



SPEC® CFP2006 Result

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Huawei

SPECfp®_rate2006 = 387

Huawei RH2285H V2 (Intel Xeon E5-2450)

SPECfp_rate_base2006 = 380

CPU2006 license: 3175

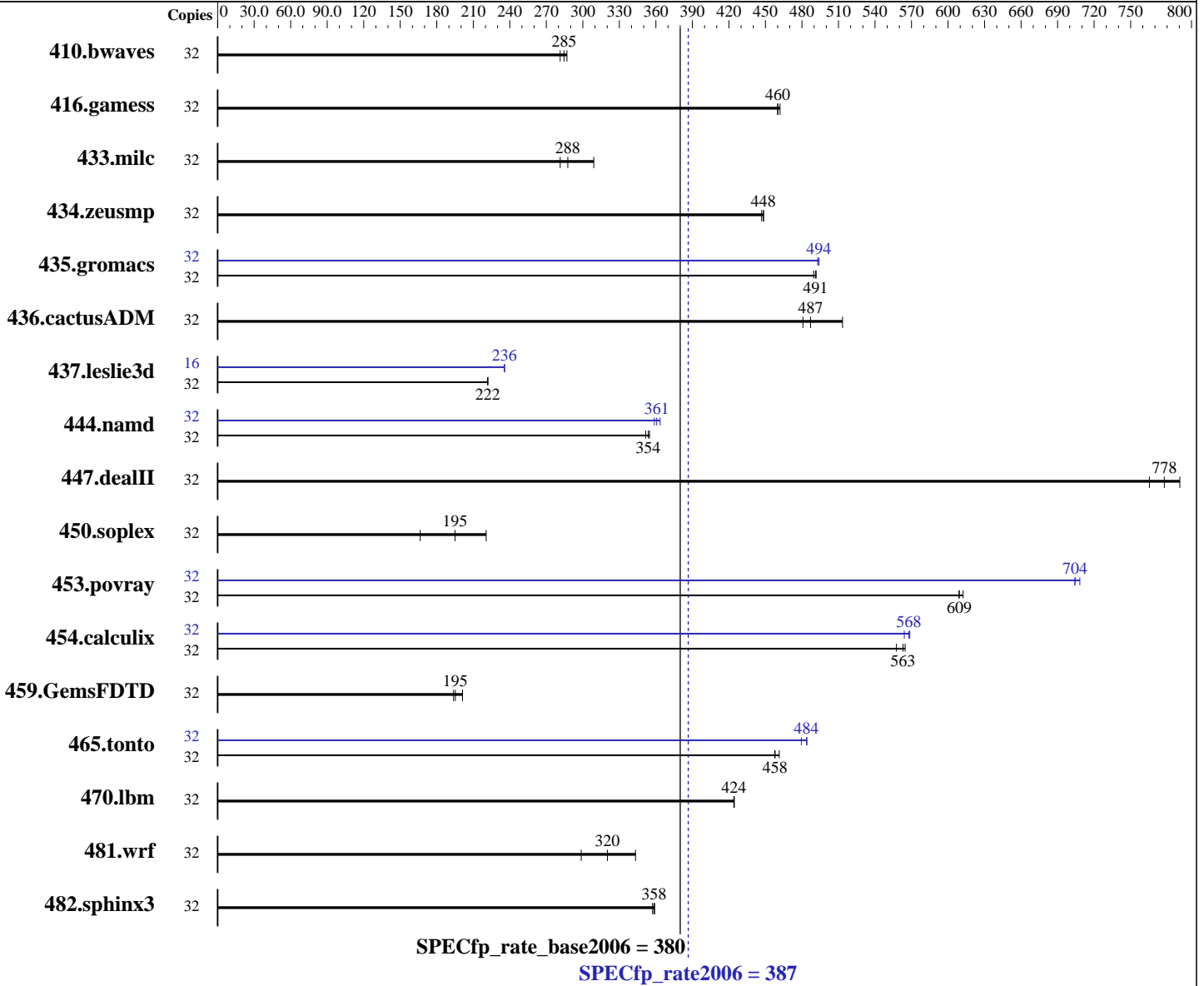
Test date: May-2013

Test sponsor: Huawei

Hardware Availability: May-2013

Tested by: Huawei

Software Availability: Feb-2013



Hardware

CPU Name: Intel Xeon E5-2450
 CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz
 CPU MHz: 2100
 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

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Software

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)
 2.6.32-358.el6.x86_64
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;
 Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
 Auto Parallel: No
 File System: ext4

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L3 Cache: 20 MB I+D on chip per chip
 Other Cache: None
 Memory: 48 GB (6 x 8 GB 2Rx4 PC3-12800R-11, ECC)
 Disk Subsystem: 1 x 300 GB SAS, 10K RPM
 Other Hardware: None

