IBM Corporation
IBM System x3550 M4 (Intel Xeon E5-2620) SPECint_rate2006 = 393
SPECint_rate_base2006 = 377

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

SPECint_rate2006 = 393
SPECint_rate_base2006 = 377

Hardware
CPU Name: Intel Xeon E5-2620
CPU Characteristics: Intel Turbo Boost Technology up to 2.50 GHz
CPU MHz: 2000
FPU: Integrated
CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
CPU(s) orderable: 1,2 chips
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: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1333 MHz)
Disk Subsystem: 1 x 1 TB SAS, 7200 RPM
Other Hardware: None

Software
Operating System: Red Hat Enterprise Linux Server release 6.1 (Santiago) 2.6.32-131.0.15.el6.x86_64
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 (add definition here)
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V9.01

CPU2006 license: 11
Test date: Mar-2012
Hardware Availability: Mar-2012
Software Availability: Oct-2011

400.perlbench
401.bzip2
403.gcc
429.mcf
445.gobmk
456.hmmer
458.sjeng
462.libquantum
464.h264ref
471.omnetpp
473.astar
483.xalancbmk
### IBM Corporation

**IBM System x3550 M4 (Intel Xeon E5-2620)**

- **SPECint_rate2006 =** 393
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**CPU2006 license:** 11  
**Test date:** Mar-2012  
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**Software Availability:** Oct-2011

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#### Results Table

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<td>415</td>
<td>399</td>
<td>415</td>
<td>401</td>
<td>413</td>
</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:

```bash
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 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on x3550M4 Thu Mar 22 14:23:48 2012
```

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:


From `/proc/cpuinfo`

- model name : Intel(R) Xeon(R) CPU E5-2620 0 @ 2.00GHz
- 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

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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: 132237084 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 x3550M4 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 Mar 22 11:38

SPEC is set to: /root/SPECcpu-v1.2
FILESYSTEM Type Size Used Avail Use% Mounted on
/dev/mapper/vg_x3550m4-lv_root ext4 790G 69G 681G 10% /

Additional information from dmidecode:
Memory:
16x 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 = "/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>
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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
```
**SPEC CINT2006 Result**

**IBM Corporation**

IBM System x3550 M4 (Intel Xeon E5-2620)

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<tr>
<th>SPECint_rate2006</th>
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- **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) -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

Continued on next page
IBM Corporation

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

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