SPEC® CINT2006 Result

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Hewlett-Packard Company

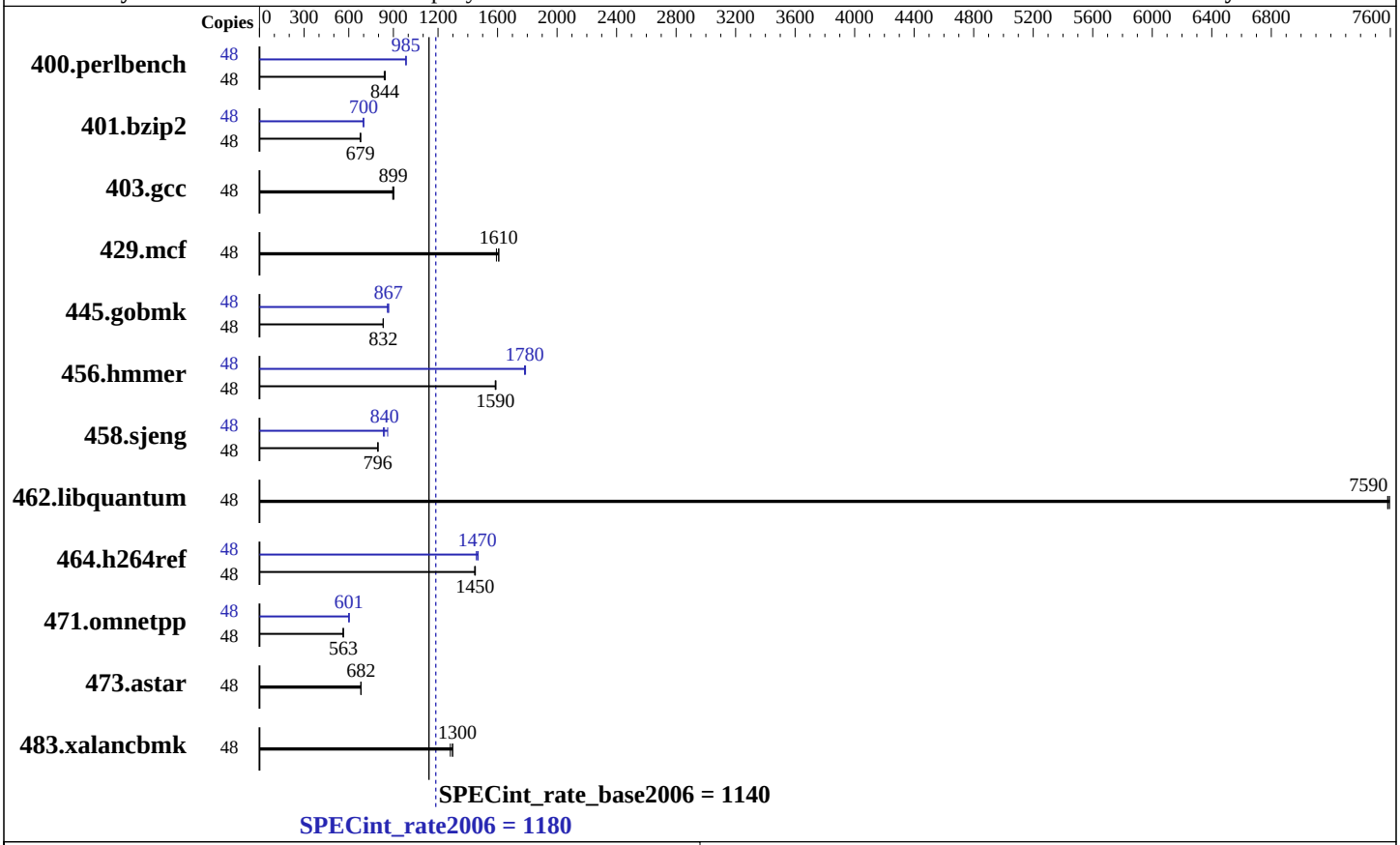
ProLiant DL580 Gen8
(3.40 GHz, Intel Xeon E7-8893 v2)

SPECint®_rate2006 = 1180

SPECint_rate_base2006 = 1140

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

Test date: Apr-2014
Hardware Availability: Feb-2014
Software Availability: Nov-2013



