SPEC® CINT2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge T110 (Intel Xeon X3440, 2.53 GHz)

SPECint®2006 = 27.8

SPECint_base2006 = 23.9
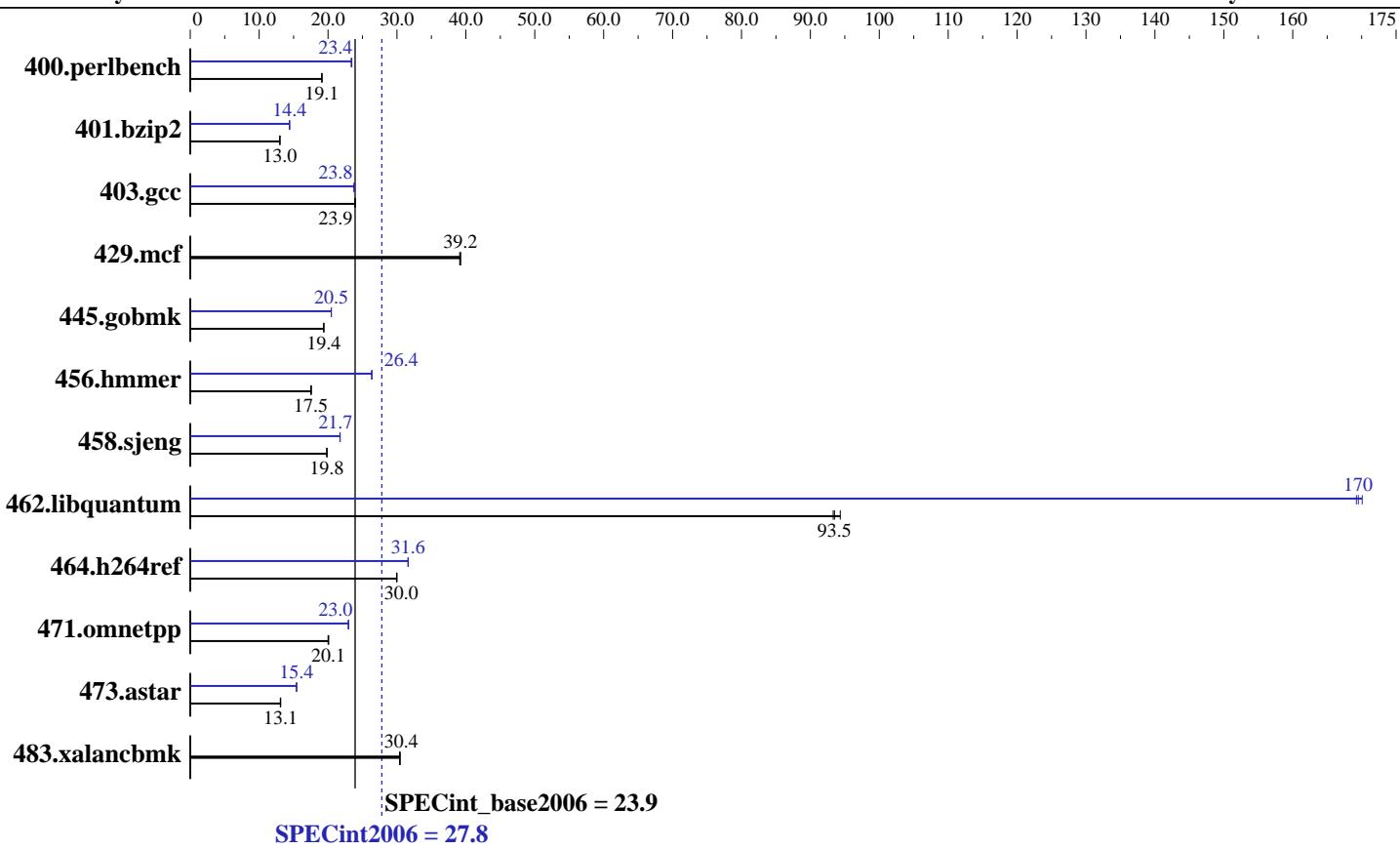
CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

Test date: Oct-2009
Hardware Availability: Aug-2009
Software Availability: Jul-2009

Benchmark	base	peak
400.perlbench	19.1	23.4
401.bzip2	13.0	14.4
403.gcc	23.9	23.8
429.mcf	39.2	
445.gobmk	19.4	20.5
456.hmmer	17.5	26.4
458.sjeng	19.8	21.7
462.libquantum	93.5	170
464.h264ref	30.0	31.6
471.omnetpp	20.1	23.0
473.astar	13.1	15.4
483.xalancbmk	30.4	

