



SPEC[®] CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECint[®]2006 = 29.8

ProLiant DL360 Gen9
(1.60 GHz, Intel Xeon E5-2603 v3)

SPECint_base2006 = 28.8

CPU2006 license: 3

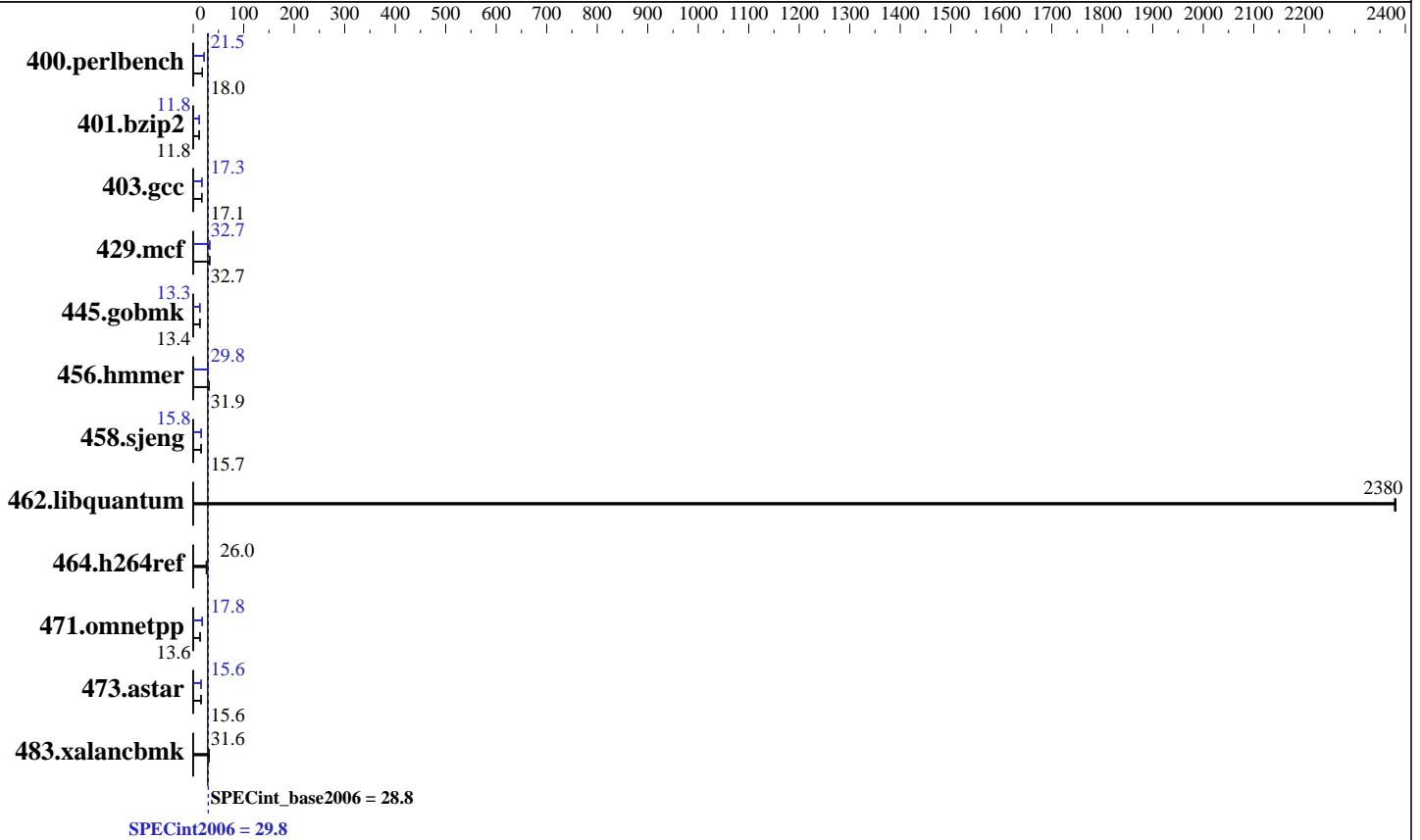
Test date: Sep-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2014

Tested by: Hewlett-Packard Company

Software Availability: Sep-2014



Hardware

CPU Name: Intel Xeon E5-2603 v3
 CPU Characteristics:
 CPU MHz: 1600
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 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: 15 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
 Disk Subsystem: 1 x 400 GB SSA 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 14.0.0.080 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



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECint2006 = **29.8**

ProLiant DL360 Gen9
(1.60 GHz, Intel Xeon E5-2603 v3)

