Dell Inc.

PowerEdge T330 (Intel Xeon E3-1240L v5, 2.10 GHz)

**SPECint®2006 = 62.0**

**SPECint_base2006 = 60.0**

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

### Hardware

<table>
<thead>
<tr>
<th>Component</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E3-1240L v5</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.20 GHz</td>
</tr>
<tr>
<td>CPU MHZ</td>
<td>2100</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>4 cores, 1 chip, 4 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1 chip</td>
</tr>
<tr>
<td>Primary Cache</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache</td>
<td>256 KB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache</td>
<td>8 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>64 GB (4 x 16 GB 2Rx8 PC4-2133P-U)</td>
</tr>
<tr>
<td>Disk Subsystem</td>
<td>1 x 500 GB 7200 RPM SATA</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
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</table>

### Software

<table>
<thead>
<tr>
<th>Component</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>SUSE Linux Enterprise Server 12 3.12.28-4-default</td>
</tr>
<tr>
<td>Compiler</td>
<td>C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>Yes</td>
</tr>
<tr>
<td>File System</td>
<td>ext4</td>
</tr>
<tr>
<td>System State</td>
<td>Run level 3 multi-user</td>
</tr>
<tr>
<td>Base Pointers</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Peak Pointers</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other Software</td>
<td>Microquill SmartHeap V10.2</td>
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</table>
## Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>236</td>
<td>41.4</td>
<td>238</td>
<td>41.5</td>
<td>235</td>
<td>41.6</td>
<td>215</td>
<td>45.5</td>
<td>215</td>
<td>45.5</td>
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<tr>
<td>401.bzip2</td>
<td>386</td>
<td>25.0</td>
<td>386</td>
<td>25.0</td>
<td>388</td>
<td>24.9</td>
<td>382</td>
<td>25.3</td>
<td>381</td>
<td>25.3</td>
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<tr>
<td>403.gcc</td>
<td>190</td>
<td>42.3</td>
<td>191</td>
<td>42.2</td>
<td>190</td>
<td>42.3</td>
<td>188</td>
<td>42.8</td>
<td>189</td>
<td>42.6</td>
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<tr>
<td>429.mcf</td>
<td>128</td>
<td>71.0</td>
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<td>71.5</td>
<td>131</td>
<td>69.6</td>
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<td>71.0</td>
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<td>71.5</td>
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<tr>
<td>456.hmmer</td>
<td>112</td>
<td>83.5</td>
<td>112</td>
<td>83.6</td>
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<td>83.5</td>
<td>112</td>
<td>83.5</td>
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<td>83.5</td>
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<td>458.sjeng</td>
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<td>32.6</td>
<td>371</td>
<td>32.6</td>
<td>371</td>
<td>32.6</td>
<td>366</td>
<td>33.1</td>
<td>366</td>
<td>33.0</td>
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<tr>
<td>462.libquantum</td>
<td>11.5</td>
<td>1800</td>
<td>11.5</td>
<td>1800</td>
<td>11.5</td>
<td>1800</td>
<td>11.5</td>
<td>1800</td>
<td>11.5</td>
<td>1800</td>
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<tr>
<td>464.hmmer</td>
<td>375</td>
<td>59.1</td>
<td>375</td>
<td>59.0</td>
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<td>59.2</td>
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<tr>
<td>471.omnetpp</td>
<td>201</td>
<td>31.1</td>
<td>196</td>
<td>31.9</td>
<td>201</td>
<td>31.1</td>
<td>163</td>
<td>38.2</td>
<td>164</td>
<td>38.2</td>
</tr>
<tr>
<td>473.astar</td>
<td>204</td>
<td>34.4</td>
<td>204</td>
<td>34.3</td>
<td>205</td>
<td>34.2</td>
<td>204</td>
<td>34.4</td>
<td>204</td>
<td>34.3</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>87.1</td>
<td>79.2</td>
<td>87.2</td>
<td>79.1</td>
<td>87.9</td>
<td>78.5</td>
<td>82.8</td>
<td>83.3</td>
<td>83.1</td>
<td>83.0</td>
</tr>
</tbody>
</table>

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

## Submit Notes

The config file option 'submit' was used.

## 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-16fb Fri Sep 25 02:19:28 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 E3-1240L v5 @ 2.10GHz
  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 caution.)
  cpu cores : 4

Continued on next page
Dell Inc.

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Platform Notes (Continued)

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-l6fb 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 Sep 25 02:15

SPEC is set to: /root/cpu2006-1.2

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

(End of data from sysinfo program)
# SPEC CINT2006 Result

**Dell Inc.**  
PowerEdge T330 (Intel Xeon E3-1240L v5, 2.10 GHz)

| SPECint2006 | 62.0 |
| SPECint_base2006 | 60.0 |

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

## General Notes

Environment variables set by runspec before the start of the run:
- KMP_AFFINITY = "granularity=fine,scatter"
- LD_LIBRARY_PATH = "/root/cpu2006-1.2/libs/32:/root/cpu2006-1.2/libs/64:/root/cpu2006-1.2/sh"
- OMP_NUM_THREADS = "4"

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

## Base Compiler Invocation

- **C benchmarks:**
  - icc -m64

- **C++ benchmarks:**
  - icpc -m64

## Base Portability Flags

- 400 perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
- 401 bzip2: -DSPEC_CPU_LP64
- 403 gcc: -DSPEC_CPU_LP64
- 429 mcf: -DSPEC_CPU_LP64
- 445 gobmk: -DSPEC_CPU_LP64
- 456 hminer: -DSPEC_CPU_LP64
- 458 sjeng: -DSPEC_CPU_LP64
- 462 libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
- 464 h264ref: -DSPEC_CPU_LP64
- 471 omnetpp: -DSPEC_CPU_LP64
- 473 astar: -DSPEC_CPU_LP64
- 483 xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

## Base Optimization Flags

- **C benchmarks:**
  - -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

- **C++ benchmarks:**
  - -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
  - -W1,-z,muldefs -L/sh -lsmartheap64
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Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

400.perlbench: icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

C++ benchmarks (except as noted below):

icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

473.astar: icpc -m64

Peak Portability Flags

400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -D_FILE_OFFSET_BITS=64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen:threadsafepass 1
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
-par-num-threads=1(pass 1) -prof-use(pass 2) -opt-prefetch
-ansi-alias

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

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Peak Optimization Flags (Continued)

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
-opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes
445.gobmk: basepeak = yes
456.hmmer: basepeak = yes

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

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

473.astar: basepeak = yes
483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap

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-ic16.0-official-linux64.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revD.20151006.xml
<table>
<thead>
<tr>
<th><strong>SPEC CINT2006 Result</strong></th>
<th></th>
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<tbody>
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</tr>
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</table>

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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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