## SPECint® CINT2006 Result

### Hewlett-Packard Company

ProLiant DL360e Gen8  
(2.40 GHz, Intel Xeon E5-2470 v2)  

**SPECint_rate2006 = 375**  
**SPECint_rate_base2006 = 364**

<table>
<thead>
<tr>
<th>Software Availability: Jan-2014</th>
<th>Hardware Availability: Jan-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor: Hewlett-Packard Company</td>
<td>Hewlett-Packard Company</td>
</tr>
<tr>
<td>Tested by: Hewlett-Packard Company</td>
<td>Hewlett-Packard Company</td>
</tr>
<tr>
<td>Test date: Jan-2014</td>
<td></td>
</tr>
<tr>
<td><strong>CPU2006 license:</strong> 3</td>
<td></td>
</tr>
</tbody>
</table>
| **Operating System:** SUSE Linux Enterprise Server 11 (x86_64) SP3  
**Kernel 3.0.76-0.11-default** | |
| **Compiler:** CIC++:  
**Version 14.0.0.080 of Intel C++ Studio XE for Linux** | |
| **Auto Parallel:** No | |
| **File System:** ext3 | |
| **System State:** Run level 3 (multi-user) | |
| **Base Pointers:** 32-bit | |
| **Peak Pointers:** 32/64-bit | |
| **Other Software:** Microquill SmartHeap V10.0 | |

### Hardware

<table>
<thead>
<tr>
<th>CPU Name:</th>
<th>Intel Xeon E5-2470 v2</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 3.20 GHz</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>2400</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>10 cores, 1 chip, 10 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>25 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>48 GB (6 x 8 GB 2Rx4 PC3-12800R-11, ECC)</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>1 x 300 GB 15 K SAS, RAID 1</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
</tr>
</tbody>
</table>

### Software

| Operating System: | SUSE Linux Enterprise Server 11 (x86_64) SP3  
**Kernel 3.0.76-0.11-default** | |
| Compiler: | CIC++:  
**Version 14.0.0.080 of Intel C++ Studio XE for Linux** | |
| Auto Parallel: | No | |
| File System: | ext3 | |
| System State: | Run level 3 (multi-user) | |
| Base Pointers: | 32-bit | |
| Peak Pointers: | 32/64-bit | |
| Other Software: | Microquill SmartHeap V10.0 | |

### Test Details

- **Software Availability:** Nov-2013
- **CPU Name:** Intel Xeon E5-2470 v2
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.20 GHz
- **CPU MHz:** 2400
- **FPU:** Integrated
- **CPU(s) enabled:** 10 cores, 1 chip, 10 cores/chip, 2 threads/core
- **CPU(s) orderable:** 1.2 chips
- **Primary Cache:** 32 KB I + 32 KB D on chip per core
- **Secondary Cache:** 256 KB I+D on chip per core
- **L3 Cache:** 25 MB I+D on chip per chip
- **Other Cache:** None
- **Memory:** 48 GB (6 x 8 GB 2Rx4 PC3-12800R-11, ECC)
- **Disk Subsystem:** 1 x 300 GB 15 K SAS, RAID 1
- **Other Hardware:** None
**SPEC CINT2006 Result**

**Hewlett-Packard Company**

ProLiant DL360e Gen8  
(2.40 GHz, Intel Xeon E5-2470 v2)

**SPECint_rate2006 = 375**  
**SPECint_rate_base2006 = 364**

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

---

**Results Table**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Copies</td>
<td>Seconds</td>
</tr>
<tr>
<td>400.perlbench</td>
<td>20</td>
<td>679</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>20</td>
<td>892</td>
</tr>
<tr>
<td>403.gcc</td>
<td>20</td>
<td>568</td>
</tr>
<tr>
<td>429.mcf</td>
<td>20</td>
<td>359</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>20</td>
<td>740</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>20</td>
<td>396</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>20</td>
<td>838</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>20</td>
<td>173</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>20</td>
<td>906</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>20</td>
<td>650</td>
</tr>
<tr>
<td>473.astar</td>
<td>20</td>
<td>692</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>20</td>
<td><strong>385</strong></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/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>
```

---

**Platform Notes**

BIOS Configuration:
HP Power Regulator was set to HP Static High Performance Mode  
HP Power Profile was set to Maximum Performance  
Memory Refresh Rate was set to 1x Refresh  
Sysinfo program /home/cpu2006/config/sysinfo.rev6874.hp  
$Rev: 6874 $ $Date:: 2013-11-20 #$ e05b96ddac6c3d74bfe176502a0a2391  
running on d1360egen8rwen Sun Jan 19 22:12:46 2014

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

Continued on next page
Hewlett-Packard Company
ProLiant DL360e Gen8
(2.40 GHz, Intel Xeon E5-2470 v2)

SPECint_rate2006 = 375  
SPECint_rate_base2006 = 364

CPU2006 license: 3  
Test date: Jan-2014  
Test sponsor: Hewlett-Packard Company  
Hardware Availability: Jan-2014  
Tested by: Hewlett-Packard Company  
Software Availability: Nov-2013  

Platform Notes (Continued)

From /proc/cpuinfo
   model name : Intel(R) Xeon(R) CPU E5-2470 v2 @ 2.40GHz  
   1 "physical id"s (chips)  
   20 "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 : 10  
      siblings : 20  
      physical 0: cores 0 1 2 3 4 8 9 10 11 12  
      cache size : 25600 KB

From /proc/meminfo  
   MemTotal: 49260212 kB  
   HugePages_Total: 0  
   Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
   SUSE Linux Enterprise Server 11 (x86_64)

From /etc/*release* /etc/*version*  
   SuSE-release:  
      SUSE Linux Enterprise Server 11 (x86_64)  
      VERSION = 11  
      PATCHLEVEL = 3

uname -a:
   Linux dl360ege8wen 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013  
      (ccab990) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 19 22:08 last=S

SPEC is set to: /home/cpu2006
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda2      ext3  549G 8.7G 539G 2% /

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS HP P73 11/12/2013
Memory:
   6x HP 689911-071 8 GB 1600 MHz
   6x UNKNOWN NOT AVAILABLE

(End of data from sysinfo program)  
Regarding the sysinfo display about the memory installed, the correct amount of memory is 48 GB and the dmidecode description should have one line reading as:  
   6x HP 689911-071 8 GB 1600 MHz
Hewlett-Packard Company
ProLiant DL360e Gen8
(2.40 GHz, Intel Xeon E5-2470 v2)

SPECint_rate2006 = 375
SPECint_rate_base2006 = 364

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

Test date: Jan-2014
Hardware Availability: Jan-2014
Software Availability: Nov-2013

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/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 -lsmarthep

Base Other Flags

C benchmarks:
  403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
  icc -m32

400.perlbench: icc -m64
Hewlett-Packard Company

ProLiant DL360e Gen8
(2.40 GHz, Intel Xeon E5-2470 v2)

SPECint_rate2006 = 375
SPECint_rate_base2006 = 364

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Test date: Jan-2014
Tested by: Hewlett-Packard Company
Hardware Availability: Jan-2014
Software Availability: Nov-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

Continued on next page
SPEC CINT2006 Result

Hewlett-Packard Company
ProLiant DL360e Gen8
(2.40 GHz, Intel Xeon E5-2470 v2)

SPECint_rate2006 = 375
SPECint_rate_base2006 = 364

Peak Optimization Flags (Continued)

464.h264ref: -xSSE4.2 -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 -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.xalanchbmk: 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.20131009.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 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 11 February 2014.