



# SPEC® CINT2006 Result

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Dell Inc.

**SPECint®\_rate2006 = 128**

PowerEdge M600 (Intel Xeon X5460, 3.16 GHz)

**SPECint\_rate\_base2006 = 114**

CPU2006 license: 55

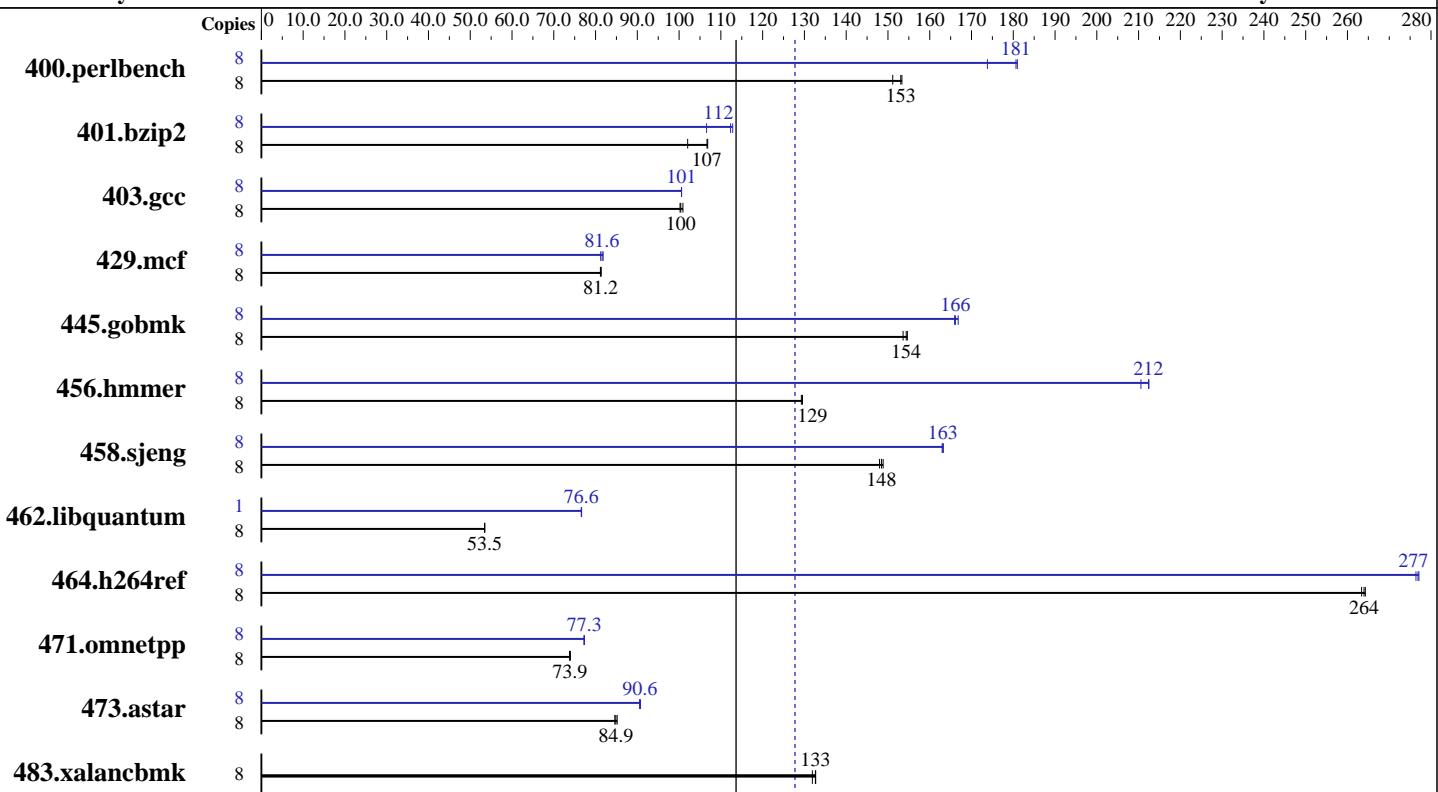
**Test date:** Dec-2007

**Test sponsor:** Dell Inc.

**Hardware Availability:** Jan-2008

**Tested by:** Dell Inc.

**Software Availability:** Nov-2007



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## Hardware

CPU Name: Intel Xeon X5460  
CPU Characteristics: 1333 MHz system bus  
CPU MHz: 3166  
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: 12 MB I+D on chip per chip, 6 MB shared / 2 cores  
L3 Cache: None  
Other Cache: None  
Memory: 16 GB (8x2 GB DDR2-667 ECC CL5 FB-DIMM)  
Disk Subsystem: 1 x 80 GB 7.2k SATA  
Other Hardware: PowerEdge M1000e blade chassis

## Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP1, Kernel 2.6.16.46-0.12-smp  
Compiler: Intel C++ Compiler for Linux32 and Linux64 version 10.1 Build 20070725  
Auto Parallel: Yes  
File System: ReiserFS  
System State: Multi-user, run level 3  
Base Pointers: 32-bit  
Peak Pointers: 32/64-bit  
Other Software: SmartHeap library V8.1



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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	8	510	153	517	151	<b>511</b>	<b>153</b>	8	450	174	432	181	<b>433</b>	<b>181</b>
401.bzip2	8	756	102	<b>724</b>	<b>107</b>	723	107	8	724	107	<b>687</b>	<b>112</b>	684	113
403.gcc	8	638	101	643	100	<b>641</b>	<b>100</b>	8	640	101	<b>640</b>	<b>101</b>	640	101
429.mcf	8	897	81.3	899	81.2	<b>898</b>	<b>81.2</b>	8	<b>894</b>	<b>81.6</b>	892	81.8	898	81.2
445.gobmk	8	543	155	546	154	<b>544</b>	<b>154</b>	8	<b>505</b>	<b>166</b>	506	166	503	167
456.hammer	8	<b>576</b>	<b>129</b>	576	130	577	129	8	354	211	351	212	<b>351</b>	<b>212</b>
458.sjeng	8	650	149	654	148	<b>652</b>	<b>148</b>	8	<b>593</b>	<b>163</b>	594	163	593	163
462.libquantum	8	<b>3101</b>	<b>53.5</b>	3101	53.5	3101	53.4	1	270	76.7	<b>270</b>	<b>76.6</b>	271	76.6
464.h264ref	8	672	263	670	264	<b>671</b>	<b>264</b>	8	641	276	<b>639</b>	<b>277</b>	639	277
471.omnetpp	8	<b>677</b>	<b>73.9</b>	676	74.0	678	73.8	8	647	77.3	647	77.2	<b>647</b>	<b>77.3</b>
473.astar	8	<b>662</b>	<b>84.9</b>	659	85.2	664	84.6	8	<b>620</b>	<b>90.6</b>	620	90.5	619	90.8
483.xalancbmk	8	418	132	<b>416</b>	<b>133</b>	416	133	8	418	132	<b>416</b>	<b>133</b>	416	133

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

## Compiler Invocation Notes

OMP\_NUM\_THREADS set to number of cores

KMP\_STACK\_SIZE set to 64M

KMP\_AFFINITY set to physical,0

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run  
 '/usr/bin/taskset' used to bind processes to CPUs

## Platform Notes

BIOS Settings:

Adjacent Cache Line Prefetch = Disabled (default Enabled)

Hardware Prefetcher = Disabled (default Enabled)

## Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc



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## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
462.libquantum: -DSPEC\_CPU\_LINUX  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:  
-fast -inline-calloc -opt-malloc-options=3

C++ benchmarks:  
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs  
-L/spec/users/rahul/cpu2006.1.0/lib -lsmartheap

## Base Other Flags

C benchmarks:  
403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):  
icc

401.bzip2: /opt/intel/cce/10.1.008/bin/icc  
-L/opt/intel/cce/10.1.008/lib  
-I/opt/intel/cce/10.1.008/include

456.hmmr: /opt/intel/cce/10.1.008/bin/icc  
-L/opt/intel/cce/10.1.008/lib  
-I/opt/intel/cce/10.1.008/include

C++ benchmarks:  
icpc

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32  
401.bzip2: -DSPEC\_CPU\_LP64  
456.hmmr: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LINUX

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## Peak Portability Flags (Continued)

483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

```
400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -fast -ansi-alias
               -prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch

403.gcc: -fast -inline-calloc -opt-malloc-options=3

429.mcf: -fast -prefetch

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

456.hmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

462.libquantum: -fast -unroll4 -O0 -prefetch
                  -opt-streaming-stores always -vec-guard-write
                  -opt-malloc-options=3 -parallel -par-runtime-control

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
               -ansi-alias
```

C++ benchmarks:

```
471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo
               -no-prec-div -ansi-alias -opt-ra-region-strategy=block
               -Wl,-z,muldefs
               -L/spec/users/rahul/cpu2006.1.0/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo
               -no-prec-div -ansi-alias -opt-ra-region-strategy=routine
               -Wl,-z,muldefs
               -L/spec/users/rahul/cpu2006.1.0/lib -lsmartheap
```

483.xalancbmk: basepeak = yes



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## 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-ic10-ia32-intel64-linux-flags.20090714.12.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090714.12.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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