SPECint_base2006 = **28.8**

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

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

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	542	18.0	542	18.0	542	18.0	452	21.6	456	21.4	454	21.5
401.bzip2	822	11.7	821	11.8	820	11.8	814	11.8	814	11.9	815	11.8
403.gcc	472	17.1	472	17.1	472	17.1	466	17.3	465	17.3	464	17.4
429.mcf	280	32.6	279	32.7	279	32.7	279	32.7	279	32.7	279	32.7
445.gobmk	781	13.4	781	13.4	780	13.4	787	13.3	787	13.3	789	13.3
456.hammer	297	31.4	291	32.0	292	31.9	314	29.8	313	29.8	314	29.7
458.sjeng	772	15.7	772	15.7	772	15.7	767	15.8	767	15.8	767	15.8
462.libquantum	8.71	2380	8.70	2380	8.71	2380	8.71	2380	8.70	2380	8.71	2380
464.h264ref	850	26.0	851	26.0	850	26.0	850	26.0	851	26.0	850	26.0
471.omnetpp	459	13.6	458	13.6	456	13.7	351	17.8	348	18.0	351	17.8
473.astar	450	15.6	450	15.6	450	15.6	447	15.7	453	15.5	451	15.6
483.xalancbmk	219	31.6	219	31.5	219	31.6	219	31.6	219	31.5	219	31.6

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"
echo always > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1 > /proc/sys/vm/drop_caches
echo 1 > /proc/sys/vm/zone_reclaim_mode
```

Platform Notes

```
BIOS Configuration:
HP Power Profile set to Custom
HP Power Regulator to HP Static High Performance Mode
Minimum Processor Idle Power Package State set to No Package State
QPI Snoop Configuration set to Early Snoop
Thermal Configuration set to Maximum Cooling
Collaborative Power Control set to Disabled
Processor Power and Utilization Monitoring set to Disabled
Memory Double Refresh Rate set to 1x Refresh
```

```
Sysinfo program /home/cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 $# e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Thu Sep 11 17:26:13 2014
```

This section contains SUT (System Under Test) info as seen by
Continued on next page



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECint2006 = 29.8

ProLiant DL360 Gen9
(1.60 GHz, Intel Xeon E5-2603 v3)

SPECint_base2006 = 28.8

CPU2006 license: 3

Test date: Sep-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2014

Tested by: Hewlett-Packard Company

Software Availability: Sep-2014

Platform Notes (Continued)

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 E5-2603 v3 @ 1.60GHz
 2 "physical id"s (chips)
 12 "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
  physical 1: cores 0 1 2 3 4 5
cache size : 15360 KB

```

```

From /proc/meminfo
MemTotal:      263847304 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 localhost.localdomain 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 11 17:23

```

SPEC is set to: /home/cpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs   318G  6.2G  312G   2% /home

```

```

Additional information from dmidecode:
BIOS HP P89 07/11/2014
Memory:
 16x HP NOT AVAILABLE 16 GB 1600 MHz 2 rank
  8x UNKNOWN NOT AVAILABLE

```

(End of data from sysinfo program) Continued on next page



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECint2006 = 29.8

ProLiant DL360 Gen9
(1.60 GHz, Intel Xeon E5-2603 v3)

SPECint_base2006 = 28.8

CPU2006 license: 3

Test date: Sep-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2014

Tested by: Hewlett-Packard Company

Software Availability: Sep-2014

Platform Notes (Continued)

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:
16x HP NOT AVAILABLE 16 GB 1600 MHz 2 rank

General Notes

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

KMP_AFFINITY = "granularity=fine,scatter"

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

OMP_NUM_THREADS = "12"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RedHat EL 6.4

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.xalanbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

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



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECint2006 = 29.8

ProLiant DL360 Gen9
(1.60 GHz, Intel Xeon E5-2603 v3)

SPECint_base2006 = 28.8

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

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

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

400.perlbench: icc -m32

445.gobmk: 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
464.h264ref: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -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)
-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-ilp32
-opt-prefetch -ansi-alias

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECint2006 = 29.8

ProLiant DL360 Gen9
(1.60 GHz, Intel Xeon E5-2603 v3)

SPECint_base2006 = 28.8

CPU2006 license: 3

Test date: Sep-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2014

Tested by: Hewlett-Packard Company

Software Availability: Sep-2014

Peak Optimization Flags (Continued)

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
-opt-malloc-options=3 -auto-ilp32

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.hmmr: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
-ansi-alias

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

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.xalanbmk: 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-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>



SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant DL360 Gen9
(1.60 GHz, Intel Xeon E5-2603 v3)

SPECint2006 = 29.8

SPECint_base2006 = 28.8

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

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

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Wed Oct 8 19:41:46 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 8 October 2014.