SPEC® CINT2006 Result

Hewlett-Packard Company

ProLiant BL460c Gen8
(3.30 GHz, Intel Xeon E5-2667 v2)

$SPECint®2006 =$ 67.9

$SPECint\_base2006 =$ 62.9

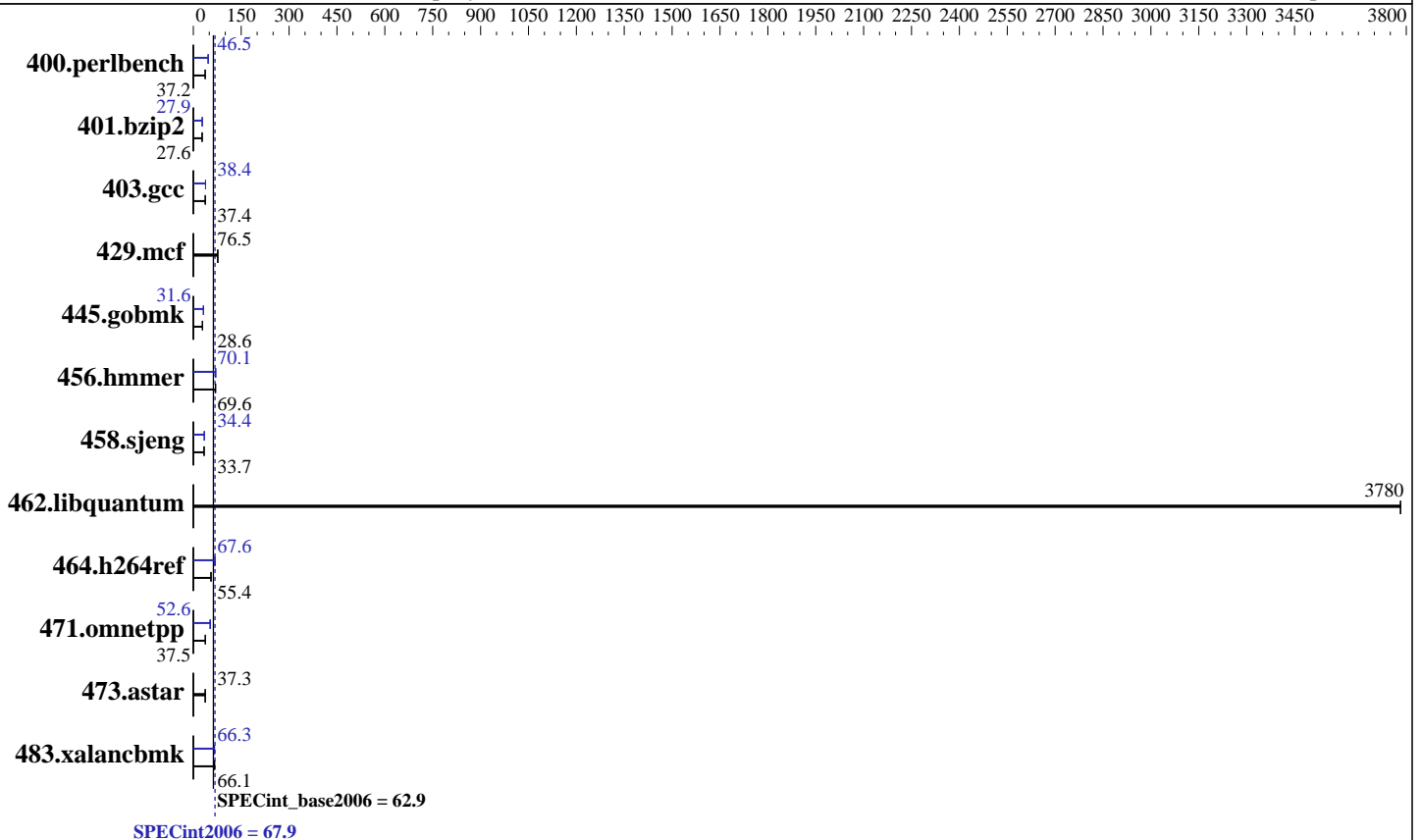|	
CPU2006 license: 3	**Test date:** Sep-2013
Test sponsor: Hewlett-Packard Company	**Hardware Availability:** Sep-2013
Tested by: Hewlett-Packard Company	**Software Availability:** Sep-2013

Graph scale: 0 150 300 450 600 750 900 1050 1200 1350 1500 1650 1800 1950 2100 2250 2400 2550 2700 2850 3000 3150 3300 3450 3800

