**Dell Inc.**

PowerEdge R920 (Intel Xeon E7-8880L v2, 2.20 GHz)

<table>
<thead>
<tr>
<th>SPECint®_rate2006</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>1960</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Test date:</th>
<th>Jan-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Availability:</td>
<td>Mar-2014</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Mar-2014</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Dell Inc. PowerEdge R920 (Intel Xeon E7-8880L v2, 2.20 GHz)</th>
<th>SPECint®_rate2006 = 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hardware</strong></td>
<td><strong>Software</strong></td>
</tr>
<tr>
<td>CPU Name: Intel Xeon E7-8880L 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: 2200</td>
<td>Auto Parallel: No</td>
</tr>
<tr>
<td>FPU: Integrated</td>
<td>File System: ext2</td>
</tr>
<tr>
<td>CPU(s) enabled: 60 cores, 4 chips, 15 cores/chip, 2 threads/core</td>
<td>System State: Run level 3 (multi-user)</td>
</tr>
<tr>
<td>CPU(s) orderable: 2,4 chip</td>
<td>Base Pointers: 32-bit</td>
</tr>
<tr>
<td>Primary Cache: 32 KB I + 32 KB D on chip per core</td>
<td>Peak Pointers: 32/64-bit</td>
</tr>
<tr>
<td>Secondary Cache: 256 KB I+D on chip per core</td>
<td>Other Software: Microquill SmartHeap V10.0</td>
</tr>
<tr>
<td>L3 Cache: 37.5 MB I+D on chip per chip</td>
<td></td>
</tr>
<tr>
<td>Other Cache: None</td>
<td></td>
</tr>
<tr>
<td>Memory: 1 TB (58 x 16 GB 2Rx4 PC3L-12800R-11 + 6 x 16 GB 2Rx4 PC3-14900R-13, ECC)</td>
<td></td>
</tr>
<tr>
<td>Disk Subsystem: 1 x 400 GB SAS6 SSD</td>
<td></td>
</tr>
<tr>
<td>Other Hardware: None</td>
<td></td>
</tr>
</tbody>
</table>
## SPEC CINT2006 Result

**Dell Inc.**

PowerEdge R920 (Intel Xeon E7-8880L v2, 2.20 GHz)

**SPECint_rate2006 = 2020**

**SPECint_rate_base2006 = 1960**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>120</td>
<td>769</td>
<td>1520</td>
<td>768</td>
<td>1530</td>
<td>766</td>
<td>1530</td>
<td>120</td>
<td>641</td>
<td>1830</td>
<td>643</td>
<td>1820</td>
<td>647</td>
<td>1810</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>120</td>
<td>1110</td>
<td>1490</td>
<td>1040</td>
<td>1109</td>
<td>1040</td>
<td>1112</td>
<td>1040</td>
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<td>1060</td>
<td>1092</td>
<td>1060</td>
<td>1094</td>
<td>1060</td>
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<tr>
<td>403.mcf</td>
<td>120</td>
<td>391</td>
<td>1280</td>
<td>391</td>
<td>1280</td>
<td>390</td>
<td>1280</td>
<td>120</td>
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<td>1280</td>
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<td>1280</td>
<td>390</td>
<td>1280</td>
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<tr>
<td>445.gobmk</td>
<td>120</td>
<td>850</td>
<td>1490</td>
<td>847</td>
<td>1490</td>
<td>848</td>
<td>1480</td>
<td>120</td>
<td>826</td>
<td>1520</td>
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<td>1520</td>
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<td>1520</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>120</td>
<td>411</td>
<td>2730</td>
<td>413</td>
<td>2710</td>
<td>412</td>
<td>2720</td>
<td>120</td>
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<td>2890</td>
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<td>2900</td>
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<tr>
<td>458.sjeng</td>
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<td>988</td>
<td>1470</td>
<td>989</td>
<td>1470</td>
<td>986</td>
<td>1470</td>
<td>120</td>
<td>948</td>
<td>1530</td>
<td>949</td>
<td>1530</td>
<td>949</td>
<td>1530</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>120</td>
<td>185</td>
<td>13500</td>
<td>185</td>
<td>13500</td>
<td>185</td>
<td>13500</td>
<td>120</td>
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<td>13500</td>
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<td>13500</td>
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<tr>
<td>464.h264ref</td>
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<td>1040</td>
<td>2550</td>
<td>1021</td>
<td>2600</td>
<td>1019</td>
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<td>120</td>
<td>1040</td>
<td>2550</td>
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<td>2600</td>
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<tr>
<td>471.omnetpp</td>
<td>120</td>
<td>768</td>
<td>976</td>
<td>768</td>
<td>976</td>
<td>769</td>
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<td>734</td>
<td>1020</td>
<td>734</td>
<td>1020</td>
<td>734</td>
<td>1020</td>
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<tr>
<td>473.astar</td>
<td>120</td>
<td>753</td>
<td>1120</td>
<td>752</td>
<td>1120</td>
<td>754</td>
<td>1120</td>
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<td>753</td>
<td>1120</td>
<td>752</td>
<td>1120</td>
<td>754</td>
<td>1120</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>120</td>
<td>396</td>
<td>2090</td>
<td>396</td>
<td>2090</td>
<td>395</td>
<td>2090</td>
<td>120</td>
<td>396</td>
<td>2090</td>
<td>396</td>
<td>2090</td>
<td>395</td>
<td>2090</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
- 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 slesperf2 Fri Jan 24 19:30:48 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 E7-8880L v2 @ 2.20GHz
- 4 "physical id"s (chips)
Dell Inc.