SPECint_base2006 = 23.9
SPECint2006 = 27.8

Hardware

CPU Name: Intel Xeon X3440
CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz
CPU MHz: 2533
FPU: Integrated
CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core
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: 8 MB I+D on chip per chip
Other Cache: None
Memory: 8 GB (4 x 2 GB DDR3-1333 DR UDIMM)
Disk Subsystem: 1 x 160 GB 7200 RPM SATA
Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 5.3, Kernel 2.6.18-128.el5
Compiler: Intel C++ Compiler Professional Edition 11.1 for Linux
Build 20090511 Package ID: l_cproc_p_11.1.040
Auto Parallel: Yes
File System: ReiserFS
System State: Run level 3 (multi-user)
Base Pointers: 32-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V8.1
Binutils 2.18.50.0.7.20080502

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Results Table

Benchmark	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**511**	**19.1**	512	19.1	511	19.1	**417**	**23.4**	417	23.4	418	23.3
401.bzip2	742	13.0	**742**	**13.0**	742	13.0	669	14.4	**669**	**14.4**	671	14.4
403.gcc	336	24.0	**337**	**23.9**	337	23.9	339	23.8	338	23.8	**338**	**23.8**
429.mcf	**233**	**39.2**	233	39.2	233	39.1	**233**	**39.2**	233	39.2	233	39.1
445.gobmk	541	19.4	542	19.4	**541**	**19.4**	**513**	**20.5**	513	20.5	512	20.5
456.hmmer	**532**	**17.5**	531	17.6	532	17.5	354	26.4	**354**	**26.4**	354	26.4
458.sjeng	611	19.8	**610**	**19.8**	610	19.8	557	21.7	**556**	**21.7**	556	21.8
462.libquantum	220	94.3	222	93.3	**222**	**93.5**	**122**	**170**	122	169	122	170
464.h264ref	**738**	**30.0**	739	29.9	738	30.0	700	31.6	**700**	**31.6**	700	31.6
471.omnetpp	**311**	**20.1**	311	20.1	312	20.0	272	23.0	272	22.9	**272**	**23.0**
473.astar	535	13.1	**535**	**13.1**	537	13.1	456	15.4	**455**	**15.4**	455	15.4
483.xalancbmk	226	30.5	227	30.4	**227**	**30.4**	226	30.5	227	30.4	**227**	**30.4**

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

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

Platform Notes

```
BIOS Settings:
Power Management = Maximum Performance (Default = Active Power Controller)
```

General Notes

```
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
The Dell PowerEdge T110 and the Bull NovaScale T810 F2 models are electronically equivalent.
This result was measured on a Dell PowerEdge T110.
```

Base Compiler Invocation

C benchmarks:
```
icc -m32
```

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Base Compiler Invocation (Continued)

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 -static -opt-prefetch -inline-calloc
    -opt-malloc-options=3

C++ benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
    -L/spec/cpu2006.1.1/lib -lsmartheap

Base Other Flags

C benchmarks:

    403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
    icc -m32

    401.bzip2: icc -m64

    456.hmmer: icc -m64

    458.sjeng: icc -m64

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

    473.astar: icpc -m64

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Peak Portability Flags

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

Peak Optimization Flags

C benchmarks:

```
     400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                    -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
                    -prof-use(pass 2) -ansi-alias -opt-prefetch

         401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                    -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
                    -prof-use(pass 2) -auto-ilp32 -opt-prefetch

           403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc
                    -opt-malloc-options=3

           429.mcf: basepeak = yes

         445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2
                    -ipo -no-prec-div -ansi-alias

        456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2
                    -ansi-alias -auto-ilp32

         458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                    -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
                    -prof-use(pass 2) -unroll4 -auto-ilp32

    462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel
                    -par-runtime-control -opt-prefetch -inline-calloc
                    -opt-malloc-options=3

        464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                    -O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
                    -prof-use(pass 2) -unroll2 -ansi-alias
```

C++ benchmarks:

```
       471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                    -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                    -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
                    -L/spec/cpu2006.1.1/lib -lsmartheap
```

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Peak Optimization Flags (Continued)

```
473.astar: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
           -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
           -ansi-alias -opt-ra-region-strategy=routine -auto-ilp32
           -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap64

483.xalancbmk: basepeak = yes
```

Peak Other Flags

C benchmarks:

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

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.1-int-linux64-revA.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.1-int-linux64-revA.xml

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

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