Dell Inc.

PowerEdge T620 (Intel Xeon E5-2637, 3.00 GHz) Specint®2006 = 45.9
Specint_base2006 = 43.4

CPU2006 license: 55
Test date: Feb-2012
Test sponsor: Dell Inc.
Hardware Availability: Mar-2012
Tested by: Dell Inc.
Software Availability: Feb-2012

<table>
<thead>
<tr>
<th>SPECint2006</th>
<th>SPECint_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>45.9</td>
<td>43.4</td>
</tr>
</tbody>
</table>

#### Hardware

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon E5-2637</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 3.50 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>3000</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>4 cores, 2 chips, 2 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1.2 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>5 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)</td>
</tr>
<tr>
<td>Disk Subsystem</td>
<td>1 x 1 TB 7200 RPM SATA</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
</tr>
</tbody>
</table>

#### Software

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>SUSE Linux Enterprise Server 11 SP2 (x86_64) 3.0.13-0.9-default</td>
</tr>
<tr>
<td>Compiler</td>
<td>C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>Yes</td>
</tr>
<tr>
<td>File System</td>
<td>ext3</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 V9.01</td>
</tr>
</tbody>
</table>
Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds Base</th>
<th>Ratio</th>
<th>Seconds Base</th>
<th>Ratio</th>
<th>Seconds Base</th>
<th>Ratio</th>
<th>Seconds Peak</th>
<th>Ratio</th>
<th>Seconds Peak</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>340</td>
<td>28.7</td>
<td>340</td>
<td>28.7</td>
<td>282</td>
<td>34.7</td>
<td>282</td>
<td>34.7</td>
<td>278</td>
<td>35.4</td>
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<tr>
<td>401.bzip2</td>
<td>435</td>
<td>22.2</td>
<td>424</td>
<td>22.7</td>
<td>424</td>
<td>22.7</td>
<td>424</td>
<td>22.7</td>
<td>424</td>
<td>22.8</td>
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<tr>
<td>403.mcf</td>
<td>287</td>
<td>28.1</td>
<td>287</td>
<td>28.0</td>
<td>282</td>
<td>28.5</td>
<td>282</td>
<td>28.5</td>
<td>283</td>
<td>28.5</td>
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<tr>
<td>429.gcc</td>
<td>159</td>
<td>57.2</td>
<td>159</td>
<td>57.4</td>
<td>159</td>
<td>57.2</td>
<td>159</td>
<td>57.4</td>
<td>159</td>
<td>57.4</td>
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<tr>
<td>456.hmmer</td>
<td>176</td>
<td>52.9</td>
<td>176</td>
<td>52.5</td>
<td>175</td>
<td>53.2</td>
<td>175</td>
<td>53.2</td>
<td>175</td>
<td>53.2</td>
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<tr>
<td>458.sjeng</td>
<td>433</td>
<td>28.0</td>
<td>433</td>
<td>28.0</td>
<td>432</td>
<td>28.0</td>
<td>433</td>
<td>28.0</td>
<td>433</td>
<td>28.0</td>
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<tr>
<td>462.libquantum</td>
<td>19.9</td>
<td>1040</td>
<td>20.3</td>
<td>1040</td>
<td>19.9</td>
<td>1040</td>
<td>19.9</td>
<td>1040</td>
<td>19.9</td>
<td>1040</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>450</td>
<td>49.2</td>
<td>460</td>
<td>48.1</td>
<td>404</td>
<td>54.8</td>
<td>402</td>
<td>55.0</td>
<td>404</td>
<td>54.8</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>320</td>
<td>19.5</td>
<td>320</td>
<td>19.5</td>
<td>265</td>
<td>23.6</td>
<td>264</td>
<td>23.6</td>
<td>265</td>
<td>23.6</td>
</tr>
<tr>
<td>473.astar</td>
<td>261</td>
<td>26.9</td>
<td>261</td>
<td>26.9</td>
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<td>26.9</td>
<td>261</td>
<td>26.9</td>
<td>261</td>
<td>26.9</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>159</td>
<td>43.4</td>
<td>159</td>
<td>43.3</td>
<td>144</td>
<td>47.8</td>
<td>144</td>
<td>47.8</td>
<td>145</td>
<td>47.7</td>
</tr>
</tbody>
</table>

