



# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## IBM Corporation

IBM NeXtScale nx360 M4  
(Intel Xeon E5-2680 v2, 2.80 GHz)

**SPECint®2006 = 61.6**

**SPECint\_base2006 = 56.9**

CPU2006 license: 11

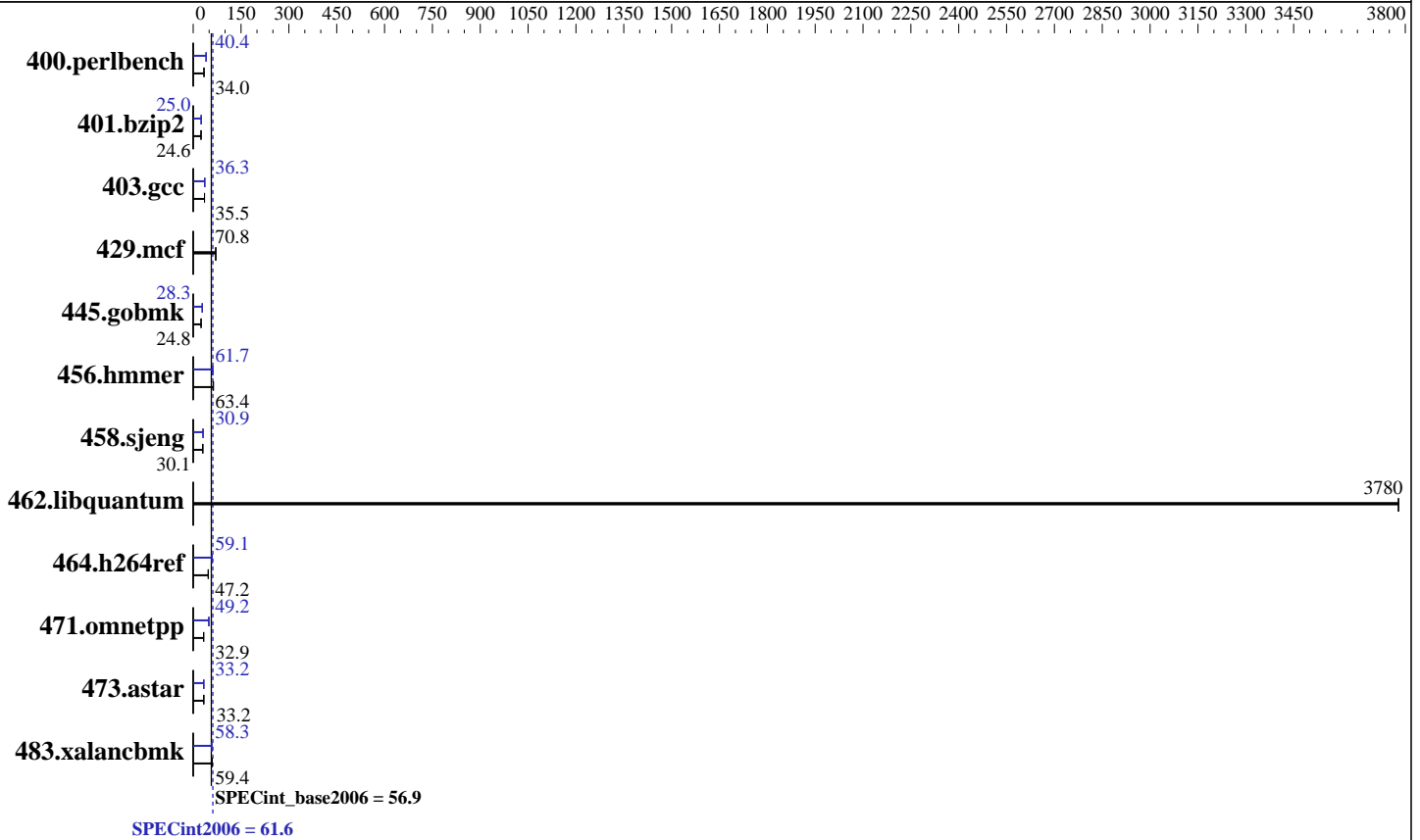
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Feb-2014

