### IBM Corporation

**IBM System x3250 M5**  
(Intel Xeon E3-1270 v3, 3.50 GHz)

<table>
<thead>
<tr>
<th>SPECint_rate2006 = 219</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006 = 212</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CPU2006 license: 11</th>
<th>Test date: Feb-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor: IBM Corporation</td>
<td>Hardware Availability: Dec-2013</td>
</tr>
<tr>
<td>Tested by: IBM Corporation</td>
<td>Software Availability: Sep-2013</td>
</tr>
</tbody>
</table>

**Hardware**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon E3-1270 v3</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 3.90 GHz</td>
</tr>
<tr>
<td>CPU MHZ:</td>
<td>3500</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>4 cores, 1 chip, 4 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>1 chip</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache:</td>
<td>256 KB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache:</td>
<td>8 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>16 GB (2 x 8 GB 2Rx8 PC3-12800E-11, ECC)</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>1 x 1 TB SATA, 7200 RPM</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
</tr>
</tbody>
</table>

**Software**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System:</td>
<td>Red Hat Enterprise Linux Server release 6.4 (Santiago)</td>
</tr>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel:</td>
<td>Yes</td>
</tr>
<tr>
<td>File System:</td>
<td>ext4</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers:</td>
<td>32-bit</td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other Software:</td>
<td>Microquill SmartHeap V10.0</td>
</tr>
</tbody>
</table>
IBM Corporation
IBM System x3250 M5
(Intel Xeon E3-1270 v3, 3.50 GHz)

SPEC CINT2006 Result

SPECint_rate2006 = 219
SPECint_rate_base2006 = 212

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Base Copies</th>
<th>Seconds</th>
<th>Base Seconds</th>
<th>Ratio</th>
<th>Peak Seconds</th>
<th>Base Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Base Seconds</th>
<th>Ratio</th>
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</thead>
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<tr>
<td>400.perlbench</td>
<td>8</td>
<td>444</td>
<td>446</td>
<td>176</td>
<td>175</td>
<td>449</td>
<td>174</td>
<td>8</td>
<td>370</td>
<td>211</td>
<td>370</td>
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<tr>
<td>401.bzip2</td>
<td>8</td>
<td>727</td>
<td>106</td>
<td>725</td>
<td>106</td>
<td>738</td>
<td>105</td>
<td>8</td>
<td>703</td>
<td>110</td>
<td>719</td>
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<tr>
<td>403.gcc</td>
<td>8</td>
<td>393</td>
<td>164</td>
<td>395</td>
<td>163</td>
<td>395</td>
<td>163</td>
<td>8</td>
<td>401</td>
<td>161</td>
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<tr>
<td>429.mcf</td>
<td>8</td>
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<td>252</td>
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<td>258</td>
<td>8</td>
<td>289</td>
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<td>294</td>
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<tr>
<td>445.gobmk</td>
<td>8</td>
<td>566</td>
<td>148</td>
<td>561</td>
<td>150</td>
<td>564</td>
<td>149</td>
<td>8</td>
<td>552</td>
<td>152</td>
<td>554</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>8</td>
<td>235</td>
<td>318</td>
<td>239</td>
<td>313</td>
<td>239</td>
<td>312</td>
<td>8</td>
<td>238</td>
<td>313</td>
<td>245</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>8</td>
<td>596</td>
<td>162</td>
<td>591</td>
<td>164</td>
<td>596</td>
<td>162</td>
<td>8</td>
<td>578</td>
<td>167</td>
<td>578</td>
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<tr>
<td>462.libquantum</td>
<td>8</td>
<td>86.6</td>
<td>1910</td>
<td>86.0</td>
<td>1930</td>
<td>87.2</td>
<td>1900</td>
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<td>86.6</td>
<td>1910</td>
<td>86.0</td>
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<tr>
<td>464.h264ref</td>
<td>8</td>
<td>665</td>
<td>266</td>
<td>661</td>
<td>268</td>
<td>667</td>
<td>265</td>
<td>8</td>
<td>609</td>
<td>291</td>
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<tr>
<td>471.omnetpp</td>
<td>8</td>
<td>485</td>
<td>103</td>
<td>462</td>
<td>108</td>
<td>474</td>
<td>105</td>
<td>8</td>
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<td>110</td>
<td>449</td>
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<tr>
<td>473.astar</td>
<td>8</td>
<td>485</td>
<td>116</td>
<td>491</td>
<td>114</td>
<td>490</td>
<td>115</td>
<td>8</td>
<td>485</td>
<td>116</td>
<td>491</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>8</td>
<td>242</td>
<td>228</td>
<td>241</td>
<td>229</td>
<td>239</td>
<td>231</td>
<td>8</td>
<td>242</td>
<td>228</td>
<td>241</td>
</tr>
</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/SPECcpu-new/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on x3250M5 Tue Feb 18 15:28:56 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 E3-1270 v3 @ 3.50GHz
1 "physical id"s (chips)
8 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
IBM Corporation

