



# SPEC<sup>®</sup> CINT2006 Result

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## Hewlett-Packard Company

SPECint<sup>®</sup>\_rate2006 = 641

ProLiant BL460c Gen8  
(3.50 GHz, Intel Xeon E5-2643 v2)

SPECint\_rate\_base2006 = 615

CPU2006 license: 3

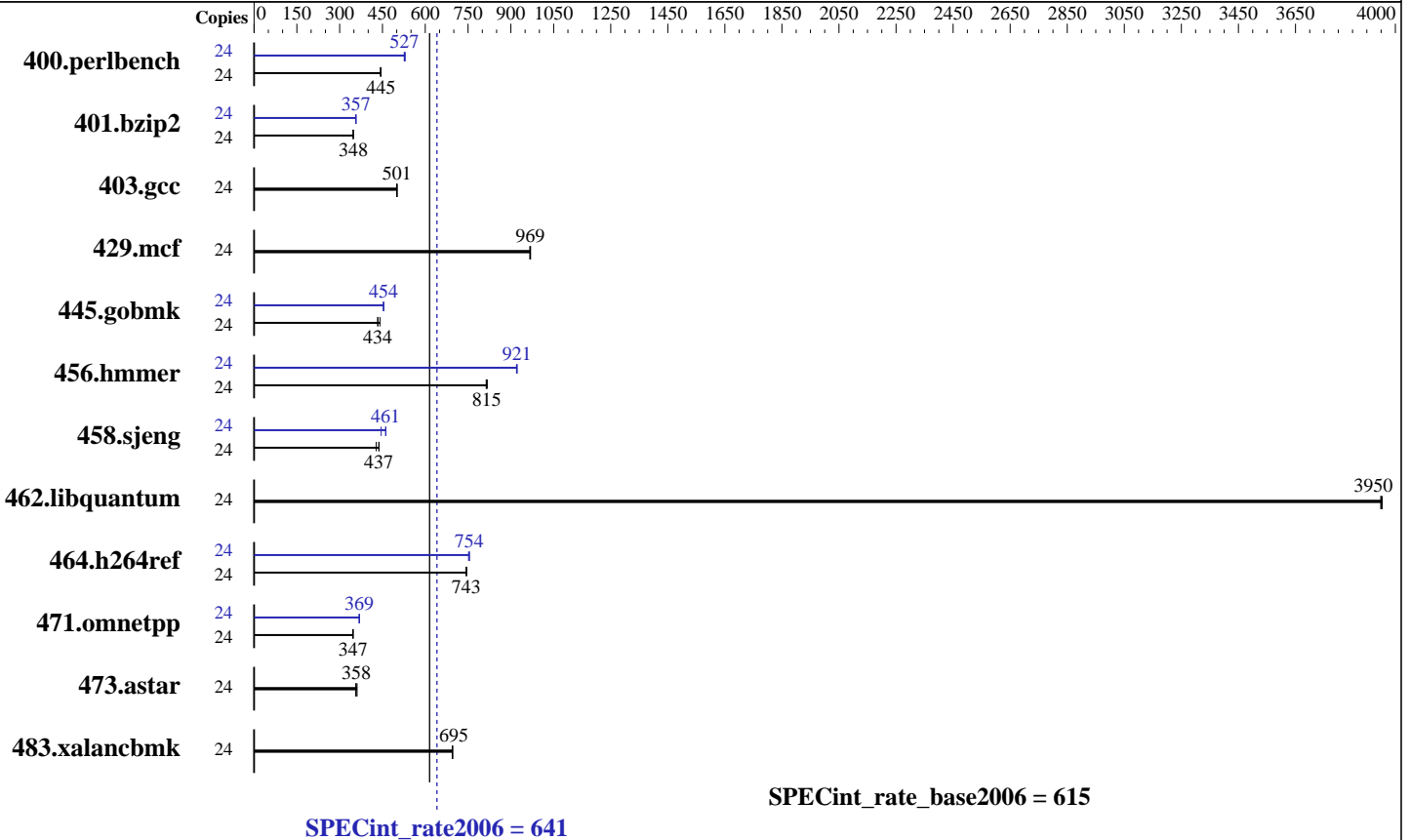
Test date: Oct-2013

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2013

Tested by: Hewlett-Packard Company

Software Availability: Sep-2013



### Hardware

CPU Name: Intel Xeon E5-2643 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz  
 CPU MHz: 3500  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core  
 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 300 GB SSD 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	24	527	445	<u>527</u>	<u>445</u>	530	443	24	443	530	<u>445</u>	<u>527</u>	445	527
401.bzip2	24	667	347	666	348	<u>666</u>	<u>348</u>	24	648	357	<u>649</u>	<u>357</u>	649	357
403.gcc	24	385	501	<u>386</u>	<u>501</u>	386	500	24	385	501	<u>386</u>	<u>501</u>	386	500
429.mcf	24	226	969	227	966	<u>226</u>	<u>969</u>	24	226	969	227	966	<u>226</u>	<u>969</u>
445.gobmk	24	<u>581</u>	<u>434</u>	571	441	581	433	24	555	453	<u>555</u>	<u>454</u>	554	454
456.hammer	24	275	814	<u>275</u>	<u>815</u>	274	817	24	243	922	243	920	<u>243</u>	<u>921</u>
458.sjeng	24	678	428	663	438	<u>664</u>	<u>437</u>	24	629	462	652	445	<u>630</u>	<u>461</u>
462.libquantum	24	<u>126</u>	<u>3950</u>	126	3950	126	3950	24	<u>126</u>	<u>3950</u>	126	3950	126	3950
464.h264ref	24	<u>714</u>	<u>743</u>	715	743	713	745	24	706	752	<u>704</u>	<u>754</u>	704	755
471.omnetpp	24	432	348	434	346	<u>433</u>	<u>347</u>	24	407	368	<u>406</u>	<u>369</u>	406	369
473.astar	24	467	361	<u>471</u>	<u>358</u>	473	356	24	467	361	<u>471</u>	<u>358</u>	473	356
483.xalancbmk	24	238	694	<u>238</u>	<u>695</u>	238	696	24	238	694	<u>238</u>	<u>695</u>	238	696

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:  
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  
Energy/Performance Bias is set to Maximum Performance  
Memory Power Savings Mode set to Maximum Performance  
Thermal Configuration set to Maximum Cooling  
Collaborative Power Control set to Disabled  
Dynamic Power Capping Functionality set to Disabled  
Processor Power and Utilization Monitoring set to Disabled  
Memory Refresh Rate set to 1x

Sysinfo program /cpu2006/config/sysinfo.rev6818  
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### Platform Notes (Continued)

\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on BL460cGen8-BT-Sys2 Fri Oct 11 16:21:27 2013

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 E5-2643 v2 @ 3.50GHz
 2 "physical id"s (chips)
 24 "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 2 3 4 8 9 10
  physical 1: cores 2 3 4 8 9 10
cache size : 25600 KB
```

```
From /proc/meminfo
MemTotal:      132119288 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

```
/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.4 (Santiago)
```

```
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 BL460cGen8-BT-Sys2 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 Oct 11 16:05
```

```
SPEC is set to: /cpu2006
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sda3        ext4      268G  15G  240G   6% /
```

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

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**Software Availability:** Sep-2013

## Peak Compiler Invocation (Continued)

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`

462.libquantum: `basepeak = yes`

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## Peak Optimization Flags (Continued)

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/HP-Platform-Flags-Intel-V1.2-revB.html>

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.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-revB.xml>

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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