



# SPEC® CINT2006 Result

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Dell Inc.

SPECint®\_rate2006 = 239

PowerEdge T610 (Intel Xeon E5640, 2.66 GHz)

SPECint\_rate\_base2006 = 225

CPU2006 license: 55

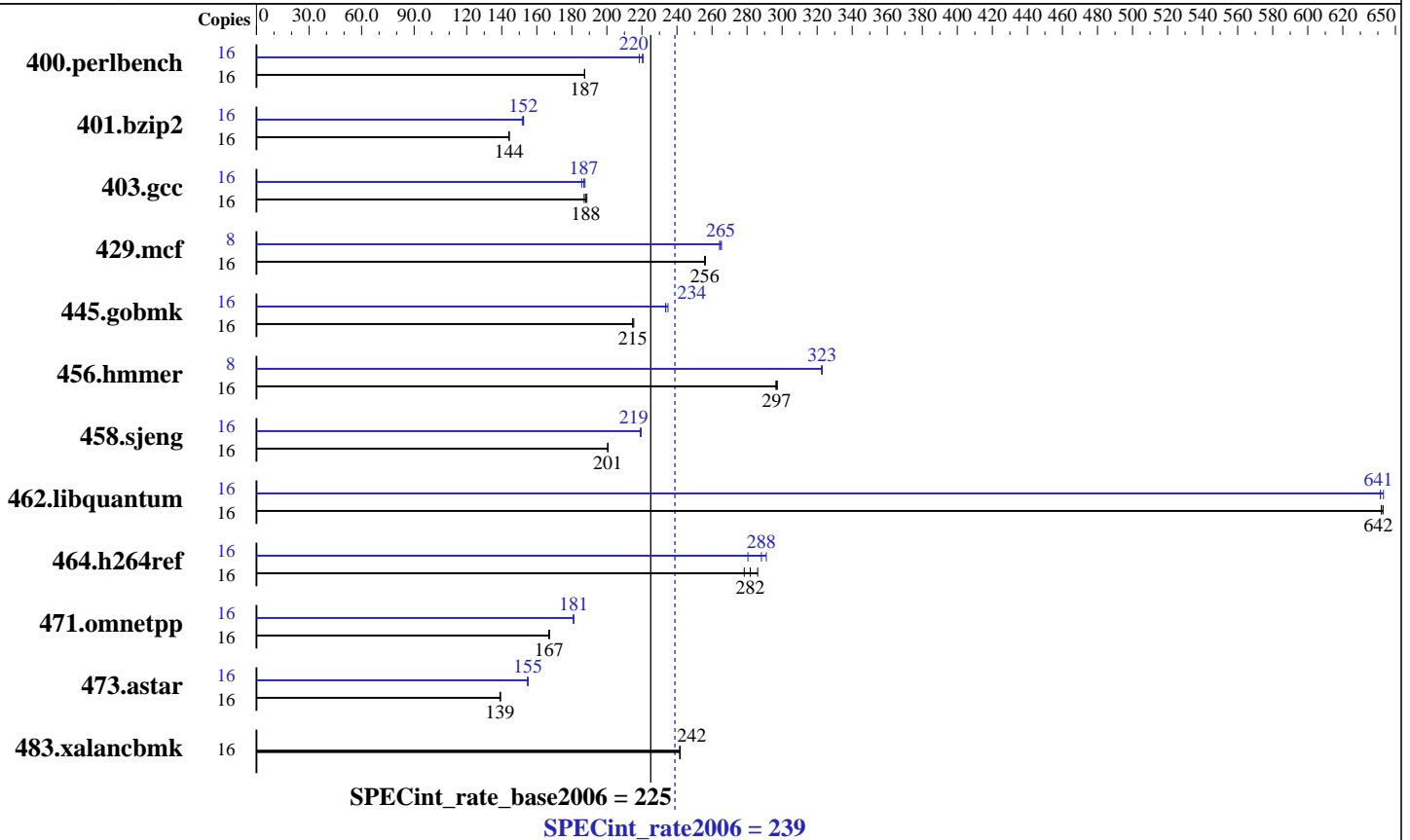
Test date: Apr-2010

Test sponsor: Dell Inc.

