Hewlett-Packard Company
ProLiant ML350p Gen8
(2.00 GHz, Intel Xeon E5-2640 v2)

SPEClnt_rate2006 = 543
SPEClnt_rate_base2006 = 522

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

Test date: Oct-2013
Hardware Availability: Sep-2013
Software Availability: Sep-2013

Hardware
CPU Name: Intel Xeon E5-2640 v2
CPU Characteristics: Intel Turbo Boost Technology up to 2.50 GHz
CPU MHz: 2000
FPU: Integrated
CPU(s) enabled: 16 cores, 2 chips, 8 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: 20 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem: 1 x 146 GB 15 K SAS
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
ProLiant ML350p Gen8
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SPECint_rate2006 = 543
SPECint_rate_base2006 = 522

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Test date: Oct-2013
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Results Table

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</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/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
- 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
- Memory Refresh Rate set to 1x

Continued on next page
Platform Notes (Continued)

Sysinfo program /cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on ML350p-Gen8 Thu Oct 31 18:21:14 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 E5-2640 v2 @ 2.00GHz
  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
caution.)
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:       132259568 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 ML350p-Gen8 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 31 18:08

SPEC is set to: /cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 ext4 133G 57G 70G 45% /

Additional information from dmidecode:
BIOS HP P72 09/08/2013
Memory:
  16x HP 689911-071 8 GB 1600 MHz 2 rank
  8x UNKNOWN NOT AVAILABLE

(End of data from sysinfo program)
Regarding the sysinfo display about the memory installed, the correct amount of
Continued on next page
Hewlett-Packard Company
ProLiant ML350p Gen8
(2.00 GHz, Intel Xeon E5-2640 v2)

SPECint_rate2006 = 543
SPECint_rate_base2006 = 522

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

Test date: Oct-2013
Hardware Availability: Sep-2013
Software Availability: Sep-2013

Platform Notes (Continued)
memory is 128 GB and the dmidecode description should read as the following:
16x HP 689911-071 8 GB 1600 MHz 2 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"
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
Hewlett-Packard Company

ProLiant ML350p Gen8
(2.00 GHz, Intel Xeon E5-2640 v2)

**SPEC CINT2006 Result**

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>543</th>
</tr>
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<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>522</td>
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**CPU2006 license:** 3  
**Test sponsor:** Hewlett-Packard Company  
**Tested by:** Hewlett-Packard Company  
**Test date:** Oct-2013  
**Hardware Availability:** Sep-2013  
**Software Availability:** Sep-2013

### Peak Compiler Invocation

C benchmarks (except as noted below):

```
icc -m32
```

400.perlbmch: `icc -m64`

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

C++ benchmarks:

```
icpc -m32
```

### Peak Portability Flags

400.perlbmch: `-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:

```c
400.perlbmch: -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
```

Continued on next page
SPEC CINT2006 Result

Hewlett-Packard Company
ProLiant ML350p Gen8
(2.00 GHz, Intel Xeon E5-2640 v2)

SPECint_rate2006 = 543
SPECint_rate_base2006 = 522

Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

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 -Wl,-z,muldefs
  -L/sh -lsmartheap

473.astar: basepeak = yes

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

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

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