



# SPEC® CINT2006 Result

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## Acer Incorporated

**SPECint®2006 = 48.7**

Acer AT110 F2, (Intel Xeon E3-1220 v2, 3.10 GHz)

**SPECint\_base2006 = 46.4**

CPU2006 license: 97

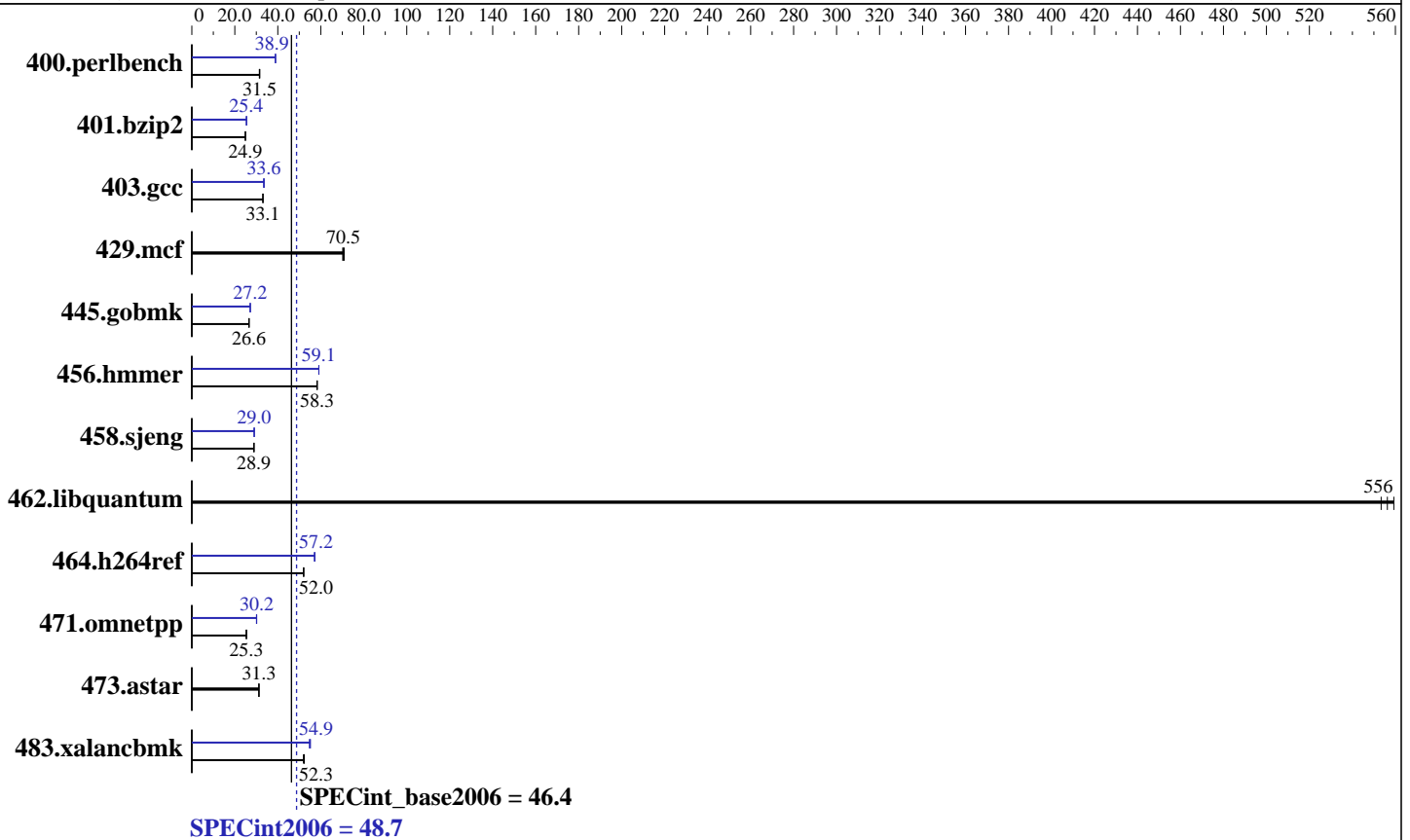
Test date: Jun-2012

Test sponsor: Acer Incorporated

Hardware Availability: Jan-2012

Tested by: Acer Incorporated

Software Availability: Dec-2011



### Hardware

CPU Name: Intel Xeon E3-1220 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz  
 CPU MHz: 3100  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core  
 L3 Cache: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 16 GB (2 x 8 GB 2Rx8 PC3L-10600E-9-11-E0, ECC)  
 Disk Subsystem: 1 x 500 GB SATAII, 7200RPM  
 Other Hardware: None

