SPEC® CINT2006 Result
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Dell Inc.

PowerEdge R610 (Intel Xeon E5507, 2.26 GHz)

SPECint®2006 = 25.0

SPECint_base2006 = 23.1
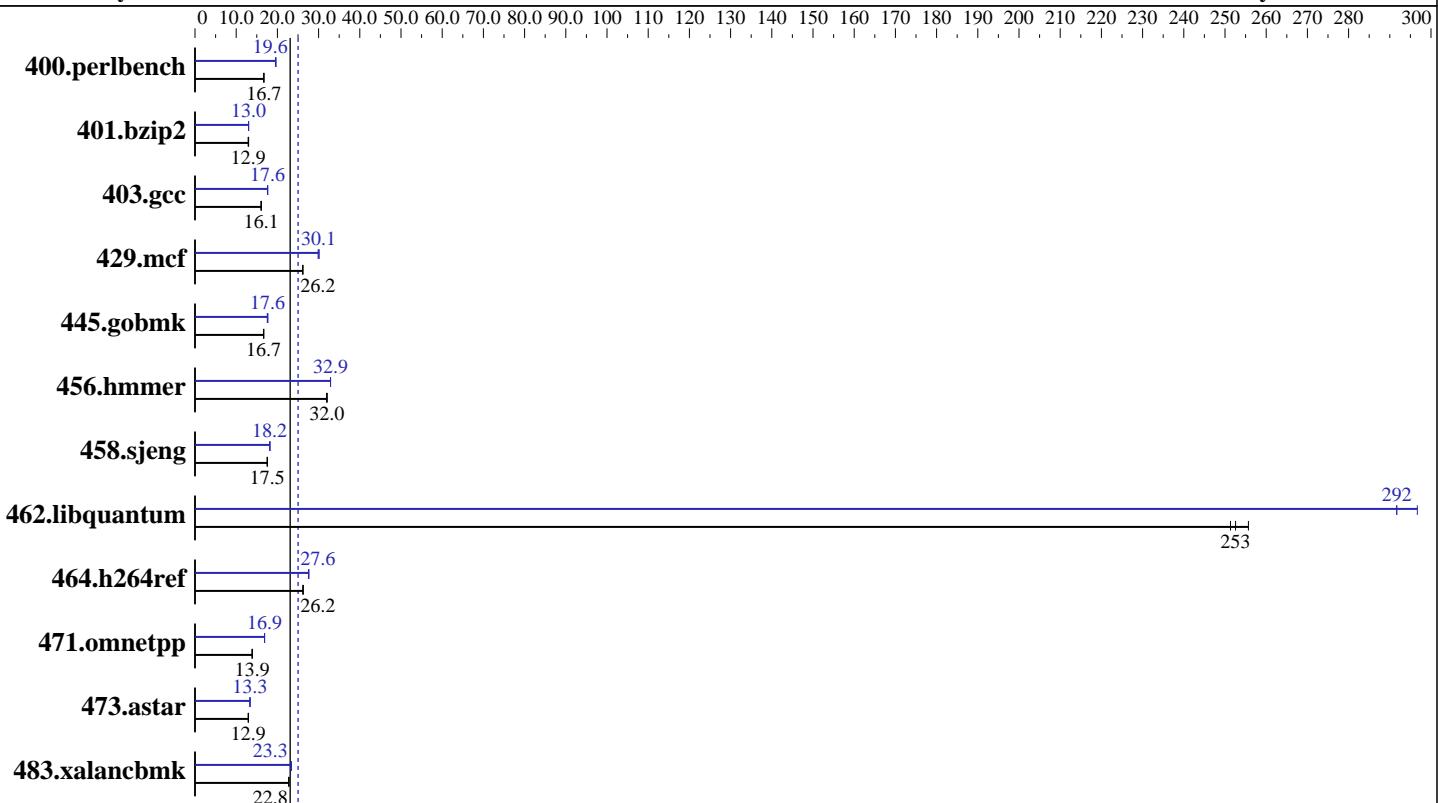
CPU2006 license: 55

Test sponsor: Dell Inc.

Tested by: Dell Inc.

