



# SPEC® CINT2006 Result

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## Hewlett-Packard Company

**SPECint®2006 = 62.2**

ProLiant DL380p Gen8  
(3.00 GHz, Intel Xeon E5-2690 v2)

**SPECint\_base2006 = 57.5**

CPU2006 license: 3

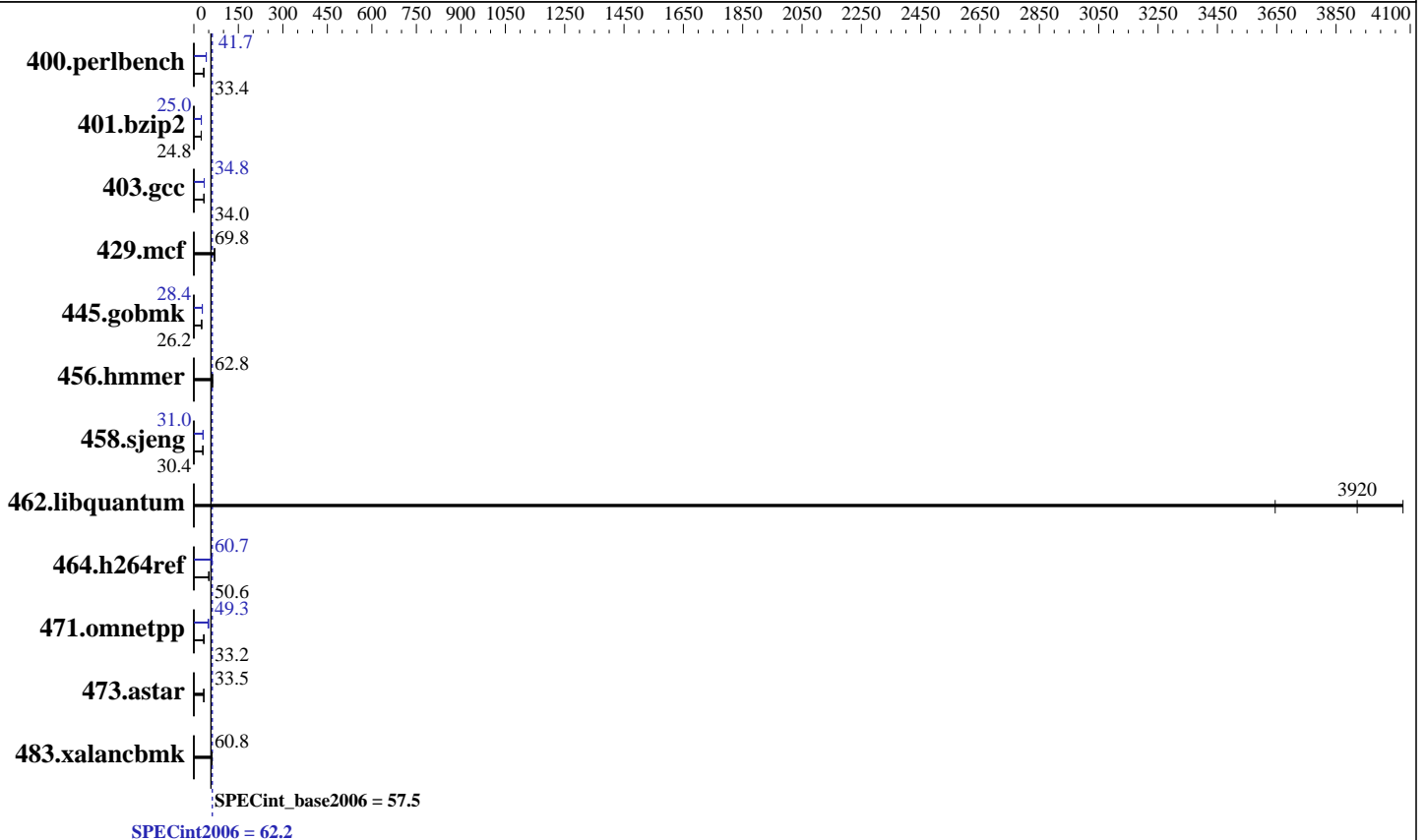
Test date: Nov-2013

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2013

Tested by: Hewlett-Packard Company

Software Availability: Sep-2013



### Hardware

CPU Name: Intel Xeon E5-2690 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 20 cores, 2 chips, 10 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: 25 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 128 GB (16 x 8 GB 2Rx4 PC3-14900R-13, ECC)  
 Disk Subsystem: 1 x 146 GB 15 K SAS, RAID 0  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 11 SP3 (x86\_64)  
 Kernel version 3.0.76-0.11-default  
 Compiler: C/C++; Version 14.0.0.080 of Intel C++ Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext3  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V10.0



