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

Dell Inc.

PowerEdge T310 (Intel Xeon X3450, 2.66 GHz)

SPECint®2006 = 29.2

SPECint_base2006 = 25.2
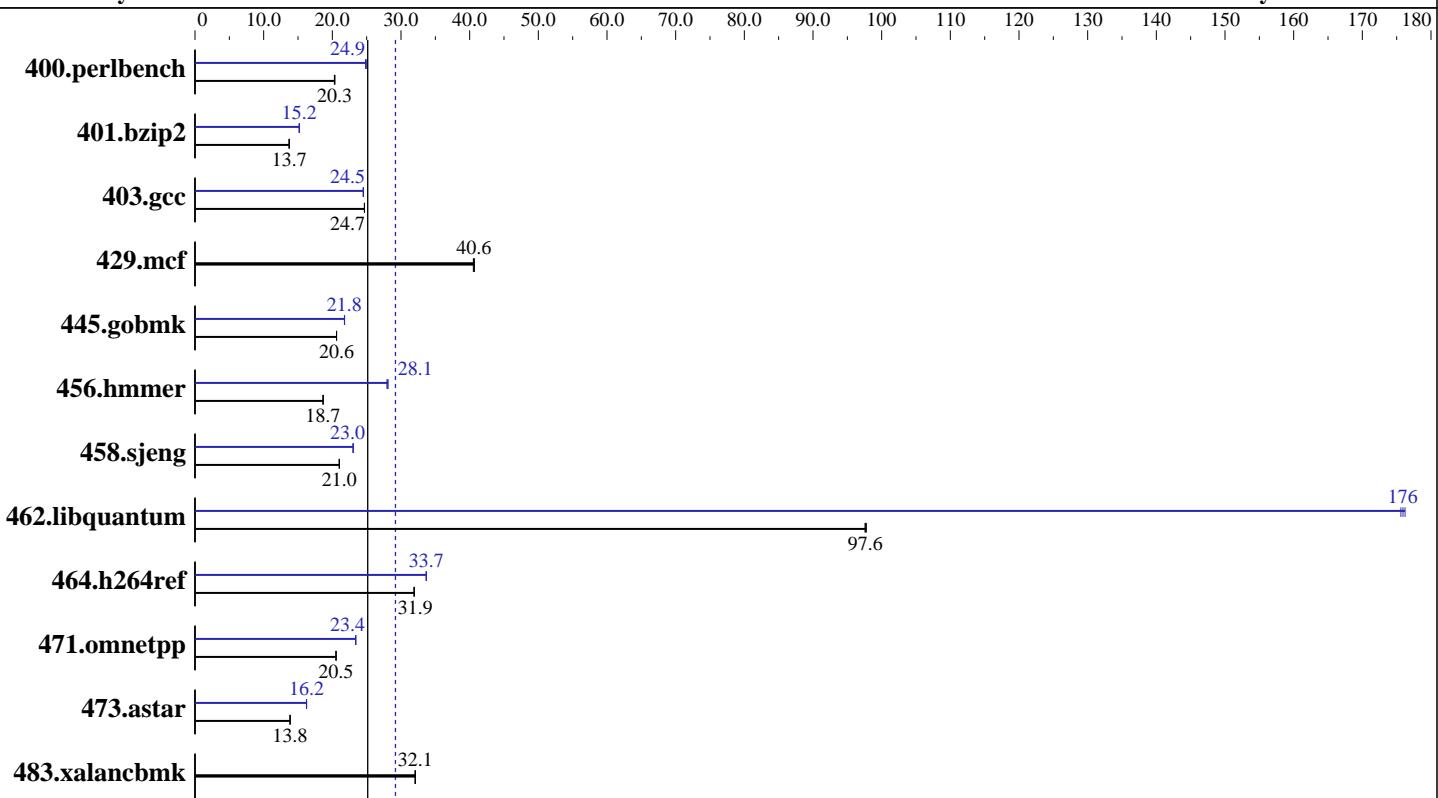
CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

Test date: Nov-2009
Hardware Availability: Sep-2009
Software Availability: Jul-2009

400.perlbench	24.9 / 20.3
401.bzip2	15.2 / 13.7
403.gcc	24.5 / 24.7
429.mcf	40.6
445.gobmk	21.8 / 20.6
456.hmmer	28.1 / 18.7
458.sjeng	23.0 / 21.0
462.libquantum	176 / 97.6
464.h264ref	33.7 / 31.9
471.omnetpp	23.4 / 20.5
473.astar	16.2 / 13.8
483.xalancbmk	32.1

SPECint_base2006 = 25.2
SPECint2006 = 29.2

Hardware

CPU Name:	Intel Xeon X3450
CPU Characteristics:	Intel Turbo Boost Technology up to 3.20 GHz
CPU MHz:	2667
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 RDIMM)
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						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	479	20.4	481	20.3	**481**	**20.3**	392	24.9	393	24.8	**393**	**24.9**
401.bzip2	703	13.7	704	13.7	**703**	**13.7**	**635**	**15.2**	635	15.2	636	15.2
403.gcc	**326**	**24.7**	326	24.7	326	24.7	**328**	**24.5**	328	24.5	329	24.5
429.mcf	**224**	**40.6**	224	40.7	225	40.5	**224**	**40.6**	224	40.7	225	40.5
445.gobmk	509	20.6	509	20.6	**509**	**20.6**	481	21.8	**482**	**21.8**	482	21.8
456.hmmer	500	18.6	**500**	**18.7**	500	18.7	**332**	**28.1**	334	28.0	332	28.1
458.sjeng	576	21.0	575	21.0	**576**	**21.0**	525	23.0	526	23.0	**525**	**23.0**
462.libquantum	**212**	**97.6**	212	97.8	212	97.6	118	176	118	176	**118**	**176**
464.h264ref	**693**	**31.9**	693	31.9	694	31.9	657	33.7	657	33.7	**657**	**33.7**
471.omnetpp	**304**	**20.5**	304	20.6	304	20.5	267	23.4	267	23.4	**267**	**23.4**
473.astar	507	13.9	**507**	**13.8**	508	13.8	433	16.2	**432**	**16.2**	432	16.3
483.xalancbmk	215	32.0	215	32.1	**215**	**32.1**	215	32.0	215	32.1	**215**	**32.1**

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 T310 and the Bull NovaScale T820 F2 models are electronically equivalent.
This result was measured on a Dell PowerEdge T310.
```

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

Tested with SPEC CPU2006 v1.1.
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