SPEC® CINT2006 Result

Dell Inc.

PowerEdge R920 (Intel Xeon E7-4809 v2, 1.90 GHz)

| SPECint_rate2006 | 640 |
| SPECint_rate_base2006 | 616 |

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

Test date: Aug-2014
Hardware Availability: Mar-2014
Software Availability: May-2014

**Hardware**

| CPU Name: | Intel Xeon E7-4809 v2 |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 256 KB I+D on chip per core |
| L3 Cache: | 12 MB I+D on chip per chip |
| Memory: | 1 TB (64 x 16 GB 2Rx4 PC3-12800R-11, ECC, running at 1066 MHz) |
| Disk Subsystem: | 1 x 400 GB SAS SSD SSD |

**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 |
| Auto Parallel: | No |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | Microquill SmartHeap V10.0 |
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Results Table

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<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<tbody>
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<td>845</td>
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<td>697</td>
</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.

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 Custom
CPU Power Management set to Maximum Performance
C1E set to disabled
C States set to disabled
Memory Patrol Scrub set to disabled
Sysinfo program
/root/Desktop/Performance/ic14.0_Oct17_2013/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on slesperf3 Sun Aug 31 17:58:16 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
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**Platform Notes (Continued)**

From /proc/cpuinfo
- model name: Intel(R) Xeon(R) CPU E7-4809 v2 @ 1.90GHz
- 4 "physical id"s (chips)
- 48 "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: 6
  - siblings: 12
  - physical 0: cores 0 1 2 3 4 5
  - physical 1: cores 0 1 2 3 4 5
  - physical 2: cores 0 1 2 3 4 5
  - physical 3: cores 0 1 2 3 4 5
- cache size: 12288 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
- PATCHLEVEL = 3

uname -a:
Linux slesperf3 3.0.76-0.11-default #1 SMP Fri Jun 14 08:21:43 UTC 2013
(cab990) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Aug 30 07:32 last=S

SPECT is set to: /root/Desktop/Performance/ic14.0_Oct17_2013

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext2 365G 247G 117G 68% /

Additional information from dmidecode:
- BIOS Dell Inc. 1.2.2 05/05/2014
- Memory:
  - 64x 00CE00B300CE M393B2G70BH0-YK0 16 GB 1066 MHz

(End of data from sysinfo program)

**General Notes**

Environment variables set by runspec before the start of the run:


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## Dell Inc.

**PowerEdge R920 (Intel Xeon E7-4809 v2, 1.90 GHz)**

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**Test date:** Aug-2014  
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### General Notes (Continued)

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
```

runcspec command invoked through numactl i.e.:
```
umactl --interleave=all runspec <etc>
```

### Base Compiler Invocation

**C benchmarks:**

- `icc -m32`

**C++ benchmarks:**

- `icpc -m32`

### Base Portability Flags

- **400.perlbench:** `-DSPEC_CPU_LINUX_IA32`
- **462.libquantum:** `-DSPEC_CPU_LINUX`
- **483.xalancbmk:** `-DSPEC_CPU_LINUX`

### Base Optimization Flags

**C benchmarks:**

- `xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3`

**C++ benchmarks:**

- `xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -opt-mem-layout-trans=3`
- `-Wl,-z,muldefs -L/sh -lsmartheap`

### Base Other Flags

**C benchmarks:**

- `403.gcc -Dalloca=_alloca`

### Peak Compiler Invocation

**C benchmarks (except as noted below):**

- `icc -m32`

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Peak Compiler Invocation (Continued)

400.perlbench: icc -m64
401.bzip2: icc -m64
456.hmmer: icc -m64
458.sjeng: icc -m64

C++ benchmarks:
   icpc -m32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

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) -auto-ilp32

401.bzip2: -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 -auto-ilp32 -ansi-alias

403.gcc: basepeak = yes
429.mcf: basepeak = yes
445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

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) -unroll4 -auto-ilp32

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Peak Optimization Flags (Continued)

462.libquantum: 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)
-unnroll2 -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)
-ansi-alias -opt-ra-region-strategy=block -L/sh -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

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

http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.html

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

http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.xml

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