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## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	293	33.3	<u>293</u>	<u>33.4</u>	292	33.5	235	41.6	234	41.7	<u>235</u>	<u>41.7</u>
401.bzip2	390	24.8	389	24.8	<u>389</u>	<u>24.8</u>	386	25.0	385	25.1	<u>386</u>	<u>25.0</u>
403.gcc	236	34.1	<u>237</u>	<u>34.0</u>	237	34.0	231	34.8	231	34.8	<u>231</u>	<u>34.8</u>
429.mcf	<u>131</u>	<u>69.8</u>	131	69.8	131	69.7	<u>131</u>	<u>69.8</u>	131	69.8	131	69.7
445.gobmk	401	26.1	<u>401</u>	<u>26.2</u>	400	26.2	<u>369</u>	<u>28.4</u>	369	28.4	369	28.4
456.hammer	148	62.8	150	62.2	<u>149</u>	<u>62.8</u>	148	62.8	150	62.2	<u>149</u>	<u>62.8</u>
458.sjeng	398	30.4	397	30.5	<u>398</u>	<u>30.4</u>	<u>390</u>	<u>31.0</u>	390	31.0	390	31.0
462.libquantum	5.08	4080	<u>5.28</u>	<u>3920</u>	5.68	3640	5.08	4080	<u>5.28</u>	<u>3920</u>	5.68	3640
464.h264ref	438	50.6	437	50.6	<u>438</u>	<u>50.6</u>	364	60.8	<u>365</u>	<u>60.7</u>	365	60.6
471.omnetpp	<u>188</u>	<u>33.2</u>	180	34.8	189	33.1	<u>127</u>	<u>49.3</u>	126	49.4	130	47.9
473.astar	210	33.4	209	33.6	<u>210</u>	<u>33.5</u>	210	33.4	209	33.6	<u>210</u>	<u>33.5</u>
483.xalancbmk	113	61.1	<u>113</u>	<u>60.8</u>	114	60.6	113	61.1	<u>113</u>	<u>60.8</u>	114	60.6

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"  
 Reclaim mode enabled with:  
 echo 1 > /proc/sys/vm/zone\_reclaim\_mode  
 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 --localalloc runspec <etc>  
 Disabled unused Linux services through "stop\_services.sh" before running.

## Platform Notes

BIOS Configuration:  
 Intel Hyperthreading Options set to Disabled  
 HP Power Profile set to Maximum Performance  
 Minimum Processor Idle Power Core State set to C1E  
 Minimum Processor Idle Power Package State set to C6 (retention)  
 Energy/Performance Bias is set to Maximum Performance  
 Memory Power Savings Mode set to Maximum Performance  
 Thermal Configuration set to Maximum Cooling  
 Collaborative Power Control set to Disabled  
 Dynamic Power Capping Functionality set to Disabled  
 Processor Power and Utilization Monitoring set to Disabled  
 Memory Refresh Rate set to 1x

Sysinfo program /cpu2006/config/sysinfo.rev6818

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### Platform Notes (Continued)

\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on dl380p-gen8-0s9 Mon Nov 4 05:27:09 2013

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 E5-2690 v2 @ 3.00GHz
 2 "physical id"s (chips)
 20 "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 : 10
  siblings  : 10
  physical 0: cores 0 1 2 3 4 8 9 10 11 12
  physical 1: cores 0 1 2 3 4 8 9 10 11 12
cache size : 25600 KB
```

```
From /proc/meminfo
MemTotal:      132130192 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

```
/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 11 (x86_64)
```

```
From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 11 (x86_64)
VERSION = 11
PATCHLEVEL = 3
```

```
uname -a:
Linux dl380p-gen8-0s9 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013
(ccab990) x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Nov 2 16:49 last=S
```

```
SPEC is set to: /cpu2006
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdal        ext3  135G   14G  121G  10% /
```

```
Additional information from dmidecode:
BIOS HP P70 09/08/2013
Memory:
16x HP 712382-071 8 GB 1866 MHz
8x UNKNOWN NOT AVAILABLE
```

(End of data from sysinfo program)  
Regarding the sysinfo display about the memory installed, the correct amount of  
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## Platform Notes (Continued)

memory is 128 GB and the dmidecode description should have one line reading as:  
16x HP 712382-071 8 GB 1866 MHz  
Regarding the sysinfo display about the CPU cores from /proc/cpuinfo, the correct mapping should display as cores 0 through 11. The mapping should read as the following:  
physical 0: cores 0 1 2 3 4 5 6 7 8 9  
physical 1: cores 0 1 2 3 4 5 6 7 8 9

## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/cpu2006/libs/32:/cpu2006/libs/64:/cpu2006/sh"  
OMP\_NUM\_THREADS = "20"

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.hmmmer: -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

## Base Optimization Flags

C benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

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## Base Optimization Flags (Continued)

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-Wl,-z,muldefs -L/sh -lsmartheap64

## 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

464.h264ref: 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

473.astar: -DSPEC\_CPU\_LP64

483.xalancbmk: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

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## Peak Optimization Flags (Continued)

400.perlbench: -xSSE4.2(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: -xSSE4.2(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

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -inline-calloc  
-opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias

456.hmmmer: basepeak = yes

458.sjeng: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2(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: basepeak = yes

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca



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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-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-revB.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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