



SPEC[®] CINT2006 Result

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IBM Corporation

SPECint[®]2006 = 49.5

IBM System x3500 M4 (Intel Xeon E5-2665)

SPECint_base2006 = 46.3

CPU2006 license: 11

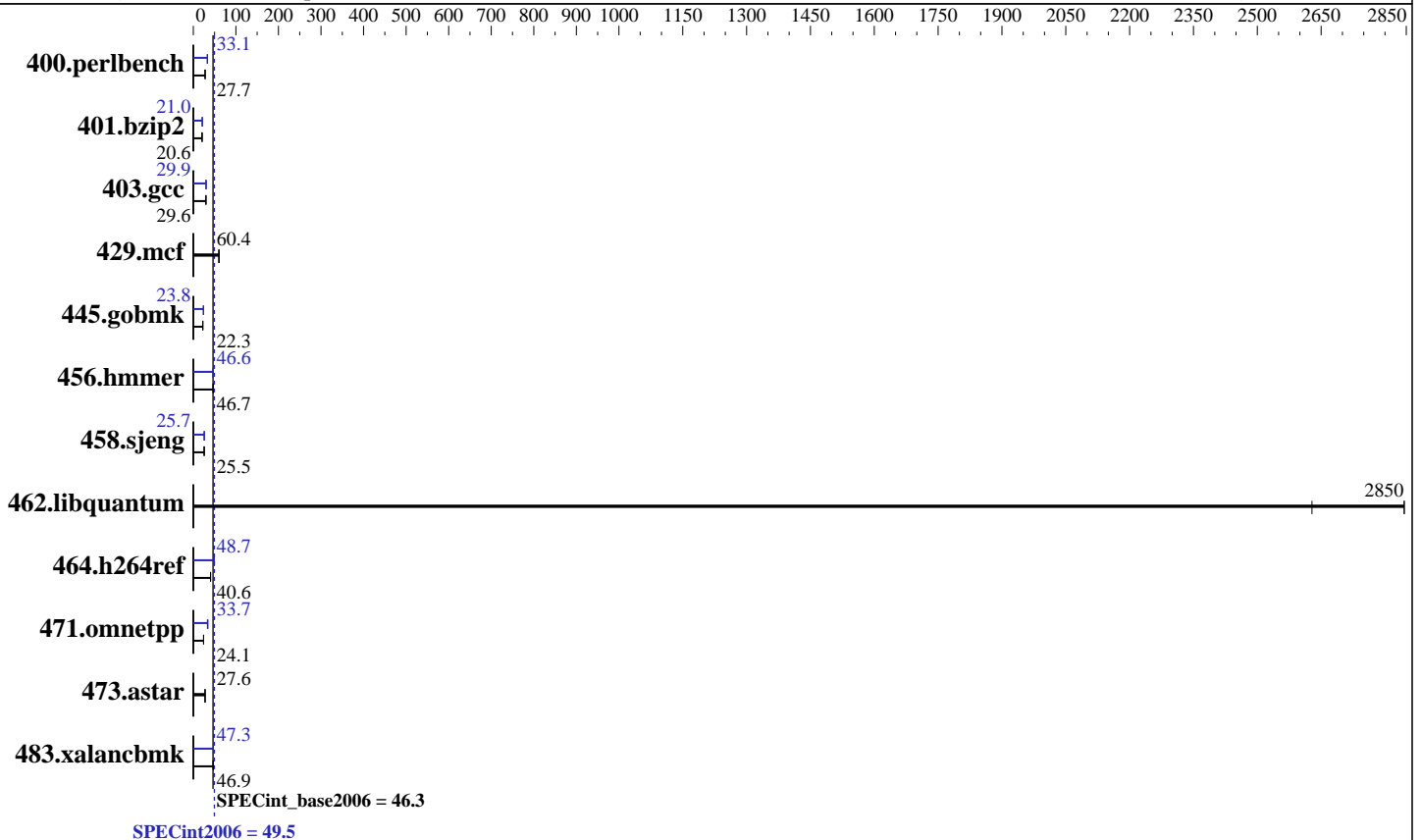
Test date: Apr-2012

Test sponsor: IBM Corporation

Hardware Availability: Mar-2012

Tested by: IBM Corporation

Software Availability: Oct-2011



Hardware

CPU Name: Intel Xeon E5-2665
 CPU Characteristics: Intel Turbo Boost Technology up to 3.10 GHz
 CPU MHz: 2400
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 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: 20 MB I+D on chip per chip
 Other Cache: None
 Memory: 64 GB (16 x 4 GB 2Rx8 PC3-12800R-11, ECC)
 Disk Subsystem: 1 x 300 GB SAS, 15000 RPM
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.1 (Santiago)
 2.6.32-131.0.15.el6.x86_64
 Compiler: C/C++: Version 12.1.0.225 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 V9.01



