



SPEC® CINT2006 Result

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Hewlett-Packard Company

SPECint®_rate2006 = 1890

ProLiant DL980 G7
(2.00 GHz, Intel Xeon E7-2850)

SPECint_rate_base2006 = 1810

CPU2006 license: 3

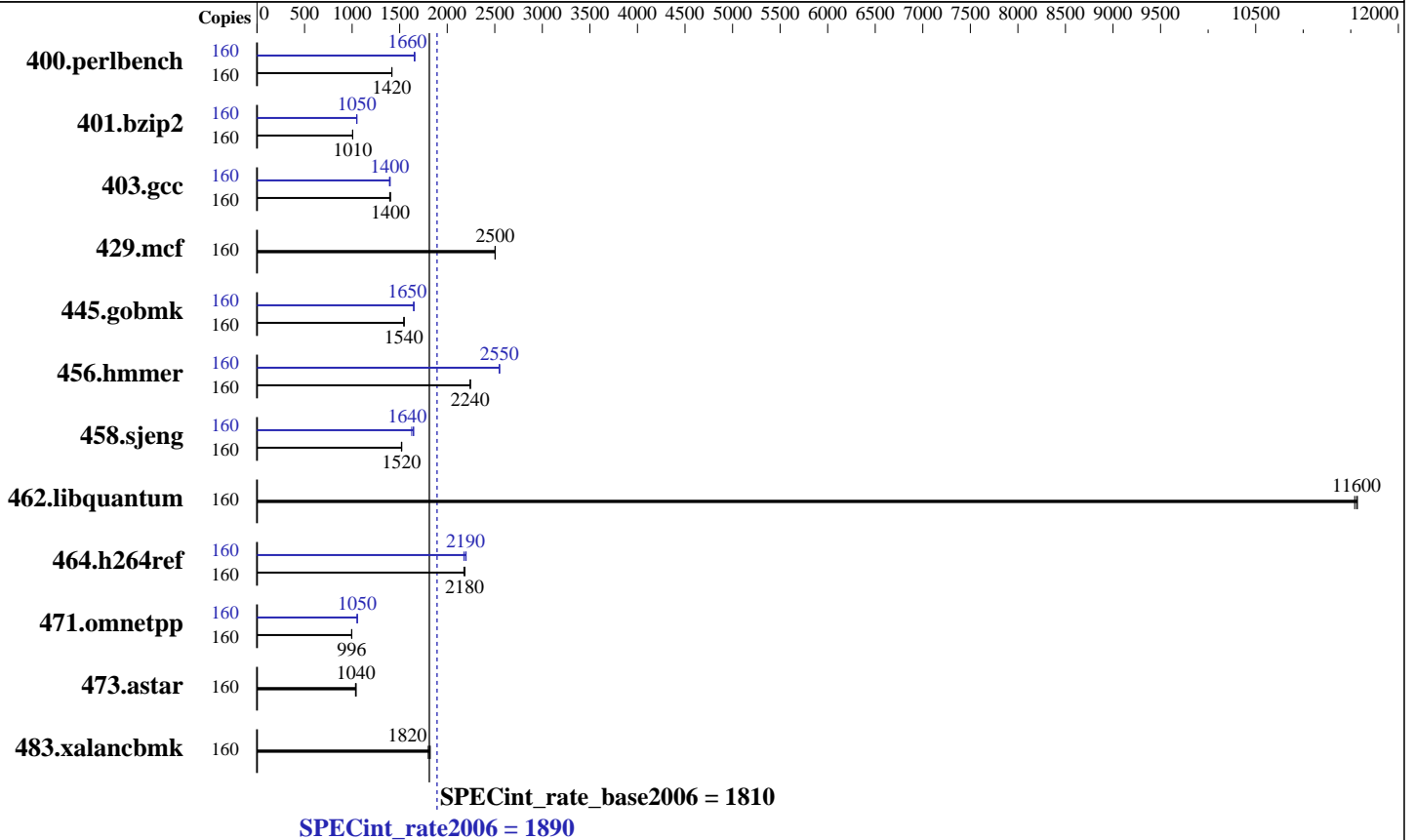
Test date: Apr-2014

Test sponsor: Hewlett-Packard Company

Hardware Availability: Jul-2013

Tested by: Hewlett-Packard Company

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E7-2850
 CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz
 CPU MHz: 2000
 FPU: Integrated
 CPU(s) enabled: 80 cores, 8 chips, 10 cores/chip, 2 threads/core
 CPU(s) orderable: 4,8 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: 2 TB (128 x 16 GB 2Rx4 PC3L-10600R-9, ECC, running at 1066 MHz and CL7)
 Disk Subsystem: 4 x 300 GB 15 K SAS, RAID 1
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.4, (Santiago)
 Kernel 2.6.32-358.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	160	<u>1102</u>	<u>1420</u>	1103	1420	1102	1420	160	946	1650	942	1660	<u>944</u>	<u>1660</u>
401.bzip2	160	<u>1535</u>	<u>1010</u>	1534	1010	1536	1010	160	1473	1050	<u>1471</u>	<u>1050</u>	1471	1050
403.gcc	160	923	1400	918	1400	<u>919</u>	<u>1400</u>	160	925	1390	<u>922</u>	<u>1400</u>	920	1400
429.mcf	160	583	2500	583	2500	<u>583</u>	<u>2500</u>	160	583	2500	583	2500	<u>583</u>	<u>2500</u>
445.gobmk	160	1087	1540	1085	1550	<u>1086</u>	<u>1540</u>	160	1017	1650	1019	1650	<u>1018</u>	<u>1650</u>
456.hammer	160	666	2240	666	2240	<u>666</u>	<u>2240</u>	160	585	2550	<u>586</u>	<u>2550</u>	586	2550
458.sjeng	160	1272	1520	1275	1520	<u>1274</u>	<u>1520</u>	160	1175	1650	<u>1178</u>	<u>1640</u>	1190	1630
462.libquantum	160	287	11600	<u>287</u>	<u>11600</u>	287	11500	160	287	11600	<u>287</u>	<u>11600</u>	287	11500
464.h264ref	160	1628	2180	<u>1621</u>	<u>2180</u>	1620	2190	160	1628	2170	1610	2200	<u>1615</u>	<u>2190</u>
471.omnetpp	160	1005	995	<u>1004</u>	<u>996</u>	1003	997	160	949	1050	<u>949</u>	<u>1050</u>	949	1050
473.astar	160	<u>1080</u>	<u>1040</u>	1078	1040	1085	1040	160	<u>1080</u>	<u>1040</u>	1078	1040	1085	1040
483.xalancbmk	160	<u>608</u>	<u>1820</u>	606	1820	613	1800	160	<u>608</u>	<u>1820</u>	606	1820	613	1800

