**Supermicro**

SuperServer 1028TR-T (X10DRT-L, Intel Xeon E5-2697 v3)

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>1230</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>1180</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name: Intel Xeon E5-2697 v3</td>
<td>Operating System: Red Hat Enterprise Linux Server release 7.0, Kernel 3.10.0-123.9.3.el7.x86_64</td>
</tr>
<tr>
<td>CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz</td>
<td>Compiler: C/C++: Version 15.0.0.0.090 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>CPU MHZ: 2600</td>
<td>Auto Parallel: No</td>
</tr>
<tr>
<td>FPU: Integrated</td>
<td>File System: xfs</td>
</tr>
<tr>
<td>CPU(s) enabled: 28 cores, 2 chips, 14 cores/chip, 2 threads/core</td>
<td>System State: Run level 3 (multi-user)</td>
</tr>
<tr>
<td>CPU(s) orderable: 1.2 chips</td>
<td>Base Pointers: 32-bit</td>
</tr>
<tr>
<td>Primary Cache: 32 KB I + 32 KB D on chip per core</td>
<td>Peak Pointers: 32/64-bit</td>
</tr>
<tr>
<td>Secondary Cache: 256 KB I+D on chip per core</td>
<td>Other Software: Microquill SmartHeap V10.0</td>
</tr>
<tr>
<td>L3 Cache: 35 MB I+D on chip per chip</td>
<td>Other Hardware: None</td>
</tr>
<tr>
<td>Other Cache: None</td>
<td>Memory: 128 GB (8 x 16 GB 2Rx4 PC4-2133P-R)</td>
</tr>
<tr>
<td>Disk Subsystem: 1 x 200 GB SATA III SSD</td>
<td></td>
</tr>
</tbody>
</table>
Supermicro
SuperServer 1028TR-T
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SPECint_rate2006 = 1230
SPECint_rate_base2006 = 1180

CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

Test date: Apr-2015
Hardware Availability: Sep-2014
Software Availability: Sep-2014

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Base</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Seconds</td>
<td>Ratio</td>
<td>Seconds</td>
</tr>
<tr>
<td>400.perlbench</td>
<td>56</td>
<td>592</td>
<td>925</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>56</td>
<td>878</td>
<td>616</td>
</tr>
<tr>
<td>403.gcc</td>
<td>56</td>
<td>485</td>
<td>930</td>
</tr>
<tr>
<td>429.mcf</td>
<td>56</td>
<td>329</td>
<td>1550</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>56</td>
<td>694</td>
<td>846</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>56</td>
<td>319</td>
<td>1640</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>56</td>
<td>749</td>
<td>905</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>56</td>
<td>109</td>
<td>10600</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>56</td>
<td>847</td>
<td>1460</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>56</td>
<td>572</td>
<td>611</td>
</tr>
<tr>
<td>473.astar</td>
<td>56</td>
<td>598</td>
<td>658</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>56</td>
<td>321</td>
<td>1200</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 Settings:
Enforce POR = Disabled
Memory Frequency = 2133
COD Enable = Enable
Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on X10DRT-01 Fri Apr 3 02:01:20 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

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2697 v3 @ 2.60GHz
2 "physical id"s (chips)
56 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
Continued on next page
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Platform Notes (Continued)

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

cpu cores : 7
siblings : 14
physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14
physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14

From /proc/meminfo
MemTotal: 131751944 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.0 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.0"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.0 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.0:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.0 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.0:ga:server

uname -a:
Linux X10DRT-01 3.10.0-123.9.3.el7.x86_64 #1 SMP Thu Oct 30 00:16:40 EDT 2014
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Apr 3 02:00

SPEC is set to: /usr/cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 183G 70G 114G 38% /

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS American Megatrends Inc. 1.0 01/29/2015
Memory:
8x Samsung (date:14/5q) M393A2G40DB0-CPB 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)
**SPEC CINT2006 Result**

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<td>Software Availability</td>
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**General Notes**

Environment variables set by runspec before the start of the run:
```
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"
```

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHad EL 7.0

Transparent Huge Pages enabled with:
```
echo always > /sys/kernel/mm/transparent_hugepage/enabled
```

Filesystem page cache cleared with:
```
echo 1>       /proc/sys/vm/drop_caches
```

Runcspec command invoked through numactl i.e.:
```
numactl --interleave=all runspec <etc>
```

**Base Compiler Invocation**

C benchmarks:
```
icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
```

C++ benchmarks:
```
icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
```

**Base Portability Flags**

- 400.perlbmk: -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
```
Supermicro
SuperServer 1028TR-T
(X10DRT-L , Intel Xeon E5-2697 v3)

SPECint\_rate2006 = 1230
SPECint\_rate\_base2006 = 1180

Peak Compiler Invocation
C benchmarks (except as noted below):
  icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
  400.perlbench: icc -m64
  401.bzip2: icc -m64
  456.hmmer: icc -m64
  458.sjeng: icc -m64
C++ benchmarks:
  icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

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: -xCORE\-AVX2(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: -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-ilp32 -ansi-alias
  403.gcc: -xCORE\-AVX2 -ipo -O3 -no-prec-div
  429.mcf: basepeak = yes
  445.gobmk: -xCORE\-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
  -ansi-alias -opt-mem-layout-trans=3
  456.hmmer: -xCORE\-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
  458.sjeng: -xCORE\-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
  -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
  -unroll4 -auto-ilp32

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SPEC CINT2006 Result

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SPECint_rate2006 = 1230
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Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref:
-xCORE-AVX2(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:
-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

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revE.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revE.xml

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

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