SPEC® CFP2006 Result
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Huawei
Tecal RH5885 V2

$SPECfp^{®}\_rate2006 =$ 752

SPECfp_rate_base2006 =   741

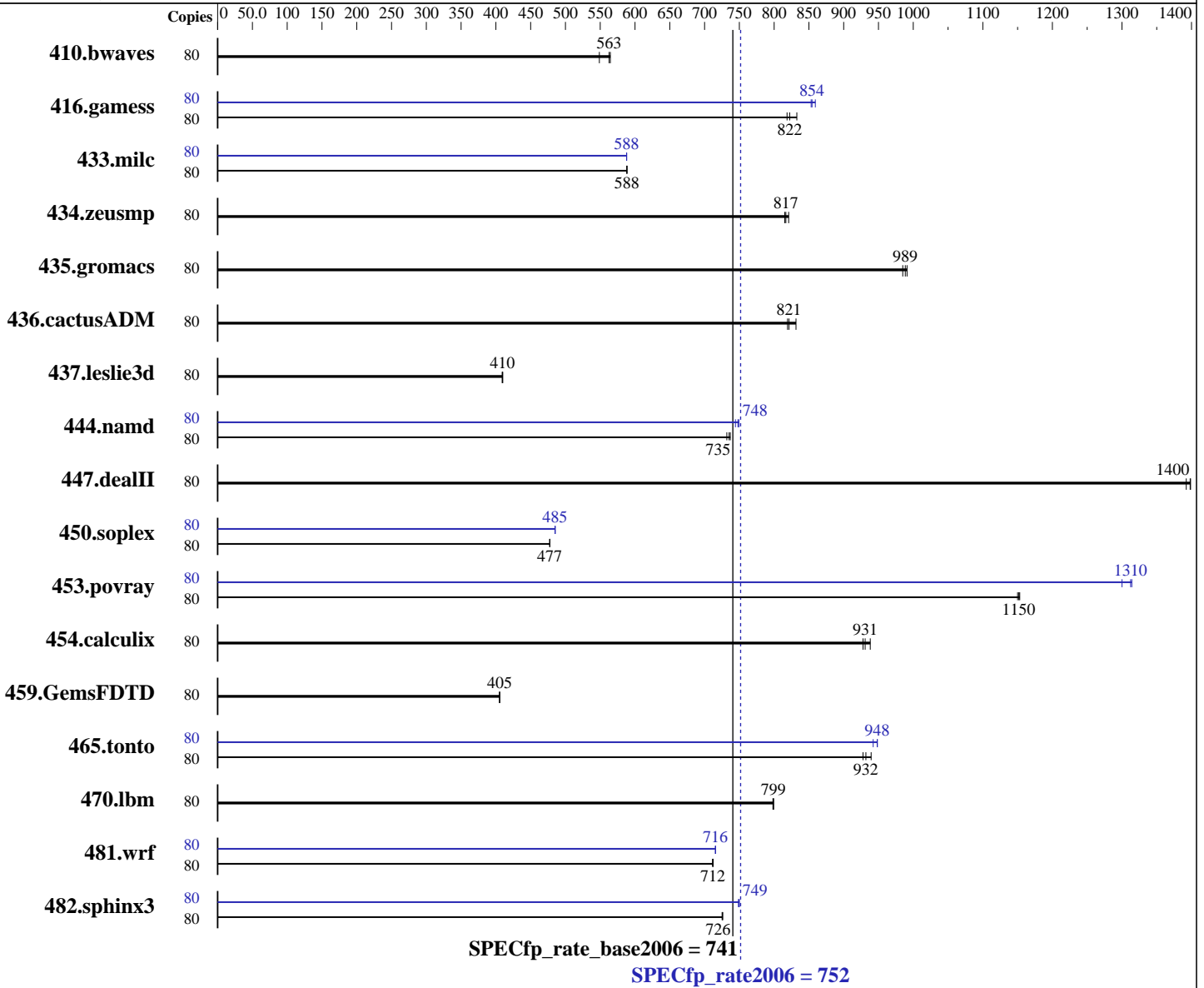| Benchmark	Copies	Result
410.bwaves	80	563
416.gamess	80	854
416.gamess	80	822
433.milc	80	588
433.milc	80	588
434.zeusmp	80	817
435.gromacs	80	989
436.cactusADM	80	821
437.leslie3d	80	410
444.namd	80	748
444.namd	80	735
447.dealII	80	1400
450.soplex	80	485
450.soplex	80	477
453.povray	80	1310
453.povray	80	1150
454.calculix	80	931
459.GemsFDTD	80	405
465.tonto	80	948
465.tonto	80	932
470.lbm	80	799
481.wrf	80	716
481.wrf	80	712
482.sphinx3	80	749
482.sphinx3	80	726