Hardware Availability: Nov-2013

Software Availability: Sep-2013



### Hardware

CPU Name: Intel Xeon E5-2680 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 2800  
 FPU: Integrated  
 CPU(s) enabled: 20 cores, 2 chips, 10 cores/chip  
 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: 25 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 128 GB (8 x 16 GB 2Rx4 PC3-14900R-13, ECC)  
 Disk Subsystem: 2 x 250 GB SATA, 7200RPM, RAID 0  
 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: Yes  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-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 NeXtScale nx360 M4  
(Intel Xeon E5-2680 v2, 2.80 GHz)

SPECint2006 = **61.6**

SPECint\_base2006 = **56.9**

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

Test date: Feb-2014  
Hardware Availability: Nov-2013  
Software Availability: Sep-2013

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b>288</b>	<b>34.0</b>	288	34.0	288	33.9	242	40.4	242	40.4	<b>242</b>	<b>40.4</b>
401.bzip2	392	24.6	<b>392</b>	<b>24.6</b>	392	24.6	386	25.0	<b>386</b>	<b>25.0</b>	386	25.0
403.gcc	227	35.4	226	35.6	<b>227</b>	<b>35.5</b>	<b>222</b>	<b>36.3</b>	222	36.3	222	36.3
429.mcf	128	71.2	<b>129</b>	<b>70.8</b>	130	70.1	128	71.2	<b>129</b>	<b>70.8</b>	130	70.1
445.gobmk	<b>423</b>	<b>24.8</b>	423	24.8	424	24.8	370	28.3	370	28.3	<b>370</b>	<b>28.3</b>
456.hammer	<b>147</b>	<b>63.4</b>	150	62.4	147	63.5	<b>151</b>	<b>61.7</b>	151	61.7	153	60.8
458.sjeng	402	30.1	402	30.1	<b>402</b>	<b>30.1</b>	391	31.0	<b>391</b>	<b>30.9</b>	391	30.9
462.libquantum	<b>5.48</b>	<b>3780</b>	5.48	3780	5.48	3780	<b>5.48</b>	<b>3780</b>	5.48	3780	5.48	3780
464.h264ref	468	47.3	<b>469</b>	<b>47.2</b>	469	47.2	375	59.1	375	59.1	<b>375</b>	<b>59.1</b>
471.omnetpp	191	32.7	<b>190</b>	<b>32.9</b>	190	32.9	<b>127</b>	<b>49.2</b>	128	48.8	127	49.2
473.astar	211	33.3	212	33.1	<b>211</b>	<b>33.2</b>	212	33.1	210	33.5	<b>212</b>	<b>33.2</b>
483.xalancbmk	116	59.4	<b>116</b>	<b>59.4</b>	116	59.5	118	58.3	118	58.3	<b>118</b>	<b>58.3</b>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The config file option 'submit' was used.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"  
Zone reclaim mode enabled with:  
echo 1 > /proc/sys/vm/zone\_reclaim\_mode

## Platform Notes

BIOS setting:  
Operating Mode set to Maximum Performance  
Hyper-Threading set to Disabled  
Sysinfo program /home/SPECcpu-new/config/sysinfo.rev6818  
\$Rev: 6818 \$ \$Date:: 2012-07-17 # \$ e86d102572650a6e4d596a3cee98f191  
running on nx360M4 Wed Feb 26 23:23:08 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 E5-2680 v2 @ 2.80GHz  
2 "physical id"s (chips)  
20 "processors"  
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with  
Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**IBM Corporation**

**SPECint2006 = 61.6**

IBM NeXtScale nx360 M4  
(Intel Xeon E5-2680 v2, 2.80 GHz)

**SPECint\_base2006 = 56.9**

**CPU2006 license:** 11

**Test date:** Feb-2014

**Test sponsor:** IBM Corporation

**Hardware Availability:** Nov-2013

**Tested by:** IBM Corporation

**Software Availability:** Sep-2013

## Platform Notes (Continued)

```

caution.)
  cpu cores : 10
  siblings  : 10
  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 : 25600 KB

```

```

From /proc/meminfo
MemTotal:      132089676 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 nx360M4 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 Feb 25 14:44

```

SPEC is set to: /home/SPECcpu-new
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/mapper/vg_nx360m4-lv_home
                ext4      403G      8.6G   374G    3% /home

```

