



SPEC® CINT2006 Result

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Hewlett-Packard Company

ProLiant BL460c Gen9
(2.60 GHz, Intel Xeon E5-2697 v3)

~~SPECint_rate2006 = 10~~

~~SPECint_rate_base2006 = NC~~

CPU2006 license: 3

Test sponsor: Hewlett-Packard Company

Tested by: Hewlett-Packard Company

Test date: Sep-2014

Hardware Availability: Sep-2014

Software Availability: Jun-2014

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	Copies
400.perlbench	
401.bzip2	
403.gcc	
429.mcf	
445.gobmk	
456.hmmer	
458.sjeng	
462.libquantum	
464.h264ref	
471.omnetpp	
473.astar	
483	

	Hardware	Software
CPU Name:	Intel Xeon E5-2697 v3	Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo)
CPU Characteristics:	Intel Turbo Boost Technology up to 3.60 GHz	Compiler: Kernel 3.10.0-123.el7.x86_64
CPU MHz:	2600	Auto Parallel: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
FPU:	Integrated	File System: No
CPU(s) enabled:	28 cores, 2 chips, 14 cores/chip, 2 threads/core	System State: ext4
CPU(s) orderable:	1,2 chip	Run level 3 (multi-user)
Primary Cache:	32 KB I + 32 KB D on chip per core	

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Secondary Cache:	256 KB I+D on chip per core	Base Pointers:	32-bit
L3 Cache:	35 MB I+D on chip per chip	Link Pointers:	32/64-bit
Other Cache:	None	Other Software:	Microquill SmartHeap V10.0
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)		
Disk Subsystem:	2 x 400 GB SAS SSD, RAID 1		
Other Hardware:	None		

Results Table

Benchmark	Baseline						Peak					
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio
400.perlbench	56	NC	NC	NC	NC	NC	NC	56	NC	NC	NC	NC
401.bzip2	56	NC	NC	NC	NC	NC	NC	56	NC	NC	NC	NC
403.gcc	56	NC	NC	NC	NC	NC	NC	56	NC	NC	NC	NC
429.mcf	56	NC	NC	NC	NC	NC	NC	56	NC	NC	NC	NC
445.gobmk	56	NC	NC	NC	NC	NC	NC	56	NC	NC	NC	NC
456.hmmer	56	NC	NC	NC	NC	NC	NC	56	NC	NC	NC	NC
458.sjeng	56	NC	NC	NC	NC	NC	NC	56	NC	NC	NC	NC
462.libquantum	56	NC	NC	NC	NC	NC	NC	56	NC	NC	NC	NC
464.h264ref	56	NC	NC	NC	NC	NC	NC	56	NC	NC	NC	NC
471.omnetpp	56	NC	NC	NC	NC	NC	NC	56	NC	NC	NC	NC
473.astar	56	NC	NC	NC	NC	NC	NC	56	NC	NC	NC	NC
483.xalancbmk	56	NC	NC	NC	NC	NC	NC	56	NC	NC	NC	NC

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.



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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
```

Filesystem page cache cleared with:

```
echo 1 > /proc/sys/vm/drop_caches
```

runspec command invoked through numactl, i.e.:

```
numactl --interleave=all unspec <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 Package C-State set to No Package State

QPI Snoop Configuration set to Cluster on Die

Thermal Configuration set to Maximum Cooling

Processor Power and Utilization Monitoring set to Disabled

Memory Refresh Rate set to 1x Refresh

Sysinfo program /opt/cpu2006/config/sysinfo.rev6818

\$Rev: 6818 \$ \$Date: 2012-07-17 ## e86d102572650a6e4d596a3cee98f191

running on BL460cGen9-VP2 Tue Sep 16 14:13:22 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 E5-2697 v3 @ 2.60GHz

2 "physical id"s (chips)

56 "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 : 7

siblings : 14

physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14

physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14

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Platform Notes (Continued)

cache size : 17920 KB

From /proc/meminfo

MemTotal: 263841080 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 BL460cGen9-VP2 3.10.0-123.el7.x86_64 #1 SMP Mon May 5 11:16:57 EDT 2014
x86_64 x86_64 GNU/Linux

1 1 2 Sep 12 07:07

SPEC is set to: /cpu2006

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/mapper/rhel-root	ext4	310G	12G	283G	4%	/

Additional information from dmidecode:

BIOS HP I36 07/11/2014

Memory:

16x HP NOT AVAILABLE 16 GB 2133 MHz 2 rank

(End of data from sysinfo program)



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General Notes

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

Binaries compiled on a system with 1 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.balancem: -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

400.perlbench: icc -m64

401.bzip2: icc -m64

458.sjeng: icc -m64

C++ benchmarks:

icpc -m32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64

-DSPEC_CPU_LP64

458.sjeng: -DSPEC_CPU_LP64

462.libquantum: -DSPEC_CPU_LINUX

483.blancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

Continued on next page



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Peak Optimization Flags (Continued)

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-rec-div(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32 -ansi-alias

403.gcc: basepeak = yes

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: 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 -auto-ilp32

462.mquantum: 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)
-unroll12 -ansi-alias

~~On~~ C++ Benchmarks:

471.craftpp: -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

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Peak Optimization Flags (Continued)

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_aligned

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-HSW-revB.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-HSW-revB.xml>

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

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