



SPEC® CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECint®2006 = 65.6

ProLiant BL460c Gen9
(2.30 GHz, Intel Xeon E5-2699 v3)

SPECint_base2006 = 64.0

CPU2006 license: 3

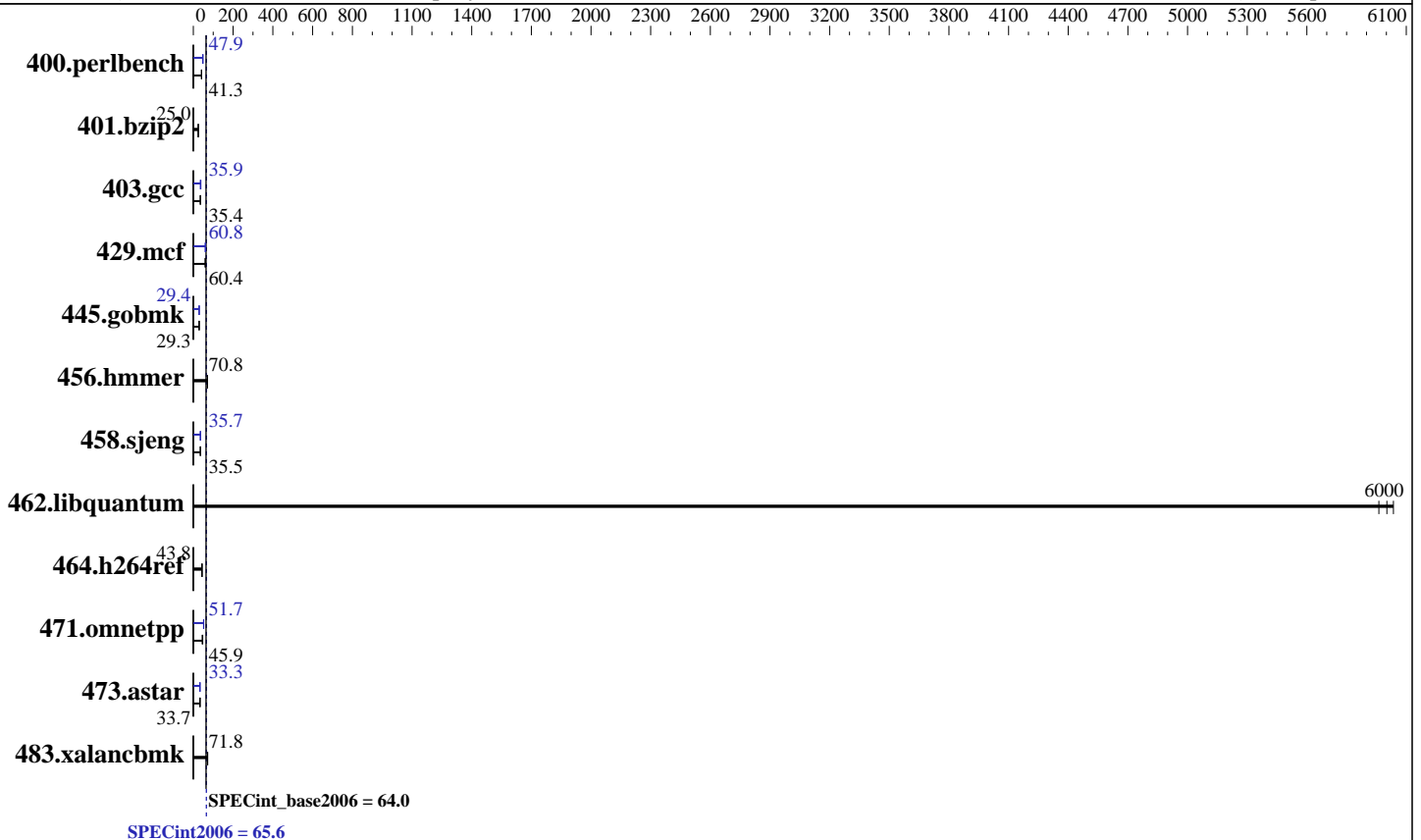
Test date: Oct-2015

Test sponsor: Hewlett-Packard Company

Hardware Availability: May-2015

Tested by: Hewlett-Packard Company

Software Availability: Sep-2014



Hardware

CPU Name: Intel Xeon E5-2699 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
 CPU MHz: 2300
 FPU: Integrated
 CPU(s) enabled: 18 cores, 1 chip, 18 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: 45 MB I+D on chip per chip
 Other Cache: None
 Memory: 128 GB (4 x 32 GB 2Rx4 PC4-2133P-R)
 Disk Subsystem: 1 x 400 GB SAS SSD, 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: 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 2006-2015 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECint2006 = **65.6**

