SPEC® CFP2006 Result

Cisco Systems

Cisco UCS C220 M4 (Intel Xeon E5-2699 v3 @ 2.30GHz)

$SPECfp®\_rate2006 =$ Not Run

$SPECfp\_rate\_base2006 =$ 922
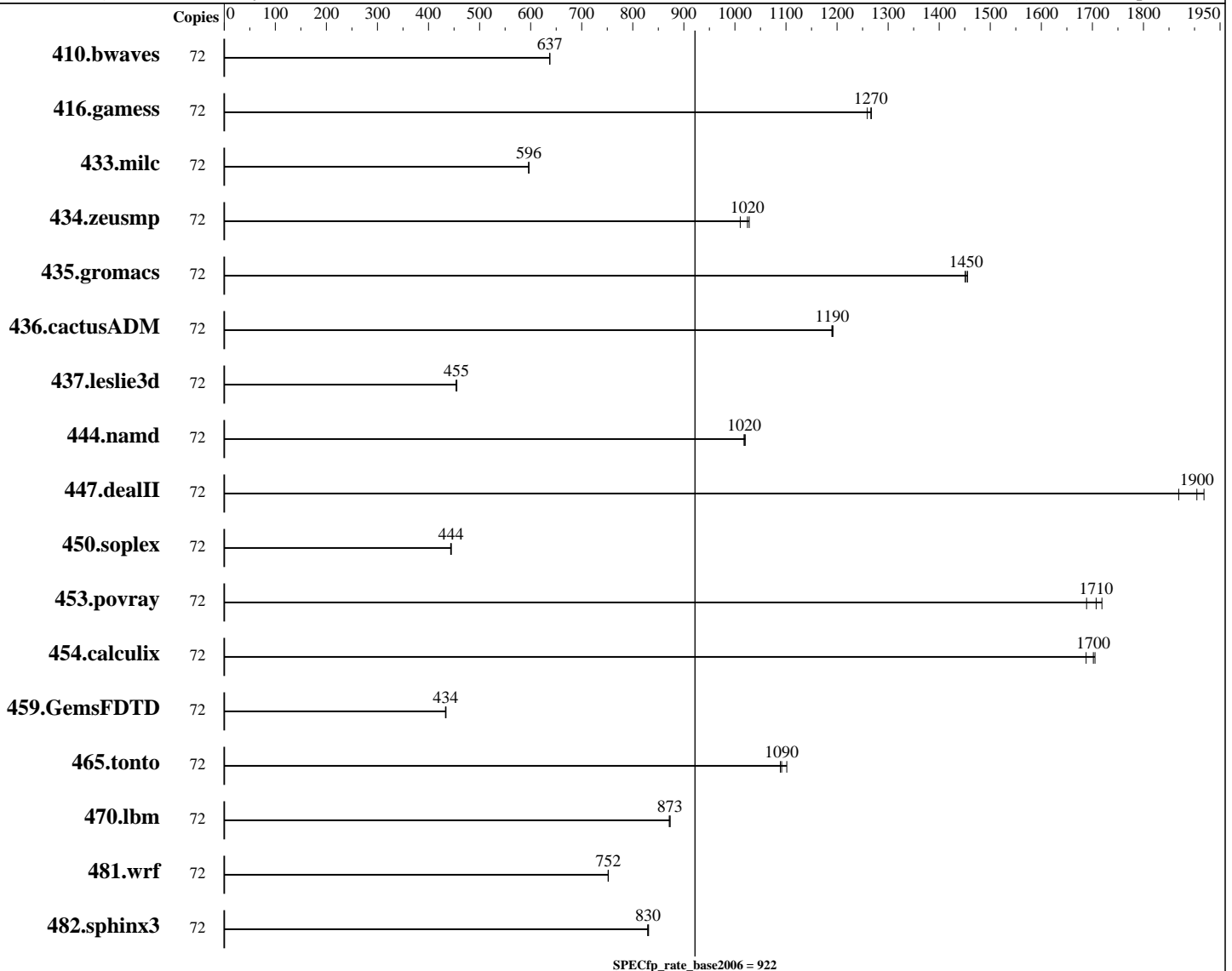
CPU2006 license: 9019
Test sponsor: Cisco Systems
Tested by: Cisco Systems

