



SPEC® CINT2006 Result

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Hewlett-Packard Company

SPECint®_rate2006 = 1070

ProLiant DL360 Gen9
(2.50 GHz, Intel Xeon E5-2680 v3)

SPECint_rate_base2006 = 1030

CPU2006 license: 3

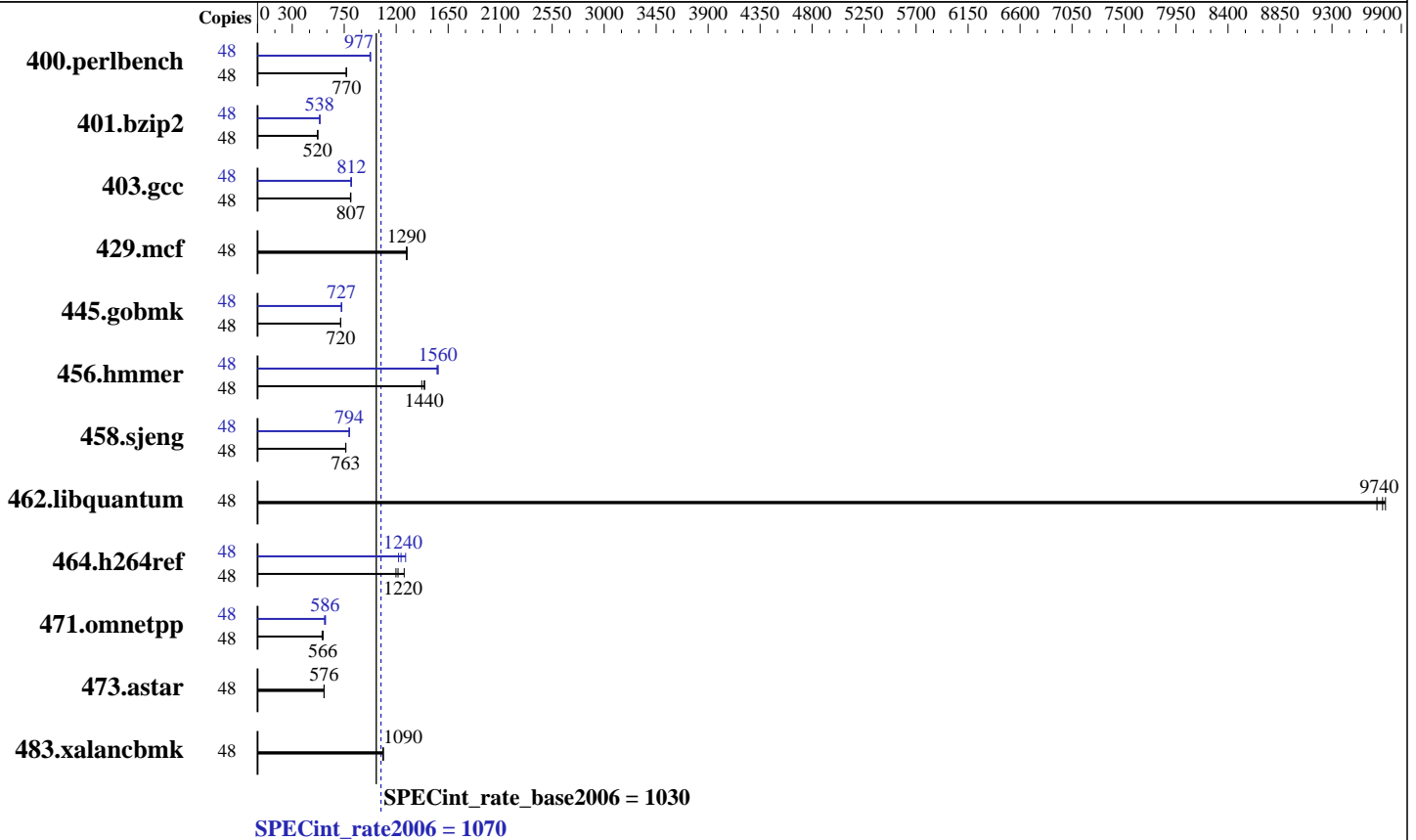
Test date: Nov-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2014

Tested by: Hewlett-Packard Company

Software Availability: Sep-2014



Hardware

CPU Name: Intel Xeon E5-2680 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
 CPU MHz: 2500
 FPU: Integrated
 CPU(s) enabled: 24 cores, 2 chips, 12 cores/chip, 2 threads/core
 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: 30 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
 Disk Subsystem: 1 x 400 GB SSD SAS, RAID 0
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 7.0 (Maipo)
 Kernel 3.10.0-123.el7.x86_64
 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



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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	48	612	767	609	770	609	770	48	480	978	480	977	482	973
401.bzip2	48	891	520	890	520	889	521	48	860	538	859	539	861	538
403.gcc	48	481	804	479	807	479	807	48	479	807	475	813	476	812
429.mcf	48	340	1290	339	1290	338	1290	48	340	1290	339	1290	338	1290
445.gobmk	48	699	720	700	720	700	719	48	693	727	693	727	693	726
456.hmmer	48	310	1450	311	1440	315	1420	48	288	1550	287	1560	287	1560
458.sjeng	48	762	762	761	763	759	765	48	731	794	731	794	732	793
462.libquantum	48	102	9740	103	9690	102	9760	48	102	9740	103	9690	102	9760
464.h264ref	48	837	1270	874	1220	887	1200	48	870	1220	855	1240	829	1280
471.omnetpp	48	530	566	530	566	537	559	48	511	588	512	586	518	580
473.astar	48	585	576	585	576	586	575	48	585	576	585	576	586	575
483.xalancbmk	48	305	1090	304	1090	305	1090	48	305	1090	304	1090	305	1090

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

Transparent Huge Pages enabled with:
Stack size set to unlimited using "ulimit -s unlimited"
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 runspec <etc>

Platform Notes

BIOS Configuration:
HP Power Profile set to Maximum Performance
QPI Snoop Configuration set to Cluster on Die
Collaborative Power Control set to Disabled
Thermal Configuration set to Maximum Cooling
Processor Power and Utilization Monitoring set to Disabled
Memory Refresh Rate set to 1x Refresh

Sysinfo program /home/cpu2006/config/sysinfo.rev6914
\$Rev: 6914 \$ \$Date:: 2014-06-25 #\$ e3fbb8667b5a285932ceab81e28219e1
running on VP2.DL360-G9 Thu Nov 27 08:25:48 2014

Continued on next page



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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 E5-2680 v3 @ 2.50GHz
 2 "physical id"s (chips)
 48 "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  : 12
  physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
  physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
cache size : 15360 KB
```

```
From /proc/meminfo
MemTotal:      263842624 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 VP2.DL360-G9 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 Nov 26 12:14
```

```
SPEC is set to: /home/cpu2006
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs      318G   49G  269G  16% /home
```

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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Platform Notes (Continued)

BIOS HP P89 08/26/2014

Memory:

8x HP 752369-081 16 GB 2 rank 2133 MHz

8x HP NOT AVAILABLE 16 GB 2 rank 2133 MHz

8x UNKNOWN NOT AVAILABLE

(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 two lines reading as:

8x HP 752369-081 16 GB 2 rank 2133 MHz

8x HP NOT AVAILABLE 16 GB 2 rank 2133 MHz

General Notes

Environment variables set by runspec before the start of the run:

LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/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

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -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

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Peak Optimization Flags (Continued)

429.mcf: basepeak = yes

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

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

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