SPEC® CFP2006 Result

Huawei

Huawei RH2285 V2 (Intel Xeon E5-2407 v2)

SPECfp®_rate2006 = 238

SPECfp_rate_base2006 = 234
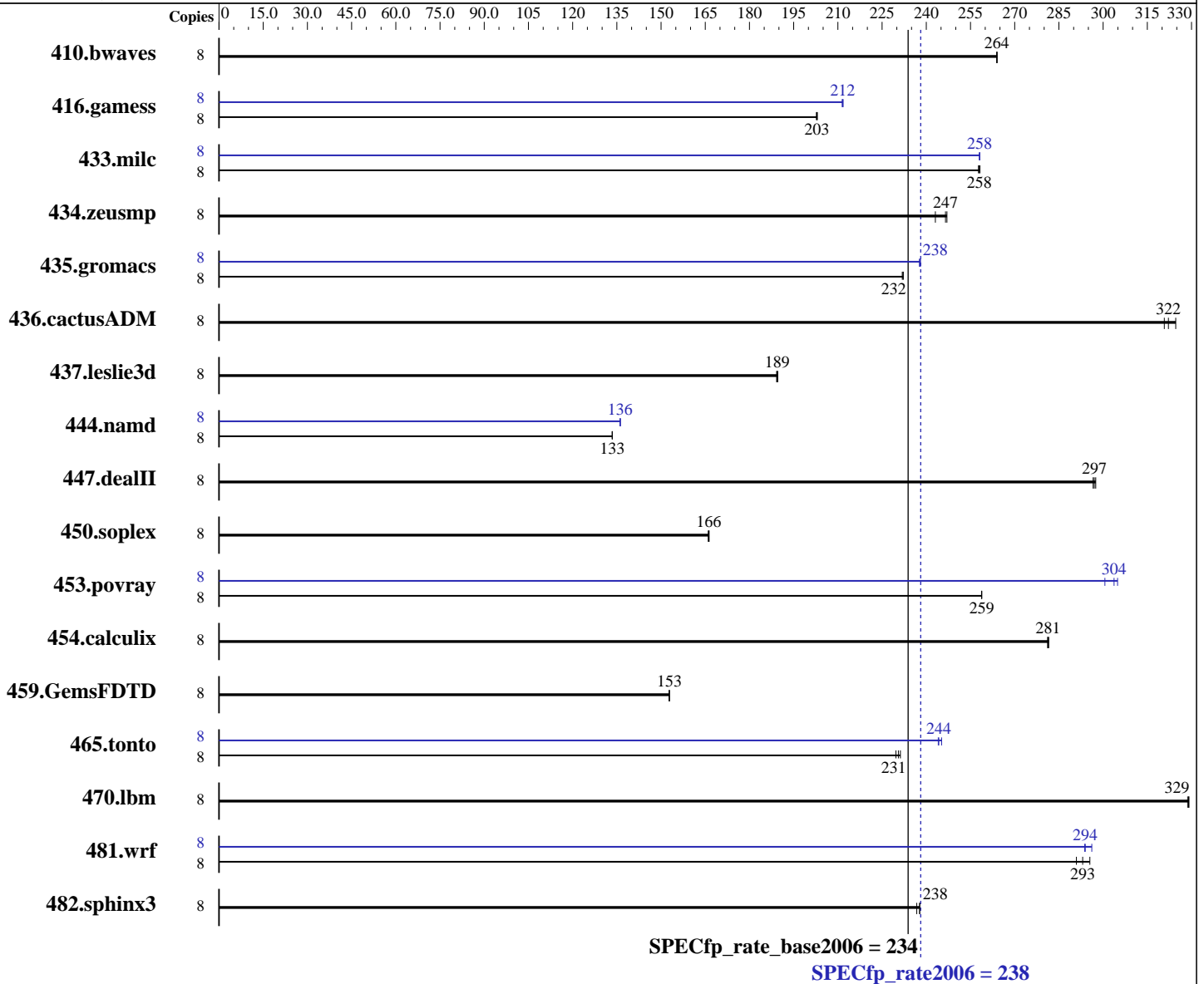
CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

Test date: May-2014
Hardware Availability: Mar-2014
Software Availability: Nov-2013

Copies		
410.bwaves	8	264
416.gamess	8	212
	8	203
433.milc	8	258
	8	258
434.zeusmp	8	247
435.gromacs	8	238
	8	232
436.cactusADM	8	322
437.leslie3d	8	189
444.namd	8	136
	8	133
447.dealII	8	297
450.soplex	8	166
453.povray	8	304
	8	259
454.calculix	8	281
459.GemsFDTD	8	153
465.tonto	8	244
	8	231
470.lbm	8	329
481.wrf	8	294
	8	293
482.sphinx3	8	238

SPECfp_rate_base2006 = 234

SPECfp_rate2006 = 238

Hardware

CPU Name: Intel Xeon E5-2407 v2
CPU Characteristics:
CPU MHz: 2400
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
CPU(s) orderable: 1,2 chip
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core
Continued on next page

Software

Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)
2.6.32-431.el6.x86_64
Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
Auto Parallel: No
File System: ext4
Continued on next page

