SPEC® CFP2006 Result

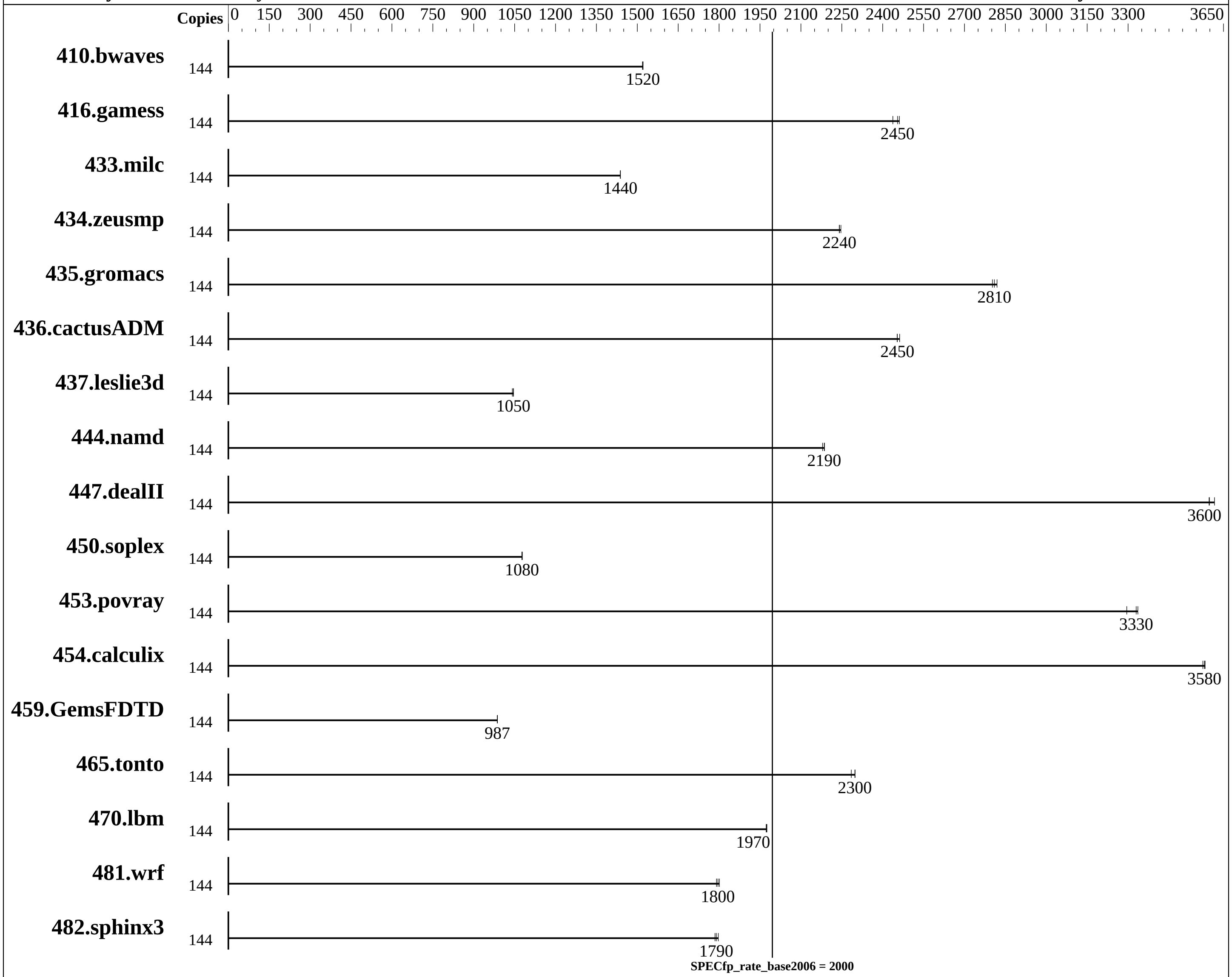
Cisco Systems

Cisco UCS C460 M4 (Intel Xeon E7-8890 v3 @ 2.50 GHz)

SPECfp®_rate2006 = Not Run

SPECfp_rate_base2006 = 2000

CPU2006 license:	9019	**Test date:**	Apr-2015
Test sponsor:	Cisco Systems	**Hardware Availability:**	Apr-2014
Tested by:	Cisco Systems	**Software Availability:**	Feb-2015



Hardware

CPU Name:	Intel Xeon E7-8890 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz:	2500
FPU:	Integrated
CPU(s) enabled:	72 cores, 4 chips, 18 cores/chip, 2 threads/core
CPU(s) orderable:	1,2,3,4 Chip
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:	SUSE Linux Enterprise Server 12 (x86_64) 3.12.28-4-default
Compiler:	C/C++: Version 15.0.2.164 of Intel C++ Studio XE for Linux; Fortran: Version 15.0.2.164 of Intel Fortran Studio XE for Linux
Auto Parallel:	No
File System:	xfs
System State:	Run level 3 (multi-user)

