



# SPEC<sup>®</sup> CFP2006 Result

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## Acer Incorporated

**SPECfp<sup>®</sup>\_rate2006 = 896**

Altos W2000h-W370h F4 (Intel Xeon Gold 6134)

**SPECfp\_rate\_base2006 = 872**

CPU2006 license: 97

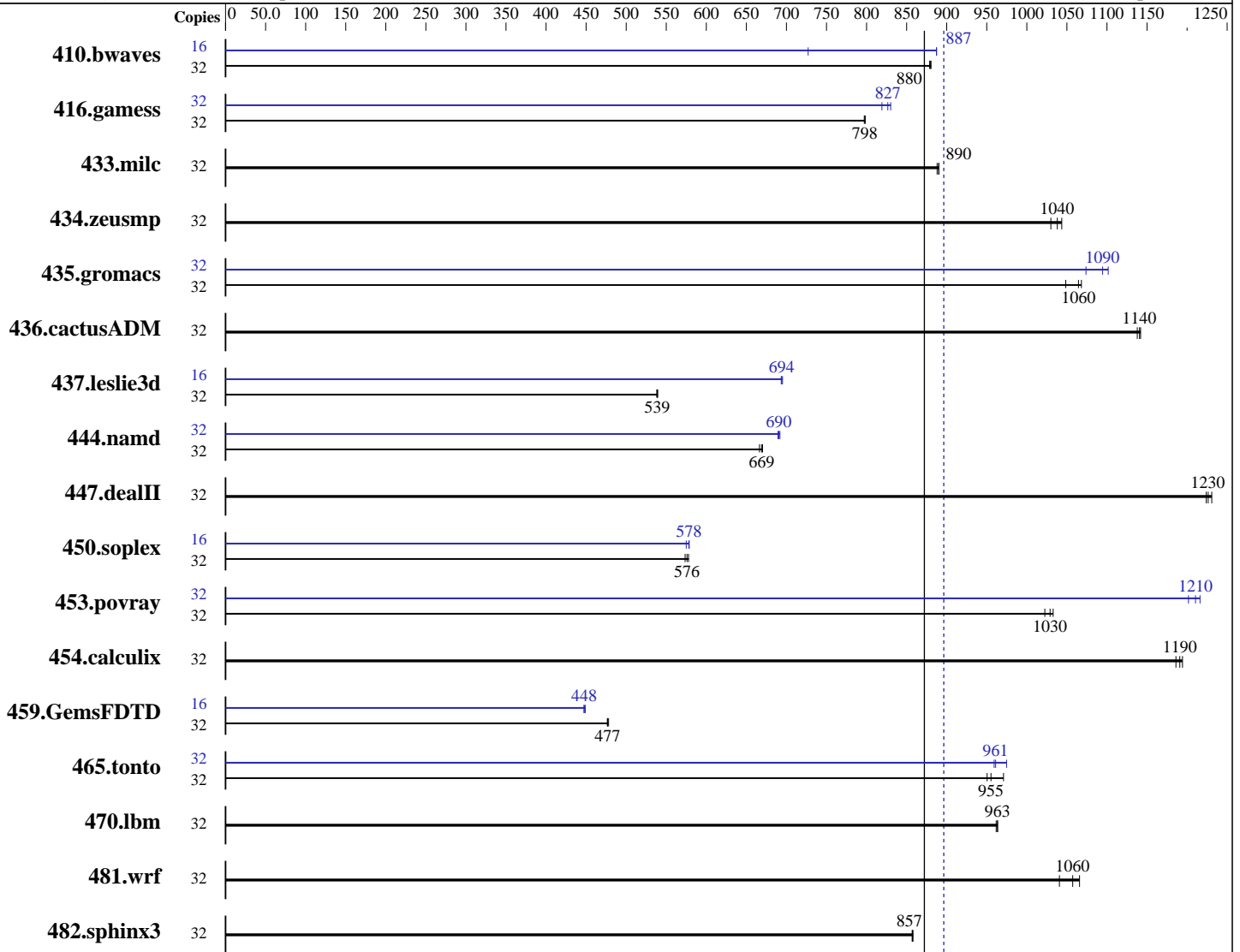
Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: Sep-2017

