IBM Corporation
IBM System x3300 M4
(Intel Pentium 1403, 2.60 GHz)

**SPECint®_rate2006 = 62.2**

**SPECint_rate_base2006 = 59.7**

**CPU2006 license:** 11

**Test date:** Oct-2012

**Test sponsor:** IBM Corporation

**Hardware Availability:** Aug-2012

**Tested by:** IBM Corporation

**Software Availability:** Dec-2011

### Performance Results

<table>
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<th>SPECint</th>
<th>Rate 2006</th>
<th>Rate Base 2006</th>
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<tr>
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<td>401.bzip2</td>
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<td>403.gcc</td>
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<td>445.gobmk</td>
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<td>456.hmmer</td>
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<td>464.h264ref</td>
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<td>471.omnetpp</td>
<td>40.1</td>
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<td>473.astar</td>
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<tr>
<td>483.xalancbmk</td>
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CPU2006 license: 11
Test sponsor: IBM Corporation
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SPECint_rate2006 = 62.2
SPECint_rate_base2006 = 59.7

Test date: Oct-2012
Hardware Availability: Aug-2012
Software Availability: Dec-2011

Results Table

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<thead>
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<td>69.9</td>
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</tbody>
</table>

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

Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset 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

BIOS setting:
Operating Mode set to Maximum Performance
Sysinfo program /home/SPECcpu1.2/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3

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 1403 @ 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.)

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Test sponsor: IBM Corporation
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Platform Notes (Continued)

- cpu cores : 2
- siblings : 2
- physical 0: cores 0 1
- cache size : 5120 KB

From /proc/meminfo
  MemTotal: 49406516 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)

uname -a:
  Linux YungAn 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 Oct 17 00:23

SPEC is set to: /home/SPECcpu1.2
  Filesystem    Type    Size  Used Avail Use% Mounted on
  /dev/mapper/vg_yungan-lv_home ext4    1.7T  8.0G  1.6T  1% /home

Additional information from dmidecode:
  Memory:
    6x Samsung M393B1K70DH0-CK0 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:
LD_LIBRARY_PATH = "/home/SPECcpu1.2/lib32:/home/SPECcpu1.2/lib64"

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 -m32

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Base Compiler Invocation (Continued)

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
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</tr>
</tbody>
</table>

---

### 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:** -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/smartheap -lsmartheap

- **473.astar:** basepeak = yes

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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-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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