



SPEC® CINT2006 Result

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IBM Corporation

IBM System x3250 M4
(Intel Pentium G2100T, 2.60 GHz)

SPECint®2006 = 36.4

SPECint_base2006 = 34.8

CPU2006 license: 11

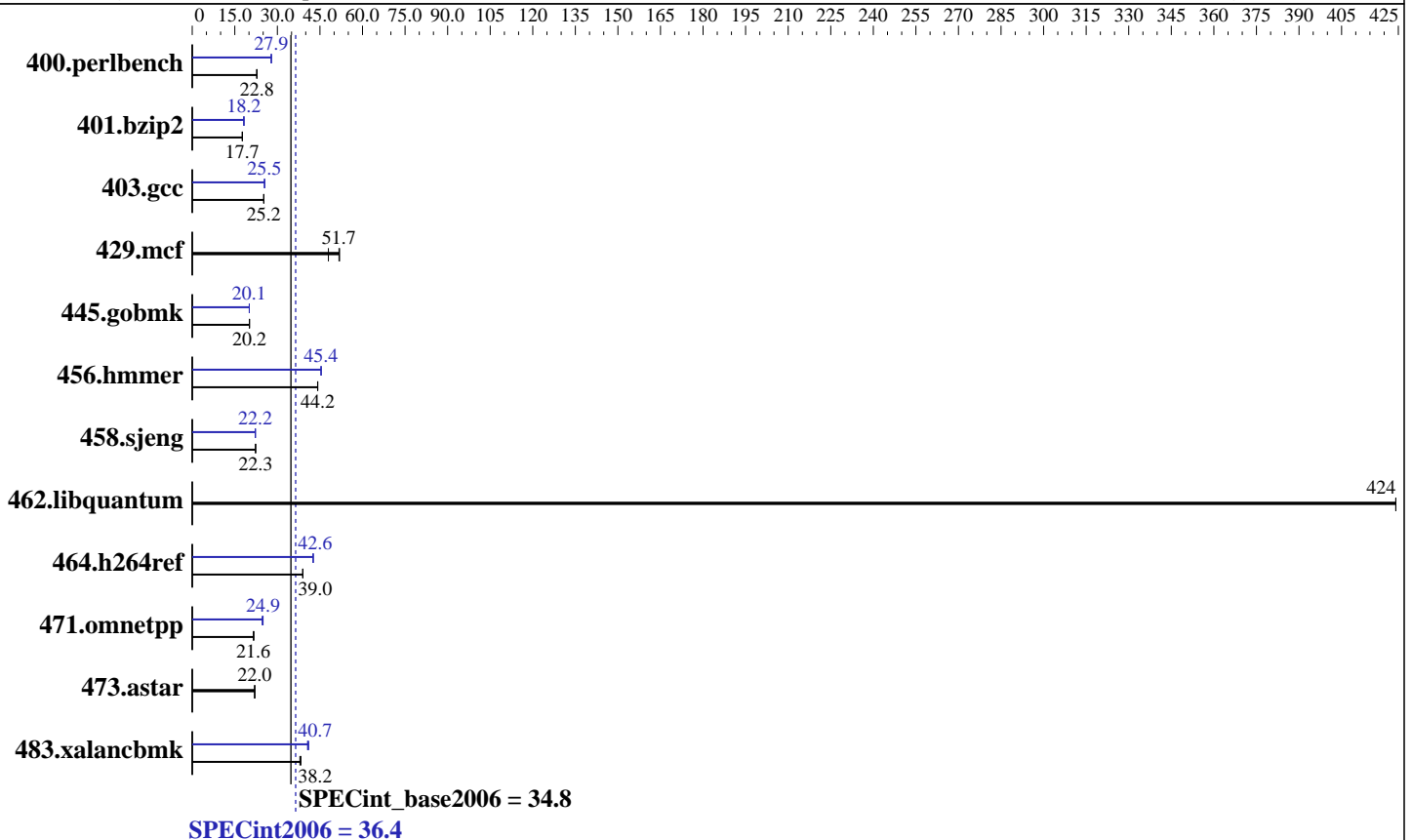
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Nov-2012

