



# SPEC<sup>®</sup> CINT2006 Result

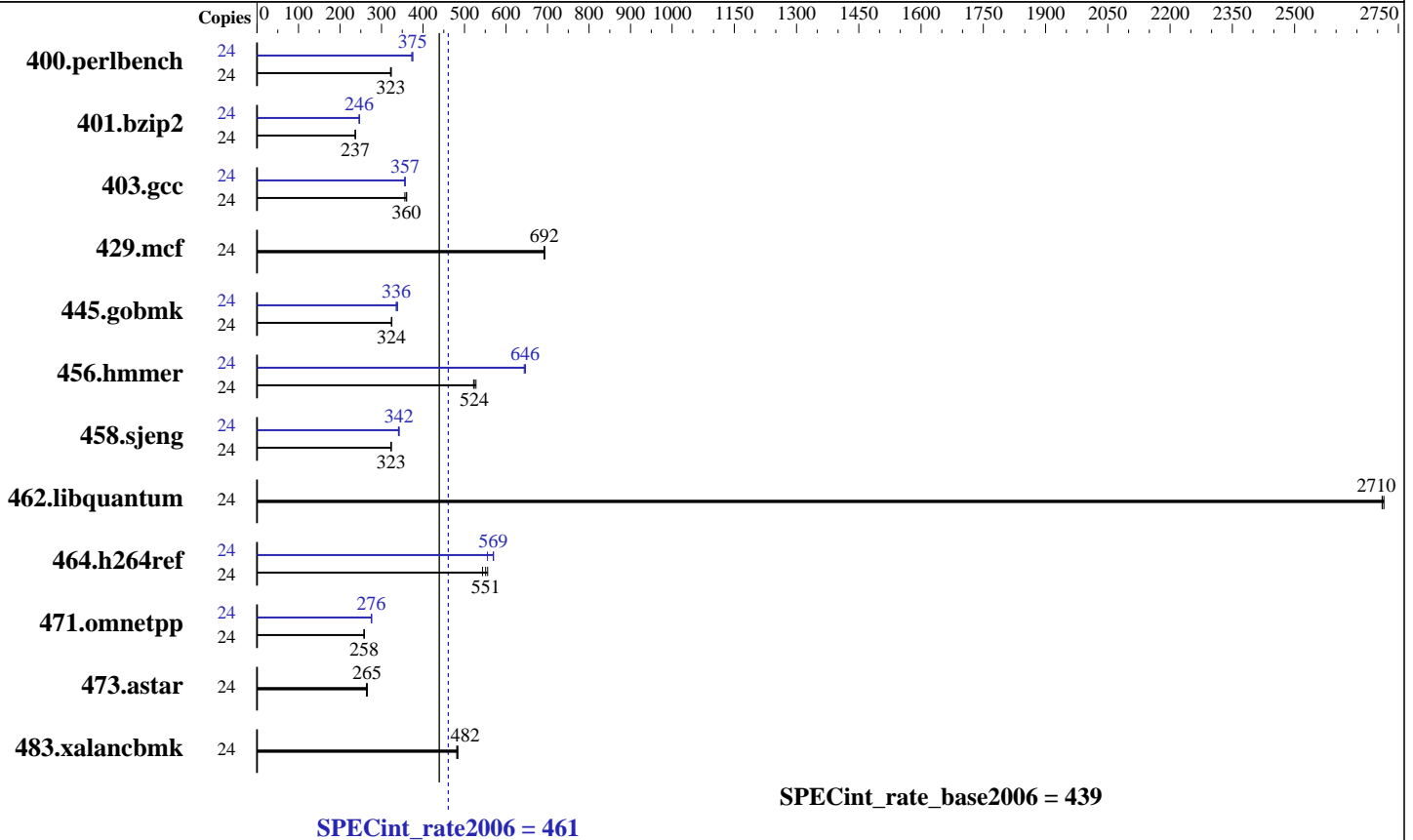
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**Acer Incorporated**  
**Acer AT350 F2 (Xeon E5-2640)**

