SPEC® CINT2006 Result

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Hewlett-Packard Company

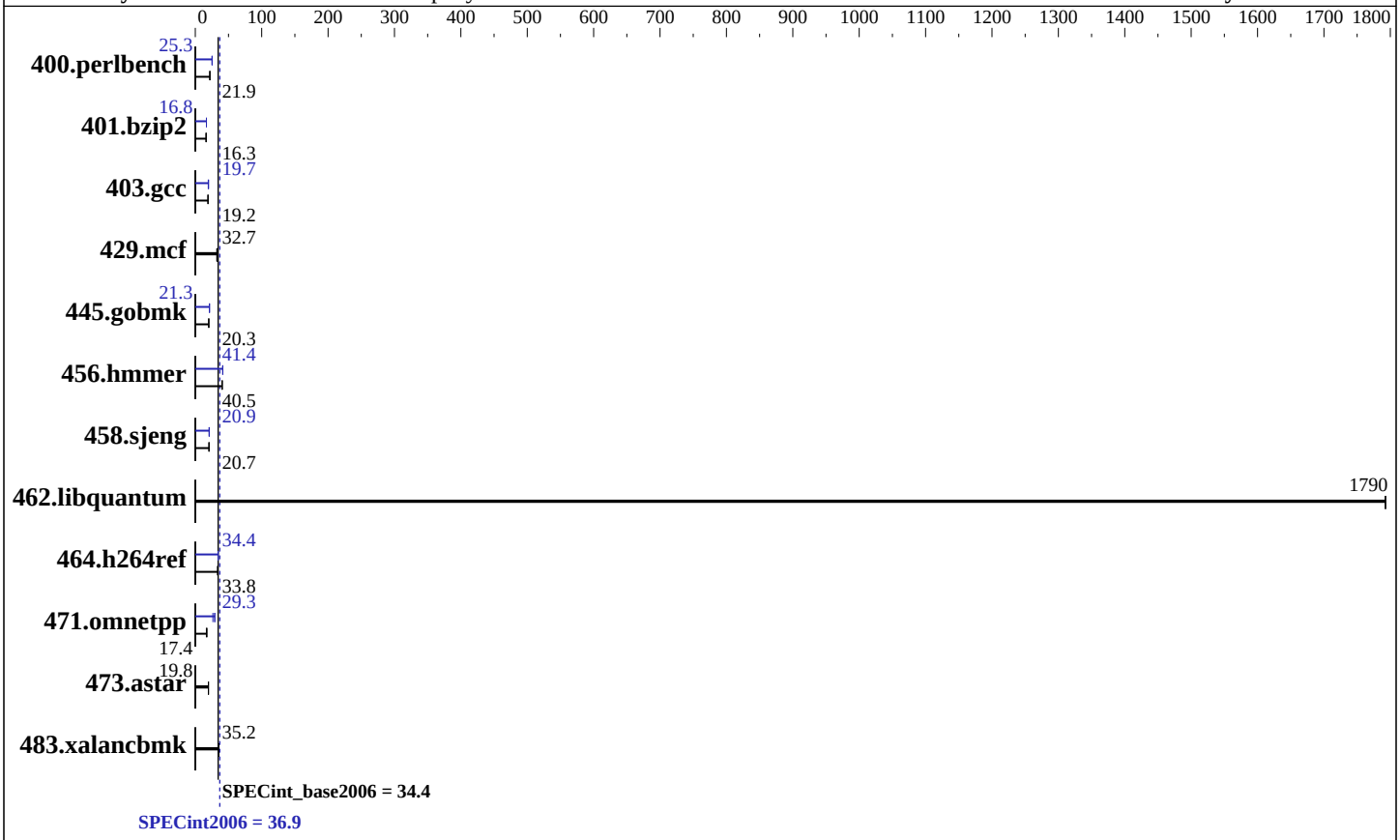
ProLiant DL580 G7
(2.66 GHz, Intel Xeon E7-8837)

SPECint®2006 = 36.9

SPECint_base2006 = 34.4

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

Test date: Aug-2012
Hardware Availability: Apr-2011
Software Availability: Oct-2011