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

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

System Profile set to Custom
CPU Power Management set to Maximum Performance
Memory Frequency set to Maximum Performance
Turbo Boost set to Enabled
C States/C1E set to Enabled
Sysinfo program /root/CPU2006-1.2/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebd6f5032aaa42e583f96b07f99d3
running on linux-Sandy Thu Feb  9 11:08:11 2012

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 E5-2637 0 @ 3.00GHz
    2 "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 : 2
    siblings : 4
    physical 0: cores 0 1

Continued on next page
SPEC CINT2006 Result

Dell Inc.

PowerEdge T620 (Intel Xeon E5-2637, 3.00 GHz)

SPECint2006 = 45.9
SPECint_base2006 = 43.4

CPU2006 license: 55
Test sponsor: Dell Inc.
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Test date: Feb-2012
Hardware Availability: Mar-2012
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Platform Notes (Continued)

- physical 1: cores 0 1
- cache size: 5120 KB

From /proc/meminfo

- MemTotal: 132122692 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 = 2

unname -a:

- Linux linux-Sandy 3.0.13-0.9-default #1 SMP Mon Jan 16 17:33:03 UTC 2012
- (54ddfaf) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Feb 9 11:06 last=5

SPEC is set to: /root/CPU2006-1.2

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext3 197G 69G 119G 37% /

Additional information from dmidecode:

(End of data from sysinfo program)

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"
- OMP_NUM_THREADS = "4"

The Dell PowerEdge T620 and
the Bull NovaScale T840 F3 models are electronically equivalent.
The results have been measured on a Dell PowerEdge T620 model
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

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5
SPEC CINT2006 Result

Dell Inc.
PowerEdge T620 (Intel Xeon E5-2637, 3.00 GHz)

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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.hmmer: -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:
    -xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:
    -xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -Wl,-z,muldefs
    -L/smartheap -lsmartheap64

Base Other Flags

C benchmarks:
    403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
    icc -m64
Dell Inc.

PowerEdge T620 (Intel Xeon E5-2637, 3.00 GHz)

**SPECint2006 =** 45.9

**SPECint_base2006 =** 43.4

**Peak Compiler Invocation (Continued)**

400.perlbench: `icc -m32`
445.gobmk: `icc -m32`
464.h264ref: `icc -m32`

C++ benchmarks (except as noted below):
`icpc -m32`

473.astar: `icpc -m64`

**Peak Portability Flags**

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
401.bzip2: `-DSPEC_CPU_LP64`
403.gcc: `-DSPEC_CPU_LP64`
429.mcf: `-DSPEC_CPU_LP64`
456.hmmer: `-DSPEC_CPU_LP64`
458.sjeng: `-DSPEC_CPU_LP64`
462.libquantum: `-DSPEC_CPU_LP64` `-DSPEC_CPU_LINUX`
473.astar: `-DSPEC_CPU_LP64`
483.xalancbmk: `-DSPEC_CPU_LINUX`

**Peak Optimization Flags**

C benchmarks:

400.perlbench: `-xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch
-ansi-alias`

401.bzip2: `-xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div -prof-use(pass 2) -auto-ilp32 -opt-prefetch
-ansi-alias`

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

429.mcf: `basepeak = yes`

445.gobmk: `-xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias`

456.hmmer: `-xAVX -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
-ansi-alias`

Continued on next page
Dell Inc. PowerEdge T620 (Intel Xeon E5-2637, 3.00 GHz) SPECint2006 = 45.9 SPECint_base2006 = 43.4

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Peak Optimization Flags (Continued)

458.sjeng: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -prof-use(pass 2) -unroll4

462.libquantum: basepeak = yes

464.h264ref: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -prof-use(pass 2) -unroll12
   -ansi-alias

C++ benchmarks:

471.omnetpp: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
   -no-prec-div(pass 2) -prof-use(pass 2)
   -opt-ra-region-strategy=block
   -ansi-alias
   -Wl,-z,muldefs -L/smartheap -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
   -Wl,-z,muldefs -L/smartheap -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-ic12.1-official-linux64.20111122.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revA.20120328.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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