SPECfp_rate_base2006 = 741

SPECfp_rate2006 = 752

Hardware
CPU Name:	Intel Xeon E7-4870
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	40 cores, 4 chips, 10 cores/chip, 2 threads/core
CPU(s) orderable:	2,4 chips
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 6.2 (Santiago) 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 13.0.0.079 of Intel C++ Studio XE for Linux; Fortran: Version 13.0.0.079 of Intel Fortran Studio XE for Linux
Auto Parallel:	No
File System:	ext4

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$SPECfp\_rate2006 =$ 752

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CPU2006 license: 3175	**Test date:** Oct-2012
Test sponsor: Huawei	**Hardware Availability:** Oct-2012
Tested by: Huawei	**Software Availability:** Oct-2012

L3 Cache:	30 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	32/64-bit
Memory:	1 TB (64 x 16 GB 4Rx4 PC3-10600R-9, ECC, running at 1066 MHz)	Peak Pointers:	32/64-bit
		Other Software:	None
Disk Subsystem:	1 x 300 GB SAS, 10K RPM		
Other Hardware:	None		

Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	80	1981	549	**1932**	**563**	1926	565	80	1981	549	**1932**	**563**	1926	565
416.gamess	80	**1905**	**822**	1881	833	1914	819	80	1836	853	**1833**	**854**	1823	859
433.milc	80	1249	588	1248	588	**1248**	**588**	80	**1249**	**588**	1249	588	1249	588
434.zeusmp	80	**891**	**817**	887	821	893	815	80	**891**	**817**	887	821	893	815
435.gromacs	80	**578**	**989**	576	991	580	985	80	**578**	**989**	576	991	580	985
436.cactusADM	80	1167	819	1150	831	**1164**	**821**	80	1167	819	1150	831	**1164**	**821**
437.leslie3d	80	1834	410	1839	409	**1836**	**410**	80	1834	410	1839	409	**1836**	**410**
444.namd	80	871	737	876	732	**873**	**735**	80	**858**	**748**	862	744	856	749
447.dealII	80	**655**	**1400**	654	1400	657	1390	80	**655**	**1400**	654	1400	657	1390
450.soplex	80	1398	477	1397	478	**1397**	**477**	80	1375	485	**1376**	**485**	1376	485
453.povray	80	**370**	**1150**	369	1150	370	1150	80	**324**	**1310**	327	1300	324	1310
454.calculix	80	703	938	711	928	**709**	**931**	80	703	938	711	928	**709**	**931**
459.GemsFDTD	80	**2094**	**405**	2094	405	2093	406	80	**2094**	**405**	2094	405	2093	406
465.tonto	80	848	928	**845**	**932**	838	939	80	835	942	830	948	**830**	**948**
470.lbm	80	1377	798	1375	799	**1376**	**799**	80	1377	798	1375	799	**1376**	**799**
481.wrf	80	1256	711	**1255**	**712**	1254	712	80	1249	716	**1249**	**716**	1248	716
482.sphinx3	80	2148	726	**2148**	**726**	2150	725	80	**2081**	**749**	2079	750	2082	749

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"

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SPECfp_rate2006 = 752

SPECfp_rate_base2006 = 741

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

Test date: Oct-2012
Hardware Availability: Oct-2012
Software Availability: Oct-2012

