SPEC® CINT2006 Result

Dell Inc.

PowerEdge R920 (Intel Xeon E7-4850 v2, 2.30 GHz)

| SPECint®2006 = | NC |
| SPECint_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.

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name: Intel Xeon E7-4850 v2</td>
<td>Operating System: SUSE Linux Enterprise Server 11 (x86_64) 3.0.76-0.11-default</td>
</tr>
<tr>
<td>CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz</td>
<td>Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>CPU MHz: 2300</td>
<td>Auto Parallel: Yes</td>
</tr>
<tr>
<td>FPU: Integrated</td>
<td>File System: ext2</td>
</tr>
<tr>
<td>CPU(s) enabled: 48 cores, 4 chips, 12 cores/chip</td>
<td>System State: Run level 3 (multi-user)</td>
</tr>
<tr>
<td>CPU(s) orderable: 2,4 chip</td>
<td>Base Pointers: 32/64-bit</td>
</tr>
<tr>
<td>Primary Cache: 32 KB I + 32 KB D on chip per core</td>
<td>Continued on next page</td>
</tr>
</tbody>
</table>

Non-Compliant
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SPECint2006 = NC
SPECint_base2006 = NC

Secondary Cache: 256 KB I+D on chip per core
L3 Cache: 24 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

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

Platform Notes
BIOS settings:
Virtualization Technology disabled
Execute Disable disabled

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

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base</th>
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Platform Notes (Continued)

System Profile set to Custom
Logical Processor disabled
Memory Patrol Scrub set to disabled
Sysinfo program
/root/Desktop/Performance/icl14.0_Oct17_2013/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on slesperf2 Sat Feb 15 11:52:50 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 E7-4850 v2 @ 2.30GHz
4 "physical id": (chips)
48 "processor":
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 : 12
siblings :
  physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
  physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
  physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13
  physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13
  cache size : 24576 KB

From /proc/meminfo
MemTotal: 1058789108 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

Continued on next page
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Platform Notes (Continued)

```
unconf -a:
   Linux slesperf2 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 Feb 15 11:48 last=S

SPEC is set to: /root/Desktop/Performance/ic14.0_Oct17_2013
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda2      ext2  365G  190G  174G  53% /

Additional information from dmidecode:
   BIOS Dell Inc. 1.0.4 01/27/2014
   Memory:
       47x 00CE00B300CE M393B2G70BH0-YK0 16 GB 1333 MHz
       11x 00CE04B300CE M393B2G70BH0-YK0 16 GB 1333 MHz
       6x 00CE04B300CE M393B2G70BH0-YK0 16 GB 1333 MHz

(End of data from sysinfo program)
```

General Notes

Environment variables set by runspec before the start of the run:
```
KMP AFFINITY = "granularity=fine,scatter"
OMP_NUM_THREADS = "48"
```

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
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
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### Base Compiler Invocation

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

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

### Base Portability Flags

- **400.perlbench:** `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64`
- **401.bzip2:** `-DSPEC_CPU_LP64`
- **403.gcc:** `-DSPEC_CPU_LP64`
- **429.mcf:** `-DSPEC_CPU_LP64`
- **445.gobmk:** `-DSPEC_CPU_LP64`
- **456.hmmer:** `-DSPEC_CPU_LP64`
- **458.sjeng:** `-DSPEC_CPU_LP64`
- **462.libquantum:** `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`
- **464.h264ref:** `-DSPEC_CPU_LP64`
- **471.omnetpp:** `-DSPEC_CPU_LP64`
- **473.ast:** `-DSPEC_CPU_LP64`
- **483.xalancbmk:** `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`

### Base Optimization Flags

- **C benchmarks:**
  - `-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32`

- **C++ benchmarks:**
  - `-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32`
  - `-Wl,-z,muldefs -L/sh -lsmartheap64`

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Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -o3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch -ansi-alias
401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -o3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32 -opt-prefetch -ansi-alias
403.gcc: -xSSE4.2 -ipo -o3 -no-prec-div -inline-calloc -opt-malloc-options=3 -auto-ilp32
429.mcf: basepeak = y
445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias
456.hmmer: -xSSE4.2 -ipo -o3 -no-prec-div -unroll2 -auto-ilp32 -ansi-alias
458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -o3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -ansi-alias
  basepeak = yes
464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -o3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -o3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -opt-ra-region-strategy=block -ansi-alias
  -Wl,-z,muldefs -L/sh -lsmartheap

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### Peak Optimization Flags (Continued)

```
473.astar: basepeak = yes
483.xalancbmk: -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias -Wl,-z,muldefs -Ish -Imarthea
```

### Peak Other Flags

**C benchmarks:**

```
403.gcc: -Dalloca=_alloca
```

The flags files that were used to format this result can be browsed at:


You can also download the XML flags sources by saving the following links:


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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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