



# SPEC<sup>®</sup> CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## IBM Corporation

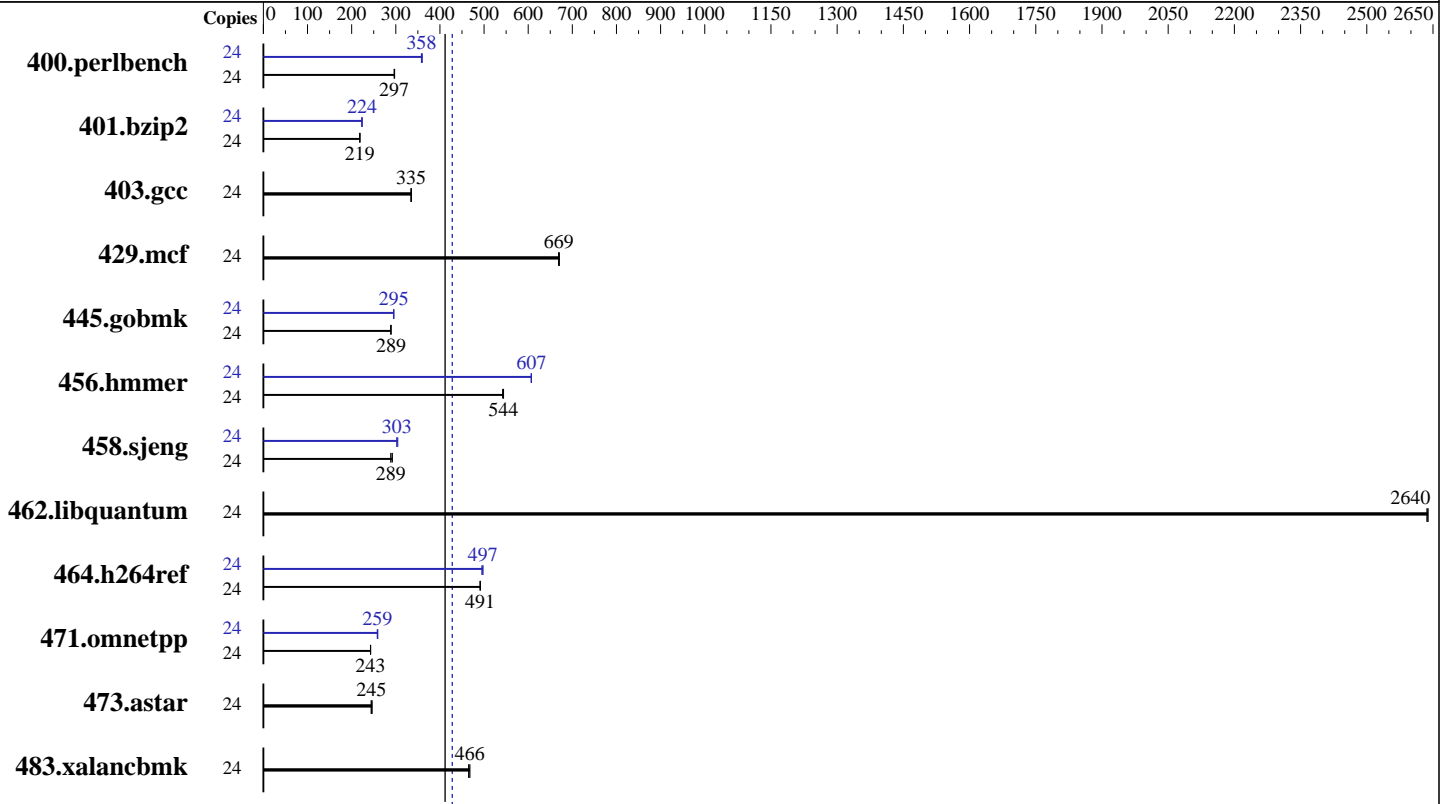
IBM Flex System x240  
(Intel Xeon E5-2620 v2, 2.10 GHz)

SPECint<sup>®</sup>\_rate2006 = 428

SPECint\_rate\_base2006 = 412

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

Test date: Aug-2014  
Hardware Availability: Dec-2013  
Software Availability: Sep-2013



SPECint\_rate2006 = 428

SPECint\_rate\_base2006 = 412

### Hardware

CPU Name: Intel Xeon E5-2620 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.60 GHz  
 CPU MHz: 2100  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2 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: 15 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC, running at 1600 MHz)  
 Disk Subsystem: 1 x 300 GB SAS, 10000 RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)  
 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



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## IBM Corporation

IBM Flex System x240  
(Intel Xeon E5-2620 v2, 2.10 GHz)

SPECint\_rate2006 = 428

SPECint\_rate\_base2006 = 412

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

Test date: Aug-2014  
Hardware Availability: Dec-2013  
Software Availability: Sep-2013

