## SPEC® CINT2006 Result

### Dell Inc.

PowerEdge T620 (Intel Xeon E5-2650L v2, 1.70 GHz)

**SPECint®_rate2006 = 565**

| Test sponsor: | Dell Inc. |
| Test date: | Sep-2013 |
| Hardware Availability: | Sep-2013 |
| Tested by: | Dell Inc. |
| Software Availability: | Sep-2013 |

| Software Availability: | Sep-2013 |
| Tested by: | Dell Inc. |
| Hardware Availability: | Sep-2013 |
| Test date: | Sep-2013 |

**SPECint_rate_base2006 = 545**

<table>
<thead>
<tr>
<th>Software</th>
<th>Operating System</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUSE Linux Enterprise Server 11 SP3 (x86_64)</td>
<td>3.0.76-0.11-default</td>
</tr>
<tr>
<td>C/C++: Version 14.0.0.0.80 of Intel C++ Studio XE for Linux</td>
<td></td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>No</td>
</tr>
<tr>
<td>File System</td>
<td>ext2</td>
</tr>
<tr>
<td>System State</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers</td>
<td>32-bit</td>
</tr>
<tr>
<td>Peak Pointers</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other Software</td>
<td>Microquill SmartHeap V10.0</td>
</tr>
</tbody>
</table>

### Hardware

- **CPU Name:** Intel Xeon E5-2650L v2
- **CPU Characteristics:** Intel Turbo Boost Technology up to 2.10 GHz
- **CPU MHz:** 1700
- **FPU:** Integrated
- **CPU(s) enabled:** 20 cores, 2 chips, 10 cores/chip, 2 threads/core
- **CPU(s) orderable:** 1.2 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:** 25 MB I+D on chip per chip
- **Other Cache:** None
- **Memory:** 256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC, running at 1600 MHz)
- **Disk Subsystem:** 1 x 300 GB 15000 RPM SAS
- **Other Hardware:** None

### Software

- **Operating System:** SUSE Linux Enterprise Server 11 SP3 (x86_64) 3.0.76-0.11-default
- **Compiler:** C/C++: Version 14.0.0.0.80 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 T620 (Intel Xeon E5-2650L v2, 1.70 GHz)

### SPEC CINT2006 Result

<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>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>40</td>
<td>971</td>
<td>402</td>
<td>972</td>
<td>402</td>
<td>970</td>
<td>403</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>40</td>
<td>1312</td>
<td>294</td>
<td>1310</td>
<td>295</td>
<td>1311</td>
<td>294</td>
</tr>
<tr>
<td>403.gcc</td>
<td>40</td>
<td>729</td>
<td>442</td>
<td>727</td>
<td>443</td>
<td>729</td>
<td>442</td>
</tr>
<tr>
<td>429.mcf</td>
<td>40</td>
<td>410</td>
<td>889</td>
<td>411</td>
<td>887</td>
<td>410</td>
<td>890</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>40</td>
<td>1089</td>
<td>385</td>
<td>1085</td>
<td>387</td>
<td>1086</td>
<td>386</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>40</td>
<td>523</td>
<td>714</td>
<td>522</td>
<td>716</td>
<td>521</td>
<td>716</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>40</td>
<td>1262</td>
<td>384</td>
<td>1262</td>
<td>383</td>
<td>1262</td>
<td>383</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>40</td>
<td>236</td>
<td>3510</td>
<td>236</td>
<td>3510</td>
<td>236</td>
<td>3510</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>40</td>
<td>1364</td>
<td>649</td>
<td>1365</td>
<td>648</td>
<td>1363</td>
<td>650</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>40</td>
<td>770</td>
<td>325</td>
<td>769</td>
<td>325</td>
<td>769</td>
<td>325</td>
</tr>
<tr>
<td>473.astar</td>
<td>40</td>
<td>899</td>
<td>312</td>
<td>890</td>
<td>315</td>
<td>893</td>
<td>315</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>40</td>
<td>466</td>
<td>593</td>
<td>469</td>
<td>588</td>
<td>466</td>
<td>592</td>
</tr>
</tbody>
</table>

### Results 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
Logical Processor enabled
System Profile set to Performance
Sysinfo program /root/cpu2006.1.2.ic13/config/sysinfo.rev6818
$Rev: 6818 $ $Date:: 2012-07-17 #$ e86d102572650a6e4d596a3cee98f191
running on linux Tue Sep  3 11:12:58 2013

