SPEC® CFP2006 Result

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

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<tr>
<th>Description</th>
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<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon E7-4820 v2</td>
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<tr>
<td>CPU Characteristics:</td>
<td>Intel Turbo Boost Technology up to 2.50 GHz</td>
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<tr>
<td>CPU MHz:</td>
<td>2000</td>
</tr>
<tr>
<td>FPU:</td>
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<tr>
<td>CPU(s) enabled:</td>
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<tr>
<td>CPU(s) orderable:</td>
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Software

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<tr>
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<td>SUSE Linux Enterprise Server 11 (x86_64) 3.0.76-0.11-default</td>
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<td>Compiler:</td>
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<td>Auto Parallel:</td>
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<td>Base Pointers:</td>
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<td>Peak Pointers:</td>
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**SPEC CFP2006 Result**

**Dell Inc.**

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### Results Table

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</tr>
</tbody>
</table>

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.

---

Non-Compliant

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Non-Compliant
Dell Inc.
PowerEdge R920 (Intel Xeon E7-4820 v2, 2.00 GHz)

SPEC CFP2006 Result

Dell Inc.

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Operating System Notes
Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

BIOS settings:
Virtualization Technology enabled
Execute Disable disabled
System Profile set to Performance
Sysinfo program
/root/Desktop/Performance/ic14.0_Oct17_2013/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 08:36d102572650a6e4d596a3cee98f191
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
  : 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

SPECfp_rate2006 = NC
SPECfp_rate_base2006 = NC

Continued on next page

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
## SPEC CFP2006 Result

**Dell Inc.**

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<table>
<thead>
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<th>SPECfp_rate2006</th>
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**CPU2006 license:** 55  
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**Test date:** Mar-2014  
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#### Platform Notes (Continued)

- **SUSE Linux Enterprise Server 11 (x86_64)**
- **SuSE-release:**
  - SUSE Linux Enterprise Server 11 (x86_64)  
  - VERSION = 11  
  - PATCHLEVEL = 3

- **uname -a:**
  - Linux slesperf1 3.0.76-4.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013  
  - (ccab990) x86_64 x86_64 x86_64 GNU/Linux

- **run-level:** 3  
- **last:** S

- **SPEC is set to:** /root/Desktop/Performance/ic14.0_Oct17_2013  
- **Filesystem:**
  - /dev/sda2: ext2  
  - 365G 31G 333G 9% /

- **Additional information from dmidecode:**
  - BIOS Dell Inc. 0.4.1/27/2014  
  - Memory:
    - 33x 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:**

- **LD_LIBRARY_PATH**
- **LD_LIBRARY_PATH**

**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**

- **Continued on next page**
Dell Inc.

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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:**  
  ```bash
  -xAVX -ipo -03 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
  -opt-mem-layout-trans=3
  ```

- **C++ benchmarks:**  
  ```bash
  -xAVX -ipo -03 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
  -opt-mem-layout-trans=3
  ```

- **Fortran benchmarks:**  
  ```bash
  -xAVX -ipo -03 -no-prec-div -opt-prefetch
  ```

- **Benchmarks using both Fortran and C:**  
  ```bash
  -xAVX -ipo -03 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
  -opt-mem-layout-trans=3
  ```

**Peak Compiler Invocation**

- **C benchmarks:**  
  ```bash
  icc -m64
  ```

- **C++ benchmarks:**  
  ```bash
  icpc -m64
  ```

- **Fortran benchmarks:**  
  ```bash
  ifort -m64
  ```

- **Benchmarks using both Fortran and C:**  
  ```bash
  icc -m64 ifort -m64
  ```

Non-Compliant
SPEC CFP2006 Result

Dell Inc.
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Peak Portability Flags
Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
433.milc: -xAVX(pas 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

44.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) -unroll -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.
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