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L3 Cache:	10 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	32/64-bit
Memory:	96 GB (12 x 8 GB 2Rx4 PC3-10600R-11,ECC)	Peak Pointers:	32/64-bit
Disk Subsystem:	1 x 300 GB SAS, 7200 RPM	Other Software:	None
Other Hardware:	None		

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	412	264	412	264	**412**	**264**	8	412	264	412	264	**412**	**264**
416.gamess	8	773	203	**772**	**203**	771	203	8	**740**	**212**	741	211	740	212
433.milc	8	**285**	**258**	284	258	285	258	8	285	258	284	258	**284**	**258**
434.zeusmp	8	**295**	**247**	295	247	299	243	8	**295**	**247**	295	247	299	243
435.gromacs	8	246	232	246	232	**246**	**232**	8	**240**	**238**	240	238	240	238
436.cactusADM	8	294	325	298	321	**297**	**322**	8	294	325	298	321	**297**	**322**
437.leslie3d	8	**397**	**189**	397	190	397	189	8	**397**	**189**	397	190	397	189
444.namd	8	481	133	481	133	**481**	**133**	8	471	136	471	136	**471**	**136**
447.dealII	8	309	297	**308**	**297**	308	298	8	309	297	**308**	**297**	308	298
450.soplex	8	402	166	401	166	**401**	**166**	8	402	166	401	166	**401**	**166**
453.povray	8	164	259	164	259	**164**	**259**	8	**140**	**304**	140	305	142	301
454.calculix	8	**235**	**281**	235	281	234	282	8	**235**	**281**	235	281	234	282
459.GemsFDTD	8	555	153	556	153	**555**	**153**	8	555	153	556	153	**555**	**153**
465.tonto	8	340	231	343	230	**341**	**231**	8	323	244	321	245	**322**	**244**
470.lbm	8	**334**	**329**	334	329	334	329	8	**334**	**329**	334	329	334	329
481.wrf	8	307	291	302	296	**305**	**293**	8	**304**	**294**	302	296	304	294
482.sphinx3	8	659	237	**656**	**238**	656	238	8	659	237	**656**	**238**	656	238

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.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on localhost.localdomain Fri May 30 20:41:33 2014

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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 E5-2407 v2 @ 2.40GHz
      2 "physical id"s (chips)
      8 "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
      physical 1: cores 0 1 2 3
   cache size : 10240 KB

From /proc/meminfo
   MemTotal:       99010156 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.5 (Santiago)

From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.5 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
   Linux localhost.localdomain 2.6.32-431.el6.x86_64 #1 SMP Sun Nov 10 22:19:54
   EST 2013 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 May 30 11:40

SPEC is set to: /spec
   Filesystem      Type  Size  Used Avail Use% Mounted on
   /dev/sda2       ext4  540G  113G  400G  23% /

Additional information from dmidecode:
  BIOS Insyde Corp. RMIBV379 03/19/2014
  Memory:
   8x Samsung M393B1K70CH0-CH9 8 GB 1333 MHz 2 rank
   3x Samsung M393B1K70DH0-CH9 8 GB 1333 MHz 2 rank
   1x Samsung M393B1K70DH0-YH9 8 GB 1333 MHz 2 rank

(End of data from sysinfo program)
```

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General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/spec/libs/32:/spec/libs/64:/spec/sh"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RedHat EL 6.4
 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>
 The Huawei RH2285H v2 and Huawei RH2285 v2 models are electronically equivalent.
 The results have been measured on a Huawei RH2285H v2 model.
```

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.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
```

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$SPECfp\_rate2006 =$ 238

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CPU2006 license: 3175	**Test date:**	May-2014
Test sponsor: Huawei	**Hardware Availability:**	Mar-2014
Tested by: Huawei	**Software Availability:**	Nov-2013

Base Optimization Flags

C benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3
```

C++ benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3
```

Fortran benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xAVX -ipo -O3 -no-prec-div -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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
          -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
          -prof-use(pass 2) -auto-ilp32
```

```
470.lbm: basepeak = yes
```

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Huawei

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Peak Optimization Flags (Continued)

482.sphinx3: basepeak = yes

C++ benchmarks:

    444.namd: `-xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
        `-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)`
        `-prof-use(pass 2) -fno-alias -auto-ilp32`

    447.dealII: 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) -opt-mem-layout-trans=3(pass 2)`
        `-prof-use(pass 2) -unroll4 -ansi-alias`

Fortran benchmarks:

    410.bwaves: basepeak = yes

    416.gamess: `-xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
        `-no-prec-div(pass 2) -prof-use(pass 2) -unroll2`
        `-inline-level=0 -scalar-rep-`

    434.zeusmp: basepeak = yes

    437.leslie3d: basepeak = yes

  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(pass 2) -O3(pass 2)`
        `-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)`
        `-prof-use(pass 2) -opt-prefetch -auto-ilp32`

  436.cactusADM: basepeak = yes

    454.calculix: basepeak = yes

      481.wrf: `-xAVX -ipo -O3 -no-prec-div -auto-ilp32`

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.html

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

http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-V1.0-IVB-RevG.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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