Dell Inc.  
PowerEdge R620 (Intel Xeon E5-2650L, 1.80 GHz)  

| SPECint²₀₀₆   | 36.9 |
| SPECint_base²₀₀₆ | 34.5 |

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

### Hardware

- **CPU Name:** Intel Xeon E5-2650L  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 2.30 GHz  
- **CPU MHz:** 1800  
- **FPU:** Integrated  
- **CPU(s) enabled:** 16 cores, 2 chips, 8 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:** 20 MB I+D on chip per chip  
- **Other Cache:** None  
- **Memory:** 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC)  
- **Disk Subsystem:** 2 x 146 GB 15000 RPM SAS, RAID 0  
- **Other Hardware:** None

### Software

- **Operating System:** SUSE Linux Enterprise Server 11 SP2 (x86_64)  
- **Compiler:** C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux  
- **Auto Parallel:** Yes  
- **File System:** ext3  
- **System State:** Run level 3 (multi-user)  
- **Base Pointers:** 32/64-bit  
- **Peak Pointers:** 32/64-bit  
- **Other Software:** Microquill SmartHeap V9.01
Dell Inc. PowerEdge R620 (Intel Xeon E5-2650L, 1.80 GHz)

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Results Table

<table>
<thead>
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<th>Benchmark</th>
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<th>Ratio</th>
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<td>767</td>
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<td>35.9</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 $ 6f2ebdff5032aaa42e583f96b07f99d3
running on unsvr Wed Feb 22 11:09:51 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 E5-2650L 0 @ 1.80GHz
  2 "physical id"s (chips)
  32 "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 : 8
siblings : 16
physical 0: cores 0 1 2 3 4 5 6 7

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**SPEC CINT2006 Result**

**Dell Inc.**

PowerEdge R620 (Intel Xeon E5-2650L, 1.80 GHz)

**SPECint2006 =** 36.9

**SPECint_base2006 =** 34.5

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**Platform Notes (Continued)**

- physical 1: cores 0 1 2 3 4 5 6 7
- cache size : 20480 KB

From `/proc/meminfo`
- MemTotal: 132089860 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

`uname -a:`
- Linux unsvr 3.0.13-0.19-default #1 SMP Fri Feb 3 15:38:23 UTC 2012 (7f256ae)
- x86_64 x86_64 x86_64 GNU/Linux

`run-level 3 Feb 22 11:03 last=S`

`SPEC is set to: /root/CPU2006-1.2`

Additional information from dmidecode:
(End of data from sysinfo program)

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**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 = "16"

The Dell PowerEdge R620 and the Bull NovaScale R440 F3 models are electronically equivalent.

The results have been measured on a Dell PowerEdge R620 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
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**SPEC CINT2006 Result**

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---

**Base Compiler Invocation**

C benchmarks:

```sh
icc  -m64
```

C++ benchmarks:

```sh
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:

```sh
-xAVX  -ipo  -O3  -no-prec-div  -parallel  -opt-prefetch  -auto-p32
```

C++ benchmarks:

```sh
-xAVX  -ipo  -O3  -no-prec-div  -opt-prefetch  -auto-p32  -Wl,-z,muldefs  
-L/smartheap -lsmartheap64
```

---

**Base Other Flags**

C benchmarks:

```sh
403.gcc: -Dalloca=_alloca
```

---

**Peak Compiler Invocation**

C benchmarks (except as noted below):

```sh
icc  -m64
```
Dell Inc.
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SPECint2006 = 36.9
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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

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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) -unroll14

- 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:

- 470.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/msmartheap -lmsmartheap

- 473.astar: basepeak = yes

- 483.xalancbmk: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias  
- -Wl,-z,muldefs -L/msmartheap -lmsmartheap

#### Peak Other Flags

- C benchmarks:
  - 403.gcc: -Dalloca=_alloca

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The flags files that were used to format this result can be browsed at:


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


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