Hewlett-Packard Company
ProLiant BL460c Gen9
(1.80 GHz, Intel Xeon E5-2630L v3)

SPECint®_rate2006 = 593
SPECint_rate_base2006 = 567

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

Hardware
CPU Name: Intel Xeon E5-2630L v3
CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz
CPU MHz: 1800
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: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1866 MHz)
Disk Subsystem: 2 x 400 GB SAS SSD, RAID 1
Other Hardware: None

Software
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: No
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V10.0

Test date: Dec-2014
Hardware Availability: Sep-2014
Software Availability: Sep-2014

CINT2006 Result

SPECint_rate2006 = 593
SPECint_rate_base2006 = 567

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## Results Table

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<th>Ratio</th>
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<td>640</td>
<td>344</td>
<td>641</td>
<td>345</td>
<td>640</td>
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</tbody>
</table>

### 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>

### Platform Notes

BIOS Configuration:
- 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
- Thermal Configuration set to Maximum Cooling
- Collaborative Power Control set to Disabled
- QPI Snoop Configuration set to Early Snoop
- Processor Power and Utilization Monitoring set to Disabled
- Memory Refresh Rate set to 1x Refresh
- Sysinfo program /cpu2006/config/sysinfo.rev6914

Continued on next page
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Software Availability: Sep-2014

Platform Notes (Continued)

$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667bSa285932ceab81e28219e1
running on W-b1460c_gen9-VP2.1 Mon Dec 8 15:32:14 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

From /proc/cpuinfo
  model name : Intel(R) Xeon(R) CPU E5-2630L v3 @ 1.80GHz
  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:       263844364 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 W-b1460c_gen9-VP2.1 3.10.0-123.e17.x86_64 #1 SMP Mon May 5 11:16:57 EDT
2014 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 8 15:22

SPEC is set to: /cpu2006

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda4 xfs 277G 41G 237G 15% /

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
Continued on next page
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Platform Notes (Continued)

determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS HP i36 08/26/2014
Memory:
16x HP NOT AVAILABLE 16 GB 2 rank 2133 MHz, configured at 1866 MHz

(End of data from sysinfo program)

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 i5-4670K CPU + 16GB memory using RedHat EL 7.0

Base Compiler Invocation

C benchmarks:
  icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

C++ benchmarks:
  icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
  -opt-mem-layout-trans=3

C++ benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
  -opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap
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Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
400.perlbench: icc -m64
401.bzip2: icc -m64
456.hmmer: icc -m64
458.sjeng: icc -m64

C++ benchmarks:
icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

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: -xCORE-AVX2(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: -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 -auto-ilp32 -ansi-alias
403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div
Peak Optimization Flags (Continued)

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2)  -prof-gen(pass 1)  -prof-use(pass 2)
   -ansi-alias  -opt-mem-layout-trans=3

456.hmmer: -xCORE-AVX2  -ipo  -O3  -no-prec-div  -unroll2  -auto-ilp32

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)
   -unroll4  -auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -xCORE-AVX2(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: -xCORE-AVX2(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/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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