Hardware Availability: Sep-2012

Software Availability: Dec-2011



Hardware

CPU Name: Intel Pentium G2100T
 CPU Characteristics:
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip
 CPU(s) orderable: 1 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: 3 MB I+D on chip per chip
 Other Cache: None
 Memory: 16 GB (2 x 8 GB 2Rx8 PC3-12800E-11, ECC)
 Disk Subsystem: 1 x 146 GB SAS, 15000 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: 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>429</u>	<u>22.8</u>	429	22.8	429	22.7	350	27.9	<u>350</u>	<u>27.9</u>	351	27.8
401.bzip2	547	17.6	<u>547</u>	<u>17.7</u>	545	17.7	528	18.3	<u>530</u>	<u>18.2</u>	532	18.1
403.gcc	319	25.2	<u>319</u>	<u>25.2</u>	319	25.2	315	25.5	316	25.5	<u>316</u>	<u>25.5</u>
429.mcf	176	51.9	<u>176</u>	<u>51.7</u>	190	48.0	176	51.9	<u>176</u>	<u>51.7</u>	190	48.0
445.gobmk	<u>520</u>	<u>20.2</u>	521	20.1	520	20.2	<u>522</u>	<u>20.1</u>	522	20.1	522	20.1
456.hammer	211	44.2	<u>211</u>	<u>44.2</u>	211	44.2	205	45.4	<u>205</u>	<u>45.4</u>	205	45.4
458.sjeng	<u>542</u>	<u>22.3</u>	542	22.3	542	22.3	544	22.3	<u>544</u>	<u>22.2</u>	544	22.2
462.libquantum	48.9	424	48.9	424	<u>48.9</u>	<u>424</u>	48.9	424	48.9	424	<u>48.9</u>	<u>424</u>
464.h264ref	569	38.9	567	39.0	<u>567</u>	<u>39.0</u>	<u>519</u>	<u>42.6</u>	519	42.6	519	42.6
471.omnetpp	<u>289</u>	<u>21.6</u>	288	21.7	290	21.6	250	25.0	<u>251</u>	<u>24.9</u>	254	24.6
473.astar	320	22.0	318	22.1	<u>319</u>	<u>22.0</u>	320	22.0	318	22.1	<u>319</u>	<u>22.0</u>
483.xalancbmk	<u>181</u>	<u>38.2</u>	182	37.9	180	38.3	170	40.7	168	41.0	<u>170</u>	<u>40.7</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"

Platform Notes

BIOS Settings:

Turbo Mode enabled in BIOS

C-State enabled in BIOS

Sysinfo program /root/SPECcpul.2/config/sysinfo.rev6800

\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3

running on localhost.localdomain Thu Nov 1 15:56:37 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) Pentium(R) CPU G2100T @ 2.60GHz

1 "physical id"s (chips)

2 "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 : 2

siblings : 2

physical 0: cores 0 1

cache size : 3072 KB

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Platform Notes (Continued)

```

From /proc/meminfo
  MemTotal:      16322724 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 localhost.localdomain 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 Nov 1 15:52

SPEC is set to: /root/SPECcpul.2
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/VolGroup-lv_root
                 ext4      50G   12G   36G   25% /

Additional information from dmidecode:
Memory:
  2x Micron 18JSF1G72AZ-1G6D1 8 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,scatter"
LD_LIBRARY_PATH = "/root/SPECcpul.2/libs/32:/root/SPECcpul.2/libs/64"
OMP_NUM_THREADS = "2"

```

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

C++ benchmarks:
icpc -m64



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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:

`-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32`

C++ benchmarks:

`-xSSE4.2 -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`

`464.h264ref: icc -m32`

C++ benchmarks (except as noted below):

`icpc -m32`

`473.astar: icpc -m64`



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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.hmmmer: -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: -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 -ansi-alias

401.bzip2: -xSSE4.2(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: -xSSE4.2 -ipo -O3 -no-prec-div -inline-calloc
          -opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
            -ansi-alias

456.hmmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
            -ansi-alias

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

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)
              -opt-ra-region-strategy=block -ansi-alias
              -Wl,-z,muldefs -L/smartheap -lsmartheap

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Peak Optimization Flags (Continued)

473.astar: basepeak = yes

483.xalancbmk: -xSSE4.2 -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-IVB-A.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-IVB-A.xml>

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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