



# SPEC<sup>®</sup> CINT2006 Result

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ASUSTeK Computer Inc.

ASUS RS920-E7(Z9PX-Q32) Server System  
(Intel Xeon E5-4650)

SPECint<sup>®</sup>\_rate2006 = **NC**

SPECint\_rate\_base2006 = **NC**

CPU2006 license: 9016

Test sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test date: Jul-2012

Hardware Availability: May-2012

Software Availability: Dec-2011

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	Copies
400.perlbench	
401.bzip2	
403.gcc	
429.mcf	
445.gobmk	
456.hmmer	
458.sjeng	
462.libquantum	
464.h264ref	
471.omnettp	
473.astar	
483	

**Non-Compliant**

### Hardware

CPU Name: Intel Xeon E5-4650  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz  
 CPU MHz: 2700  
 FPU: Integrated  
 CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip, 2 threads/core  
 CPU(s) orderable: 2,4 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core

Continued on next page

### 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)

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Secondary Cache: 256 KB I+D on chip per core  
L3 Cache: 20 MB I+D on chip per chip  
Other Cache: None  
Memory: 256 GB (16 x 16 GB 2Rx4 PC3-12800R-11, ECC)  
Disk Subsystem: Seagate ST3500320AS 1 x 500 GB SATA, 7200 RPM  
Other Hardware: None

Base Processors: 32-bit  
Link Pointers: 32/64-bit  
Other Software: Microquill SmartHeap V9.01

## Result Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
400.perlbench	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
401.bzip2	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
403.gcc	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
429.mcf	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
445.gobmk	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
456.hmmer	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
458.sjeng	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
462.libquantum	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
464.h264ref	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
471.omnetpp	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
473.astar	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		
483.xal	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC		

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.



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## 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 # \$ 6f2e15032aaa42e583f96b07f99d3  
running on localhost Fri Jul 13 04:51:11 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/Documentation/config.html#sysinfo>

From /proc/cpuinfo  
model name : Intel(R) CPU E5-4650 @ 2.70GHz  
4 "physical id"s (chips)  
64 "processors"  
cores, siblings (notation: 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  
physical 2: cores 0 1 2 3 4 5 6 7  
physical 3: cores 0 1 2 3 4 5 6 7  
cache size : 20480 KB

From /proc/meminfo  
MemTotal: 264516044 kB  
HugePages\_Total: 0  
Hugepagesize: 2048 kB

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:

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## Platform Notes (Continued)

```
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 Jul 12 16:28
```

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

```
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda1 ext4 459G 173G 264G 40% /
```

```
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 this system with 1x Core i7-860 CPU + 8GB
memory using RHEL 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 --localnode=0 --localcpus=0 --leave=all runspec <etc>
```

## Base Compiler Invocation

```
C benchmarks:
```

```
icc -m32
```

```
C++ benchmarks:
```

```
icpc -m32
```



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## 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/smarteap -lsmarteap

## 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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## 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.bzp2: -DSPEC\_CPU\_LP64

456.hmmr: -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)  
-no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32

401.bzp2: -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

402.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

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## Peak Optimization Flags (Continued)

456.hmmer: -xAVX -ipo -O3 -no-prec-div -unroll12 -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) -unroll14  
-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) -unroll12  
-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-isa-reg -strategy=block -Wl,-z,muldefs  
-L/\$smarthheap -lsmarthheap

473.astar: basepeak = yes

483.balancbm: basepeak = yes

## Peak Other Flags

C benchmarks:

402.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>





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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux.201111.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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