ProLiant BL460c Gen9
(2.30 GHz, Intel Xeon E5-2699 v3)

SPECint_base2006 = **64.0**

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

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

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	236	41.4	238	41.1	<u>237</u>	<u>41.3</u>	204	47.9	<u>204</u>	<u>47.9</u>	204	48.0
401.bzip2	385	25.1	<u>386</u>	<u>25.0</u>	392	24.6	385	25.1	<u>386</u>	<u>25.0</u>	392	24.6
403.gcc	227	35.5	<u>227</u>	<u>35.4</u>	227	35.4	225	35.8	<u>224</u>	<u>35.9</u>	212	38.0
429.mcf	151	60.5	152	60.0	<u>151</u>	<u>60.4</u>	152	60.1	<u>150</u>	<u>60.8</u>	149	61.2
445.gobmk	359	29.3	<u>358</u>	<u>29.3</u>	357	29.4	<u>357</u>	<u>29.4</u>	357	29.4	358	29.3
456.hammer	<u>132</u>	<u>70.8</u>	132	70.9	132	70.7	<u>132</u>	<u>70.8</u>	132	70.9	132	70.7
458.sjeng	341	35.5	<u>341</u>	<u>35.5</u>	341	35.4	339	35.7	<u>339</u>	<u>35.7</u>	340	35.6
462.libquantum	<u>3.45</u>	<u>6000</u>	3.43	6040	3.48	5960	<u>3.45</u>	<u>6000</u>	3.43	6040	3.48	5960
464.h264ref	509	43.5	<u>505</u>	<u>43.8</u>	505	43.8	509	43.5	<u>505</u>	<u>43.8</u>	505	43.8
471.omnetpp	132	47.4	<u>136</u>	<u>45.9</u>	140	44.8	119	52.3	<u>121</u>	<u>51.7</u>	122	51.4
473.astar	<u>208</u>	<u>33.7</u>	208	33.8	211	33.2	210	33.4	211	33.2	<u>211</u>	<u>33.3</u>
483.xalancbmk	98.1	70.4	95.5	72.3	<u>96.1</u>	<u>71.8</u>	98.1	70.4	95.5	72.3	<u>96.1</u>	<u>71.8</u>

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 #\$ e3fbb8667b5a285932ceab81e28219e1
running on BL460c-Gen9-cpu2006 Thu Oct 1 12:23:40 2015

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECint2006 = 65.6

ProLiant BL460c Gen9
(2.30 GHz, Intel Xeon E5-2699 v3)

SPECint_base2006 = 64.0

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

Test date: Oct-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 E5-2699 v3 @ 2.30GHz
 1 "physical id"s (chips)
 18 "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    : 18
  siblings     : 18
  physical 0: cores 0 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
cache size     : 46080 KB
```

```
From /proc/meminfo
MemTotal:      131734220 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 Oct 1 12:22

```
SPEC is set to: /cpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda4       xfs   368G  70G  298G  20% /
```

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.

BIOS HP I36 05/06/2015

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECint2006 = 65.6

ProLiant BL460c Gen9
(2.30 GHz, Intel Xeon E5-2699 v3)

SPECint_base2006 = 64.0

CPU2006 license: 3

Test date: Oct-2015

Test sponsor: Hewlett-Packard Company

Hardware Availability: May-2015

Tested by: Hewlett-Packard Company

Software Availability: Sep-2014

Platform Notes (Continued)

Memory:

12x UNKNOWN NOT AVAILABLE

4x 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 128 GB and the dmidecode description should have one line reading as:

4x 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 = "18"

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

Copyright 2006-2015 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECint2006 = 65.6

ProLiant BL460c Gen9
(2.30 GHz, Intel Xeon E5-2699 v3)

SPECint_base2006 = 64.0

CPU2006 license: 3

Test date: Oct-2015

Test sponsor: Hewlett-Packard Company

Hardware Availability: May-2015

Tested by: Hewlett-Packard Company

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 -lsmarheap64`

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`



SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Hewlett-Packard Company

SPECint2006 = 65.6

ProLiant BL460c Gen9
(2.30 GHz, Intel Xeon E5-2699 v3)

SPECint_base2006 = 64.0

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

Test date: Oct-2015
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: basepeak = yes

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.hmmmer: 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)
-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.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca



SPEC CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

Hewlett-Packard Company

ProLiant BL460c Gen9
(2.30 GHz, Intel Xeon E5-2699 v3)

SPECint2006 = 65.6

SPECint_base2006 = 64.0

CPU2006 license: 3

Test sponsor: Hewlett-Packard Company

Tested by: Hewlett-Packard Company

Test date: Oct-2015

Hardware Availability: May-2015

Software Availability: Sep-2014

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>

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 Tue Oct 20 16:25:59 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 20 October 2015.