Hardware Availability: Oct-2017

Software Availability: Apr-2017



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**SPECfp\_rate2006 = 896**

### Hardware

CPU Name: Intel Xeon Gold 6134  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 3200  
 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: 1 MB I+D on chip per core

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### Software

Operating System: SUSE Linux Enterprise Server 12 SP2  
 4.4.21-69-default  
 Compiler: C/C++: Version 17.0.3.191 of Intel C/C++  
 Compiler for Linux;  
 Fortran: Version 17.0.3.191 of Intel Fortran  
 Compiler for Linux  
 Auto Parallel: Yes  
 File System: btrfs  
 System State: Run level 3 (multi-user)

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L3 Cache: 24.75 MB I+D on chip per chip  
Other Cache: None  
Memory: 384 GB (12 x 32 GB 2Rx4 PC4-2666V-R)  
Disk Subsystem: 1 x 1000 GB SATA, 7200 RPM  
Other Hardware: None

Base Pointers: 32/64-bit  
Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	32	494	880	<b>494</b>	<b>880</b>	495	879	16	<b>245</b>	<b>887</b>	299	727	245	887
416.gamess	32	786	797	785	798	<b>785</b>	<b>798</b>	32	<b>758</b>	<b>827</b>	755	830	765	819
433.milc	32	<b>330</b>	<b>890</b>	330	890	331	888	32	<b>330</b>	<b>890</b>	330	890	331	888
434.zeusmp	32	279	1040	283	1030	<b>281</b>	<b>1040</b>	32	279	1040	283	1030	<b>281</b>	<b>1040</b>
435.gromacs	32	<b>215</b>	<b>1060</b>	214	1070	218	1050	32	<b>209</b>	<b>1090</b>	213	1070	207	1100
436.cactusADM	32	336	1140	335	1140	<b>335</b>	<b>1140</b>	32	336	1140	335	1140	<b>335</b>	<b>1140</b>
437.leslie3d	32	558	539	<b>558</b>	<b>539</b>	559	538	16	<b>217</b>	<b>694</b>	217	693	216	695
444.namd	32	<b>384</b>	<b>669</b>	385	666	383	670	32	371	692	372	689	<b>372</b>	<b>690</b>
447.dealII	32	<b>299</b>	<b>1230</b>	297	1230	299	1220	32	<b>299</b>	<b>1230</b>	297	1230	299	1220
450.soplex	32	462	578	465	574	<b>463</b>	<b>576</b>	16	231	579	<b>231</b>	<b>578</b>	232	575
453.povray	32	165	1030	166	1020	<b>165</b>	<b>1030</b>	32	140	1220	142	1200	<b>141</b>	<b>1210</b>
454.calculix	32	221	1190	<b>222</b>	<b>1190</b>	223	1190	32	221	1190	<b>222</b>	<b>1190</b>	223	1190
459.GemsFDTD	32	710	478	<b>712</b>	<b>477</b>	713	476	16	378	449	<b>379</b>	<b>448</b>	380	447
465.tonto	32	<b>330</b>	<b>955</b>	324	971	331	950	32	328	959	323	975	<b>328</b>	<b>961</b>
470.lbm	32	<b>456</b>	<b>963</b>	456	964	457	962	32	<b>456</b>	<b>963</b>	456	964	457	962
481.wrf	32	343	1040	<b>338</b>	<b>1060</b>	335	1070	32	343	1040	<b>338</b>	<b>1060</b>	335	1070
482.sphinx3	32	728	857	<b>727</b>	<b>857</b>	727	858	32	728	857	<b>727</b>	<b>857</b>	727	858

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

BIOS Configuration:  
CPU Power and Performance Policy set to Performance  
IMC set to 1-way interleaving

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## Platform Notes (Continued)

Sub\_NUMA Cluster set to enabled  
Set Fan Profile set to Performance  
Sysinfo program /usr/cpu2006/config/sysinfo.rev6993  
Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)  
running on linux-uibv Fri Sep 8 01:18:18 2017

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) Gold 6134 CPU @ 3.20GHz
 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 2 3 9 16 19 26 27
  physical 1: cores 0 2 3 9 16 19 26 27
cache size : 25344 KB
```