Hardware Availability: Mar-2010

Tested by: Dell Inc.

Software Availability: Dec-2009



## Hardware

CPU Name: Intel Xeon E5640  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz  
 CPU MHz: 2667  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core  
 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: 12 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 48 GB (12 x 4 GB DDR3-1333 DR RDIMM downclocked to 1066 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: No  
 File System: ext3  
 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   |            |            |            |            |             |            |
|----------------|--------|------------|------------|-------------|------------|-------------|------------|--------|------------|------------|------------|------------|-------------|------------|
|                | Copies | Seconds    | Ratio      | Seconds     | Ratio      | Seconds     | Ratio      | Copies | Seconds    | Ratio      | Seconds    | Ratio      | Seconds     | Ratio      |
| 400.perlbench  | 16     | 835        | 187        | 835         | 187        | <b>835</b>  | <b>187</b> | 16     | <b>710</b> | <b>220</b> | 716        | 218        | 708         | 221        |
| 401.bzip2      | 16     | 1071       | 144        | <b>1071</b> | <b>144</b> | 1070        | 144        | 16     | 1013       | 152        | 1018       | 152        | <b>1014</b> | <b>152</b> |
| 403.gcc        | 16     | 683        | 189        | <b>686</b>  | <b>188</b> | 689         | 187        | 16     | 687        | 187        | <b>689</b> | <b>187</b> | 694         | 186        |
| 429.mcf        | 16     | 570        | 256        | <b>570</b>  | <b>256</b> | 570         | 256        | 8      | 275        | 265        | 276        | 264        | <b>275</b>  | <b>265</b> |
| 445.gobmk      | 16     | 782        | 215        | <b>781</b>  | <b>215</b> | 779         | 215        | 16     | <b>718</b> | <b>234</b> | 719        | 233        | 715         | 235        |
| 456.hammer     | 16     | 504        | 296        | <b>503</b>  | <b>297</b> | 502         | 297        | 8      | 231        | 323        | 231        | 323        | <b>231</b>  | <b>323</b> |
| 458.sjeng      | 16     | 965        | 201        | <b>966</b>  | <b>201</b> | 966         | 200        | 16     | 884        | 219        | 882        | 219        | <b>882</b>  | <b>219</b> |
| 462.libquantum | 16     | <b>516</b> | <b>642</b> | 516         | 643        | 516         | 642        | 16     | 517        | 641        | <b>517</b> | <b>641</b> | 515         | 643        |
| 464.h264ref    | 16     | 1238       | 286        | 1272        | 278        | <b>1256</b> | <b>282</b> | 16     | 1262       | 280        | 1217       | 291        | <b>1229</b> | <b>288</b> |
| 471.omnetpp    | 16     | 598        | 167        | <b>599</b>  | <b>167</b> | 599         | 167        | 16     | 552        | 181        | 553        | 181        | <b>553</b>  | <b>181</b> |
| 473.astar      | 16     | 806        | 139        | 808         | 139        | <b>808</b>  | <b>139</b> | 16     | 726        | 155        | <b>725</b> | <b>155</b> | 725         | 155        |
| 483.xalancbmk  | 16     | 456        | 242        | 457         | 242        | <b>457</b>  | <b>242</b> | 16     | 456        | 242        | 457        | 242        | <b>457</b>  | <b>242</b> |

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.  
numactl was used to bind copies to the cores

## 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)  
Data Reuse = Disabled (Default = Enabled)

## General Notes

The Dell PowerEdge T610 and  
the Bull NovaScale T840 F2 models are electronically equivalent.  
The results have been measured on a Dell PowerEdge T610 model.

## 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

C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs  
-L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-32bit -lsmarheap

## 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

462.libquantum: 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_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

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) -opt-prefetch -ansi-alias -auto-ilp32

403.gcc: -xSSE4.2 -ipo -O3 -no-prec-div -static

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 -auto-ilp32

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32
                -opt-prefetch

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/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-32bit -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 -Wl,-z,muldefs
           -L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-64bit -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-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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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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