**Hewlett-Packard Company**

ProLiant BL420c Gen8  
(2.10 GHz, Intel Xeon E5-2450)  

**SPECint rate 2006 = 557**  
**SPECint rate base 2006 = 536**

**Hardware**

<table>
<thead>
<tr>
<th>Test date:</th>
<th>Jul-2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor:</td>
<td>Hewlett-Packard Company</td>
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<tr>
<td>Tested by:</td>
<td>Hewlett-Packard Company</td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>Jun-2012</td>
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<td>Software Availability:</td>
<td>Feb-2012</td>
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</table>

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

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**CPU Name:** Intel Xeon E5-2450  
**CPU Characteristics:** Intel Turbo Boost Technology up to 2.90 GHz  
**CPU MHz:** 2100  
**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:** 96 GB (12 x 8 GB 2Rx4 PC3-12800R-11, ECC)  
**Disk Subsystem:** 2 x 146 GB RAID 0  
**Other Hardware:** None

**Software**

**Operating System:** Red Hat Enterprise Linux Server release 6.2 (Santiago)  
**Compiler:** C/C++: Version 12.1.3.293 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 V9.01
SPEC CINT2006 Result

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Results Table

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<td>523</td>
<td><strong>422</strong></td>
<td><strong>524</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"
rundspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled

Platform Notes

BIOS configuration:
HP Power Profile set to Maximum Performance
Sysinfo program /mnt/store/cpu2006/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ 8787f7622badcf24e01c368b1db4377c
running on bl420c-cpu Tue Jul 3 10:36:01 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 E5-2450 0 @ 2.10GHz
  2 "physical id"s (chips)
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Platform Notes (Continued)

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: 99026400 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 bl420c-cpu 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jul 3 03:10

SPEC is set to: /mnt/store/cpu2006

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda5 ext4 191G 19G 163G 11% /mnt/store

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/opt/smartheap/
Binaries compiled on a system with 2x E5-2470 CPU + 192GB
memory using RHEL6.2.
glibc-static-2.12-1.47.el6.x86_64.rpm and glibc-static-2.12-1.47.el6.i686.rpm
are added to enable static linking

Base Compiler Invocation

C benchmarks:
icc -m32

Continued on next page
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Base Compiler Invocation ( Continued)

C++ benchmarks:
icc -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/opt/smartheap -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
401.bzip2: icc -m64
456.hmmer: icc -m64
458.sjeng: icc -m64

C++ benchmarks:
icc -m32
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Peak Optimization Flags (Continued)

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-A.20120605.html
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.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-A.20120605.xml
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml

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For other inquiries, please contact webmaster@spec.org.

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