```
From /proc/meminfo
MemTotal:      394675016 kB
HugePages_Total:      0
Hugepagesize:    2048 kB
```

```
/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12 SP2
```

```
From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 2
# This file is deprecated and will be removed in a future service pack or
release.
# Please check /etc/os-release for details about this release.
os-release:
NAME="SLES"
VERSION="12-SP2"
VERSION_ID="12.2"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp2"
```

```
uname -a:
Linux linux-uibv 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016
(9464f67) x86_64 x86_64 x86_64 GNU/Linux
```

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## Platform Notes (Continued)

run-level 3 Nov 2 22:52

SPEC is set to: /usr/cpu2006

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sda3	btrfs	3.7T	190G	3.5T	6%	/

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Intel Corporation SE5C620.86B.00.01.0004.071220170215 07/12/2017

Memory:

4x Empty/NO DIMM NO DIMM

12x Micron 36ASF4G72PZ-2G6D1 32 GB 2 rank 2666 MHz

(End of data from sysinfo program)

## General Notes

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

LD\_LIBRARY\_PATH = "/usr/cpu2006/lib/ia32:/usr/cpu2006/lib/intel64:/usr/cpu2006/sh10.2"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.2

Transparent Huge Pages enabled by default

Filesystem page cache cleared with:

shell invocation of 'sync; echo 3 > /proc/sys/vm/drop\_caches' prior to run

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>

## Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64



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## Base Portability Flags

```
410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64
```

## Base Optimization Flags

C benchmarks:

```
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3
```

C++ benchmarks:

```
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3
```

Fortran benchmarks:

```
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
```

Benchmarks using both Fortran and C:

```
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch -auto-p32
-qopt-mem-layout-trans=3
```

## Peak Compiler Invocation

C benchmarks:

```
icc -m64
```

C++ benchmarks (except as noted below):

```
icpc -m64
```

```
450.soplex: icpc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32
```

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## Peak Compiler Invocation (Continued)

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## Peak Portability Flags

410.bwaves: -DSPEC\_CPU\_LP64  
 416.gamess: -DSPEC\_CPU\_LP64  
 433.milc: -DSPEC\_CPU\_LP64  
 434.zeusmp: -DSPEC\_CPU\_LP64  
 435.gromacs: -DSPEC\_CPU\_LP64 -nofor\_main  
 436.cactusADM: -DSPEC\_CPU\_LP64 -nofor\_main  
 437.leslie3d: -DSPEC\_CPU\_LP64  
 444.namd: -DSPEC\_CPU\_LP64  
 447.dealII: -DSPEC\_CPU\_LP64  
 450.soplex: -D\_FILE\_OFFSET\_BITS=64  
 453.povray: -DSPEC\_CPU\_LP64  
 454.calculix: -DSPEC\_CPU\_LP64 -nofor\_main  
 459.GemsFDTD: -DSPEC\_CPU\_LP64  
 465.tonto: -DSPEC\_CPU\_LP64  
 470.lbm: -DSPEC\_CPU\_LP64  
 481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX  
 482.sphinx3: -DSPEC\_CPU\_LP64

## Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)  
 -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -fno-alias -auto-ilp32  
 -qopt-mem-layout-trans=3

447.dealII: basepeak = yes

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## Peak Optimization Flags (Continued)

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -qopt-malloc-options=3  
-qopt-mem-layout-trans=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -unroll4 -qopt-mem-layout-trans=3

### Fortran benchmarks:

410.bwaves: -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -unroll2 -inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: Same as 410.bwaves

459.GemsFDTD: Same as 410.bwaves

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)  
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -unroll4 -auto -inline-calloc  
-qopt-malloc-options=3

### Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512(pass 2)  
-par-num-threads=1(pass 1) -qopt-prefetch -auto-ilp32  
-qopt-mem-layout-trans=3

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.html>

<http://www.spec.org/cpu2006/flags/Acer-Platform-Settings-V1.3-revC.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64-revF.xml>

<http://www.spec.org/cpu2006/flags/Acer-Platform-Settings-V1.3-revC.xml>



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

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