**HITACHI**

**Compute Blade 520X (Intel Xeon E7-8890 v3)**

**SPECint<sup>®</sup> Rate2006 = Not Run**

**SPECint<sup>®</sup> Rate Base2006 = 5400**

<table>
<thead>
<tr>
<th>Copy</th>
<th>SPECint&lt;sup&gt;®&lt;/sup&gt; Rate Base2006 = 5400</th>
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<td>0</td>
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<td>288</td>
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<td>1</td>
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</tr>
<tr>
<td>1</td>
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<tr>
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<td>1</td>
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<td>1</td>
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<td>1</td>
<td>47000</td>
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</table>

**Hardware**

<table>
<thead>
<tr>
<th>CPU Name:</th>
<th>Intel Xeon E7-8890 v3</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU MHz:</td>
<td>2500</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>144 cores, 8 chips, 18 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>2.4,8 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>45 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>2 TB (128 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>2 x 300 GB SAS, 15000 RPM, RAID1</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
</tr>
</tbody>
</table>

**Software**

<table>
<thead>
<tr>
<th>Operating System:</th>
<th>Red Hat Enterprise Linux Server release 6.6 (Santiago) 2.6.32-504.el6.x86_64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler:</td>
<td>C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel:</td>
<td>No</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>
HITACHI

Compute Blade 520X (Intel Xeon E7-8890 v3)

SPECint_rate2006 = Not Run

SPECint_rate_base2006 = 5400

Results Table

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<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>288</td>
<td>622</td>
<td>4520</td>
<td>617</td>
<td>4560</td>
<td>617</td>
<td>4560</td>
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<tr>
<td>401.bzip2</td>
<td>288</td>
<td>1017</td>
<td>2730</td>
<td>1016</td>
<td>2730</td>
<td>1014</td>
<td>2740</td>
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<td>403.gcc</td>
<td>288</td>
<td>601</td>
<td>3860</td>
<td>599</td>
<td>3870</td>
<td>599</td>
<td>3870</td>
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<tr>
<td>429.mcf</td>
<td>288</td>
<td>392</td>
<td>6700</td>
<td>393</td>
<td>6680</td>
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<td>6680</td>
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<tr>
<td>445.gobmk</td>
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<td>788</td>
<td>3830</td>
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<tr>
<td>456.hmmer</td>
<td>288</td>
<td>329</td>
<td>8160</td>
<td>334</td>
<td>8060</td>
<td>333</td>
<td>8060</td>
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<tr>
<td>458.sjeng</td>
<td>288</td>
<td>800</td>
<td>4360</td>
<td>801</td>
<td>4350</td>
<td>801</td>
<td>4350</td>
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<tr>
<td>462.libquantum</td>
<td>288</td>
<td>113</td>
<td>52800</td>
<td>113</td>
<td>52600</td>
<td>113</td>
<td>52900</td>
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<tr>
<td>464.h264ref</td>
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<td>974</td>
<td>6550</td>
<td>964</td>
<td>6610</td>
<td>969</td>
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<td>471.omnetpp</td>
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<td>728</td>
<td>2470</td>
<td>732</td>
<td>2460</td>
<td>731</td>
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<tr>
<td>473.astar</td>
<td>288</td>
<td>687</td>
<td>2940</td>
<td>690</td>
<td>2930</td>
<td>689</td>
<td>2930</td>
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<tr>
<td>483.xalancbmk</td>
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<td>5670</td>
<td>5650</td>
<td>5650</td>
<td>538</td>
<td>5550</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"

Platform Notes

BIOS configuration:
- C-State = Disable
- C1 Enhanced Mode = Disable
- Energy Efficient Turbo = Disable
- Processor Performance States = Disable
- Uncore Frequency Scaling = Disable
- Platform Controlled Type = Maximum Performance
- Memory Power Management = Disable
- Patrol Scrub = Disable

Sysinfo program /home/cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Tue Jul 14 00:27:45 2015

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
Continued on next page
## HITACHI

**Compute Blade 520X (Intel Xeon E7-8890 v3)**

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>Not Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>5400</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 35

**Test sponsor:** HITACHI

**Tested by:** HITACHI

**Test date:** Jul-2015

**Hardware Availability:** Jun-2015

**Software Availability:** Oct-2014

### Platform Notes (Continued)

From `/proc/cpuinfo`

```
model name : Intel(R) Xeon(R) CPU E7-8890 v3 @ 2.50GHz
8 "physical id"s (chips)
288 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
cpu cores : 18
siblings : 36
physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 2: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 3: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 4: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 5: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 6: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 7: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
cache size : 46080 KB
```

From `/proc/meminfo`

```
MemTotal: 2117096220 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

```
/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.6 (Santiago)
```

From `/etc/*release* /etc/*version*`

```
redhat-release: Red Hat Enterprise Linux Server release 6.6 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.6 (Santiago)
```

```
uname -a:
Linux localhost.localdomain 2.6.32-504.el6.x86_64 #1 SMP Tue Sep 16 01:56:35 EDT 2014 x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Jul 13 12:34
```

```
SPEC is set to: /home/cpu2006
```

```
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/vg_rhel6-lv_home ext4 221G 3.7G 206G 2% /home
```

Additional information from dmidecode:

```
BIOS HITACHI 09-14 07/09/2015
Memory:
64x NO DIMM Unknown
1x Samsung M39.A2G40DB0-CPB 16 GB 1600 MHz 2 rank
127x Samsung M393A2G40DB0-CPB 16 GB 1600 MHz 2 rank
```

(End of data from sysinfo program)
HITACHI
Compute Blade 520X (Intel Xeon E7-8890 v3)

SPECint_rate2006 = Not Run
SPECint_rate_base2006 = 5400

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/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
Filesystem page cache cleared with:
echo 1>/proc/sys/vm/drop_caches
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
Bladesymphony BS520X, Bladesymphony BS2500 and Hitachi Compute Blade 520X are electronically equivalent.
The results have been measured on a Hitachi Compute Blade 520X.

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
HITACHI

Compute Blade 520X (Intel Xeon E7-8890 v3)

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CPU2006 license: 35
Test sponsor: HITACHI
Tested by: HITACHI

Test date: Jul-2015
Hardware Availability: Jun-2015
Software Availability: Oct-2014

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/PlatformHitachi-V1.2.20150729.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/PlatformHitachi-V1.2.20150729.xml

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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