Hardware

CPU Name:	Intel Xeon E7-8837
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2667
FPU:	Integrated
CPU(s) enabled:	32 cores, 4 chips, 8 cores/chip
CPU(s) orderable:	2,4 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	24 MB I+D on chip per chip
Other Cache:	None
Memory:	1 TB (64 x 16 GB 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem:	5 x 900 GB 6G SAS 10K, RAID 5
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64) 2.6.32.12-0.7-default
Compiler:	C/C++: Version 12.1.0.225 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 V9.01

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	443	22.0	447	21.9	**446**	**21.9**	386	25.3	385	25.4	**386**	**25.3**
401.bzip2	**592**	**16.3**	592	16.3	591	16.3	**576**	**16.8**	575	16.8	576	16.8
403.gcc	420	19.2	420	19.2	**420**	**19.2**	402	20.0	413	19.5	**408**	**19.7**
429.mcf	281	32.4	279	32.7	**279**	**32.7**	281	32.4	279	32.7	**279**	**32.7**
445.gobmk	517	20.3	**517**	**20.3**	518	20.3	492	21.3	492	21.3	**492**	**21.3**
456.hmmer	230	40.5	231	40.4	**231**	**40.5**	**226**	**41.4**	226	41.4	226	41.4
458.sjeng	**586**	**20.7**	585	20.7	586	20.7	578	20.9	577	21.0	**578**	**20.9**
462.libquantum	**11.6**	**1790**	11.6	1790	11.6	1790	**11.6**	**1790**	11.6	1790	11.6	1790
464.h264ref	652	33.9	657	33.7	**656**	**33.8**	644	34.4	**644**	**34.4**	644	34.4
471.omnetpp	359	17.4	375	16.7	**360**	**17.4**	213	29.3	**214**	**29.3**	236	26.4
473.astar	**355**	**19.8**	355	19.8	354	19.8	**355**	**19.8**	355	19.8	354	19.8
483.xalancbmk	196	35.2	195	35.4	**196**	**35.2**	196	35.2	195	35.4	**196**	**35.2**

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"
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
```

Platform Notes

```
BIOS Configuration:
  HP Power Profile set to Maximum Performance
  Thermal Configuration set to Increased Cooling
  Collaborative Power Control set to Disabled
 Sysinfo program /cpu2006/config/sysinfo.rev6800
 $Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
 running on dl580g7-r88 Sat Aug 11 16:18:28 2012

 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 E7- 8837 @ 2.67GHz
       4 "physical id"s (chips)
       32 "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
```

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Platform Notes (Continued)

```
        physical 0: cores 0 1 2 9 16 18 24 25
        physical 1: cores 0 1 2 8 17 18 24 25
        physical 2: cores 0 1 2 8 17 18 24 25
        physical 3: cores 0 1 8 9 16 17 24 25
     cache size : 24576 KB

  From /proc/meminfo
     MemTotal:       1058831952 kB
     HugePages_Total:       0
     Hugepagesize:       2048 kB

  From /etc/*release* /etc/*version*
     SuSE-release:
        SUSE Linux Enterprise Server 11 (x86_64)
        VERSION = 11
        PATCHLEVEL = 1

  uname -a:
     Linux dl580g7-r88 2.6.32.12-0.7-default #1 SMP 2010-05-20 11:14:20 +0200
     x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Aug 10 13:58 last=S

  SPEC is set to: /cpu2006
     Filesystem     Type    Size  Used Avail Use% Mounted on
     /dev/cciss/c0d0p2
                    ext3    3.3T   76G  3.0T   3% /

  Additional information from dmidecode:
    BIOS HP P65 12/01/2011

  (End of data from sysinfo program)
```

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"
OMP_NUM_THREADS = "16"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
```

Base Compiler Invocation

C benchmarks:

```
     icc  -m64
```

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Base Compiler Invocation (Continued)

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/smartheap -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

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Peak Compiler Invocation (Continued)

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:

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.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

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Peak Optimization Flags (Continued)

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/smartheap -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/HP-Platform-Flags-Intel-V1.2-A.20120605.html
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-A.20120605.xml
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml

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