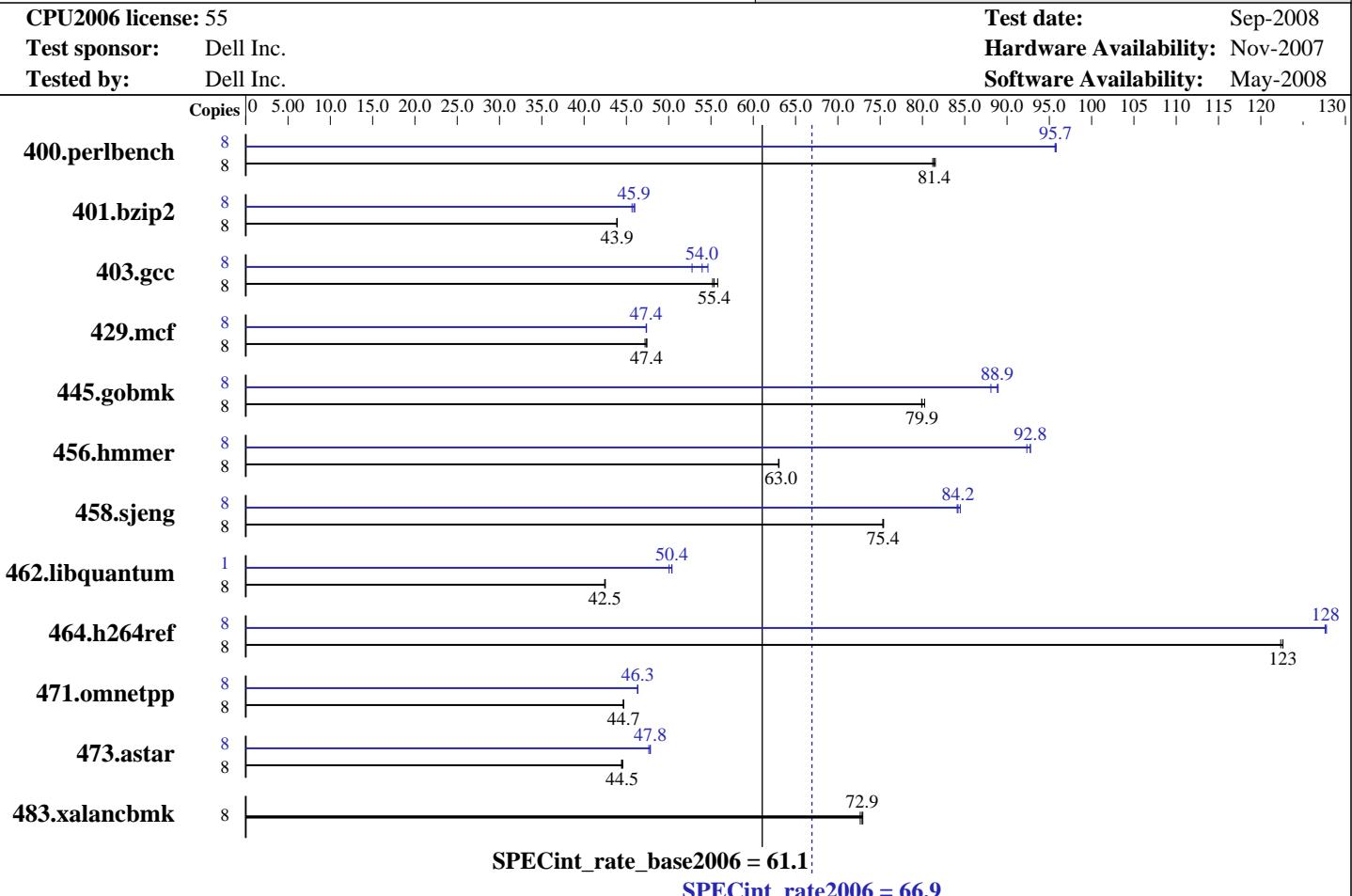# SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge R900 (Intel Xeon E7310, 1.60 GHz)

$SPECint®\_rate2006 =$ 66.9

$SPECint\_rate\_base2006 =$ 61.1

CPU2006 license: 55
Test sponsor: Dell Inc.
Tested by: Dell Inc.

