**IBM Corporation**

**IBM System x3500 M4 (Intel Xeon E5-2667)**

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>526</th>
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<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>504</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 11

**Test sponsor:** IBM Corporation

**Tested by:** IBM Corporation

**Hardware**

| CPU Name: Intel Xeon E5-2667 |
| Primary Cache: 32 KB I + 32 KB D on chip per core |
| Secondary Cache: 256 KB I+D on chip per core |
| L3 Cache: 15 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 |

**Software**

| Operating System: Red Hat Enterprise Linux Server release 6.1 (Santiago) |
| Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux |
| Auto Parallel: No |
| File System: ext4 |
| System State: Run level 3 (multi-user) |
| Base Pointers: 32-bit |
| Peak Pointers: 32/64-bit |
| Other Software: Microquill SmartHeap V9.01 |
### IBM System x3500 M4 (Intel Xeon E5-2667)

- **CPU2006 license:** 11
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### Results Table

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<tr>
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</tr>
</tbody>
</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"

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 $ $Date:: 2011-10-11 #$ 6f2ebd6b50232a242e583f96b07f99d3
running on x3500M4 Fri Apr 13 16:09:50 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 E5-2667 0 @ 2.90GHz
2 "physical id"s (chips)
24 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
Continued on next page
```
SPEC CINT2006 Result

IBM Corporation

IBM System x3500 M4 (Intel Xeon E5-2667)

SPECint_rate2006 = 526
SPECint_rate_base2006 = 504

CPU2006 license: 11
Test sponsor: IBM Corporation
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Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
  cpu cores : 6
  siblings : 12
  physical 0: cores 0 1 2 3 4 5
  physical 1: cores 0 1 2 3 4 5
  cache size : 15360 KB

From /proc/meminfo
  MemTotal: 66045764 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)

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 13 15:10

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

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
Filesystem page cache cleared with:
  echo 1 > /proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
  numactl --interleave=all runspec <etc>
IBM Corporation
IBM System  x3500 M4 (Intel Xeon E5-2667)

SPECint_rate2006 =  526
SPECint_rate_base2006 =  504

CPU2006 license: 11  Test date:  Apr-2012
Test sponsor: IBM Corporation  Hardware Availability: Mar-2012
Tested by: IBM Corporation  Software Availability: Oct-2011

---

**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`
IBM Corporation

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SPECint_rate_base2006 = 504

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

Test date: Apr-2012
Hardware Availability: Mar-2012
Software Availability: Oct-2011

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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Test date: Apr-2012
Tested by: IBM Corporation
Hardware Availability: Mar-2012
Tested with SPEC CPU2006 v1.2.
Software Availability: Oct-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-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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