Dell Inc.

PowerEdge R420 (Intel Xeon E5-2470 v2, 2.40 GHz)

| SPECint_rate2006 | 731 |
| SPECint_rate_base2006 | 711 |

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

Hardware

- CPU Name: Intel Xeon E5-2470 v2
- CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz
- CPU MHz: 2400
- FPU: Integrated
- CPU(s) enabled: 20 cores, 2 chips, 10 cores/chip, 2 threads/core
- Primary Cache: 32 KB I + 32 KB D on chip per core
- Secondary Cache: 256 KB I+D on chip per core
- L3 Cache: 25 MB I+D on chip per chip
- Memory: 192 GB (12 x 16 GB 2Rx4, PC3L-12800R-11, ECC)
- Disk Subsystem: 1 x 300 GB 15000 RPM SAS
- Other Cache: None
- 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
- Auto Parallel: No
- File System: ext2
- 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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<th>Seconds</th>
<th>Ratio</th>
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<td>400.perlbench</td>
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<td>736 570</td>
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<tr>
<td>456.hmmer</td>
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<td>395 944</td>
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<td>458.sjeng</td>
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<td>869 557</td>
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<td>867 558</td>
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<td>462.libquantum</td>
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<td>483.xalancbmk</td>
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<td>395 699</td>
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<td>395 699</td>
<td></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
Logical Processor enabled
System Profile set to Performance
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on linux Wed Nov 6 08:45:48 2013

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 E5-2470 v2 @ 2.40GHz
  2 "physical id"s (chips)
  40 "processors"

Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
SPEC CINT2006 Result

Dell Inc.

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Platform Notes (Continued)

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 : 10
siblings : 20
physical 0: cores 0 1 2 3 4 8 9 10 11 12
physical 1: cores 0 1 2 3 4 8 9 10 11 12

cache size : 25600 KB

From /proc/meminfo

MemTotal: 198410440 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 linux 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 Nov 6 08:45 last=S

SPEC is set to: /root/cpu2006-1.2

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext2 267G 7.7G 258G 3% /

Additional information from dmidecode:

BIOS Dell Inc. 2.0.21 09/23/2013
Memory:
12x 00CE00B300CE M393B2G70BH0-YK0 16 GB 1600 MHz

(End of data from sysinfo program)

General Notes

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

LD_LIBRARY_PATH = "/root/cpu2006-1.2/libs/32:/root/cpu2006-1.2/libs/64:/root/cpu2006-1.2/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/redhat_transparent_hugepage/enabled

Filesystem page cache cleared with:

echo 1> /proc/sys/vm/drop_caches

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Dell Inc.  
PowerEdge R420 (Intel Xeon E5-2470 v2, 2.40 GHz)  

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CPU2006 license: 55  
Test sponsor: Dell Inc.  
Test date: Nov-2013  
Hardware Availability: Jan-2014  
Tested by: Dell Inc.  
Software Availability: Sep-2013

General Notes (Continued)
runspec command invoked through numactl i.e.:  
numactl --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,undefined -L/sh -lsmartheap

Base Other Flags
C benchmarks:
  403.gcc: -Dalloca=_alloca

Peak Compiler Invocation
C benchmarks (except as noted below):
  icc -m32  
  400.perlbench: icc -m64 
  401.bzip2: icc -m64

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### Dell Inc.

**PowerEdge R420 (Intel Xeon E5-2470 v2, 2.40 GHz)**

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**CPU2006 license:** 55  
**Test sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Test date:** Nov-2013  
**Hardware Availability:** Jan-2014  
**Software Availability:** Sep-2013

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### Peak Compiler Invocation (Continued)

```plaintext
456.hmmer: icc -m64
458.sjeng: icc -m64
```

**C++ benchmarks:**

```plaintext
icpc -m32
```

---

### Peak Portability Flags

```plaintext
400.perlbmk: -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:**

```plaintext
400.perlbmk: -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
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) -unroll2 -ansi-alias
```

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**SPECint\_rate2006 = 731**

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**Peak Optimization Flags (Continued)**

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
-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/Intel-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revB.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-revB.xml

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Originally published on 28 January 2014.