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 E5-2650L v2 @ 1.70GHz
  2 "physical id"s (chips)
  40 "processors"
**SPEC CINT2006 Result**

**Dell Inc.**

PowerEdge T620 (Intel Xeon E5-2650L v2, 1.70 GHz)

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>565</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>545</td>
</tr>
</tbody>
</table>

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

**Test date:** Sep-2013  
**Hardware Availability:** Sep-2013  
**Software Availability:** Sep-2013

**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.)

```plaintext
cpu cores : 10
siblings : 20
physical 0: cores 0 1 2 3 4 8 9 10 11 12
physical 1: cores 0 1 2 3 4 8 9 10 11 12
cache size : 25600 KB
```

From /proc/meminfo

```plaintext
MemTotal:       264601764 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 Sep 3 10:56 last=S
```

```
SPEC is set to: /root/cpu2006.1.2.ic13
```

```
Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda2      ext2  267G  13G  254G   5% /
```

Additional information from dmidecode:

```
BIOS Dell Inc. 2.0.19 08/30/2013
Memory:
  2x 00AD00B300AD HMT42GR7MF4C-RD 16 GB 1600 MHz
  12x 00AD04B300AD HMT42GR7AF4C-RD 16 GB 1600 MHz
  2x 00CE00B300CE M393B2G70CB0-CMA 16 GB 1600 MHz
```

(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.ic13/libs/32:/root/cpu2006.1.2.ic13/libs/64:/root/cpu2006.1.2.ic13/sh"
```

```
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
```

Continued on next page
Dell Inc.  
PowerEdge T620 (Intel Xeon E5-2650L v2, 1.70 GHz)

**SPEC CINT2006 Result**

**SPECint_rate2006 = 565**
**SPECint_rate_base2006 = 545**

**CPU2006 license:** 55  
**Test date:** Sep-2013

**Test sponsor:** Dell Inc.  
**Hardware Availability:** Sep-2013

**Tested by:** Dell Inc.  
**Software Availability:** Sep-2013

---

**General Notes (Continued)**

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
```

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
```

---

**Peak Compiler Invocation**

C benchmarks (except as noted below):

```
  icc   -m32
```

```
  400.perlbench: icc  -m64
```

---

Continued on next page
Dell Inc. PowerEdge T620 (Intel Xeon E5-2650L v2, 1.70 GHz)

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>565</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>545</td>
</tr>
</tbody>
</table>

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.
Test date: Sep-2013
Hardware Availability: Sep-2013
Software Availability: Sep-2013

Peak Compiler Invocation (Continued)

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Compiler Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>401.bzip2</td>
<td>icc -m64</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>icc -m64</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>icc -m64</td>
</tr>
</tbody>
</table>

C++ benchmarks:
| icpc -m32 |

Peak Portability Flags

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>-DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>-DSPEC_CPU_LINUX</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>-DSPEC_CPU_LINUX</td>
</tr>
</tbody>
</table>

Peak Optimization Flags

C benchmarks:

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>-xSSE4.2(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</td>
</tr>
<tr>
<td>403.gcc</td>
<td>basepeak = yes</td>
</tr>
<tr>
<td>429.mcf</td>
<td>basepeak = yes</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>-xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias -opt-mem-layout-trans=3</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>-xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>-xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto-ilp32</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>basepeak = yes</td>
</tr>
</tbody>
</table>

Continued on next page
SPEC CINT2006 Result

Dell Inc.

PowerEdge T620 (Intel Xeon E5-2650L v2, 1.70 GHz)

SPECint_rate2006 = 565
SPECint_rate_base2006 = 545

<table>
<thead>
<tr>
<th>CPU2006 license: 55</th>
<th>Test date:</th>
<th>Sep-2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor: Dell Inc.</td>
<td>Hardware Availability:</td>
<td>Sep-2013</td>
</tr>
<tr>
<td>Tested by: Dell Inc.</td>
<td>Software Availability:</td>
<td>Sep-2013</td>
</tr>
</tbody>
</table>

Peak Optimization Flags (Continued)

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-03(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)
-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-revB.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-revB.xml

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Originally published on 22 October 2013.