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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<u>353</u>	<u>27.7</u>	353	27.7	352	27.7	295	33.1	<u>296</u>	<u>33.1</u>	296	33.0
401.bzip2	469	20.6	470	20.5	<u>469</u>	<u>20.6</u>	<u>459</u>	<u>21.0</u>	459	21.0	459	21.0
403.gcc	<u>272</u>	<u>29.6</u>	272	29.6	273	29.5	269	29.9	<u>269</u>	<u>29.9</u>	269	29.9
429.mcf	<u>151</u>	<u>60.4</u>	151	60.6	153	59.8	<u>151</u>	<u>60.4</u>	151	60.6	153	59.8
445.gobmk	471	22.3	471	22.2	<u>471</u>	<u>22.3</u>	442	23.8	442	23.8	<u>442</u>	<u>23.8</u>
456.hammer	200	46.7	<u>200</u>	<u>46.7</u>	200	46.8	202	46.3	<u>200</u>	<u>46.6</u>	199	46.9
458.sjeng	<u>474</u>	<u>25.5</u>	474	25.5	474	25.5	472	25.6	471	25.7	<u>471</u>	<u>25.7</u>
462.libquantum	<u>7.28</u>	<u>2850</u>	7.28	2850	7.88	2630	<u>7.28</u>	<u>2850</u>	7.28	2850	7.88	2630
464.h264ref	<u>545</u>	<u>40.6</u>	545	40.6	548	40.4	<u>454</u>	<u>48.7</u>	454	48.8	454	48.7
471.omnetpp	<u>259</u>	<u>24.1</u>	259	24.1	260	24.0	182	34.3	<u>186</u>	<u>33.7</u>	189	33.1
473.astar	254	27.6	255	27.5	<u>255</u>	<u>27.6</u>	254	27.6	255	27.5	<u>255</u>	<u>27.6</u>
483.xalancbmk	<u>147</u>	<u>46.9</u>	148	46.6	147	46.9	147	47.0	146	47.3	<u>146</u>	<u>47.3</u>

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

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 Settings:
Operating Mode set to Maximum Performance
Sysinfo program /root/SPECcpu-v1.2/config/sysinfo.rev6800
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3
running on x3500M4 Wed Apr 11 17:29:47 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 E5-2665 0 @ 2.40GHz
2 "physical id"s (chips)
32 "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 : 8
siblings : 16
physical 0: cores 0 1 2 3 4 5 6 7
physical 1: cores 0 1 2 3 4 5 6 7

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Platform Notes (Continued)

cache size : 20480 KB

From /proc/meminfo

MemTotal: 66044804 kB

HugePages_Total: 0

Hugepagesize: 2048 kB

/usr/bin/lsb_release -d

Red Hat Enterprise Linux Server release 6.1 (Santiago)

From /etc/*release* /etc/*version*

redhat-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)

system-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)

system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:

Linux x3500M4 2.6.32-131.0.15.el6.x86_64 #1 SMP Tue May 10 15:42:40 EDT 2011
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Apr 9 17:14

SPEC is set to: /root/SPECcpu-v1.2

```
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/vg_x3500m4-lv_root
                ext4      210G   69G  130G  35% /
```

Additional information from dmidecode:

Memory:

16x Samsung M393B5273DH0-CK0 4 GB 1600 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,compact,1,0"

LD_LIBRARY_PATH = "/root/SPECcpu-v1.2/libs/32:/root/SPECcpu-v1.2/libs/64"

OMP_NUM_THREADS = "16"

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

Base Compiler Invocation

C benchmarks:

icc -m64

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Base Compiler Invocation (Continued)

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/smartheap -lsmartheap64

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m64
400.perlbench: icc -m32
445.gobmk: icc -m32

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Peak Compiler Invocation (Continued)

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

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

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Peak Optimization Flags (Continued)

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/smartheap -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
-Wl,-z,muldefs -L/smartheap -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-ic12.1-official-linux64.20111122.html>

<http://www.spec.org/cpu2006/flags/IBM-Platform-Flags-V1.2-SNB-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-SNB-C.xml>

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