Test date: Jun-2014
Hardware Availability: Sep-2014
Software Availability: Sep-2013

Benchmark	Copies	Result
410.bwaves	72	637
416.gamess	72	1270
433.milc	72	596
434.zeusmp	72	1020
435.gromacs	72	1450
436.cactusADM	72	1190
437.leslie3d	72	455
444.namd	72	1020
447.dealII	72	1900
450.soplex	72	444
453.povray	72	1710
454.calculix	72	1700
459.GemsFDTD	72	434
465.tonto	72	1090
470.lbm	72	873
481.wrf	72	752
482.sphinx3	72	830

SPECfp_rate_base2006 = 922

Hardware

CPU Name: Intel Xeon E5-2699 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz: 2300
FPU: Integrated
CPU(s) enabled: 36 cores, 2 chips, 18 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

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64) 3.0.76-0.11-default
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: ext3
System State: Run level 3 (multi-user)

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L3 Cache:	45 MB I+D on chip per chip	Base Pointers:	32/64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)	Other Software:	None
Disk Subsystem:	1 x 300GB SAS, 15K RPM		
Other Hardware:	None		

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	72	1535	638	**1535**	**637**	1535	637							
416.gamess	72	**1113**	**1270**	1112	1270	1120	1260							
433.milc	72	1109	596	1108	597	**1108**	**596**							
434.zeusmp	72	637	1030	**640**	**1020**	648	1010							
435.gromacs	72	353	1460	354	1450	**354**	**1450**							
436.cactusADM	72	722	1190	723	1190	**723**	**1190**							
437.leslie3d	72	1491	454	**1487**	**455**	1486	456							
444.namd	72	566	1020	**567**	**1020**	567	1020							
447.dealII	72	441	1870	429	1920	**432**	**1900**							
450.soplex	72	1350	445	**1353**	**444**	1354	443							
453.povray	72	**224**	**1710**	223	1720	227	1690							
454.calculix	72	348	1710	**349**	**1700**	352	1690							
459.GemsFDTD	72	1760	434	**1761**	**434**	1764	433							
465.tonto	72	651	1090	**649**	**1090**	643	1100							
470.lbm	72	**1134**	**873**	1133	873	1135	871							
481.wrf	72	1070	752	1069	752	**1069**	**752**							
482.sphinx3	72	**1691**	**830**	1693	829	1689	831							

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 Energy Efficient
    Energy Performance BIAS setting set to Balanced Performance

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Platform Notes (Continued)

```
Memory RAS configuration set to Maximum Performance
 Sysinfo program /opt/cpu2006-1.2/config/sysinfo.rev6818
 $Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
 running on SLES11-CS Sun Jun 29 11:32:36 2014
 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 E5-2699 v3 @ 2.30GHz
       2 "physical id"s (chips)
       72 "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
    cache size : 23040 KB
 From /proc/meminfo
    MemTotal:       264436840 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB
 /usr/bin/lsb_release -d
    SUSE Linux Enterprise Server 11 (x86_64)
 From /etc/*release* /etc/*version*
    SuSE-release:
       SUSE Linux Enterprise Server 11 (x86_64)
       VERSION = 11
       PATCHLEVEL = 3
 uname -a:
    Linux SLES11-CS 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013
    (ccab990) x86_64 x86_64 x86_64 GNU/Linux
 run-level 3 Jun 29 05:19 last=S
 SPEC is set to: /opt/cpu2006-1.2
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda2       ext3  273G   13G  259G   5% /
 Additional information from dmidecode:
   BIOS Cisco Systems, Inc. C220M4.2.0.2.68.073120141827 07/31/2014
   Memory:
   16x 0xCE00 M393A2G40DB0-CPB 16 GB 2133 MHz
   8x NO DIMM NO DIMM
 (End of data from sysinfo program)
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/opt/cpu2006-1.2/libs/32:/opt/cpu2006-1.2/libs/64:/opt/cpu2006-1.2/sh"
 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RedHat EL 6.4
 Transparent Huge Pages enabled with:
```

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General Notes (Continued)

```
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.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
```

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Base Optimization Flags (Continued)

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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/Cisco-Platform-Settings-V1.2-revC.html

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/Cisco-Platform-Settings-V1.2-revC.xml

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

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Oct 30 12:50:41 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 30 October 2014.