Dell Inc. PowerEdge R220 (Intel Xeon E3-1240L v3, 2.00 GHz)

SPECint_rate2006 = 162
SPECint_rate_base2006 = 156

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

Test date: Oct-2014
Hardware Availability: Mar-2014
Software Availability: Sep-2014

400.perlbench
401.bzip2
403.gcc
429.mcf
445.gobmk
456.hmmer
458.sjeng
462.libquantum
464.h264ref
471.omnetpp
473.astar
483.xalancbmk

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473.astar
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CPU Name: Intel Xeon E3-1240L v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.00 GHz
CPU MHz: 2000
FPU: Integrated
CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core
CPU(s) orderable: 1 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: 8 MB I+D on chip per core
Other Cache: None
Memory: 32 GB (4 x 8 GB 2Rx8 PC3L-12800E-11)
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
**Dell Inc.**

PowerEdge R220 (Intel Xeon E3-1240L v3, 2.00 GHz)

---

**SPEC CINT2006 Result**

SPECint\_rate2006 = 162

SPECint\_rate\_base2006 = 156

---

**Results Table**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base Copies</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Peak Copies</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>8</td>
<td>678</td>
<td>115</td>
<td>680</td>
<td>115</td>
<td>683</td>
<td>114</td>
<td>8</td>
<td>551</td>
<td>142</td>
<td>553</td>
<td>141</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>8</td>
<td>984</td>
<td>78.4</td>
<td>991</td>
<td>77.9</td>
<td>987</td>
<td>78.2</td>
<td>8</td>
<td>940</td>
<td>82.1</td>
<td>937</td>
<td>82.4</td>
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<tr>
<td>403.gcc</td>
<td>8</td>
<td>506</td>
<td>127</td>
<td>507</td>
<td>127</td>
<td>502</td>
<td>128</td>
<td>8</td>
<td>506</td>
<td>127</td>
<td>507</td>
<td>127</td>
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<tr>
<td>429.mcf</td>
<td>331</td>
<td>220</td>
<td>337</td>
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<td>327</td>
<td>223</td>
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<td>220</td>
<td>337</td>
<td>217</td>
<td>327</td>
<td>223</td>
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<tr>
<td>445.gobmk</td>
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<td>100</td>
<td>837</td>
<td>100</td>
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<td>806</td>
<td>104</td>
<td>818</td>
<td>103</td>
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<tr>
<td>456.hmmer</td>
<td>364</td>
<td>205</td>
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<td>205</td>
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<td>363</td>
<td>206</td>
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<td>206</td>
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<td>206</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>8</td>
<td>874</td>
<td>111</td>
<td>894</td>
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<td>897</td>
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<td>115</td>
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<td>111</td>
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<td>462.libquantum</td>
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</tr>
<tr>
<td>464.h264ref</td>
<td>1002</td>
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<td>938</td>
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<td>935</td>
</tr>
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<td>524</td>
<td>95.4</td>
<td>516</td>
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<td>520</td>
<td>96.1</td>
<td>490</td>
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<td>102</td>
<td>494</td>
<td>101</td>
<td>504</td>
</tr>
<tr>
<td>473.astar</td>
<td>8</td>
<td>658</td>
<td>85.3</td>
<td>651</td>
<td>86.2</td>
<td>649</td>
<td>86.5</td>
<td>658</td>
<td>85.3</td>
<td>651</td>
<td>86.2</td>
<td>649</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>317</td>
<td>174</td>
<td>317</td>
<td>174</td>
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<td>174</td>
<td>317</td>
<td>174</td>
<td>317</td>
<td>174</td>
<td>318</td>
<td>174</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 taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset 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 Configuration:
Virtualization Technology disabled
Execute Disable disabled
System Profile set to Performance
Sysinfo program /root/cpu2006-1.2/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191

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 E3-1240L v3 @ 2.00GHz
1 physical id"s (chips)
8 processors"
cores, siblings (Caution: counting these is hw and system dependent. The
Continued on next page
Dell Inc.  
PowerEdge R220 (Intel Xeon E3-1240L v3, 2.00 GHz)  

**SPEC CINT2006 Result**

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**Platform Notes (Continued)**

following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

- cpu cores : 4
- siblings : 8
- physical 0: cores 0 1 2 3
- cache size : 8192 KB

From /proc/meminfo

- MemTotal: 32809896 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 8 18:59 last=S

SPEC is set to: /root/cpu2006-1.2

Additional information from dmidecode:

BIOS Dell Inc. 1.3.2 09/11/2014
Memory:

4x Hynix/Hyundai HMT41GU7AFR8A-PB 8 GB 1600 MHz

---

**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/transparent_hugepage/enable
```
Dell Inc.

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### 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:
- -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
- -opt-mem-layout-trans=3

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

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

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**Peak Compiler Invocation (Continued)**

C++ benchmarks:
\texttt{icpc -m32}

**Peak Portability Flags**

400.perlbench: \texttt{-DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64}
401.bzip2: \texttt{-DSPEC\_CPU\_LP64}
456.hmmer: \texttt{-DSPEC\_CPU\_LP64}
458.sjeng: \texttt{-DSPEC\_CPU\_LP64}
462.libquantum: \texttt{-DSPEC\_CPU\_LINUX}
483.xalancbmk: \texttt{-DSPEC\_CPU\_LINUX}

**Peak Optimization Flags**

C benchmarks:

400.perlbench: \texttt{-xCORE-AVX2(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: \texttt{-xCORE-AVX2(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: \texttt{-xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3}
456.hmmer: \texttt{-xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32}
458.sjeng: \texttt{-xCORE-AVX2(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: \texttt{-xCORE-AVX2(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:

Continued on next page
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Peak Optimization Flags (Continued)

```
471.omnetpp: -xCORE-AVX2(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

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

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

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