



# SPEC® CINT2006 Result

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## ASUSTeK Computer Inc.

### SPECint®\_rate2006 = 691

ASUS RS720-E7(Z9PE-D16) Server System  
(Intel Xeon E5-2690)

### SPECint\_rate\_base2006 = 663

CPU2006 license: 9016

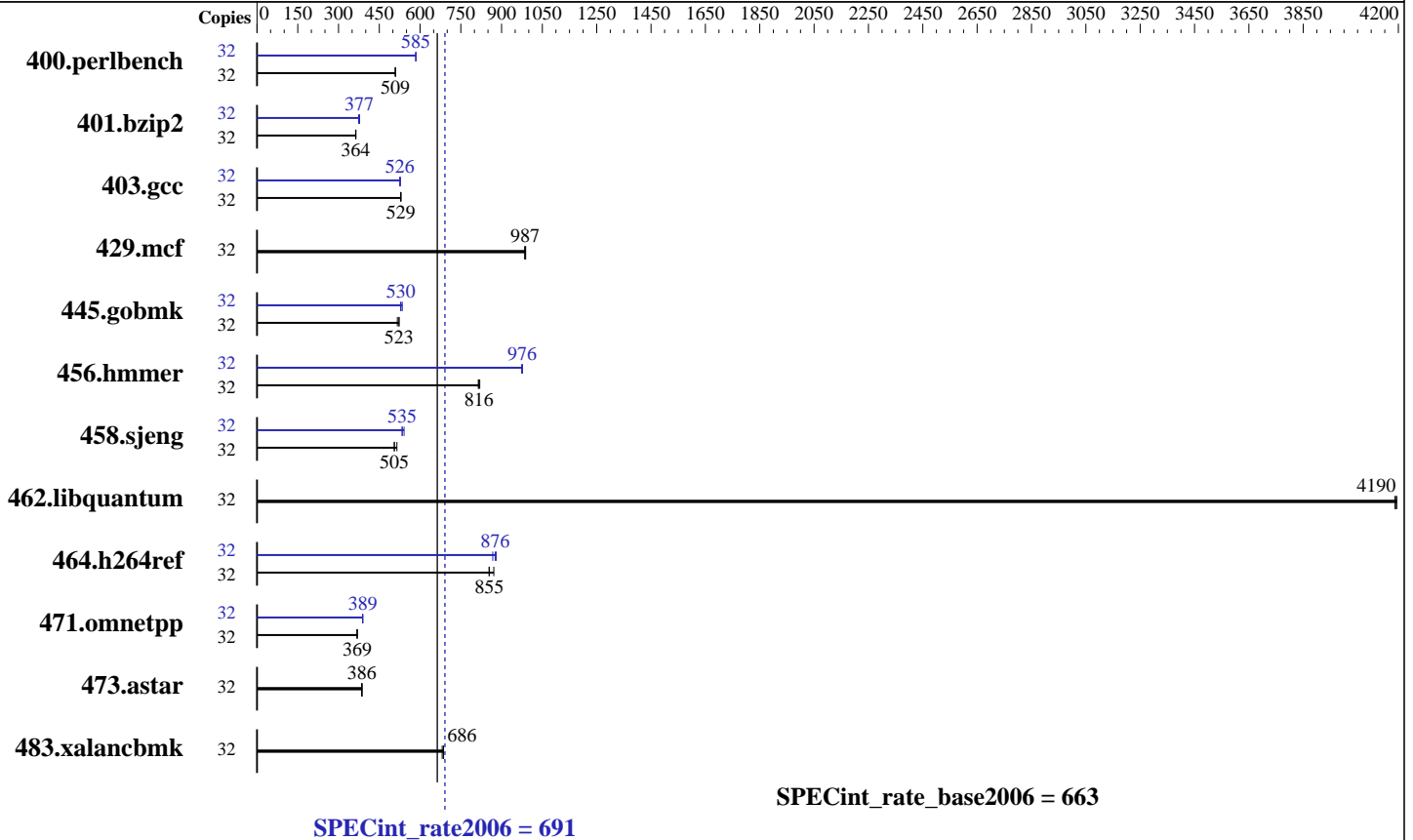
Test date: Apr-2012

Test sponsor: ASUSTeK Computer Inc.

Hardware Availability: Mar-2012

Tested by: ASUSTeK Computer Inc.

