Dell Inc.

PowerEdge R320 (Intel Xeon E5-2430 v2, 2.50 GHz)

SPECint\textsuperscript{\textregistered}\_rate\textsubscript{2006} = 248
SPECint\textsubscript{rate}_base\textsubscript{2006} = 239

CPU\textsubscript{2006} license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.
Test date: Oct-2013
Hardware Availability: Jan-2014
Software Availability: Sep-2013

Hardware
CPU Name: Intel Xeon E5-2430 v2
CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz
CPU MHz: 2500
FPU: Integrated
CPU(s) enabled: 6 cores, 1 chip, 6 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: 15 MB I+D on chip per chip
Other Cache: None
Memory: 96 GB (6 x 16 GB 2Rx4 PC3L-12800R-11, ECC)
Disk Subsystem: 1 x 300 GB 15000 RPM SAS
Other Hardware: None

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

Software
**SPEC CINT2006 Result**

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### Results Table

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**Peak**

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</tbody>
</table>

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

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### 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:
```
$sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on linux Mon Oct 14 10:39:39 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 E5-2430 v2 @ 2.50GHz  
 1 "physical id"s (chips)  
 12 "processors"
```

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Continued on next page
Dell Inc.
PowerEdge R320 (Intel Xeon E5-2430 v2, 2.50 GHz)

SPECint_rate2006 = 248
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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 : 6
siblings : 12
physical 0: cores 0 1 2 3 4 5
cache size : 15360 KB

From /proc/meminfo
MemTotal: 99123704 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 Oct 14 10:39 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:
6x 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
runspec command invoked through numactl i.e.:
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General Notes (Continued)  
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,muldefs -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  
    456.hmmer: icc -m64  

Continued on next page
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Peak Compiler Invocation (Continued)

458.sjeng: icc -m64

C++ benchmarks:
icpc -m32

Peak Portability Flags

400.perlbmch: -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.perlbmch: -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: basepeak = yes

C++ benchmarks:

Continued on next page
**SPEC CINT2006 Result**

**Dell Inc.**

PowerEdge R320 (Intel Xeon E5-2430 v2, 2.50 GHz)

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
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<td>SPECint_rate_base2006</td>
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**CPU2006 license:** 55  
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### Peak Optimization Flags (Continued)

- 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 
  -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:


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

- [http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revB.xml](http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revB.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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Standard Performance Evaluation Corporation  
info@spec.org  
http://www.spec.org/