PowerEdge R920 (Intel Xeon E7-8880L v2, 2.20 GHz)

SPEC_cint_rate2006 = 2020
SPEC_cint_rate_base2006 = 1960

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

Test date: Jan-2014
Hardware Availability: Mar-2014
Software Availability: Mar-2014

---

120 "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 : 15
  siblings : 30
  physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
  physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
  physical 2: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
  physical 3: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
  cache size : 38400 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 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 Jan 23 16:13 last=S

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

Additional information from dmidecode:
  BIOS Dell Inc. 1.0.0 12/16/2013
  Memory:
    41x 00CE00B300CE M393B2G70BH0-YK0 16 GB 1333 MHz
    6x 00CE00B300CE M393B2G70CB0-CMA 16 GB 1333 MHz
    11x 00CE04B300CE M393B2G70BH0-YK0 16 GB 1333 MHz
    6x 00CE04B300CE M393B2G70CB0-YK0 16 GB 1333 MHz

(End of data from sysinfo program)

Regarding the sysinfo display about the memory installed, although the information
is accurate, two different types of DIMMs were used in the configuration and it may
not be easy to immediately tell the difference. The following has been provided to help
make the situation more clear.

DIMMs with @awM393B2G70BH0-YK0a@• in the name are 16 GB PC3L-12800R-11 DIMMs
DIMMs with @awM393B2G70CB0-CMAa@• in the name are 16 GB PC3-14900R-13 DIMMs
Dell Inc.  

PowerEdge R920 (Intel Xeon E7-8880L v2, 2.20 GHz)  

**SPECint_rate2006 = 2020**  
**SPECint_rate_base2006 = 1960**

**General Notes**

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

```
```

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
```

runcase 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,muldefs -L/sh -lsmartheap
```

**Base Other Flags**

C benchmarks:

```
403.gcc: -Dalloca=_alloca
```
**SPEC CINT2006 Result**

Dell Inc.  
PowerEdge R920 (Intel Xeon E7-8880L v2, 2.20 GHz)  

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

### Peak Compiler Invocation

C benchmarks (except as noted below):

```
icc  -m32
400.perlbench: icc  -m64
401.bzip2: icc  -m64
456.hmmer: icc  -m64
458.sjeng: icc  -m64
```

C++ benchmarks:

```
icpp  -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: -xSSE4.2 -ipo -03 -no-prec-div
```

```
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
```

Continued on next page
Dell Inc.

PowerEdge R920 (Intel Xeon E7-8880L v2, 2.20 GHz)

**SPECint_rate2006 = 2020**

**SPECint_rate_base2006 = 1960**

**CPU2006 license:** 55

**Test sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test date:** Jan-2014

**Hardware Availability:** Mar-2014

**Software Availability:** Mar-2014

---

**Peak Optimization Flags (Continued)**

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

**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.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-ic14.0-official-linux64.20140128.html

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

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

Tested with SPEC CPU2006 v1.2.

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