### Software

Operating System: Red Hat Enterprise Linux Server release 6.0 (Santiago)  
 2.6.32-71.el6.x86\_64  
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux  
 Auto Parallel: Yes  
 File System: ext3  
 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  | 311        | 31.4        | <b>310</b> | <b>31.5</b> | 309         | 31.6        | 251        | 38.9        | 251        | 39.0        | <b>251</b>  | <b>38.9</b> |
| 401.bzip2      | <b>387</b> | <b>24.9</b> | 388        | 24.9        | 387         | 24.9        | 380        | 25.4        | <b>379</b> | <b>25.4</b> | 379         | 25.4        |
| 403.gcc        | 244        | 33.0        | 243        | 33.1        | <b>243</b>  | <b>33.1</b> | <b>240</b> | <b>33.6</b> | 241        | 33.4        | 239         | 33.6        |
| 429.mcf        | <b>129</b> | <b>70.5</b> | 129        | 70.9        | 130         | 70.2        | <b>129</b> | <b>70.5</b> | 129        | 70.9        | 130         | 70.2        |
| 445.gobmk      | 394        | 26.6        | <b>394</b> | <b>26.6</b> | 394         | 26.6        | <b>386</b> | <b>27.2</b> | 386        | 27.2        | 386         | 27.2        |
| 456.hammer     | 160        | 58.2        | 160        | 58.4        | <b>160</b>  | <b>58.3</b> | 158        | 59.1        | <b>158</b> | <b>59.1</b> | 158         | 59.1        |
| 458.sjeng      | 418        | 28.9        | 419        | 28.9        | <b>419</b>  | <b>28.9</b> | 417        | 29.0        | 417        | 29.0        | <b>417</b>  | <b>29.0</b> |
| 462.libquantum | 37.4       | 553         | 37.0       | 559         | <b>37.2</b> | <b>556</b>  | 37.4       | 553         | 37.0       | 559         | <b>37.2</b> | <b>556</b>  |
| 464.h264ref    | <b>425</b> | <b>52.0</b> | 426        | 52.0        | 425         | 52.1        | <b>387</b> | <b>57.2</b> | 387        | 57.2        | 388         | 57.1        |
| 471.omnetpp    | 247        | 25.3        | 245        | 25.5        | <b>247</b>  | <b>25.3</b> | <b>207</b> | <b>30.2</b> | 208        | 30.1        | 207         | 30.2        |
| 473.astar      | 225        | 31.1        | 225        | 31.3        | <b>225</b>  | <b>31.3</b> | 225        | 31.1        | 225        | 31.3        | <b>225</b>  | <b>31.3</b> |
| 483.xalancbmk  | 132        | 52.3        | 133        | 51.9        | <b>132</b>  | <b>52.3</b> | 125        | 55.2        | <b>126</b> | <b>54.9</b> | 126         | 54.7        |

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 /user/cpu2006/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on localhost.localdomain Tue Jun 26 17:30:48 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 E3-1220 V2 @ 3.10GHz
1 "physical id"s (chips)
4 "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 : 4
siblings : 4
physical 0: cores 0 1 2 3
cache size : 8192 KB
```

```
From /proc/meminfo
MemTotal: 16437540 kB
HugePages_Total: 0
```

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## Platform Notes (Continued)

Hugepagesize: 2048 kB

```
/usr/bin/lsb_release -d
Red Hat Enterprise Linux Server release 6.0 (Santiago)
```

```
From /etc/*release* /etc/*version*
redhat-release: Red Hat Enterprise Linux Server release 6.0 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.0 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

```
uname -a:
Linux localhost.localdomain 2.6.32-71.el6.x86_64 #1 SMP Wed Sep 1 01:33:01
EDT 2010 x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Jun 22 17:56
```

```
SPEC is set to: /user/cpu2006
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sda2        ext3      197G      21G  167G  12% /
```

Additional information from dmidecode:

BIOS Acer D22 06/18/2012

Memory:

2x 830B NT8GC72C8PB0NF-CG 8 GB 1333 MHz 2 rank

(End of data from sysinfo program)

## General Notes

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

KMP\_AFFINITY = "granularity=fine,compact,1,0"

LD\_LIBRARY\_PATH = "/user/cpu2006/libs/32:/user/cpu2006/libs/64"

OMP\_NUM\_THREADS = "2"

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
```

runspec command invoked through numactl i.e.:

```
numactl --interleave=all runspec <etc>
```

## 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 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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