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L3 Cache:	45 MB I+D on chip per chip
Other Cache:	None
Memory:	1 TB (64 x 16 GB 2Rx4 PC4-2133P-R, running at 1600 MHz)
Disk Subsystem:	1 x 400 GB 6Gb/s SSD
Other Hardware:	None

Base Pointers:	32/64-bit
Peak Pointers:	Not Applicable
Other Software:	None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	144	1287	1520	1288	1520	**1287**	**1520**							
416.gamess	144	1157	2440	**1149**	**2450**	1146	2460							
433.milc	144	919	1440	919	1440	**919**	**1440**							
434.zeusmp	144	**585**	**2240**	583	2250	585	2240							
435.gromacs	144	365	2820	**366**	**2810**	367	2800							
436.cactusADM	144	701	2450	699	2460	**701**	**2450**							
437.leslie3d	144	1299	1040	1294	1050	**1295**	**1050**							
444.namd	144	528	2190	**528**	**2190**	530	2180							
447.dealII	144	458	3600	**458**	**3600**	455	3620							
450.soplex	144	1114	1080	**1115**	**1080**	1115	1080							
453.povray	144	232	3300	230	3340	**230**	**3330**							
454.calculix	144	**332**	**3580**	332	3580	332	3570							
459.GemsFDTD	144	1548	987	1548	987	**1548**	**987**							
465.tonto	144	616	2300	**617**	**2300**	620	2280							
470.lbm	144	1002	1980	**1003**	**1970**	1003	1970							
481.wrf	144	898	1790	893	1800	**896**	**1800**							
482.sphinx3	144	1562	1800	**1568**	**1790**	1572	1780							

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

```
   CPU performance set to Enterprise
   Power Technology set to Performance
   CPU Power State C6 set to Disabled
   CPU Power State C1 Enhanced set to Disabled
   Package C State Limit set to C0/C1 State
   Energy Performance policy set to Balanced Performance
   Memory Power saving mode set to Disabled
   DRAM Clock Throttling Set to Auto
   LV DDR Mode set to Performance mode
   Closed Loop Thermal Throttling set to Enabled
   Memory RAS configuration set to Maximum Performance
    Sysinfo program /home/cpu2006-1.2/config/sysinfo.rev6914
    $Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
    running on linux-cfac Thu Apr 16 09:56:22 2015

    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 E7-8890 v3 @ 2.50GHz
          4 "physical id"s (chips)
          144 "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 : 18
          siblings  : 36
          physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
          physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
          physical 2: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
          physical 3: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
       cache size : 46080 KB

    From /proc/meminfo
       MemTotal:       1058822544 kB
       HugePages_Total:       0
       Hugepagesize:       2048 kB

    From /etc/*release* /etc/*version*
       SuSE-release:
          SUSE Linux Enterprise Server 12 (x86_64)
          VERSION = 12
          PATCHLEVEL = 0
          # 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"
          VERSION_ID="12"
          PRETTY_NAME="SUSE Linux Enterprise Server 12"
```

Continued on next page

Platform Notes (Continued)

```
         ID="sles"
         ANSI_COLOR="0;32"
         CPE_NAME="cpe:/o:suse:sles:12"

   uname -a:
      Linux linux-cfac 3.12.28-4-default #1 SMP Thu Sep 25 17:02:34 UTC 2014
      (9879bd4) x86_64 x86_64 x86_64 GNU/Linux

   run-level 3 Apr 16 05:40

   SPEC is set to: /home/cpu2006-1.2
      Filesystem     Type  Size  Used Avail Use% Mounted on
      /dev/sdp1      xfs   181G   44G  137G  25% /
   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 Cisco Systems, Inc. C460M4.2.0.4.20.040420150215 04/04/2015
     Memory:
      64x 0xCE00 M393A2G40DB0-CPB 16 GB 2 rank 1600 MHz
      32x NO DIMM NO DIMM   1600 MHz

   (End of data from sysinfo program)
```

General Notes

```
 Environment variables set by runspec before the start of the run:
 LD_LIBRARY_PATH = "/home/cpu2006-1.2/libs/32:/home/cpu2006-1.2/libs/64:/home/cpu2006-1.2/sh"

  Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB
  memory using RedHat EL 7.0
  Transparent Huge Pages enabled with:
  echo always > /sys/kernel/mm/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
```

Continued on next page

Base Compiler Invocation (Continued)

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
```

Base Optimization Flags

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

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

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

Benchmarks using both Fortran and C:
```
-xCORE-AVX2 -ipo -O3 -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/Cisco-Platform-Settings-V1.2-revC.20150505.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/Cisco-Platform-Settings-V1.2-revC.20150505.xml

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

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