SPEC® CINT2006 Result
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ASUSTeK Computer Inc.

ASUS TS700-E7(Z9PE-D16) Server System
(Intel Xeon E5-2690)

$SPECint^®2006 =$ 59.2

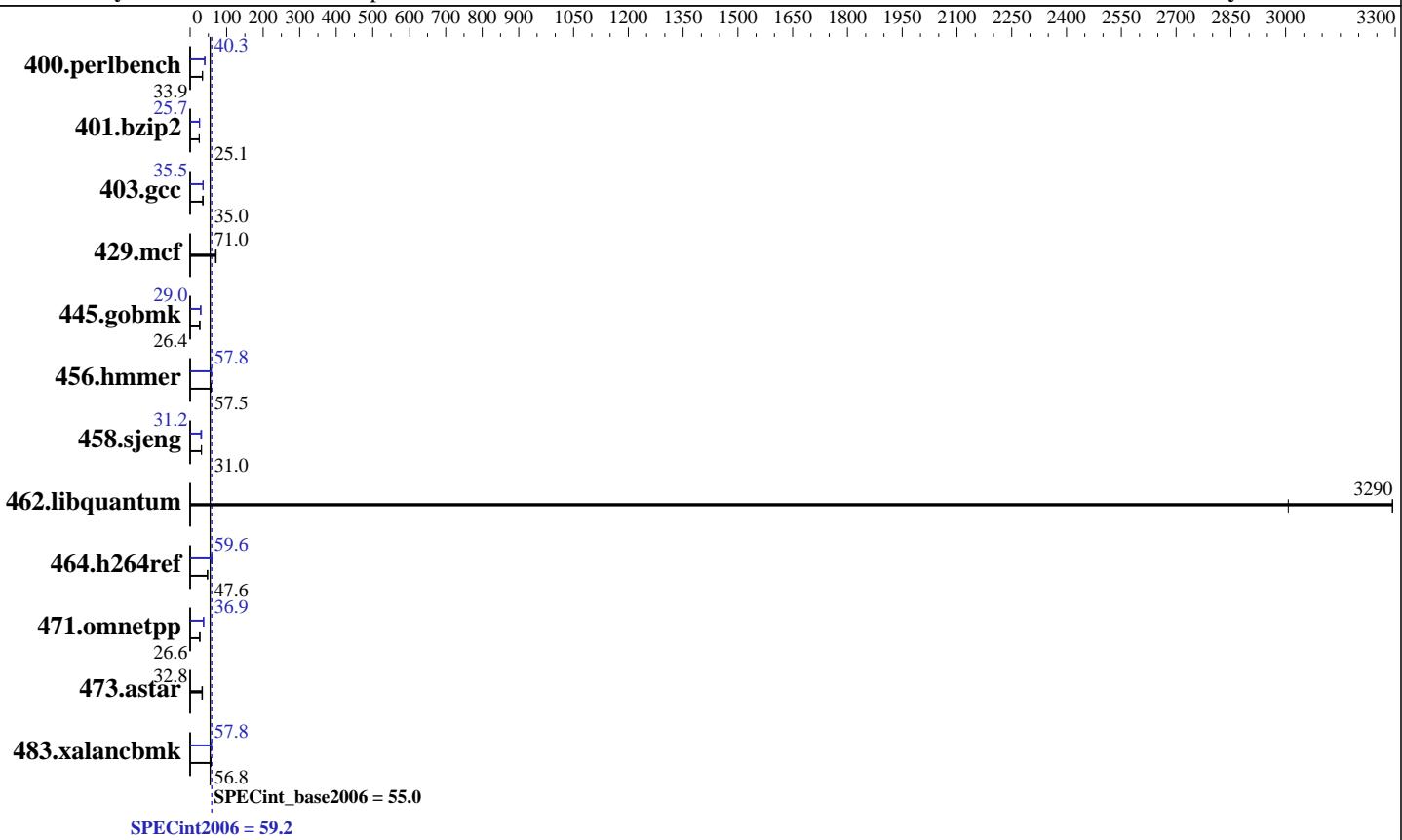$SPECint\_base2006 =$ 55.0

CPU2006 license: 9016
Test sponsor: ASUSTeK Computer Inc.
Tested by: ASUSTeK Computer Inc.

Test date: Feb-2012
Hardware Availability: Mar-2012
Software Availability: Dec-2011

Benchmark results:

Benchmark	Peak	Base
400.perlbench	40.3	33.9
401.bzip2	25.7	25.1
403.gcc	35.5	35.0
429.mcf		71.0
445.gobmk	29.0	26.4
456.hmmer	57.8	57.5
458.sjeng	31.2	31.0
462.libquantum		3290
464.h264ref	59.6	47.6
471.omnetpp	36.9	26.6
473.astar	32.8	
483.xalancbmk	57.8	56.8

SPECint_base2006 = 55.0

SPECint2006 = 59.2

Hardware

CPU Name: Intel Xeon E5-2690
CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz: 2900
FPU: Integrated
CPU(s) enabled: 16 cores, 2 chips, 8 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: 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: Seagate ST3500320AS 1 x 500 GB SATA, 7200 RPM
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)
2.6.32-220.el6.x86_64
Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;
Auto Parallel: Yes
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V9.01

