



# SPEC® CINT2006 Result

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## Hewlett-Packard Company

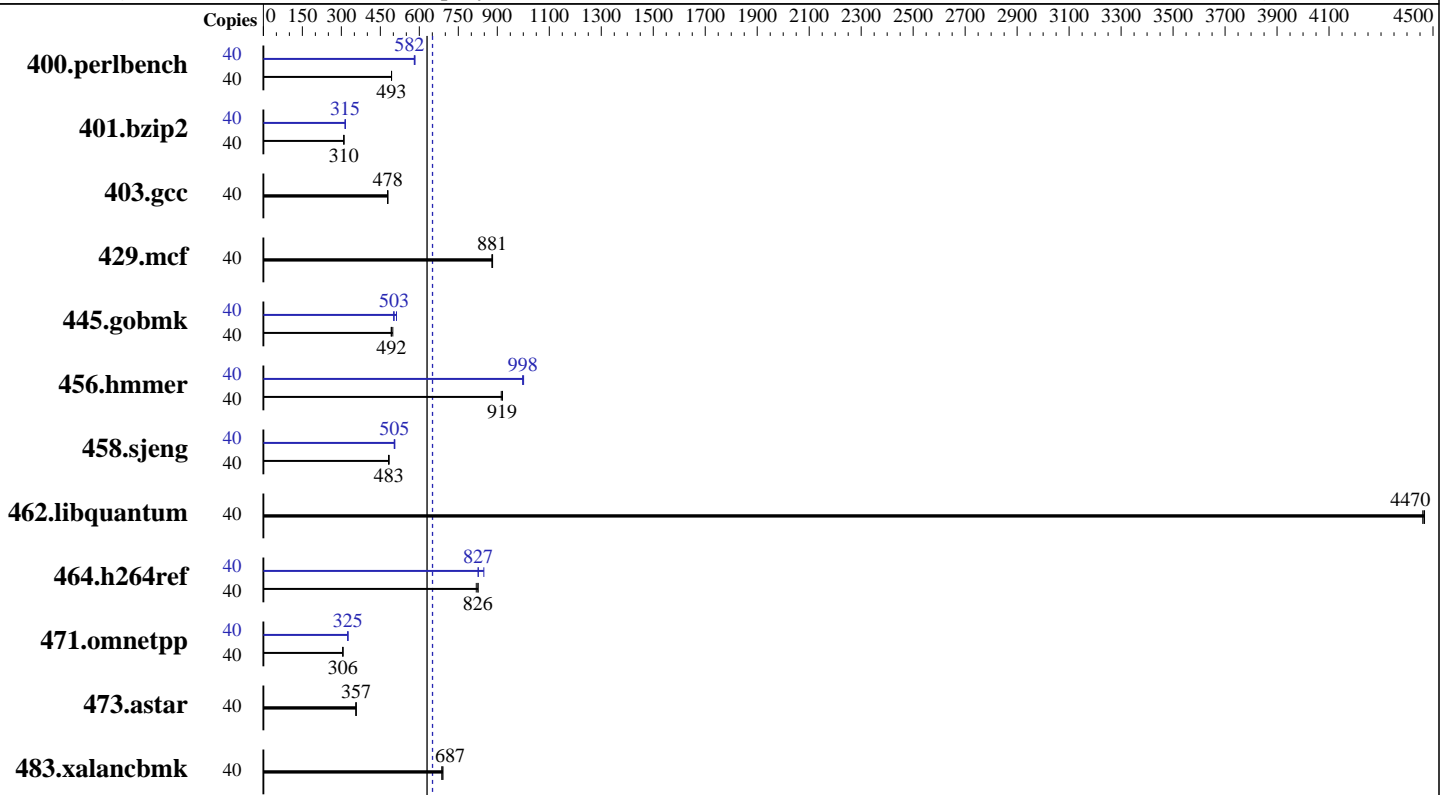
SPECint®\_rate2006 = 651

ProLiant DL580 Gen8  
(2.20 GHz, Intel Xeon E7-4830 v2)

SPECint\_rate\_base2006 = 630

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

Test date: Mar-2015  
Hardware Availability: Nov-2014  
Software Availability: Oct-2013



