SPEC® CFP2006 Result

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ScaleMP

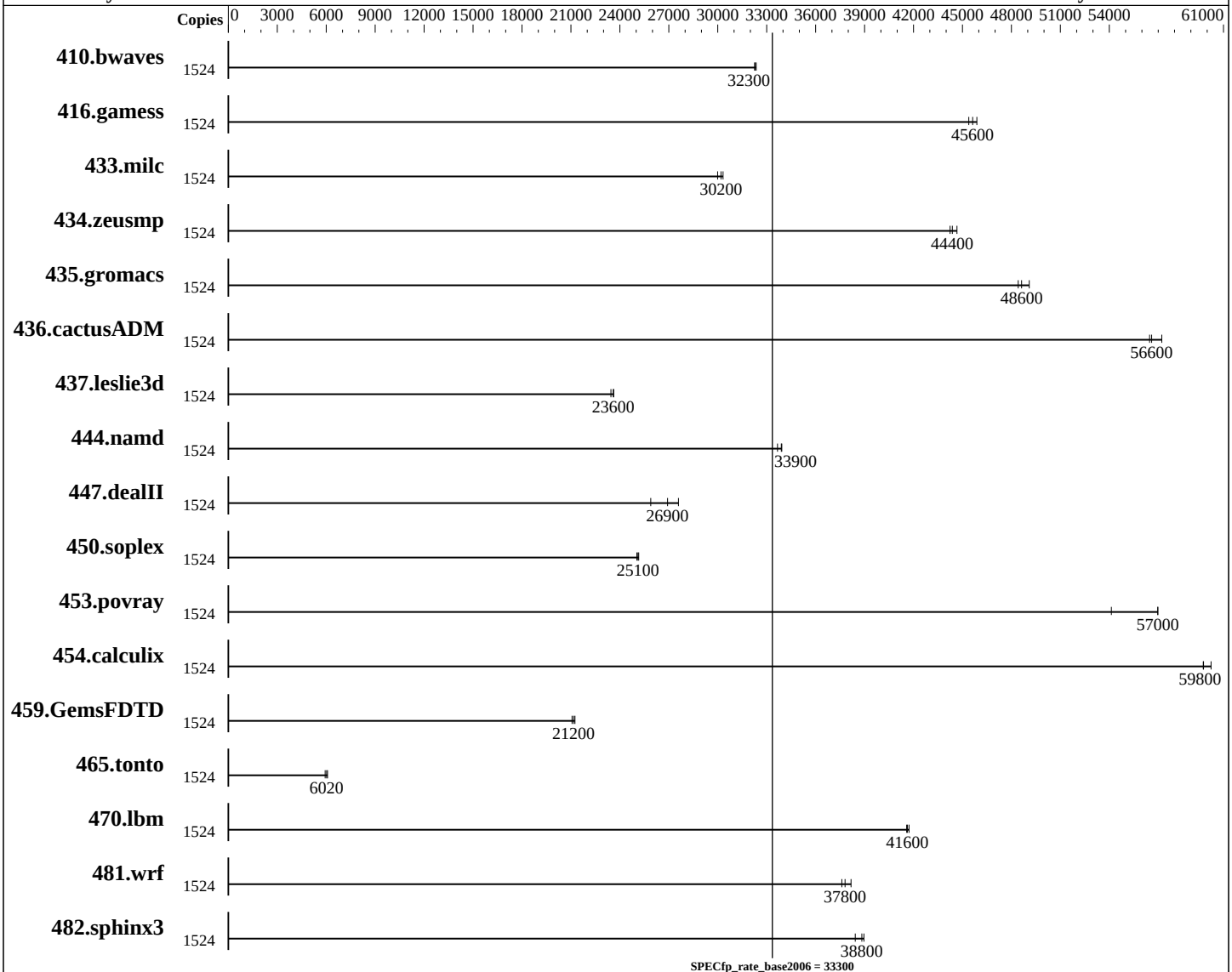
vSMP Foundation (Intel Xeon E5-2680 v3, 2.50 GHz)

SPECfp®_rate2006 = Not Run

SPECfp_rate_base2006 = 33300

CPU2006 license: 2929
Test sponsor: ScaleMP
Tested by: ScaleMP

Test date: Jan-2016
Hardware Availability: Nov-2015
Software Availability: Nov-2015



Hardware

CPU Name:	Intel Xeon E5-2680 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz:	2500
FPU:	Integrated
CPU(s) enabled:	1536 cores, 128 chips, 12 cores/chip
CPU(s) orderable:	2 to 64 blades with 2 chips per blade
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:	CentOS CentOS release 6.5 (Final) 2.6.32-431.29.2.el6.vSMP.1.x86_64
Compiler:	C/C++: Version 15.0.3.187 of Intel C++ Studio XE for Linux ; Fortran: Version 15.0.3.187 of Intel Fortran Studio XE for Linux
Auto Parallel:	No
File System:	ramfs

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L3 Cache:	30 MB I+D on chip per chip
Other Cache:	1200 GB I+D off chip per system
Memory:	16 TB (64 x 16 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem:	13TB ramfs
Other Hardware:	None

System State:	Run level 3 (multi-user)
Base Pointers:	32/64-bit
Peak Pointers:	Not Applicable
Other Software:	ScaleMP vSMP Foundation 7.0.147.0