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>

Platform Notes

BIOS Configuration:
HP Power Profile set to Maximum Performance
Collaborative Power Control set to Disabled
Memory Power Savings Mode set to Maximum Performance
Thermal Configuration set so Maximum Cooling
Processor Power and Utilization Monitoring set to Disabled
Memory Refresh Rate set to 1x Refresh

Sysinfo program /home/cpu2006/config/sysinfo.rev6818
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191
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Platform Notes (Continued)

running on hd70.epc.external.hp.com Tue Apr 29 10:40:54 2014

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- 2850 @ 2.00GHz
 8 "physical id"s (chips)
160 "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  : 20
 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
 physical 2: cores 0 1 2 3 4 5 6 7 8 9
 physical 3: cores 0 1 2 3 4 5 6 7 8 9
 physical 4: cores 0 1 2 3 4 5 6 7 8 9
 physical 5: cores 0 1 2 3 4 5 6 7 8 9
 physical 6: cores 0 1 2 3 4 5 6 7 8 9
 physical 7: cores 0 1 2 3 4 5 6 7 8 9
cache size : 24576 KB

```

```

From /proc/meminfo
MemTotal:      2117632736 kB
HugePages_Total:       0
Hugepagesize:       2048 kB

```

```

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

```

```

uname -a:
Linux hd70.epc.external.hp.com 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29
11:47:41 EST 2013 x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Apr 29 06:48

```

SPEC is set to: /home/cpu2006
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/mapper/vg_hd70-lv_home
ext4            497G      76G      396G    16% /home

```

```

Additional information from dmidecode:
BIOS HP P66 07/29/2013
Memory:
128x Not Specified Not Specified 16 GB 1066 MHz 2 rank

```

(End of data from sysinfo program)



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General Notes

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

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Peak Compiler Invocation (Continued)

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: `-xSSE4.2 -ipo -O3 -no-prec-div`

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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