Hewlett-Packard Company
ProLiant BL460c Gen9
(3.20 GHz, Intel Xeon E5-2667 v3)

SPECint\textsuperscript{2006} = 65.4
SPECint\textsubscript{base2006} = 62.4

CPU\textsuperscript{2006} license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

CPU Name: Intel Xeon E5-2667 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz: 3200
FPU: Integrated
CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip
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: 256 GB (8 x 32 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: 1 x 400 GB SAS SSD, RAID 0
Other Hardware: None

Hardware

Operating System: Red Hat Enterprise Linux Server release 7.0
(Maipo)
Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE
for Linux
Auto Parallel: Yes
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V10.0

Software

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Results Table

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<td>204</td>
<td>34.5</td>
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<tr>
<td>483.xalancbmk</td>
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<td>67.2</td>
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<td>67.4</td>
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<td>67.7</td>
<td>103</td>
<td>67.2</td>
<td>102</td>
<td>67.4</td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The config file option 'submit' was used.

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

Platform Notes

BIOS Configuration:
  Intel Hyperthreading Options set to Disabled
  HP Power Profile set to Custom
  HP Power Regulator set to HP Static High Performance Mode
  Minimum Processor Idle Power Core State set to C6 State
  Minimum Processor Idle Power Package State set to No Package State
  Energy/Performance Bias set to Maximum Performance
  Collaborative Power Control set to Disabled
  QPI Snoop Configuration set to Early Snoop
  Thermal Configuration set to Maximum Cooling
  Processor Power and Utilization Monitoring set to Disabled
  Memory Refresh Rate set to 1x Refresh

Sysinfo program /cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 $$ e3fbb8667b5a285932ceab88e8219e1
running on BL460c.Gen9-CPU2006 Mon Sep 28 03:38:28 2015

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Test date: Sep-2015
Hardware Availability: May-2015
Software Availability: Sep-2014

Platform Notes (Continued)

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 E5-2667 v3 @ 3.20GHz
2 "physical id"s (chips)
16 "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  : 8
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: 263846712 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server

uname -a:
Linux BL460c.Gen9-CPU2006 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57 EDT 2014 x86_64 x86_64 x86_64 GNU/Linux
run-level 3 Sep 28 03:37

SPEC is set to: /cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel-root xfs 368G 64G 305G 18% /

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.

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SPEC CINT2006 Result

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Platform Notes (Continued)

BIOS HP I36 05/06/2015
Memory:
8x UNKNOWN NOT AVAILABLE
8x UNKNOWN NOT AVAILABLE 32 GB 2 rank 2133 MHz

(End of data from sysinfo program)
Regarding the sysinfo display about the memory installed, the correct amount of
memory is 256 GB and the dmidecode description should have one line reading as:
8x UNKNOWN NOT AVAILABLE 32 GB 2 rank 2133 MHz

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/cpu2006/libs/32:/cpu2006/libs/64:/cpu2006/sh"
OMP_NUM_THREADS = "16"

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB
memory using RedHat EL 7.0

Base Compiler Invocation

C benchmarks:
  icc  -m64

C++ benchmarks:
  icpc  -m64

Base Portability Flags

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
SPEC CINT2006 Result

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Software Availability: Sep-2014

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh -lsmartheap64

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
   icc -m64

400.perlbench: icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
445.gobmk: icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

C++ benchmarks (except as noted below):
   icpc -m64

471.omnetpp: icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

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
464.h264ref: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
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Hardware Availability: May-2015
Software Availability: Sep-2014

Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(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: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-1lp32
-opt-prefetch -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
-opt-prefetch -ansi-alias

429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel
-opt-prefetch -auto-p32

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias

456.hmmer: basepeak = yes

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll14

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca
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The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-HSW-revE.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-HSW-revE.xml

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

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