Dell Inc.  

PowerEdge R230 (Intel Xeon E3-1260L v5, 2.90 GHz)  

SPECint\_rate\_2006 = 221  

SPECint\_rate\_base\_2006 = 214  

<table>
<thead>
<tr>
<th>Software</th>
<th>Hardware</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System: SUSE Linux Enterprise Server 12 3.12.28-4-default</td>
<td>CPU Name: Intel Xeon E3-1260L v5</td>
</tr>
<tr>
<td>Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux</td>
<td>CPU Characteristics: Intel Turbo Boost Technology up to 3.90 GHz</td>
</tr>
<tr>
<td>Auto Parallel: No</td>
<td>CPU MHz: 2900</td>
</tr>
<tr>
<td>File System: ext4</td>
<td>CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>System State: Run level 3 multi-user</td>
<td>CPU(s) orderable: 1 chip</td>
</tr>
<tr>
<td>Base Pointers: 32-bit</td>
<td>Primary Cache: 32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Peak Pointers: 32/64-bit</td>
<td>Secondary Cache: 256 KB I+D on chip per core</td>
</tr>
<tr>
<td>Other Software: Microquill SmartHeap V10.2</td>
<td>L3 Cache: 8 MB I+D on chip per core</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 55  
**Test sponsor:** Dell Inc.  
**Test date:** Oct-2015  
**Hardware Availability:** Nov-2015  
**Tested by:** Dell Inc.  
**Software Availability:** Sep-2015
## Dell Inc.

PowerEdge R230 (Intel Xeon E3-1260L v5, 2.90 GHz)

<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>
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<tbody>
<tr>
<td>400.perlbench</td>
<td>8</td>
<td>492</td>
<td>159</td>
<td>492</td>
<td>159</td>
<td>495</td>
<td>158</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>8</td>
<td>761</td>
<td>101</td>
<td>758</td>
<td>102</td>
<td>764</td>
<td>101</td>
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<tr>
<td>403.gcc</td>
<td>8</td>
<td>355</td>
<td>182</td>
<td>354</td>
<td>182</td>
<td>355</td>
<td>182</td>
</tr>
<tr>
<td>429.mcf</td>
<td>8</td>
<td>246</td>
<td>297</td>
<td>246</td>
<td>297</td>
<td>246</td>
<td>297</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>8</td>
<td>610</td>
<td>138</td>
<td>605</td>
<td>139</td>
<td>616</td>
<td>136</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>8</td>
<td>251</td>
<td>293</td>
<td>251</td>
<td>293</td>
<td>254</td>
<td>295</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>8</td>
<td>680</td>
<td>142</td>
<td>684</td>
<td>142</td>
<td>690</td>
<td>140</td>
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<tr>
<td>462.libquantum</td>
<td>8</td>
<td>76.9</td>
<td>2160</td>
<td>76.6</td>
<td>2160</td>
<td>77.6</td>
<td>2140</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>8</td>
<td>684</td>
<td>259</td>
<td>688</td>
<td>257</td>
<td>705</td>
<td>251</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>8</td>
<td>478</td>
<td>104</td>
<td>479</td>
<td>104</td>
<td>507</td>
<td>108</td>
</tr>
<tr>
<td>473.astar</td>
<td>8</td>
<td>461</td>
<td>122</td>
<td>461</td>
<td>122</td>
<td>460</td>
<td>122</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>8</td>
<td>219</td>
<td>253</td>
<td>218</td>
<td>253</td>
<td>220</td>
<td>252</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
System Profile set to Performance
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on linux-8px2 Fri Oct  2 09:56:45 2015

