SPEC® CINT2006 Result

IBM Corporation

IBM BladeCenter HS21 (Intel Xeon E5430)

$SPECint®2006 =$ 24.1
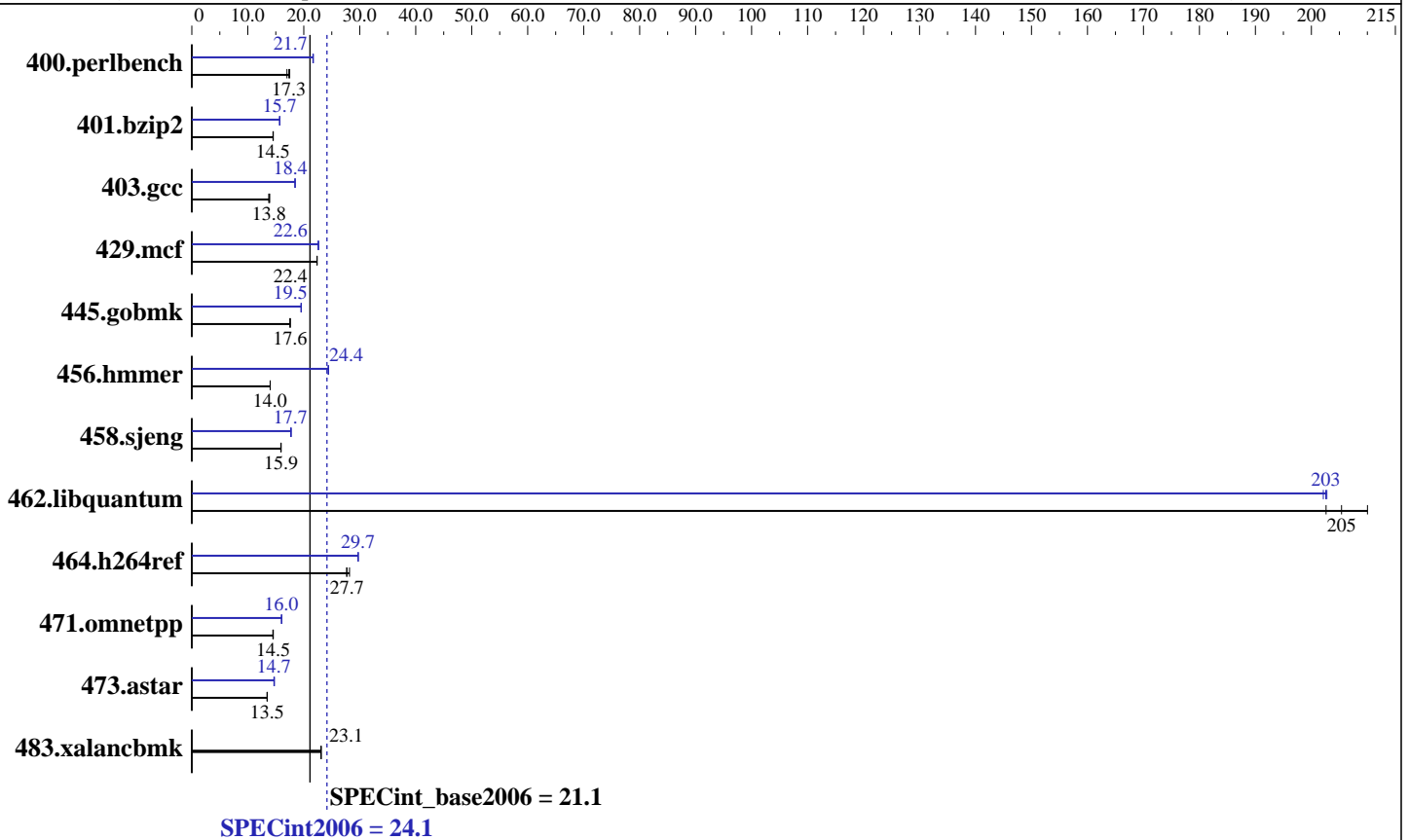
$SPECint\_base2006 =$ 21.1

CPU2006 license: 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation

Test date: Dec-2007
Hardware Availability: Jan-2008
Software Availability: Nov-2007

	Result
400.perlbench	21.7 / 17.3
401.bzip2	15.7 / 14.5
403.gcc	18.4 / 13.8
429.mcf	22.6 / 22.4
445.gobmk	19.5 / 17.6
456.hmmer	24.4 / 14.0
458.sjeng	17.7 / 15.9
462.libquantum	203 / 205
464.h264ref	29.7 / 27.7
471.omnetpp	16.0 / 14.5
473.astar	14.7 / 13.5
483.xalancbmk	23.1

SPECint_base2006 = 21.1

SPECint2006 = 24.1

Hardware

CPU Name:	Intel Xeon E5430
CPU Characteristics:	1333MHz system bus
CPU MHz:	2666
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 (8 x 2 GB DDR2-5300F ECC)
Disk Subsystem:	1 x 36 GB SAS, 10000 RPM
Other Hardware:	None

Software

Operating System:	SuSE Linux Enterprise Server 10 (x86_64), Kernel 2.6.16.21-0.8-smp
Compiler:	Intel C++ Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Multi-user, run level 3
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill SmartHeap 8.1 Binutils 2.17.50.0.15

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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**564**	**17.3**	575	17.0	559	17.5	452	21.6	**450**	**21.7**	450	21.7
401.bzip2	663	14.6	**665**	**14.5**	665	14.5	**615**	**15.7**	614	15.7	615	15.7
403.gcc	578	13.9	585	13.8	**584**	**13.8**	436	18.5	437	18.4	**436**	**18.4**
429.mcf	407	22.4	408	22.4	**408**	**22.4**	**403**	**22.6**	404	22.6	403	22.6
445.gobmk	597	17.6	598	17.6	**597**	**17.6**	537	19.5	**537**	**19.5**	537	19.5
456.hmmer	666	14.0	**666**	**14.0**	667	14.0	382	24.4	383	24.4	**383**	**24.4**
458.sjeng	761	15.9	**759**	**15.9**	759	16.0	685	17.7	**684**	**17.7**	681	17.8
462.libquantum	102	203	**101**	**205**	98.7	210	**102**	**203**	102	203	103	202
464.h264ref	**799**	**27.7**	786	28.2	800	27.7	745	29.7	**745**	**29.7**	744	29.7
471.omnetpp	**430**	**14.5**	430	14.5	432	14.5	**390**	**16.0**	390	16.0	389	16.1
473.astar	**522**	**13.5**	521	13.5	522	13.5	479	14.7	475	14.8	**478**	**14.7**
483.xalancbmk	**299**	**23.1**	299	23.1	299	23.1	**299**	**23.1**	299	23.1	299	23.1

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

General Notes

```
All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode
Hardware Sector Prefetch Enabled and Adjacent Sector Prefetch Enabled
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to null
```

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
```

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Base Optimization Flags

C benchmarks:
```
-fast -vec-guard-write -parallel -par-runtime-control
```

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.hmmer: /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.hmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

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Peak Optimization Flags (Continued)

```
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
               -auto-ilp32

      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
               -auto-ilp32

    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/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
```

Peak Other Flags

C benchmarks:

```
      403.gcc: -Dalloca=_alloca
```

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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.20090714.14.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.20090714.14.xml

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

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