Test date: Sep-2008
Hardware Availability: Nov-2007
Software Availability: May-2008

Copies			
400.perlbench	8		95.7
	8		81.4
401.bzip2	8		45.9
	8		43.9
403.gcc	8		54.0
	8		55.4
429.mcf	8		47.4
	8		47.4
445.gobmk	8		88.9
	8		79.9
456.hmmer	8		92.8
	8		63.0
458.sjeng	8		84.2
	8		75.4
462.libquantum	1		50.4
	8		42.5
464.h264ref	8		128
	8		123
471.omnetpp	8		46.3
	8		44.7
473.astar	8		47.8
	8		44.5
483.xalancbmk	8		72.9

SPECint_rate_base2006 = 61.1

SPECint_rate2006 = 66.9

Hardware

CPU Name:	Intel Xeon E7310
CPU Characteristics:	
CPU MHz:	1600
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	2,4 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	4 MB I+D on chip per chip, 2 MB shared / 2 cores
L3 Cache:	None
Other Cache:	None
Memory:	16 GB (16 x 1 GB 667 MHz ECC CL5 FB-DIMM)
Disk Subsystem:	2 x 300 GB 10000 RPM SAS (RAID-0)
Other Hardware:	None

Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP2, Kernel 2.6.16-60.0.21-smp
Compiler:	Intel C++ Compiler 10.1 for Linux Build 20080312 Package ID: l_cc_p_10.1.015
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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	959	81.5	962	81.2	**960**	**81.4**	8	816	95.8	**816**	**95.7**	817	95.7
401.bzip2	8	**1758**	**43.9**	1760	43.9	1758	43.9	8	**1682**	**45.9**	1691	45.7	1679	46.0
403.gcc	8	**1163**	**55.4**	1154	55.8	1167	55.2	8	**1194**	**54.0**	1221	52.8	1179	54.6
429.mcf	8	1539	47.4	**1540**	**47.4**	1546	47.2	8	1540	47.4	**1541**	**47.4**	1541	47.3
445.gobmk	8	1050	79.9	**1050**	**79.9**	1046	80.3	8	943	89.0	**944**	**88.9**	953	88.1
456.hmmer	8	1185	63.0	1184	63.0	**1184**	**63.0**	8	805	92.8	**805**	**92.8**	808	92.3
458.sjeng	8	1284	75.4	1285	75.3	**1284**	**75.4**	8	**1150**	**84.2**	1146	84.5	1151	84.1
462.libquantum	8	3899	42.5	3906	42.4	**3903**	**42.5**	1	411	50.4	414	50.1	**411**	**50.4**
464.h264ref	8	1444	123	1447	122	**1444**	**123**	8	**1387**	**128**	1386	128	1387	128
471.omnetpp	8	**1119**	**44.7**	1121	44.6	1119	44.7	8	1079	46.4	1079	46.3	**1079**	**46.3**
473.astar	8	1264	44.4	1260	44.6	**1262**	**44.5**	8	1179	47.6	1174	47.8	**1174**	**47.8**
483.xalancbmk	8	757	72.9	760	72.6	**758**	**72.9**	8	757	72.9	760	72.6	**758**	**72.9**

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 stack size to unlimited prior to run

Platform Notes

```
BIOS Settings:
Adjacent Cache Line Prefetch = Disabled (default Enabled)
Hardware Prefetcher = Disabled (default Enabled)
```

General Notes

```
All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode
taskset was used to bind processes to cores except
for 462.libquantum peak
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M
```

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Base Compiler Invocation

C benchmarks:
    icc

C++ benchmarks:
    icpc

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/cpu2006.1.1/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/10.1.015/bin/icc
        -L/opt/intel/cce/10.1.015/lib
        -I/opt/intel/cce/10.1.015/include

    456.hmmer: /opt/intel/cce/10.1.015/bin/icc
        -L/opt/intel/cce/10.1.015/lib
        -I/opt/intel/cce/10.1.015/include

C++ benchmarks:
    icpc

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CPU2006 license: 55	**Test date:** Sep-2008
Test sponsor: Dell Inc.	**Hardware Availability:** Nov-2007
Tested by: Dell Inc.	**Software Availability:** May-2008

Peak Portability Flags

```
400.perlbench: -DSPEC_CPU_LINUX_IA32
    401.bzip2: -DSPEC_CPU_LP64
   456.hmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
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 -Ob0 -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/cpu2006.1.1/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/cpu2006.1.1/lib -lsmartheap

 483.xalancbmk: basepeak = yes
```

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Peak Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic10.1-int-linux64-revD.html
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.07.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic10.1-int-linux64-revD.xml
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090713.07.xml

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

Tested with SPEC CPU2006 v1.1.
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