Test date: Jul-2010

Hardware Availability: Mar-2010

Software Availability: Dec-2009

Benchmark	Peak	Base
400.perlbench	19.6	16.7
401.bzip2	13.0	12.9
403.gcc	17.6	16.1
429.mcf	30.1	26.2
445.gobmk	17.6	16.7
456.hmmer	32.9	32.0
458.sjeng	18.2	17.5
462.libquantum	292	253
464.h264ref	27.6	26.2
471.omnetpp	16.9	13.9
473.astar	13.3	12.9
483.xalancbmk	23.3	22.8

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Hardware

CPU Name: Intel Xeon E5507

CPU Characteristics:

CPU MHz: 2267

FPU: Integrated

CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip

CPU(s) orderable: 1,2 chips

Primary Cache: 32 KB I + 32 KB D on chip per core

Secondary Cache: 256 KB I+D on chip per core

L3 Cache: 4 MB I+D on chip per chip

Other Cache: None

Memory: 48 GB (12 x 4 GB DDR3-1333 DR RDIMM, CL9, ECC, downclocked to 800 MHz)

Disk Subsystem: 1 x 146 GB 15000 RPM SAS

Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-smp

Compiler: Intel C++ Professional Compiler for IA32 and Intel 64, Version 11.1
Build 20091130 Package ID: l_cproc_p_11.1.064

Auto Parallel: Yes

File System: ext3

System State: Run level 3 (multi-user)

Base Pointers: 64-bit

Peak Pointers: 32/64-bit

Other Software: Microquill SmartHeap V8.1

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**584**	**16.7**	584	16.7	586	16.7	500	19.5	**498**	**19.6**	497	19.6
401.bzip2	741	13.0	747	12.9	**745**	**12.9**	741	13.0	**742**	**13.0**	743	13.0
403.gcc	**501**	**16.1**	501	16.1	501	16.1	456	17.6	**456**	**17.6**	458	17.6
429.mcf	**349**	**26.2**	349	26.1	348	26.2	303	30.1	**303**	**30.1**	305	29.9
445.gobmk	**630**	**16.7**	628	16.7	631	16.6	593	17.7	598	17.5	**595**	**17.6**
456.hmmer	292	31.9	**291**	**32.0**	291	32.1	**284**	**32.9**	284	32.9	284	32.9
458.sjeng	690	17.5	688	17.6	**690**	**17.5**	666	18.2	**666**	**18.2**	666	18.2
462.libquantum	82.4	251	**82.0**	**253**	81.0	256	**71.0**	**292**	69.8	297	71.0	292
464.h264ref	845	26.2	842	26.3	**844**	**26.2**	802	27.6	801	27.6	**802**	**27.6**
471.omnetpp	**450**	**13.9**	450	13.9	450	13.9	370	16.9	370	16.9	**370**	**16.9**
473.astar	**542**	**12.9**	542	13.0	543	12.9	526	13.4	**526**	**13.3**	526	13.3
483.xalancbmk	303	22.8	303	22.8	**303**	**22.8**	295	23.4	296	23.3	**296**	**23.3**

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

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

    Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502
    OMP_NUM_THREADS set to number of cores
    KMP_AFFINITY set to granularity=fine,scatter
    The Dell PowerEdge R610 and
    the Bull NovaScale R440 F2 models are electronically equivalent.
    The results have been measured on a Dell PowerEdge R610 model.

Base Compiler Invocation

C benchmarks:
    icc -m64

C++ benchmarks:
    icpc -m64

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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:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

C++ benchmarks:
```
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
    -L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-64bit -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
```

```
       429.mcf: icc -m32
```

```
     445.gobmk: icc -m32
```

```
    464.h264ref: icc -m32
```

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

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Peak Compiler Invocation (Continued)

473.astar: `icpc -m64`

Peak Portability Flags

```
400.perlbench: -DSPEC_CPU_LINUX_IA32
   401.bzip2: -DSPEC_CPU_LP64
     403.gcc: -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: -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 -static(pass 2) -prof-use(pass 2)
              -auto-ilp32 -opt-prefetch -ansi-alias

     403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static -inline-calloc
              -opt-malloc-options=3 -auto-ilp32

     429.mcf: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

   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

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel
                -opt-prefetch -par-schedule-static=32768 -ansi-alias

  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
```

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Peak Optimization Flags (Continued)

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/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-32bit -lsmartheap`

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 -Wl,-z,muldefs`
`-L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-64bit -lsmartheap64`

483.xalancbmk: `-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch`
`-Wl,-z,muldefs`
`-L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-32bit -lsmartheap`

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-linux64-revE.20100330.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100330.xml

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