```

Additional information from dmidecode:
BIOS IBM -[FHE105GUS-1.00]- 08/23/2013
Memory:
8x Samsung M393B2G70QH0-CMA 16 GB 1867 MHz 2 rank

```

(End of data from sysinfo program)

## General Notes

Environment variables set by runspec before the start of the run:

```

KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/SPECcpu-new/libs/32:/home/SPECcpu-new/libs/64:/home/SPECcpu-new/sh"
OMP_NUM_THREADS = "20"

```

```

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
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 NeXtScale nx360 M4  
(Intel Xeon E5-2680 v2, 2.80 GHz)

**SPECint2006 = 61.6**

**SPECint\_base2006 = 56.9**

**CPU2006 license:** 11

**Test sponsor:** IBM Corporation

**Tested by:** IBM Corporation

**Test date:** Feb-2014

**Hardware Availability:** Nov-2013

**Software Availability:** Sep-2013

## Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
 401.bzip2: -DSPEC\_CPU\_LP64  
 403.gcc: -DSPEC\_CPU\_LP64  
 429.mcf: -DSPEC\_CPU\_LP64  
 445.gobmk: -DSPEC\_CPU\_LP64  
 456.hmmer: -DSPEC\_CPU\_LP64  
 458.sjeng: -DSPEC\_CPU\_LP64  
 462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
 464.h264ref: -DSPEC\_CPU\_LP64  
 471.omnetpp: -DSPEC\_CPU\_LP64  
 473.astar: -DSPEC\_CPU\_LP64  
 483.xalancbmk: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:

-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -Wl,-z,muldefs  
-L/sh -lsmartheap64

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**IBM Corporation**

IBM NeXtScale nx360 M4  
(Intel Xeon E5-2680 v2, 2.80 GHz)

**SPECint2006 = 61.6**

**SPECint\_base2006 = 56.9**

**CPU2006 license:** 11

**Test sponsor:** IBM Corporation

**Tested by:** IBM Corporation

**Test date:** Feb-2014

**Hardware Availability:** Nov-2013

**Software Availability:** Sep-2013

## Peak Compiler Invocation (Continued)

400.perlbench: `icc -m32`

445.gobmk: `icc -m32`

464.h264ref: `icc -m32`

C++ benchmarks (except as noted below):

`icpc -m32`

473.astar: `icpc -m64`

## Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`

401.bzip2: `-DSPEC_CPU_LP64`

403.gcc: `-DSPEC_CPU_LP64`

429.mcf: `-DSPEC_CPU_LP64`

456.hmmer: `-DSPEC_CPU_LP64`

458.sjeng: `-DSPEC_CPU_LP64`

462.libquantum: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`

473.astar: `-DSPEC_CPU_LP64`

483.xalancbmk: `-DSPEC_CPU_LINUX`

## Peak Optimization Flags

C benchmarks:

400.perlbench: `-xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch  
-ansi-alias`

401.bzip2: `-xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div -prof-use(pass 2) -auto-ilp32 -opt-prefetch  
-ansi-alias`

403.gcc: `-xAVX -ipo -O3 -no-prec-div -inline-calloc  
-opt-malloc-options=3 -auto-ilp32`

429.mcf: `basepeak = yes`

445.gobmk: `-xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)  
-ansi-alias`

456.hmmer: `-xAVX -ipo -O3 -no-prec-div -unroll2 -auto-ilp32  
-ansi-alias`

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**IBM Corporation**

IBM NeXtScale nx360 M4  
(Intel Xeon E5-2680 v2, 2.80 GHz)

**SPECint2006 = 61.6**

**SPECint\_base2006 = 56.9**

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

**Test date:** Feb-2014  
**Hardware Availability:** Nov-2013  
**Software Availability:** Sep-2013

## Peak Optimization Flags (Continued)

458.sjeng: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4

462.libquantum: basepeak = yes

464.h264ref: -xAVX(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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2)  
-opt-ra-region-strategy=block -ansi-alias  
-Wl,-z,muldefs -L/sh -lsmartheap

473.astar: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32  
-Wl,-z,muldefs -L/sh -lsmartheap64

483.xalancbmk: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias  
-Wl,-z,muldefs -L/sh -lsmartheap

## 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 Thu Jul 24 20:45:01 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 25 March 2014.