Oracle Corporation

Netra Server X3-2 (Intel Xeon E5-2658 2.1GHz)

SPECint®_rate2006 = 477
SPECint_rate_base2006 = 455

CPU2006 license: 6
Test sponsor: Oracle Corporation
Tested by: Oracle Corporation

Hardware
CPU Name: Intel Xeon E5-2658
CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz
CPU MHz: 2100
FPU: Integrated
CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip, 2 threads/core
CPU(s) orderable: 1 or 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: 20 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem: 1 x 300 GB 10K RPM SAS
Other Hardware: None

Software
Operating System: Oracle Linux Server release 6.1 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 5 (multi-user)
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V9.01
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Test date: Mar-2012
Hardware Availability: Apr-2012
Software Availability: Oct-2011

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<tbody>
<tr>
<td>400.perlbench</td>
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<td>955</td>
<td>328</td>
<td>957</td>
<td>327</td>
<td>953</td>
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<tr>
<td>401.bzip2</td>
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<td>1242</td>
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<td>1240</td>
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<td>1244</td>
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<tr>
<td>403.gcc</td>
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<td>686</td>
<td>376</td>
<td>686</td>
<td>375</td>
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<td>429.mcf</td>
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<td>392</td>
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<td>445.gobmk</td>
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<td>327</td>
<td>1032</td>
<td>325</td>
<td>1028</td>
<td>326</td>
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<td>456.hmmer</td>
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<td>526</td>
<td>568</td>
<td>526</td>
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<td>458.sjeng</td>
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<td>1190</td>
<td>325</td>
<td>1189</td>
<td>326</td>
<td>1190</td>
<td>325</td>
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<tr>
<td>462.libquantum</td>
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<td>2740</td>
<td>241</td>
<td>2750</td>
<td>242</td>
<td>2740</td>
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<tr>
<td>464.h264ref</td>
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<td>1260</td>
<td>562</td>
<td>1300</td>
<td>545</td>
<td>1277</td>
<td>555</td>
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<td>471.omnetpp</td>
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<td>682</td>
<td>293</td>
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<td>293</td>
<td>683</td>
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<tr>
<td>473.astar</td>
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<td>818</td>
<td>275</td>
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<td>277</td>
<td>812</td>
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<tr>
<td>483.xalancbmk</td>
<td>32</td>
<td>449</td>
<td>492</td>
<td>447</td>
<td>494</td>
<td>447</td>
<td>494</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

Default BIOS Settings were used.

Oracle's Netra Server X3-2 was formerly known as the Sun Netra X4270 M3

Sysinfo program /data1/cpu2006v1.2/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on pae-sb-02 Tue Mar 20 13:18:06 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 E5-2658 0 @ 2.10GHz
  2 "physical id"s (chips)
  32 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
Oracle Corporation
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Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.
cpu cores : 8
siblings : 16
physical 0: cores 0 1 2 3 4 5 6 7
physical 1: cores 0 1 2 3 4 5 6 7
cache size : 20480 KB

From /proc/meminfo
MemTotal: 132288120 kb
HugePages_Total: 0
Hugepagesize: 2048 kb

/usr/bin/lsb_release -d
Oracle Linux Server release 6.1

From /etc/*release* /etc/*version*
oracle-release: Oracle Linux Server release 6.1
redhat-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
system-release: Oracle Linux Server release 6.1

uname -a:
Linux pae-sb-02 2.6.32-131.0.15.el6.x86_64 #1 SMP Fri May 20 15:04:03 EDT
2011 x86_64 x86_64 x86_64 GNU/Linux

run-level 5 Mar 16 16:49

SPEC is set to: /data1/cpu2006v1.2

Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/vg_paesb02-lv_root
ext4 50G 11G 37G 23% /

Additional information from dmidecode:
Memory:
16x Samsung M393B1K70DH0-YK0 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 = "/data1/cpu2006v1.2/libs/32:/data1/cpu2006v1.2/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.:
Continued on next page
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General Notes (Continued)

numactl --interleave=all runspec <etc>

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:
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3

C++ benchmarks:
-xAVX -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

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Oracle Corporation

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Peak Compiler Invocation (Continued)

458.sjeng: icc -m64

C++ benchmarks:
icpc -m32

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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32
-prec-div(pass 2)

401.bzip2: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch
-auto-ilp32 -ansi-alias

403.gcc: -xAVX -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xAVX -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-prec-div(pass 2) -prof-use(pass 2) -unroll14
-prec-div(pass 2)

462.libquantum: basepeak = yes

464.h264ref: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-prec-div(pass 2) -prof-use(pass 2) -unroll2
-ansi-alias

C++ benchmarks:

Continued on next page
**Oracle Corporation**

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### Peak Optimization Flags (Continued)

- 471.omnetpp: 
  - -xAVX(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
- 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/Oracle-platform-x86_64.CPUv1.2-RevA.html](http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.CPUv1.2-RevA.html)

You can also download the XML flags sources by saving the following links:

- [http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.CPUv1.2-RevA.xml](http://www.spec.org/cpu2006/flags/Oracle-platform-x86_64.CPUv1.2-RevA.xml)

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

Tested with SPEC CPU2006 v1.2.  
Originally published on 31 July 2012.