32</td>
<td>573</td>
<td>450</td>
<td>579</td>
<td>445</td>
</tr>
<tr>
<td>429.mcf</td>
<td>32</td>
<td>343</td>
<td>851</td>
<td>344</td>
<td>849</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>32</td>
<td>766</td>
<td>438</td>
<td>749</td>
<td>448</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>32</td>
<td>394</td>
<td>758</td>
<td>397</td>
<td>751</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>32</td>
<td>855</td>
<td>453</td>
<td>856</td>
<td>452</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>32</td>
<td>192</td>
<td>3450</td>
<td>192</td>
<td>3460</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>32</td>
<td>935</td>
<td>757</td>
<td>949</td>
<td>746</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>32</td>
<td>623</td>
<td>321</td>
<td>622</td>
<td>322</td>
</tr>
<tr>
<td>473.astar</td>
<td>32</td>
<td>683</td>
<td>329</td>
<td>688</td>
<td>326</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>32</td>
<td>392</td>
<td>563</td>
<td>391</td>
<td>565</td>
</tr>
</tbody>
</table>

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</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/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>
```
Disabled unused Linux services through "stop_services.sh" before running.

### 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
Hewlett-Packard Company

ProLiant DL380e Gen8
(2.30 GHz, Intel Xeon E5-2470)

SPECint_rate2006 = 590
SPECint_rate_base2006 = 574

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

Platform Notes (Continued)

Sysinfo program /cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on dl360e-gen8-rf0 Sat Oct 19 23:12:39 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 E5-2470 0 @ 2.30GHz
  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
cautions.)
  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: 98894604 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 dl360e-gen8-rf0 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 19 22:53

SPEC is set to: /cpu2006

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 ext4 273G 12G 248G 5% /

Additional information from dmidecode:
BIOS HP P73 01/20/2014
Memory:
  12x HP 689911-071 8 GB 1600 MHz 2 rank

(End of data from sysinfo program)
Hewlett-Packard Company

ProLiant DL380e Gen8
(2.30 GHz, Intel Xeon E5-2470)

SPECint_rate2006 = 590
SPECint_rate_base2006 = 574

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Test date: Oct-2013
Tested by: Hewlett-Packard Company
Hardware Availability: Jun-2012
Software 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:
  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/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
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)
-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: -xSSE4.2 -ipo -03 -no-prec-div

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

Continued on next page
Hewlett-Packard Company
ProLiant DL380e Gen8
(2.30 GHz, Intel Xeon E5-2470)

**SPECint_rate2006 = 590**
**SPECint_rate_base2006 = 574**

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

### 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  
- L/Sh -lsmartheap

473.astar: basepeak = yes
483.xalanchmk: 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/Intel-ic14.0-official-linux64.20140128.html  
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-revB.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.xml

SPEC and SPECint 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 5 November 2013.