



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## IBM Corporation

IBM System x3850 X5 (Intel Xeon E7-4860, 2.27 GHz)

**SPECint®\_rate2006 = 1080**

**SPECint\_rate\_base2006 = 1020**

CPU2006 license: 11

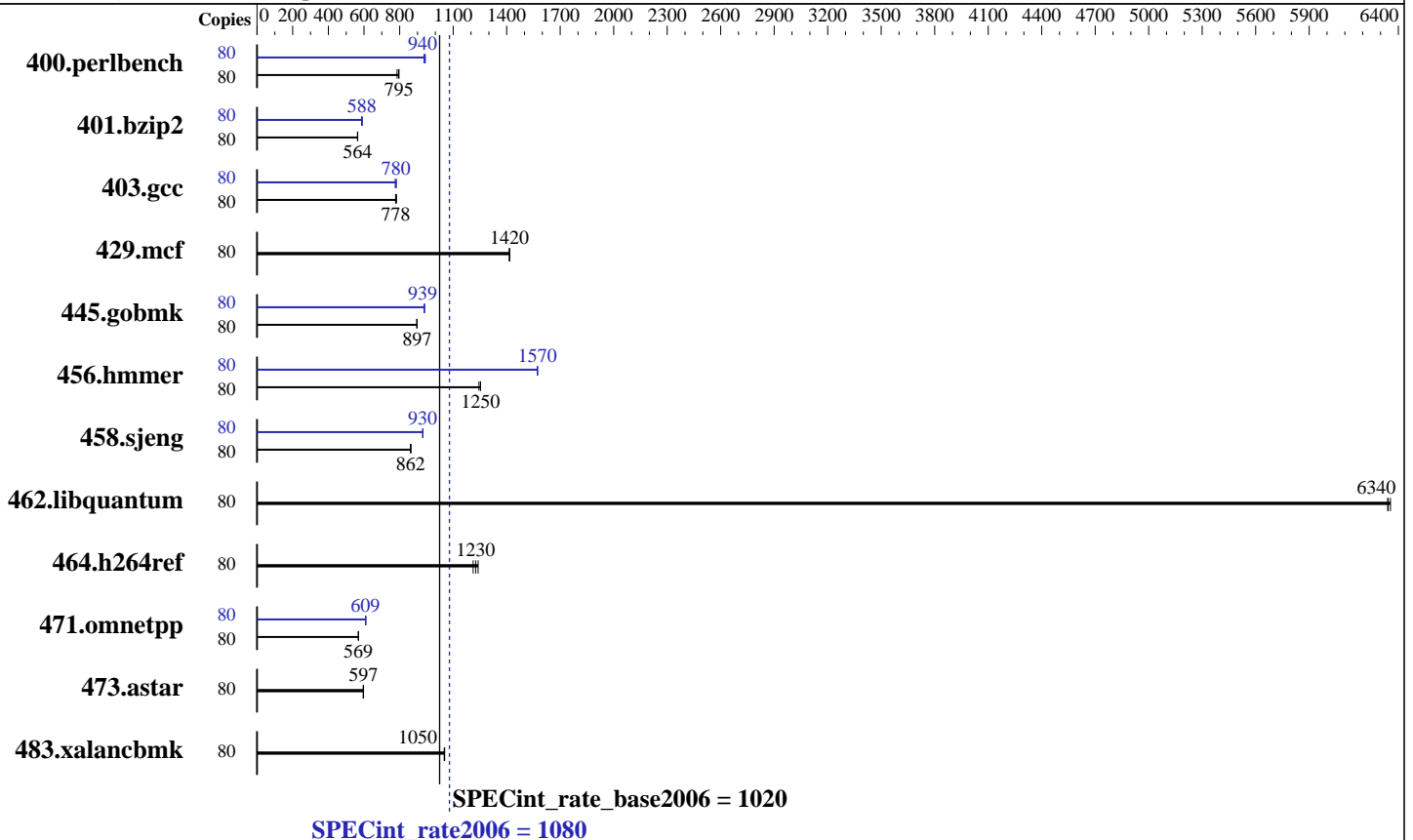
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Sep-2012

Hardware Availability: May-2011

Software Availability: Dec-2011



### Hardware

CPU Name: Intel Xeon E7-4860  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.67 GHz  
 CPU MHz: 2267  
 FPU: Integrated  
 CPU(s) enabled: 40 cores, 4 chips, 10 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2,3,4 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: 24 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 512 GB (64 x 8 GB 4Rx8 PC3L-8500R-7, ECC)  
 Disk Subsystem: 1 x 300 GB SAS, 10000 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)  
 2.6.32-220.el6.x86\_64  
 Compiler: C/C++: Version 12.1.0.225 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 V9.01



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## IBM Corporation

IBM System x3850 X5 (Intel Xeon E7-4860, 2.27 GHz)

SPECint\_rate2006 = 1080

SPECint\_rate\_base2006 = 1020

CPU2006 license: 11  
Test sponsor: IBM Corporation  
Tested by: IBM Corporation

Test date: Sep-2012  
Hardware Availability: May-2011  
Software Availability: Dec-2011