Platform Notes

```
BIOS configuration:
Set Power Efficiency Mode to Performance
Sysinfo program /root/benchmark/cpu2006/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ 5569a0425e2ad530534e4c79a46e4d28
running on Huawei-RH5885 Thu Oct 25 13:16:45 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 E7- 4870 @ 2.40GHz
      4 "physical id"s (chips)
      80 "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 : 10
      siblings  : 20
      physical 0: cores 0 1 2 8 9 16 17 18 24 25
      physical 1: cores 0 1 2 8 9 16 17 18 24 25
      physical 2: cores 0 1 2 8 9 16 17 18 24 25
      physical 3: cores 0 1 2 8 9 16 17 18 24 25
   cache size : 30720 KB

From /proc/meminfo
   MemTotal:       1058605968 kB
   HugePages_Total:        0
   Hugepagesize:        2048 kB

/usr/bin/lsb_release -d
   Red Hat Enterprise Linux Server release 6.2 (Santiago)

From /etc/*release* /etc/*version*
   redhat-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
   system-release: Red Hat Enterprise Linux Server release 6.2 (Santiago)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:6server:ga:server

uname -a:
   Linux Huawei-RH5885 2.6.32-220.el6.x86_64 #1 SMP Wed Nov 9 08:03:13 EST 2011
   x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Oct 24 19:55

SPEC is set to: /root/benchmark/cpu2006
   Filesystem      Type     Size   Used Avail Use% Mounted on
   /dev/sda1       ext4     274G   256G  4.4G  99% /root/benchmark

Additional information from dmidecode:
  BIOS American Megatrends Inc. RGPUC-BIOS-V018 08/29/2012
  Memory:
   64x   16 GB
```
Continued on next page

SPEC CFP2006 Result
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Huawei
Tecal RH5885 V2

Platform Notes (Continued)

```
    64x Hyundai HMT42GR7BMR4C-H9 16 GB 1067 MHz 4 rank

  (End of data from sysinfo program)
    Descriptions about memory generated by sysinfo are not correct,
    only 64 DIMMs are installed not 128, see descriptions below.
    Memory:
     64x Hyundai HMT42GR7BMR4C-H9 16 GB 1067 MHz 4 rank
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/root/benchmark/cpu2006/libs/32:/root/benchmark/cpu2006/libs/64"

 Binaries compiled on a system with 4x E7-4807 CPU + 512 GB
 memory using RHEL6.2
 Transparent Huge Pages disabled with:
 echo never  > /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
```

SPEC CFP2006 Result
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Huawei

Tecal RH5885 V2

SPECfp_rate2006 =   752

SPECfp_rate_base2006 =   741

CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

Test date: Oct-2012
Hardware Availability: Oct-2012
Software Availability: Oct-2012

Base Portability Flags (Continued)

```
    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:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
    -ansi-alias -opt-mem-layout-trans=3
```

C++ benchmarks:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
    -ansi-alias -opt-mem-layout-trans=3
```

Fortran benchmarks:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
```

Benchmarks using both Fortran and C:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
    -ansi-alias -opt-mem-layout-trans=3
```

Peak Compiler Invocation

C benchmarks (except as noted below):
```
    icc   -m64
```
```
    482.sphinx3: icc -m32
```

C++ benchmarks (except as noted below):
```
    icpc  -m64
```
```
     450.soplex: icpc -m32
```

Fortran benchmarks:
```
    ifort -m64
```

Benchmarks using both Fortran and C:
```
    icc   -m64 ifort -m64
```

SPEC CFP2006 Result
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Tecal RH5885 V2

SPECfp_rate2006 = 752

SPECfp_rate_base2006 = 741

CPU2006 license: 3175　　　　　　　　　　　　　　　　　**Test date:** Oct-2012
Test sponsor: Huawei　　　　　　　　　　　　　　**Hardware Availability:** Oct-2012
Tested by: Huawei　　　　　　　　　　　　　　**Software Availability:** Oct-2012

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
         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
```

Peak Optimization Flags

C benchmarks:

```
        433.milc: -xSSE4.2(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) -static -auto-ilp32
```

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

```
     482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -opt-mem-layout-trans=3
                  -unroll2
```

C++ benchmarks:

```
        444.namd: -xSSE4.2(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: -xSSE4.2(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-malloc-options=3
```

```
      453.povray: -xSSE4.2(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:

Huawei

Tecal RH5885 V2

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CPU2006 license: 3175
Test sponsor: Huawei
Tested by: Huawei

Test date: Oct-2012
Hardware Availability: Oct-2012
Software Availability: Oct-2012

Peak Optimization Flags (Continued)

410.bwaves: basepeak = yes

416.gamess: -xSSE4.2(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- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -xSSE4.2(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: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-revF.html
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Huawei-Platform-Settings-revF.xml
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml

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

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