- 400.perlbench: 46.5 / 37.2
- 401.bzip2: 27.9 / 27.6
- 403.gcc: 38.4 / 37.4
- 429.mcf: 76.5
- 445.gobmk: 31.6 / 28.6
- 456.hmmer: 70.1 / 69.6
- 458.sjeng: 34.4 / 33.7
- 462.libquantum: 3780
- 464.h264ref: 67.6 / 55.4
- 471.omnetpp: 52.6 / 37.5
- 473.astar: 37.3
- 483.xalancbmk: 66.3 / 66.1

SPECint_base2006 = 62.9

SPECint2006 = 67.9

Hardware

CPU Name:	Intel Xeon E5-2667 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 4.00 GHz
CPU MHz:	3300
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 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 200 GB SAS SSD, RAID 0
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 11 (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	**263**	**37.2**	263	37.2	262	37.2	210	46.5	**210**	**46.5**	210	46.5
401.bzip2	350	27.6	**350**	**27.6**	349	27.6	**346**	**27.9**	346	27.9	346	27.9
403.gcc	214	37.6	215	37.4	**215**	**37.4**	**210**	**38.4**	210	38.3	210	38.4
429.mcf	119	76.5	**119**	**76.5**	119	76.6	119	76.5	**119**	**76.5**	119	76.6
445.gobmk	366	28.7	**367**	**28.6**	368	28.5	332	31.6	**332**	**31.6**	331	31.7
456.hmmer	133	70.0	**134**	**69.6**	135	69.3	133	70.0	**133**	**70.1**	133	70.1
458.sjeng	**359**	**33.7**	359	33.7	359	33.7	**352**	**34.4**	352	34.4	352	34.4
462.libquantum	5.48	3780	5.48	3780	**5.48**	**3780**	5.48	3780	5.48	3780	**5.48**	**3780**
464.h264ref	**400**	**55.4**	399	55.5	400	55.4	**327**	**67.6**	328	67.5	327	67.7
471.omnetpp	165	37.8	**167**	**37.5**	167	37.4	116	54.0	119	52.6	**119**	**52.6**
473.astar	188	37.3	188	37.3	**188**	**37.3**	188	37.3	188	37.3	**188**	**37.3**
483.xalancbmk	**104**	**66.1**	105	65.8	103	67.2	104	66.4	104	66.2	**104**	**66.3**

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"
Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_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>
Disabled unused Linux services through "stop_services.sh" before running.
```

Platform Notes

```
BIOS Configuration:
 Intel HyperThreading set to Disabled
 HP Power Profile set to Maximum Performance
 Memory Power Savings Mode set to Maximum Performance
 Collaborative Power Control set to Disabled
 Dynamic Power Capping Functionality set to Disabled
 Thermal Configuration set to Maximum Cooling
 Processor Power and Utilization Monitoring set to Disabled
 Memory Refresh Rate set to 1x

 Sysinfo program /cpu2006/config/sysinfo.rev6818
 $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
 running on BL460cGen8-Sys3 Fri Sep 20 16:14:01 2013

 This section contains SUT (System Under Test) info as seen by
 some common utilities.  To remove or add to this section, see:
```

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Platform Notes (Continued)

```
    http://www.spec.org/cpu2006/Docs/config.html#sysinfo

  From /proc/cpuinfo
     model name : Intel(R) Xeon(R) CPU E5-2667 v2 @ 3.30GHz
        2 "physical id"s (chips)
       16 "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 : 8
        siblings  : 8
        physical 0: cores 1 2 3 4 8 9 10 11
        physical 1: cores 1 2 3 4 8 9 10 11
     cache size : 25600 KB

  From /proc/meminfo
     MemTotal:       132130196 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 BL460cGen8-Sys3 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 Sep 20 16:12 last=S

  SPEC is set to: /cpu2006
     Filesystem      Type  Size  Used Avail Use% Mounted on
     /dev/sda3       ext3  176G  9.3G  158G   6% /

  Additional information from dmidecode:
    BIOS HP I31 09/08/2013
    Memory:
     16x HP 712382-071 8 GB 1866 MHz

  (End of data from sysinfo program)
  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
     physical 1: cores 0 1 2 3 4 5 6 7
```

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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 = "16"

 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.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
```

Base Optimization Flags

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

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

Base Other Flags

C benchmarks:

Continued on next page

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Base Other Flags (Continued)

        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 -m32

        473.astar: icpc -m64

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_LINUX

Peak Optimization Flags

C benchmarks:

    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

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Peak Optimization Flags (Continued)

429.mcf: basepeak = yes

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

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
-ansi-alias

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: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
-Wl,-z,muldefs -L/sh -lsmartheap

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-revB.20131009.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.20131009.xml

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