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Results Table

Benchmark	Base						Peak					
	Seconds	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
400.perlbench	291	33.5	288	33.9	**289**	**33.9**	243	40.3	**243**	**40.3**	243	40.2
401.bzip2	385	25.1	**385**	**25.1**	384	25.1	375	25.7	**376**	**25.7**	376	25.7
403.gcc	229	35.1	230	35.0	**230**	**35.0**	227	35.5	227	35.5	**227**	**35.5**
429.mcf	131	69.6	**128**	**71.0**	128	71.1	131	69.6	**128**	**71.0**	128	71.1
445.gobmk	396	26.5	397	26.4	**397**	**26.4**	**362**	**29.0**	361	29.0	362	29.0
456.hmmer	162	57.4	**162**	**57.5**	162	57.5	161	57.8	161	57.8	**161**	**57.8**
458.sjeng	391	31.0	**391**	**31.0**	390	31.0	**388**	**31.2**	412	29.4	388	31.2
462.libquantum	6.89	3010	**6.29**	**3290**	6.29	3290	6.89	3010	**6.29**	**3290**	6.29	3290
464.h264ref	**465**	**47.6**	469	47.2	463	47.8	**372**	**59.6**	372	59.6	379	58.4
471.omnetpp	234	26.8	240	26.1	**235**	**26.6**	170	36.8	169	37.0	**169**	**36.9**
473.astar	215	32.7	208	33.8	**214**	**32.8**	215	32.7	208	33.8	**214**	**32.8**
483.xalancbmk	**121**	**56.8**	120	57.3	122	56.6	120	57.6	119	58.1	**119**	**57.8**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
```

Platform Notes

```
Sysinfo program /cpu2006/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on localhost Mon Feb 20 19:25:35 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 E5-2690 @ 2.90GHz
2 "physical id"s (chips)
32 "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 : 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:       132284976 kB
```

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Platform Notes (Continued)

```
HugePages_Total:        0
Hugepagesize:        2048 kB

/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.2 (Santiago)

From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
Linux localhost 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Feb 20 19:17

SPEC is set to: /cpu2006
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sda1       ext4      459G   71G  366G  17% /

Additional information from dmidecode:

(End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/cpu2006/libs/32:/cpu2006/libs/64"
OMP_NUM_THREADS = "16"

 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
```

Base Compiler Invocation

C benchmarks:
    icc -m64

C++ benchmarks:
    icpc -m64

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Base Portability Flags

```
    400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
       401.bzip2: -DSPEC_CPU_LP64
         403.gcc: -DSPEC_CPU_LP64
         429.mcf: -DSPEC_CPU_LP64
      445.gobmk: -DSPEC_CPU_LP64
      456.hmmer: -DSPEC_CPU_LP64
       458.sjeng: -DSPEC_CPU_LP64
   462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
     464.h264ref: -DSPEC_CPU_LP64
     471.omnetpp: -DSPEC_CPU_LP64
        473.astar: -DSPEC_CPU_LP64
    483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
```

Base Optimization Flags

C benchmarks:

```
    -xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
```

C++ benchmarks:

```
    -xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -Wl,-z,muldefs
    -L/smartheap -lsmartheap64
```

Base Other Flags

C benchmarks:

```
       403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
    icc  -m64
```

```
    400.perlbench: icc -m32
```

```
      445.gobmk: icc -m32
```

```
     464.h264ref: icc -m32
```

C++ benchmarks (except as noted below):
```
    icpc -m32
```

```
       473.astar: icpc -m64
```

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Peak Portability Flags

```
    400.perlbench: -DSPEC_CPU_LINUX_IA32
       401.bzip2: -DSPEC_CPU_LP64
         403.gcc: -DSPEC_CPU_LP64
         429.mcf: -DSPEC_CPU_LP64
      456.hmmer: -DSPEC_CPU_LP64
       458.sjeng: -DSPEC_CPU_LP64
   462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
       473.astar: -DSPEC_CPU_LP64
   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)
                   -no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch
                   -ansi-alias

       401.bzip2: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                   -no-prec-div -prof-use(pass 2) -auto-ilp32 -opt-prefetch
                   -ansi-alias

         403.gcc: -xAVX -ipo -O3 -no-prec-div -inline-calloc
                   -opt-malloc-options=3 -auto-ilp32

         429.mcf: basepeak = yes

      445.gobmk: -xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
                   -ansi-alias

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

       458.sjeng: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                   -no-prec-div(pass 2) -prof-use(pass 2) -unroll4

   462.libquantum: basepeak = yes

      464.h264ref: -xAVX(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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
                   -no-prec-div(pass 2) -prof-use(pass 2)
                   -opt-ra-region-strategy=block              -ansi-alias
                   -Wl,-z,muldefs -L/smartheap -lsmartheap
```

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Peak Optimization Flags (Continued)

```
 473.astar: basepeak = yes

483.xalancbmk: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
               -Wl,-z,muldefs -L/smartheap -lsmartheap
```

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/ASUSTekPlatform.20120313.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/ASUSTekPlatform.20120313.xml

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

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