SPEC® CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge R920 (Intel Xeon E7-4820 v2, 2.00 GHz)

SPECfp®_rate2006 = NC

SPECfp_rate_base2006 = NC

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

Test date: Feb-2014
Hardware Availability: Mar-2014
Software Availability: Mar-2014

SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the submitter has notified SPEC that the system was run with a BIOS which included a version of the Intel MRC (Memory Reference Code) that is not supported by Dell or Intel.

Hardware		Software	
CPU Name:	Intel Xeon E7-4820 v2	Operating System:	SUSE Linux Enterprise Server 11 (x86_64) 3.0.76-0.11-default
CPU Characteristics:	Intel Turbo Boost Technology up to 2.50 GHz	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
CPU MHz:	2000		
FPU:	Integrated		
CPU(s) enabled:	32 cores, 4 chips, 8 cores/chip, 2 threads/core	Auto Parallel:	No
CPU(s) orderable:	2,4 chip	File System:	ext2
Primary Cache:	32 KB I + 32 KB D on chip per core	System State:	Run level 3 (multi-user)
Secondary Cache:	256 KB I+D on chip per core	Base Pointers:	32/64-bit
L3 Cache:	16 MB I+D on chip per chip	Peak Pointers:	32/64-bit
Other Cache:	None	Other Software:	None
Memory:	1 TB (64 x 16 GB 2Rx4 PC3-12800R-11, ECC)		
Disk Subsystem:	1 x 400 GB SAS6 SSD		
Other Hardware:	None		

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Non-Compliant

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC
416.gamess	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC
433.milc	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC
434.zeusmp	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC
435.gromacs	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC
436.cactusADM	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC
437.leslie3d	64	NC	NC	NC	NC	NC	NC	32	NC	NC	NC	NC	NC	NC
444.namd	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC
447.dealII	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC
450.soplex	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC
453.povray	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC
454.calculix	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC
459.GemsFDTD	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC
465.tonto	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC
470.lbm	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC
481.wrf	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC
482.sphinx3	64	NC	NC	NC	NC	NC	NC	64	NC	NC	NC	NC	NC	NC

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.

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Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
```

Platform Notes

```
BIOS settings:
Virtualization Technology disabled
Execute Disable disabled
System Profile set to Performance
Sysinfo program
/root/Desktop/Performance/ic14.0_Oct15_2013/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-**-*** **86d102572650a6e4d596a3cee98f191
running on slesperf1 Fri Feb 21 13:44:45 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 E7-4820 v2 @ 2.00GHz
      4 "physical id"s (chips)
      64 "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 : 8
      siblings : 16
      physical 0: cores 0 1 2 3 4 5 6 7
      physical 1: cores 0 1 2 3 4 5 6 7
      physical 2: cores 0 1 2 3 4 5 6 7
      physical 3: cores 0 1 2 3 4 5 6 7
   cache size : 16384 KB

From /proc/meminfo
   MemTotal:      1058789108 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
```

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Platform Notes (Continued)

```
    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 slesperf1 3.0.76-11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013
    (ccab990) x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 Feb 21 10:50 last=S

  SPEC is set to: /root/Desktop/Performance/ic14.0_Oct17_2013
    Filesystem     Type  Size  Used Avail Use% Mounted on
    /dev/sda2      ext2  375G   31G  333G   9% /

  Additional information from dmidecode:
   BIOS Dell Inc. 0.4 1/27/2014
   Memory:
    32x 00CE00B300CE M393B2G70BH0-YK0 16 GB 1333 MHz
    10x 00CE00B300CE M393B2G70CB0-YK0 16 GB 1333 MHz
    22x 00CE04D00CE M393B2G70CB0-YK0 16 GB 1333 MHz

  (End of data from sysinfo program)
```

General Notes

```
  Environment variables set by runspec before the start of the run:
  LD_LIBRARY_PATH = "/root/Desktop/Performance/ic14.0_Oct17_2013/libs/32:/root/Desktop/Performance/ic14.0_Oct17_2013/libs/64:/root/Desktop/Performance/ic14.0_Oct17_2013/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/transparent_hugepage/enabled
  Filesystem page cache cleared with:
  echo 1>        /proc/sys/vm/drop_caches
```

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General Notes (Continued)

```
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
```

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Base Portability Flags (Continued)

```
   481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64
```

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
```

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Test sponsor: Dell Inc.		**Hardware Availability:**	Mar-2014
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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

    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-
```

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Peak Optimization Flags (Continued)

434.zeusmp: basepeak = yes

437.leslie3d: -xAVX -ipo -O3 -no-prec-div -opt-prefetch

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

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

Tested with SPEC CPU2006 v1.2.
Report generated on Fri Sep 19 15:47:37 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 8 April 2014.