# SPEC® CINT2006 Result

## Dell Inc.

PowerEdge T620 (Intel Xeon E5-2609, 2.40 GHz)

| SPECint<sup>®</sup>2006 = | 35.9 |
| SPECint<sub>base2006</sub> = | 34.2 |

### CPU2006 license: 55

Test date: Feb-2012

Test sponsor: Dell Inc.

Hardware Availability: Mar-2012

Tested by: Dell Inc.

Software Availability: Feb-2012

### CPU Name:

Intel Xeon E5-2609

### CPU Characteristics:

- CPU MHz: 2400
- FPU: Integrated
- CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
- 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: 10 MB I+D on chip per chip
- Other Cache: None
- Memory: 128 GB (16 x 8 GB 2Rx4 PC3-12800R-11, ECC, running at 1066 MHz)
- Disk Subsystem: 1 x 250 GB 7200 RPM SATA
- Other Hardware: None

### Operating System:

SUSE Linux Enterprise Server 11 SP2 (x86_64)

3.0.13-0.9-default

### Compiler:

C/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
Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>188</td>
<td>36.8</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
C States/C1E set to Enabled
Sysinfo program /root/CPU2006-1.2/config/sysinfo.rev6800
$Rev: 6800 $ $Date:: 2011-10-11 #$ 6f2ebdff5032aaa42e583f96b07f99d3
running on SUT Tue Feb 14 00:57:57 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 E5-2609 0 @ 2.40GHz
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 : 4
siblings : 4
physical 0: cores 0 1 2 3
physical 1: cores 0 1 2 3

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Platform Notes (Continued)

    cache size : 10240 KB

    From /proc/meminfo
    MemTotal: 132089856 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 SUT 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 14 00:57 last=S

    SPEC is set to: /root/CPU2006-1.2

    Filesystem Type Size Used Avail Use% Mounted on
    /dev/sda1 ext3 226G 69G 146G 32% /

    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 = 8"

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

Base Compiler Invocation

C benchmarks:
    icc -m64

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Base Compiler Invocation (Continued)

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

400.perlbench: icc -m32
445.gobmk: icc -m32

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Peak Compiler Invocation (Continued)

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

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

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Peak Optimization Flags (Continued)

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) -unroll2
            -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.xalanchbmk: -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 other inquiries, please contact webmaster@spec.org.

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