Hardware

CPU Name:	Intel Xeon E7-8893 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.70 GHz
CPU MHz:	3400
FPU:	Integrated
CPU(s) enabled:	24 cores, 4 chips, 6 cores/chip, 2 threads/core
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:	37.5 MB I+D on chip per chip
Other Cache:	None
Memory:	512 GB (32 x 16 GB 2Rx4 PC3-14900R-13, ECC, running at 1333 MHz and CL9)
Disk Subsystem:	1 x 400 GB SSD SAS, RAID 0
Other Hardware:	None

Software

Operating System:	Red Hat Enterprise Linux Server release 6.5 (Santiago) Kernel 2.6.32-431.el6.x86_64
Compiler:	C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux
Auto Parallel:	No
File System:	ext4
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V10.0

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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	48	559	838	555	845	**556**	**844**	48	476	984	476	985	**476**	**985**
401.bzip2	48	682	680	683	678	**682**	**679**	48	662	700	**662**	**700**	663	698
403.gcc	48	431	896	**430**	**899**	428	903	48	431	896	**430**	**899**	428	903
429.mcf	48	**272**	**1610**	275	1590	272	1610	48	**272**	**1610**	275	1590	272	1610
445.gobmk	48	606	831	**605**	**832**	605	832	48	580	868	**581**	**867**	586	860
456.hmmer	48	283	1580	282	1590	**282**	**1590**	48	250	1790	**251**	**1780**	251	1780
458.sjeng	48	**730**	**796**	730	796	729	796	48	**691**	**840**	674	862	697	833
462.libquantum	48	**131**	**7590**	131	7590	131	7580	48	**131**	**7590**	131	7590	131	7580
464.h264ref	48	732	1450	735	1450	**733**	**1450**	48	729	1460	723	1470	**725**	**1470**
471.omnetpp	48	533	563	**533**	**563**	532	564	48	499	601	498	602	**499**	**601**
473.astar	48	493	683	495	681	**494**	**682**	48	493	683	495	681	**494**	**682**
483.xalancbmk	48	258	1280	**255**	**1300**	255	1300	48	258	1280	**255**	**1300**	255	1300

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

Submit Notes

```
The numactl mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate numactl commands to bind each copy to a specific processor.
For details, please see the config file.
```

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:
 HP Power Profile set to Maximum Performance
 Collaborative Power Control set to Disabled
 Thermal Configuration set to Maximum Cooling
 Processor Power and Utilization Monitoring set to Disabled
 Memory Refresh Rate set to Disabled

Sysinfo program /cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on DL580-Gen8-SR Thu Apr  3 17:42:54 2014
```

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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 E7-8893 v2 @ 3.40GHz
      4 "physical id"s (chips)
      48 "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  : 12
      physical 0: cores 3 4 5 6 10 11
      physical 1: cores 3 4 5 6 10 11
      physical 2: cores 3 4 5 6 10 11
      physical 3: cores 3 4 5 6 10 11
   cache size : 38400 KB

From /proc/meminfo
   MemTotal:       529156280 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.5 (Santiago)

From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
   Linux DL580-Gen8-SR 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54 EST 2013
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Apr 3 17:41

SPEC is set to: /cpu2006
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda3      ext4  365G   13G  334G   4% /

Additional information from dmidecode:
  BIOS HP P79 02/21/2014
  Memory:
   32x HP 712383-081 16 GB 1333 MHz 2 rank
   64x UNKNOWN NOT AVAILABLE

(End of data from sysinfo program)
Regarding the sysinfo display about the memory installed, the correct amount of
memory is 512 GB and the dmidecode description should have one line reading as:
```

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Platform Notes (Continued)

```
      32x HP 712383-081 16 GB 1333 MHz 2 rank
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/cpu2006/libs/32:/cpu2006/libs/64:/cpu2006/sh"

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

Base Compiler Invocation

C benchmarks:
```
     icc  -m32
```

C++ benchmarks:
```
     icpc -m32
```

Base Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
462.libquantum: `-DSPEC_CPU_LINUX`
483.xalancbmk: `-DSPEC_CPU_LINUX`

Base Optimization Flags

C benchmarks:
```
     -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
```

C++ benchmarks:
```
     -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3
     -Wl,-z,muldefs -L/sh -lsmartheap
```

Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m32

400.perlbench: icc -m64

401.bzip2: icc -m64

456.hmmer: icc -m64

458.sjeng: icc -m64

C++ benchmarks:
icpc -m32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
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)
-auto-ilp32

401.bzip2: -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 -auto-ilp32 -ansi-alias

403.gcc: basepeak = yes

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -opt-mem-layout-trans=3

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

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 -auto-ilp32

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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) -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/sh -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/Intel-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-revD.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-revD.xml

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For other inquiries, please contact webmaster@spec.org.

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