**SPEC® CFP2006 Result**

**Dell Inc.**

PowerEdge R920 (Intel Xeon E7-4830 v2, 2.20 GHz)  

<table>
<thead>
<tr>
<th>SPECfp®2006 = NC</th>
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</table>

**CPU2006 license:** 55  
**Test sponsor:** Dell Inc.  
**Test date:** Feb-2014  
**Hardware Availability:** Mar-2014  
**Tested by:** Dell Inc.  
**Software Availability:** Mar-2014

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### Hardware
- **CPU Name:** Intel Xeon E7-4830 v2  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 2.70 GHz  
- **CPU MHz:** 2200  
- **FPU:** Integrated  
- **CPU(s) enabled:** 40 cores, 4 chips, 10 cores/chip, 2 threads/core  
- **CPU(s) orderable:** 2,4 chip  
- **Primary Cache:** 32 KB I + 32 KB D on chip per core  
- **Secondary Cache:** 256 KB I+D on chip per core  
- **L3 Cache:** 20 MB I+D on chip per chip  
- **Other Cache:** None  
- **Memory:** 1 TB (64 x 16 GB 2Rx4 PC3L-12800R-11, ECC)  
- **Disk Subsystem:** 1 x 400 GB SAS6 SSD  
- **Other Hardware:** None

### 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:** Yes  
- **File System:** ext2  
- **System State:** Run level 3 (multi-user)  
- **Base Pointers:** 64-bit  
- **Peak Pointers:** 32/64-bit  
- **Other Software:** None

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Non-compliant
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Results Table

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

Operating System Notes

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

Platform Notes

BIOS settings:
Virtualization Technology disabled
Execute Disable disabled

Continued on next page
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Platform Notes (Continued)

```
VERSION = 11
PATCHLEVEL = 3

uname -a:
    Linux slesperf1 3.0.76-0.1.SLES11 #1 SMP Fri Jun 14 08:21:43 UTC 2013
    (ccab990) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Feb 17 11:47 \#1 S

SPEC is set to: /root/Desktop/Performance/ic14.0_Oct17_2013
Additional information from dmidecode:
    BIOS Dell Inc. 1.0.4 01/27/2014
    Memory:
        32x 00CE00B300CE M393B2G70BH0-YK0 16 GB 1333 MHz
        10x 00CE00B300CE M393B2G70CB0-YK0 16 GB 1333 MHz
        22x 00CE04B300CE M393B2G70CB0-YK0 16 GB 1333 MHz
```

General Notes

```
Environment variables set by runspec before the start of the run:
    "granularity=fine,compact,1,0"
    "OMP_NUM_THREADS = "40"

Binarles 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"
    "numactl --interleave=all runspec <etc>"
```
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Base Compiler Invocation

C benchmarks:
icc  -m64

C++ benchmarks:
icc  -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.sieie3d: -DSPEC_CPU_LP64
444.fnd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64 -nofor_main
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
468.lib resultant: -DSPEC_CPU_LP64
471.fbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64
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Base Optimization Flags

C benchmarks:
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

C++ benchmarks:
-xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

Peak Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Both Fortran and C:
icc -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags
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Peak Optimization Flags

C benchmarks:
433.milc: basepeak = yes
470.lbml: basepeak = yes
482.sphinx3: basepeak = yes

C++ benchmarks:
444.namd: -xAVX(pass 2) -prof-use(pass 2) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -auto-ilp32 -prof-use(pass 2) -fno-alias
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) -prof-use(pass 2) -unroll4 -ansi-alias
434.zeusmp: basepeak = yes
437.leslie3d: basepeak = yes
459.GemsFDTD: -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-

Non-Compliant

Continued on next page
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#### Peak Optimization Flags (Continued)

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -profile -line-callec -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

- 435.gromacs: basepeak = yes
- 436.cactusADM: basepeak = yes
- 454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias
- 481.wrf: basepeak = yes

The flag 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.

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