IBM Corporation
IBM System x3250 M4
(Intel Core i3-3220T, 2.80 GHz)

| SPECint_rate2006 | 84.1 |
| SPECint_rate_base2006 | 80.0 |

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

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name: Intel Core i3-3220T</td>
<td>Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)</td>
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<tr>
<td>CPU Characteristics:</td>
<td></td>
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<tr>
<td>CPU MHz: 2800</td>
<td>Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux</td>
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<tr>
<td>FPU: Integrated</td>
<td>Auto Parallel: No</td>
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<tr>
<td>CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip, 2 threads/core</td>
<td>File System: ext4</td>
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<tr>
<td>CPU(s) orderable: 1 chip</td>
<td>System State: Run level 3 (multi-user)</td>
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<tr>
<td>Primary Cache: 32 KB I + 32 KB D on chip per core</td>
<td>Base Pointers: 32-bit</td>
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<tr>
<td>Secondary Cache: 256 KB I+D on chip per core</td>
<td>Peak Pointers: 32/64-bit</td>
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<tr>
<td>L3 Cache: 3 MB I+D on chip per chip</td>
<td>Other Software: Microquill SmartHeap V9.01</td>
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<tr>
<td>Other Cache: None</td>
<td>Other Hardware: None</td>
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## IBM System x3250 M4
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</table>

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**

BIOS Settings:
- Turbo Mode enabled in BIOS
- C-State enabled in BIOS
- Sysinfo program /root/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) Core(TM) i3-3220T CPU @ 2.80GHz
- 1 "physical id"s (chips)
- 4 "processors"
- cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

Continued on next page
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**SPECint_rate2006 = 84.1**

**SPECint_rate_base2006 = 80.0**

<table>
<thead>
<tr>
<th>CPU2006 license:</th>
<th>Test date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Oct-2012</td>
</tr>
</tbody>
</table>

**Test sponsor:** IBM Corporation  
**Tested by:** IBM Corporation

**Software Availability:** Dec-2011

**Hardware Availability:** Sep-2012

---

**Platform Notes (Continued)**

```plaintext
cautions.  
cpu cores : 2  
siblings : 4  
physical 0: cores 0 1  
cache size : 3072 KB
```

From `/proc/meminfo`

```plaintext
MemTotal:        16322724 kB  
HugePages_Total:       0  
Hugepagesize:       2048 kB
```

```plaintext
/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)
```

```plaintext
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

```plaintext
run-level 3 Oct 25 15:36
```

SPEC is set to: /root/SPECcpu1.2

```plaintext
<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>/dev/mapper/VolGroup-1v_root</td>
<td>ext4</td>
<td>50G</td>
<td>12G</td>
<td>36G</td>
<td>25%</td>
<td>/</td>
</tr>
</tbody>
</table>
```

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

```plaintext
LD_LIBRARY_PATH = "/root/SPECcpu1.2/libs/32:/root/SPECcpu1.2/libs/64"
```

**Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5**

**Transparent Huge Pages enabled with:**

```plaintext
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
Filesystem page cache cleared with:
echo 1 > /proc/sys/vm/drop_caches
```

**runcs command invoked through numactl i.e.:**

```plaintext
numactl --interleave=all runspec <etc>
```

---

**General Notes**

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

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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/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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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)
-03(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)
-03(pasS 2) -no-prec-div(pasS 2) -prof-use(pasS 2)
-opt-prefetch -auto-ilp32 -ansi-alias
403.gcc: -xSSE4.2 -ipo -03 -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 -03 -no-prec-div -unroll2 -auto-ilp32
458.sjeng: -xSSE4.2(pasS 2) -prof-gen(pass 1) -ipo(pass 2)
-03(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)
-03(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)
-03(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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Software Availability:  Dec-2011

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-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 other inquiries, please contact webmaster@spec.org.

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