IBM System x3250 M5
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**CPU2006 license:** 11

**Test sponsor:** IBM Corporation

**Tested by:** IBM Corporation

**Test date:** Feb-2014

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**Platform Notes (Continued)**

- cpu cores : 4
- siblings : 8
- physical 0: cores 0 1 2 3
- cache size : 8192 KB

From /proc/meminfo

```
MemTotal:       16299396 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)
```

```
uname -a:
```

```
Linux x3250M5 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 18 15:27
```

```
SPEC is set to: /home/SPECcpu-new
```

```
Filesystem    Type    Size  Used Avail Use% Mounted on
/dev/mapper/vg_x3250m5-lv_home
```

```
ext4    852G   14G  795G   2% /home
```

Additional information from dmidecode:

- BIOS IBM -[JUE109OUS-1.00]- 11/20/2013
- Memory:
  - 2x Micron 18KSF1G72AZ-1G6E1 8 GB 1600 MHz 2 rank
  - 2x Not Specified Not Specified

(End of data from sysinfo program)

"Not Specified" memory information from dmidecode indicates unused DIMM slots.

---

**General Notes**

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

```
LD_LIBRARY_PATH = "/home/SPECcpu-new/libs/32:/home/SPECcpu-new/libs/64:/home/SPECcpu-new/sh"
```

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
```
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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:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
  -opt-mem-layout-trans=3

C++ benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
  -opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -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

Continued on next page
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Peak Compiler Invocation (Continued)

C++ benchmarks:
\texttt{icpc -m32}

Peak Portability Flags

400.perlbench: \texttt{-DSPEC\_CPU\_LP64 -DSPEC\_CPU\_Linux\_X64}
401.bzip2: \texttt{-DSPEC\_CPU\_LP64}
456.hmmer: \texttt{-DSPEC\_CPU\_LP64}
458.sjeng: \texttt{-DSPEC\_CPU\_LP64}
462.libquantum: \texttt{-DSPEC\_CPU\_Linux}
483.xalancbmk: \texttt{-DSPEC\_CPU\_Linux}

Peak Optimization Flags

C benchmarks:

400.perlbench: \texttt{-xCORE\_AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-auto-1lp32}

401.bzip2: \texttt{-xCORE\_AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-1lp32 -ansi-alias}

403.gcc: \texttt{-xCORE\_AVX2 -ipo -O3 -no-prec-div}

429.mcf: basepeak = yes

445.gobmk: \texttt{-xCORE\_AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -opt-mem-layout-trans=3}

456.hmmer: \texttt{-xCORE\_AVX2 -ipo -O3 -no-prec-div -unroll12 -auto-1lp32}

458.sjeng: \texttt{-xCORE\_AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll14 -auto-1lp32}

462.libquantum: basepeak = yes

464.h264ref: \texttt{-xCORE\_AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll12 -ansi-alias}

C++ benchmarks:

Continued on next page
SPEC CINT2006 Result

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Peak Optimization Flags (Continued)

471.omnetpp: -xCORE-AVX2(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/sh -lsmartheap

473.astar: basepeak = yes
483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

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-HSW-A.xml

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

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