**SPECint<sup>®</sup>\_rate2006 = 461**  
**SPECint\_rate\_base2006 = 439**

**CPU2006 license:** 97  
**Test sponsor:** Acer Incorporated  
**Tested by:** Acer Incorporated

**Test date:** May-2012  
**Hardware Availability:** May-2012  
**Software Availability:** Oct-2011



## Hardware

**CPU Name:** Intel Xeon E5-2640  
**CPU Characteristics:** Intel Turbo Boost Technology up to 3.00 GHz  
**CPU MHz:** 2500  
**FPU:** Integrated  
**CPU(s) enabled:** 12 cores, 2 chips, 6 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:** 15 MB I+D on chip per chip  
**Other Cache:** None  
**Memory:** 128 GB (16 x 8 GB 2Rx4 PC3L-10600R-9, ECC)  
**Disk Subsystem:** 1 x 2 TB SAS, 7200 RPM  
**Other Hardware:** None

## Software

**Operating System:** Red Hat Enterprise 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:** ext3  
**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	24	<u>727</u>	<u>323</u>	729	322	725	324	24	<u>625</u>	<u>375</u>	629	373	625	375
401.bzip2	24	<u>977</u>	<u>237</u>	978	237	977	237	24	939	247	<u>940</u>	<u>246</u>	940	246
403.gcc	24	536	361	542	356	<u>537</u>	<u>360</u>	24	542	356	541	357	<u>542</u>	<u>357</u>
429.mcf	24	<u>316</u>	<u>692</u>	316	693	317	692	24	<u>316</u>	<u>692</u>	316	693	317	692
445.gobmk	24	775	325	777	324	<u>777</u>	<u>324</u>	24	743	339	750	336	<u>750</u>	<u>336</u>
456.hammer	24	<u>428</u>	<u>524</u>	424	528	429	522	24	346	647	<u>347</u>	<u>646</u>	348	644
458.sjeng	24	898	323	<u>899</u>	<u>323</u>	899	323	24	852	341	<u>850</u>	<u>342</u>	848	343
462.libquantum	24	<u>183</u>	<u>2710</u>	183	2720	183	2710	24	<u>183</u>	<u>2710</u>	183	2720	183	2710
464.h264ref	24	<u>964</u>	<u>551</u>	978	543	956	556	24	932	570	956	555	<u>933</u>	<u>569</u>
471.omnetpp	24	<u>581</u>	<u>258</u>	582	258	580	259	24	544	276	543	276	<u>544</u>	<u>276</u>
473.astar	24	<u>636</u>	<u>265</u>	639	264	634	266	24	<u>636</u>	<u>265</u>	639	264	634	266
483.xalancbmk	24	344	482	<u>344</u>	<u>482</u>	342	484	24	344	482	<u>344</u>	<u>482</u>	342	484

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 /usr/cpu2006/config/sysinfo.rev6800  
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3  
running on localhost.localdomain Wed May 9 10:32:32 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 E5-2640 0 @ 2.50GHz
 2 "physical id"s (chips)
 24 "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 : 6
siblings  : 12
```

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## Platform Notes (Continued)

```
physical 0: cores 0 1 2 3 4 5
physical 1: cores 0 1 2 3 4 5
cache size : 15360 KB
```

```
From /proc/meminfo
MemTotal:      132140812 kB
HugePages_Total:    0
Hugepagesize:    2048 kB
```

```
/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.1 (Santiago)
```

```
From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.1 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

```
uname -a:
Linux localhost.localdomain 2.6.32-131.0.15.el6.x86_64 #1 SMP Tue May 10
15:42:40 EDT 2011 x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 May 9 10:30 last=5
```

```
SPEC is set to: /usr/cpu2006
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/VolGroup-lv_root
ext3            962G    84G  830G  10% /
```

Additional information from dmidecode:

```
Memory:
8x Hynix Semiconductor HMT31GR7BFR4A-H9 8 GB 1333 MHz 1 rank
8x Hynix Semiconductor HMT31GR7CFR4A-H9 8 GB 1333 MHz 1 rank
```

(End of data from sysinfo program)

## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/usr/cpu2006/libs/32:/usr/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>
```



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## 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

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 file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

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

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