System State: Run level 3 (multi-user)
 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	1516	287	<u>1528</u>	<u>285</u>	1546	281	32	1516	287	<u>1528</u>	<u>285</u>	1546	281
416.gamess	32	1362	460	1356	462	<u>1361</u>	<u>460</u>	32	1362	460	1356	462	<u>1361</u>	<u>460</u>
433.milc	32	<u>1021</u>	<u>288</u>	951	309	1044	281	32	<u>1021</u>	<u>288</u>	951	309	1044	281
434.zeusmp	32	649	448	<u>649</u>	<u>448</u>	652	447	32	649	448	<u>649</u>	<u>448</u>	652	447
435.gromacs	32	465	492	467	490	<u>465</u>	<u>491</u>	32	464	493	463	494	<u>463</u>	<u>494</u>
436.cactusADM	32	745	513	<u>785</u>	<u>487</u>	795	481	32	745	513	<u>785</u>	<u>487</u>	795	481
437.leslie3d	32	<u>1356</u>	<u>222</u>	1357	222	1355	222	16	639	235	<u>639</u>	<u>236</u>	638	236
444.namd	32	<u>725</u>	<u>354</u>	730	352	723	355	32	715	359	<u>712</u>	<u>361</u>	706	364
447.dealII	32	478	765	<u>471</u>	<u>778</u>	463	790	32	478	765	<u>471</u>	<u>778</u>	463	790
450.soplex	32	1603	166	<u>1369</u>	<u>195</u>	1210	221	32	1603	166	<u>1369</u>	<u>195</u>	1210	221
453.povray	32	<u>279</u>	<u>609</u>	280	609	278	612	32	242	704	240	708	<u>242</u>	<u>704</u>
454.calculix	32	<u>469</u>	<u>563</u>	467	565	473	558	32	464	569	<u>465</u>	<u>568</u>	468	564
459.GemsFDTD	32	1688	201	<u>1739</u>	<u>195</u>	1752	194	32	1688	201	<u>1739</u>	<u>195</u>	1752	194
465.tonto	32	682	461	<u>688</u>	<u>458</u>	688	458	32	650	484	<u>651</u>	<u>484</u>	657	479
470.lbm	32	1037	424	<u>1036</u>	<u>424</u>	1036	424	32	1037	424	<u>1036</u>	<u>424</u>	1036	424
481.wrf	32	1041	343	1197	299	<u>1116</u>	<u>320</u>	32	1041	343	1197	299	<u>1116</u>	<u>320</u>
482.sphinx3	32	1737	359	1746	357	<u>1740</u>	<u>358</u>	32	1737	359	1746	357	<u>1740</u>	<u>358</u>

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 /spec/config/sysinfo.rev6800
\$Rev: 6800 \$ \$Date:: 2011-10-11 #\$ 6f2ebdff5032aaa42e583f96b07f99d3
running on speccpu Mon May 27 09:28:41 2013

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Platform Notes (Continued)

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 E5-2450 0 @ 2.10GHz
 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 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:      49383832 kB
HugePages_Total: 0
Hugepagesize:   2048 kB
```

/usr/bin/lsb_release -d

```
Red Hat Enterprise Linux Server release 6.4 (Santiago)
```

From /etc/*release* /etc/*version*

```
redhat-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release: Red Hat Enterprise Linux Server release 6.4 (Santiago)
system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server
```

uname -a:

```
Linux speccpu 2.6.32-358.el6.x86_64 #1 SMP Tue Jan 29 11:47:41 EST 2013
x86_64 x86_64 x86_64 GNU/Linux
```

run-level 3 May 26 19:47

SPEC is set to: /spec

```
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/mapper/df1_4c534920202020201000005b19e5d20447114711f8bdfdbdp1
  ext4          241G    35G  194G  15% /
```

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 = "/spec/libs/32:/spec/libs/64"

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General Notes (Continued)

Binaries compiled on a system with 2 x Xeon X5645 CPU + 16GB memory using RHEL 6.1

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 -m64
```

C++ benchmarks:

```
icpc -m64
```

Fortran benchmarks:

```
ifort -m64
```

Benchmarks using both Fortran and C:

```
icc -m64 ifort -m64
```

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.deallI: -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

```



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Base Optimization Flags

C benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Peak Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

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Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -fno-alias
-auto-ilp32

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32
-opt-mem-layout-trans=3

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto
-inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo -O3 -no-prec-div
-prof-use(pass 2) -xSSE4.2 -opt-prefetch -static
-auto-ilp32 -opt-mem-layout-trans=3

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32
-opt-mem-layout-trans=3

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-ic12.1-official-linux64.20120425.html>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-revE.20121120.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml>

<http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-revE.20121120.xml>



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For other inquiries, please contact webmaster@spec.org.

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