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### Hardware

CPU Name: Intel Xeon E7-4830 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.70 GHz  
 CPU MHz: 2200  
 FPU: Integrated  
 CPU(s) enabled: 20 cores, 2 chips, 10 cores/chip, 2 threads/core  
 CPU(s) orderable: 2,3,4 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: 20 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 512 GB (32 x 16 GB 2Rx4 PC3-14900R-13, ECC, running at 1067 MHz and CL9)  
 Disk Subsystem: 2 x 300 GB 15 K SAS, RAID 1  
 Other Hardware: None

### Software

Operating System: SUSE Linux Enterprise Server 11 (x86\_64) SP3  
 Kernel 3.0.101-0.31-default  
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux  
 Auto Parallel: No  
 File System: ext3  
 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	40	<b>793</b>	<b>493</b>	793	493	792	493	40	673	581	<b>671</b>	<b>582</b>	670	583
401.bzip2	40	<b>1247</b>	<b>310</b>	1246	310	1247	309	40	1228	314	1224	315	<b>1224</b>	<b>315</b>
403.gcc	40	673	478	<b>673</b>	<b>478</b>	673	478	40	673	478	<b>673</b>	<b>478</b>	673	478
429.mcf	40	<b>414</b>	<b>881</b>	415	879	414	882	40	<b>414</b>	<b>881</b>	415	879	414	882
445.gobmk	40	<b>852</b>	<b>492</b>	843	498	853	492	40	<b>834</b>	<b>503</b>	819	512	837	501
456.hammer	40	<b>406</b>	<b>919</b>	406	920	408	915	40	373	1000	<b>374</b>	<b>998</b>	374	998
458.sjeng	40	1005	482	<b>1002</b>	<b>483</b>	1002	483	40	958	505	961	503	<b>958</b>	<b>505</b>
462.libquantum	40	186	4460	<b>186</b>	<b>4470</b>	186	4470	40	186	4460	<b>186</b>	<b>4470</b>	186	4470
464.h264ref	40	<b>1072</b>	<b>826</b>	1072	826	1081	819	40	1044	848	1071	826	<b>1071</b>	<b>827</b>
471.omnetpp	40	817	306	818	306	<b>817</b>	<b>306</b>	40	<b>769</b>	<b>325</b>	770	325	768	325
473.astar	40	<b>788</b>	<b>357</b>	788	356	786	357	40	<b>788</b>	<b>357</b>	788	356	786	357
483.xalancbmk	40	402	687	<b>402</b>	<b>687</b>	399	691	40	402	687	<b>402</b>	<b>687</b>	399	691

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/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  
Thermal Configuration set so Maximum Cooling  
Processor Power and Utilization Monitoring set to Disabled  
Memory Double Refresh Rate set to Disabled  
  
Sysinfo program /cpu/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on PL23 Fri Mar 13 17:15:51 2015

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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 E7-4830 v2 @ 2.20GHz
 2 "physical id"s (chips)
 40 "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 8 9 10 11 12
  physical 1   : cores 0 1 2 3 4 8 9 10 11 12
cache size     : 20480 KB

```

```

From /proc/meminfo
MemTotal:      529325068 kB
HugePages_Total: 0
Hugepagesize:  2048 kB

```

```

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

```

```

uname -a:
Linux PL23 3.0.101-0.31-default #1 SMP Wed Jun 4 08:59:53 UTC 2014 (87c5279)
x86_64 x86_64 x86_64 GNU/Linux

```

run-level 3 Mar 13 16:59 last=S

```

SPEC is set to: /cpu
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdal       ext3  275G  7.1G  255G   3% /

```

```

Additional information from dmidecode:
BIOS HP P79 11/26/2014
Memory:
 32x HP 712383-081 16 GB 1067 MHz
 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: 32x HP 712383-081 16 GB 1067 MHz



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## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/cpu/libs/32:/cpu/libs/64:/cpu/sh"

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

NOTE: Although compliant with all of the SPEC runrules restrictions, this result  
has not been formally submitted to SPEC and should therefore be considered as  
an estimate.

## 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



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## 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-revC.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-revC.xml>  
<http://www.spec.org/cpu2006/flags/HP-Platform-Flags-Intel-V1.2-revD.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Wed Apr 8 11:04:19 2015 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 7 April 2015.