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	24	788	297	791	297	<u>791</u>	<u>297</u>	24	655	358	<u>654</u>	<u>358</u>	651	360
401.bzip2	24	<u>1060</u>	<u>219</u>	1060	218	1059	219	24	1035	224	1039	223	<u>1036</u>	<u>224</u>
403.gcc	24	<u>577</u>	<u>335</u>	578	334	576	336	24	<u>577</u>	<u>335</u>	578	334	576	336
429.mcf	24	327	669	326	671	<u>327</u>	<u>669</u>	24	327	669	326	671	<u>327</u>	<u>669</u>
445.gobmk	24	873	288	<u>871</u>	<u>289</u>	870	289	24	852	296	<u>853</u>	<u>295</u>	853	295
456.hammer	24	412	544	<u>412</u>	<u>544</u>	413	542	24	<u>369</u>	<u>607</u>	369	607	369	607
458.sjeng	24	993	292	1006	289	<u>1005</u>	<u>289</u>	24	954	305	<u>960</u>	<u>303</u>	960	302
462.libquantum	24	<u>188</u>	<u>2640</u>	189	2640	188	2640	24	<u>188</u>	<u>2640</u>	189	2640	188	2640
464.h264ref	24	1081	492	1082	491	<u>1081</u>	<u>491</u>	24	1067	498	1073	495	<u>1069</u>	<u>497</u>
471.omnetpp	24	618	243	617	243	<u>617</u>	<u>243</u>	24	<u>580</u>	<u>259</u>	581	258	579	259
473.astar	24	684	246	<u>687</u>	<u>245</u>	690	244	24	684	246	<u>687</u>	<u>245</u>	690	244
483.xalancbmk	24	354	468	356	465	<u>355</u>	<u>466</u>	24	354	468	356	465	<u>355</u>	<u>466</u>

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

Operating Mode set to Maximum Performance in BIOS  
Sysinfo program /cpu2006.1.2\_14.0\_updates/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 #\$ e86d102572650a6e4d596a3cee98f191  
running on BT2-IVB Wed Aug 6 18:02:19 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 E5-2620 v2 @ 2.10GHz  
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

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**IBM Corporation**

**SPECint\_rate2006 = 428**

IBM Flex System x240  
(Intel Xeon E5-2620 v2, 2.10 GHz)

**SPECint\_rate\_base2006 = 412**

**CPU2006 license:** 11

**Test date:** Aug-2014

**Test sponsor:** IBM Corporation

**Hardware Availability:** Dec-2013

**Tested by:** IBM Corporation

**Software Availability:** Sep-2013

## Platform Notes (Continued)

```
siblings : 12
physical 0: cores 0 1 2 3 4 5
physical 1: cores 0 1 2 3 4 5
cache size : 15360 KB
```

```
From /proc/meminfo
MemTotal:          264504236 kB
HugePages_Total:   0
Hugepagesize:      2048 kB
```

```
/usr/bin/lbs_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 BT2-IVB 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 Aug 6 17:52
```

```
SPEC is set to: /cpu2006.1.2_14.0_updates
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/vg_bt2ivb-lv_root
                ext4      265G  100G  153G  40% /
```

```
Additional information from dmidecode:
BIOS IBM -[B2E141AUS-1.50]- 05/08/2014
Memory:
16x Micron 36JSF2G72PZ-1G9E1 16 GB 1600 MHz 2 rank
8x Not Specified Not Specified
```

(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\_14.0\_updates/libs/32:/cpu2006.1.2\_14.0\_updates/libs/64:/cpu2006.1.2\_14.0\_updates/sh"

```
Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
memory using RedHat EL 6.4
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 Flex System x240  
(Intel Xeon E5-2620 v2, 2.10 GHz)

**SPECint\_rate2006 = 428**

**SPECint\_rate\_base2006 = 412**

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

**Test date:** Aug-2014  
**Hardware Availability:** Dec-2013  
**Software Availability:** Sep-2013

## 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



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**IBM Corporation**

**SPECint\_rate2006 = 428**

IBM Flex System x240  
(Intel Xeon E5-2620 v2, 2.10 GHz)

**SPECint\_rate\_base2006 = 412**

**CPU2006 license:** 11

**Test date:** Aug-2014

**Test sponsor:** IBM Corporation

**Hardware Availability:** Dec-2013

**Tested by:** IBM Corporation

**Software Availability:** Sep-2013

## 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

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

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**IBM Corporation**

IBM Flex System x240  
(Intel Xeon E5-2620 v2, 2.10 GHz)

**SPECint\_rate2006 = 428**

**SPECint\_rate\_base2006 = 412**

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

**Test date:** Aug-2014  
**Hardware Availability:** Dec-2013  
**Software Availability:** Sep-2013

## Peak Optimization Flags (Continued)

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/IBM-Platform-Flags-V1.2-IVB-A.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/IBM-Platform-Flags-V1.2-IVB-A.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 Wed Dec 3 16:52:53 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 26 August 2014.