**SPEC® CINT2006 Result**

Dell Inc.

PowerEdge R820 (Intel Xeon E5-4650, 2.70 GHz)

<table>
<thead>
<tr>
<th>SPECint®_rate2006</th>
<th>1220</th>
</tr>
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<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>1170</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 55  
**Test date:** Mar-2012  
**Test sponsor:** Dell Inc.  
**Hardware Availability:** May-2012  
**Tested by:** Dell Inc.  
**Software Availability:** Feb-2012

**CPU Name:** Intel Xeon E5-4650  
**CPU Characteristics:** Intel Turbo Boost Technology up to 3.30 GHz  
**CPU MHz:** 2700  
**FPU:** Integrated  
**CPU(s) enabled:** 32 cores, 4 chips, 8 cores/chip, 2 threads/core  
**CPU(s) orderable:** 2,4 chip  
**Primary Cache:** 32 KB I + 32 KB D on chip per core  
**Secondary Cache:** 256 KB I+D on chip per core  
**L3 Cache:** 20 MB I+D on chip per chip  
**Other Cache:** None  
**Memory:** 256 GB (32 x 8 GB 2Rx4 PC3-12800R-11, ECC)  
**Disk Subsystem:** 1 x 146 GB 15000 RPM SAS, RAID 0  
**Other Hardware:** None

### Software

**Operating System:** SUSE Linux Enterprise Server 11 SP2 (x86_64)  
**Compiler:** C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux  
**Auto Parallel:** No  
**File System:** ext3  
**System State:** Run level 3 (multi-user)  
**Base Pointers:** 32-bit  
**Peak Pointers:** 32/64-bit  
**Other Software:** Microquill SmartHeap V9.01

### Diagram

**Graph** showing SPECint rate results for various benchmarks. The graph displays performance metrics for different test cases with X and Y axes representing different metrics and values. The results are compared against a baseline for each benchmark.

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Standard Performance Evaluation Corporation  
info@spec.org  
http://www.spec.org/
## Dell Inc.

Dell Inc. PowerEdge R820 (Intel Xeon E5-4650, 2.70 GHz)

### SPEC CINT2006 Result

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## Results Table

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<tr>
<th>Benchmark</th>
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<th>Seconds</th>
<th>Ratio</th>
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<td>1150</td>
<td>388</td>
<td>1140</td>
<td>395</td>
<td>1120</td>
</tr>
</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.

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## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

---

## Platform Notes

- System Profile set to Custom
- CPU Power Management set to Maximum Performance
- Memory Frequency set to Maximum Performance
- Turbo Boost set to Enabled
- C States/C1E set to Enabled
- Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6800

$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdfff5032aaa42e583f96b07f99d3
running on linux-2z46 Wed Mar 14 17:32:08 2012

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 E5-4650 0 @ 2.70GHz
- 4 "physical id"s (chips)
- 64 "processors"

Continued on next page
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**SPECint_rate2006** = 1220

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**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"
```

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5

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
```

runspec command invoked through numactl i.e.:
```
Continued on next page
```

---

**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 : 8
- siblings : 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 : 20480 KB

From /proc/meminfo
```
MemTotal: 264501512 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

From /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 = 2
```

```
uname -a:
    Linux linux-2z46 3.0.13-0.19-default #1 SMP Fri Feb 3 15:38:23 UTC 2012
    (7f256ae) x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Mar 14 17:29 last=S
```

```
SPEC is set to: /root/cpu2006-1.2
```

```
Filesystem     Type  Size  Used  Avail Use% Mounted on
/dev/sda1      ext3  119G  7.1G  111G   6% /
```

Additional information from dmidecode:

(End of data from sysinfo program)
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General Notes (Continued)
numactl --interleave=all runspec <etc>
The Dell PowerEdge R820 and
the Bull NovaScale R470 F3 Models are electronically equivalent.
The results have been measured on a Dell PowerEdge R820 model.

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/smartheap -lsmartheap -lismartheap

Base Other Flags

  C benchmarks:
    403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
  icc  -m32
  400.perlbench: icc  -m64

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Peak Compiler Invocation (Continued)

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)
-03(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)
-03(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 -03 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll4 -auto-ilp32

462.libquantum: basepeak = yes

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**Peak Optimization Flags (Continued)**

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) -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/smartheap -lsmartheap

473.astar: basepeak = yes

483.xalanchbmk: 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-ic12.1-official-linux64.20111122.html

http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120410.00.html

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

http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml

http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120410.00.xml

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

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