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 E3-1260L v5 @ 2.90GHz
  1 "physical id"s (chips)
  8 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with
Continued on next page
```
Dell Inc.

PowerEdge R230 (Intel Xeon E3-1260L v5, 2.90 GHz)

SPECint_rate2006 = 221
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CPU2006 license: 55
Test sponsor: Dell Inc.
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Platform Notes (Continued)

cautions.)
cpu cores : 4
siblings : 8
physical 0: cores 0 1 2 3
cache size : 8192 KB

From /proc/meminfo
MemTotal: 66066084 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12

From /etc/*release* /etc/*version*
SuSE-release:
  SUSE Linux Enterprise Server 12 (x86_64)
  VERSION = 12
  PATCHLEVEL = 0
  # This file is deprecated and will be removed in a future service pack or
  # release.
  # Please check /etc/os-release for details about this release.
os-release:
  NAME="SLES"
  VERSION="12"
  VERSION_ID="12"
  PRETTY_NAME="SUSE Linux Enterprise Server 12"
  ID="sles"
  ANSI_COLOR="0;32"
  CPE_NAME="cpe:/o:suse:sles:12"

uname -a:
Linux linux-8px2 3.12.28-4-default #1 SMP Thu Sep 25 17:02:34 UTC 2014
(9879bd4) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Oct 2 09:55

SPEC is set to: /root/cpu2006-1.2
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext4 451G 8.4G 442G 2% /

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Dell Inc. 0.3.16 09/09/2015
Memory:
1x 00AD00000000 HMA82GU7MFR8N-TF 16 GB 2 rank 2133 MHz
2x 00AD0000020B HMA82GU7MFR8N-TF 16 GB 2 rank 2133 MHz
1x 00AD00000800 HMA82GU7MFR8N-TF 16 GB 2 rank 2133 MHz

Continued on next page
**Dell Inc.**

**PowerEdge R230 (Intel Xeon E3-1260L v5, 2.90 GHz)**

| Specint_rate2006 | 221 |
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**CPU2006 license:** 55  
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### Platform Notes (Continued)

(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 Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1  
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.:
```
numactl --interleave=all runspec <etc>
```

### Base Compiler Invocation

**C benchmarks:**
```
icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

**C++ benchmarks:**
```
icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
```

### Base Portability Flags

```
400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
401.bzip2: -D_FILE_OFFSET_BITS=64
403.gcc: -D_FILE_OFFSET_BITS=64
429.mcf: -D_FILE_OFFSET_BITS=64
445.gobmk: -D_FILE_OFFSET_BITS=64
456.hmmer: -D_FILE_OFFSET_BITS=64
458.sjeng: -D_FILE_OFFSET_BITS=64
462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
464.h264ref: -D_FILE_OFFSET_BITS=64
471.omnetpp: -D_FILE_OFFSET_BITS=64
473.astar: -D_FILE_OFFSET_BITS=64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
```

### Base Optimization Flags

**C benchmarks:**
```
xCORE-AVX2 -ipo -03 -no-prec-div -opt-prefetch
-opt-mem-layout-trans=3
```

Continued on next page
SPEC CINT2006 Result

**Dell Inc.**

PowerEdge R230 (Intel Xeon E3-1260L v5, 2.90 GHz)  

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---

**Base Optimization Flags (Continued)**

C++ benchmarks:
- -xCORE-AVX2 -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 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin
- 400.perlbench: icc -m64
- 401.bzip2: icc -m64
- 456.hmmer: icc -m64
- 458.sjeng: icc -m64

C++ benchmarks:
- icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

---

**Peak Portability Flags**

- 400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
- 401.bzip2: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
- 456.hmmer: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
- 458.sjeng: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LP64
- 462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
- 471.omnetpp: -D_FILE_OFFSET_BITS=64
- 473.astar: -D_FILE_OFFSET_BITS=64
- 483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
SPEC CINT2006 Result

Dell Inc.

PowerEdge R230 (Intel Xeon E3-1260L v5, 2.90 GHz)

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CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.
Test date: Oct-2015
Hardware Availability: Nov-2015
Software Availability: Sep-2015

Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
  -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
  -par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
  -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
  -par-num-threads=1(pass 1) -prof-use(pass 2) -opt-prefetch
  -auto-ilp32 -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
  -prof-use(pass 2) -par-num-threads=1(pass 1) -ansi-alias
  -opt-mem-layout-trans=3

456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
  -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
  -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4
  -auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
  -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
  -par-num-threads=1(pass 1) -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
## Dell Inc.

**PowerEdge R230 (Intel Xeon E3-1260L v5, 2.90 GHz)**

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

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