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	1524	640	32400	642	32300	**641**	**32300**							
416.gamess	1524	657	45400	650	45900	**654**	**45600**							
433.milc	1524	466	30000	461	30300	**463**	**30200**							
434.zeusmp	1524	313	44200	**313**	**44400**	311	44700							
435.gromacs	1524	225	48400	**224**	**48600**	222	49100							
436.cactusADM	1524	323	56500	**322**	**56600**	318	57200							
437.leslie3d	1524	**607**	**23600**	606	23600	611	23500							
444.namd	1524	360	33900	363	33700	**361**	**33900**							
447.dealII	1524	673	25900	**648**	**26900**	632	27600							
450.soplex	1524	508	25000	**506**	**25100**	505	25200							
453.povray	1524	**142**	**57000**	150	54100	142	57000							
454.calculix	1524	209	60200	210	59800	**210**	**59800**							
459.GemsFDTD	1524	761	21200	**764**	**21200**	768	21100							
465.tonto	1524	2527	5930	2467	6080	**2490**	**6020**							
470.lbm	1524	**503**	**41600**	502	41700	504	41600							
481.wrf	1524	453	37600	446	38200	**450**	**37800**							
482.sphinx3	1524	773	38400	762	39000	**765**	**38800**							

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

```
The taskset mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate taskset 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 Settings
    Hyper-Threading Technology disabled.
ScaleMP
```

Continued on next page

Platform Notes (Continued)

```
      vSMP Foundation: 7.0.147.0
      vSMP Foundation manages off chip cache using a portion of each blade memory.
 Hardware Details:
      System was aggregated using 64 x Supermicro 1028U blades.
      The servers were connected with Melanox InfiniBand FDR and an
      FDR switch.
Sysinfo program /ramfs/SPEC_CPU2006v1.2/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ 8787f7622badcf24e01c368b1db4377c
running on fl100.local Tue Jan 12 22:03:04 2016

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 E5-2680 v3 @ 2.50GHz
      128 "physical id"s (chips)
      1536 "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 : 12
      siblings  : 12
      physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 8: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 9: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 16: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 17: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 24: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 25: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 32: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 33: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 40: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 41: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 48: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 49: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 56: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 57: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 64: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 65: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 72: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 73: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 80: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 81: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 88: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 89: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 96: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 97: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 104: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 105: cores 0 1 2 3 4 5 8 9 10 11 12 13
      physical 112: cores 0 1 2 3 4 5 8 9 10 11 12 13
```

Continued on next page

Platform Notes (Continued)

```
physical 113: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 120: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 121: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 128: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 129: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 136: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 137: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 144: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 145: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 152: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 153: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 160: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 161: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 168: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 169: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 176: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 177: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 184: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 185: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 192: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 193: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 200: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 201: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 208: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 209: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 216: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 217: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 224: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 225: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 232: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 233: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 240: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 241: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 248: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 249: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 256: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 257: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 264: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 265: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 272: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 273: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 280: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 281: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 288: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 289: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 296: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 297: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 304: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 305: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 312: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 313: cores 0 1 2 3 4 5 8 9 10 11 12 13
physical 320: cores 0 1 2 3 4 5 8 9 10 11 12 13
```

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Platform Notes (Continued)

```
        physical 321: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 328: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 329: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 336: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 337: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 344: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 345: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 352: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 353: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 360: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 361: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 368: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 369: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 376: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 377: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 384: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 385: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 392: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 393: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 400: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 401: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 408: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 409: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 416: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 417: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 424: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 425: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 432: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 433: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 440: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 441: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 448: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 449: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 456: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 457: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 464: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 465: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 472: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 473: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 480: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 481: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 488: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 489: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 496: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 497: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 504: cores 0 1 2 3 4 5 8 9 10 11 12 13
        physical 505: cores 0 1 2 3 4 5 8 9 10 11 12 13
    cache size : 30720 KB

From /proc/meminfo
    MemTotal:       14205999376 kB
    HugePages_Total:       0
```

Continued on next page

Platform Notes (Continued)

```
      Hugepagesize:       2048 kB

   /usr/bin/lsb_release -d
      CentOS release 6.5 (Final)

   From /etc/*release* /etc/*version*
      centos-release: CentOS release 6.5 (Final)
      redhat-release: CentOS release 6.5 (Final)
      rocks-release: Rocks release 6.1.1 (Sand Boa)
      system-release: CentOS release 6.5 (Final)
      system-release-cpe: cpe:/o:centos:linux:6:GA

   uname -a:
      Linux fl100.local 2.6.32-431.29.2.el6.vSMP.1.x86_64 #1 SMP Tue Sep 30
      01:59:41 PDT 2014 x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Jan 12 00:04

   SPEC is set to: /ramfs/SPEC_CPU2006v1.2
      Filesystem     Type   Size  Used Avail Use% Mounted on
      ramfs          ramfs     0     0     0    - /ramfs

   (End of data from sysinfo program)
```

General Notes

```
Binaries compiled on same system.
```

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

Continued on next page

Base Portability Flags (Continued)

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-AVX2 -O3 -ipo -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -O3 -ipo -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:
-xCORE-AVX2 -O3 -ipo -no-prec-div -opt-prefetch

Benchmarks using both Fortran and C:
-xCORE-AVX2 -O3 -ipo -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revG.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revG.xml

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