Hewlett-Packard Company

ProLiant BL460c Gen8
(2.00 GHz, Intel Xeon E5-2620)

SPECint®2006 = 38.6
SPECint_base2006 = 36.2

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

CPU Name: Intel Xeon E5-2620
CPU Characteristics: Intel Turbo Boost Technology up to 2.50 GHz
CPU MHz: 2000
FPU: Integrated
CPU(s) enabled: 6 cores, 1 chip, 6 cores/chip
CPU(s) orderable: 1 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: 15 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (4 x 4 GB 1Rx4 PC3-12800R-11, ECC, running at 1333 MHz and CL9)
Disk Subsystem: 1 x 300 GB SAS SSD, RAID 1
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: Yes
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V10.0

Hardware
Hewlett-Packard Company (ProLiant BL460c Gen8 (2.00 GHz, Intel Xeon E5-2620))

**SPECint2006 =** 38.6
**SPECint_base2006 =** 36.2

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

### Results Table

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<tr>
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<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>483.xalancbmk</td>
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<td><strong>162</strong></td>
<td><strong>42.5</strong></td>
<td>163</td>
<td>42.4</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:
  ```bash
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```
Filesystem page cache cleared with:
  ```bash
echo 1 > /proc/sys/vm/drop_caches
```
runspec command invoked through numacl i.e.:
  ```bash
numactl --interleave=all runspec <etc>
```
Disabled unused Linux services through "stop_services.sh" before running.

### Platform Notes

BIOS Configuration:
  - Intel HyperTherading set to Disabled
  - 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

Sysinfo program /cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 $e86d102572650a6e4d596a3cee98f191
running on BL460cGen8-RFP-BAO Wed Sep 4 17:46:09 2013

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

Continued on next page
SPEC CINT2006 Result

Hewlett-Packard Company
ProLiant BL460c Gen8
(2.00 GHz, Intel Xeon E5-2620)

SPECint2006 = 38.6
SPECint_base2006 = 36.2

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

Platform Notes (Continued)

http://www.spec.org/cpu2006/Docs/config.html#sysinfo

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E5-2620 0 @ 2.00GHz
    1 "physical id"s (chips)
      6 "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 : 6
      siblings : 6
      physical 0: cores 0 1 2 3 4 5
    cache size : 15360 KB

From /proc/meminfo
  MemTotal:       16292088 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 BL460cGen8-RFP-BAO 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 Mar 6 19:34

SPEC is set to: /cpu2006
  Filesystem    Type    Size  Used Avail Use% Mounted on
  /dev/sda3     ext4 360G 8.7G 333G 3% /

Additional information from dmidecode:
  BIOS HP I31 03/01/2013
  Memory:
    1x HP Not Specified 4 GB 1333 MHz 1 rank
    12x UNKNOWN Not Specified
    3x UNKNOWN Not Specified 4 GB 1333 MHz 1 rank

(End of data from sysinfo program)
Regarding the sysinfo display about the memory installed, the correct amount of
memory is 16 GB and the dmidecode description should read as the following:
  1x HP Not Specified 4 GB 1333 MHz 1 rank
  3x UNKNOWN Not Specified 4 GB 1333 MHz 1 rank
Hewlett-Packard Company

ProLiant BL460c Gen8
(2.00 GHz, Intel Xeon E5-2620)

SPECint2006 = 38.6
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General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/cpu2006.ic14.0/libs/32:/cpu2006.ic14.0/libs/64:/cpu2006.ic14.0/sh"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5

Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Base Portability Flags

C benchmarks:
400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

C++ benchmarks:
403.gcc: -Dalloca=_alloca

Base Optimization Flags

C benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh -lsmartheap64

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca
Hewlett-Packard Company

ProLiant BL460c Gen8
(2.00 GHz, Intel Xeon E5-2620)

Hewlett-Packard Company

SPECint2006 = 38.6
SPECint_base2006 = 36.2

CPU2006 license: 3
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Tested by: Hewlett-Packard Company

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

Peak Compiler Invocation

C benchmarks (except as noted below):
  icc -m64
  400.perlbench: icc -m32
  445.gobmk: icc -m32
  464.h264ref: icc -m32

C++ benchmarks (except as noted below):
  icpc -m64
  471.omnetpp: icpc -m32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -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)
  -opt-prefetch -ansi-alias
  401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
  -O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32
  -opt-prefetch -ansi-alias
  403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -inline-calloc
  -opt-malloc-options=3 -auto-ilp32
  429.mcf: basepeak = yes
  445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
  -ansi-alias

Continued on next page
# SPEC CINT2006 Result

Hewlett-Packard Company

ProLiant BL460c Gen8
(2.00 GHz, Intel Xeon E5-2620)

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**Software Availability:** Sep-2013

## Peak Optimization Flags (Continued)

```
456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
           -ansi-alias

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

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)
             -opt-ra-region-strategy=block
             -ansi-alias
             -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/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
Hewlett-Packard Company  
ProLiant BL460c Gen8  
(2.00 GHz, Intel Xeon E5-2620)  

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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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