Software Availability: Dec-2011



### 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: No  
 File System: ext4  
 System State: Run level 3 (multi-user)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: Microquill SmartHeap V9.01



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## Results Table

| Benchmark      | Base   |            |             |            |            |            |            | Peak   |            |             |            |            |            |            |
|----------------|--------|------------|-------------|------------|------------|------------|------------|--------|------------|-------------|------------|------------|------------|------------|
|                | Copies | Seconds    | Ratio       | Seconds    | Ratio      | Seconds    | Ratio      | Copies | Seconds    | Ratio       | Seconds    | Ratio      | Seconds    | Ratio      |
| 400.perlbench  | 32     | 615        | 509         | <b>614</b> | <b>509</b> | 613        | 510        | 32     | 535        | 584         | <b>535</b> | <b>585</b> | 534        | 585        |
| 401.bzip2      | 32     | <b>849</b> | <b>364</b>  | 849        | 364        | 851        | 363        | 32     | 818        | 378         | <b>819</b> | <b>377</b> | 826        | 374        |
| 403.gcc        | 32     | <b>487</b> | <b>529</b>  | 488        | 528        | 486        | 530        | 32     | 488        | 528         | 490        | 526        | <b>490</b> | <b>526</b> |
| 429.mcf        | 32     | 295        | 989         | 296        | 985        | <b>296</b> | <b>987</b> | 32     | 295        | 989         | 296        | 985        | <b>296</b> | <b>987</b> |
| 445.gobmk      | 32     | 650        | 516         | 642        | 523        | <b>642</b> | <b>523</b> | 32     | <b>633</b> | <b>530</b>  | 628        | 535        | 635        | 529        |
| 456.hammer     | 32     | 364        | 820         | <b>366</b> | <b>816</b> | 367        | 814        | 32     | <b>306</b> | <b>976</b>  | 307        | 974        | 306        | 977        |
| 458.sjeng      | 32     | <b>766</b> | <b>505</b>  | 752        | 515        | 766        | 505        | 32     | 716        | 541         | <b>724</b> | <b>535</b> | 725        | 534        |
| 462.libquantum | 32     | <b>158</b> | <b>4190</b> | 158        | 4190       | 158        | 4190       | 32     | <b>158</b> | <b>4190</b> | 158        | 4190       | 158        | 4190       |
| 464.h264ref    | 32     | <b>828</b> | <b>855</b>  | 813        | 871        | 829        | 854        | 32     | 804        | 880         | <b>808</b> | <b>876</b> | 816        | 868        |
| 471.omnetpp    | 32     | <b>543</b> | <b>369</b>  | 543        | 369        | 543        | 368        | 32     | 514        | 389         | <b>514</b> | <b>389</b> | 514        | 389        |
| 473.astar      | 32     | 583        | 385         | <b>583</b> | <b>386</b> | 581        | 387        | 32     | 583        | 385         | <b>583</b> | <b>386</b> | 581        | 387        |
| 483.xalancbmk  | 32     | 324        | 681         | 322        | 686        | <b>322</b> | <b>686</b> | 32     | 324        | 681         | 322        | 686        | <b>322</b> | <b>686</b> |

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

Sysinfo program /cpu2006/config/sysinfo.rev6800  
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
running on localhost Wed Apr 18 10:46:59 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 0 @ 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

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## Platform Notes (Continued)

```
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:      132143796 kB
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 Apr 18 10:45
```

```
SPEC is set to: /cpu2006
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sda1       ext4      459G   71G  365G  17% /
```

Additional information from dmidecode:

(End of data from sysinfo program)

## General Notes

Environment variables set by runspec before the start of the run:

```
LD_LIBRARY_PATH = "/cpu2006/libs/32:/cpu2006/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>
```

## Base Compiler Invocation

C benchmarks:

```
icc -m32
```

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## Base Compiler Invocation (Continued)

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  
458.sjeng: icc -m64  
C++ benchmarks:  
icpc -m32



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## 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.xalanbmk: -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) -auto-ilp32

401.bzip2: -xAVX(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: -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)  
 -no-prec-div(pass 2) -prof-use(pass 2) -unroll4  
 -auto-ilp32

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) -ansi-alias  
 -opt-ra-region-strategy=block -Wl,-z,muldefs  
 -L/smartheap -lsmartheap

473.astar: basepeak = yes

483.xalanbmk: basepeak = yes



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## 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>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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