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	80	995	785	<b>983</b>	<b>795</b>	982	796	80	835	936	828	944	<b>831</b>	<b>940</b>
401.bzip2	80	1367	565	<b>1368</b>	<b>564</b>	1371	563	80	<b>1312</b>	<b>588</b>	1307	590	1316	586
403.gcc	80	823	782	<b>828</b>	<b>778</b>	829	777	80	<b>826</b>	<b>780</b>	824	781	831	775
429.mcf	80	<b>515</b>	<b>1420</b>	515	1420	516	1420	80	<b>515</b>	<b>1420</b>	515	1420	516	1420
445.gobmk	80	<b>935</b>	<b>897</b>	935	898	937	896	80	895	938	<b>894</b>	<b>939</b>	893	940
456.hammer	80	595	1250	<b>596</b>	<b>1250</b>	600	1240	80	475	1570	474	1570	<b>475</b>	<b>1570</b>
458.sjeng	80	1124	861	<b>1124</b>	<b>862</b>	1122	863	80	1042	929	1041	930	<b>1041</b>	<b>930</b>
462.libquantum	80	261	6340	261	6360	<b>261</b>	<b>6340</b>	80	261	6340	261	6360	<b>261</b>	<b>6340</b>
464.h264ref	80	1460	1210	1428	1240	<b>1443</b>	<b>1230</b>	80	1460	1210	1428	1240	<b>1443</b>	<b>1230</b>
471.omnetpp	80	879	569	<b>879</b>	<b>569</b>	879	569	80	822	608	819	611	<b>822</b>	<b>609</b>
473.astar	80	<b>940</b>	<b>597</b>	940	597	944	595	80	<b>940</b>	<b>597</b>	940	597	944	595
483.xalancbmk	80	525	1050	526	1050	<b>525</b>	<b>1050</b>	80	525	1050	526	1050	<b>525</b>	<b>1050</b>

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"

## Platform Notes

Turbo Boost Power Optimization set to Traditional in BIOS  
Sysinfo program /cpu2006.1.2/config/sysinfo.rev6800  
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
running on ghidorah-pete Tue Sep 25 16:26:20 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- 4860 @ 2.27GHz  
4 "physical id"s (chips)  
80 "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

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## IBM Corporation

IBM System x3850 X5 (Intel Xeon E7-4860, 2.27 GHz)

**SPECint\_rate2006 = 1080**

**SPECint\_rate\_base2006 = 1020**

**CPU2006 license:** 11  
**Test sponsor:** IBM Corporation  
**Tested by:** IBM Corporation

**Test date:** Sep-2012  
**Hardware Availability:** May-2011  
**Software Availability:** Dec-2011

### Platform Notes (Continued)

```
siblings : 20
physical 0: cores 0 1 2 8 9 16 17 18 24 25
physical 1: cores 0 1 2 8 9 16 17 18 24 25
physical 2: cores 0 1 2 8 9 16 17 18 24 25
physical 3: cores 0 1 2 8 9 16 17 18 24 25
cache size : 24576 KB
```

```
From /proc/meminfo
MemTotal:      529211644 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

```
/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.2 (Santiago)
```

```
From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

```
uname -a:
Linux ghidorah-pete 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011
x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Sep 24 15:15
```

```
SPEC is set to: /cpu2006.1.2
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/vg_ghidorahpete-lv_root
                ext4      264G  5.9G  245G   3% /
```

```
Additional information from dmidecode:
Memory:
64x Hynix HMT31GR7BFR8A-G7 8 GB 1067 MHz 4 rank
```

(End of data from sysinfo program)

### General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/cpu2006.1.2/libs/32:/cpu2006.1.2/libs/64"

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



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**IBM Corporation**

IBM System x3850 X5 (Intel Xeon E7-4860, 2.27 GHz)

**SPECint\_rate2006 = 1080**

**SPECint\_rate\_base2006 = 1020**

**CPU2006 license:** 11  
**Test sponsor:** IBM Corporation  
**Tested by:** IBM Corporation

**Test date:** Sep-2012  
**Hardware Availability:** May-2011  
**Software Availability:** Dec-2011

## 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/smartheap -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



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**IBM Corporation**

IBM System x3850 X5 (Intel Xeon E7-4860, 2.27 GHz)

**SPECint\_rate2006 = 1080**

**SPECint\_rate\_base2006 = 1020**

**CPU2006 license:** 11

**Test sponsor:** IBM Corporation

**Tested by:** IBM Corporation

**Test date:** Sep-2012

**Hardware Availability:** May-2011

**Software Availability:** Dec-2011

## 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

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

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/smartheap -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**IBM Corporation**

IBM System x3850 X5 (Intel Xeon E7-4860, 2.27 GHz)

**SPECint\_rate2006 = 1080**

**SPECint\_rate\_base2006 = 1020**

**CPU2006 license:** 11  
**Test sponsor:** IBM Corporation  
**Tested by:** IBM Corporation

**Test date:** Sep-2012  
**Hardware Availability:** May-2011  
**Software Availability:** Dec-2011

## 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-ic12.1-official-linux64.20111122.html>  
<http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-WSM-C.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>  
<http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-WSM-C.xml>

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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 Thu Jul 24 17:07:55 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 23 October 2012.