SPEC® CINT2006 Result
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IBM Corporation

IBM BladeCenter HS22V (Intel Xeon L5640)

$SPECint®2006 =$ 32.8
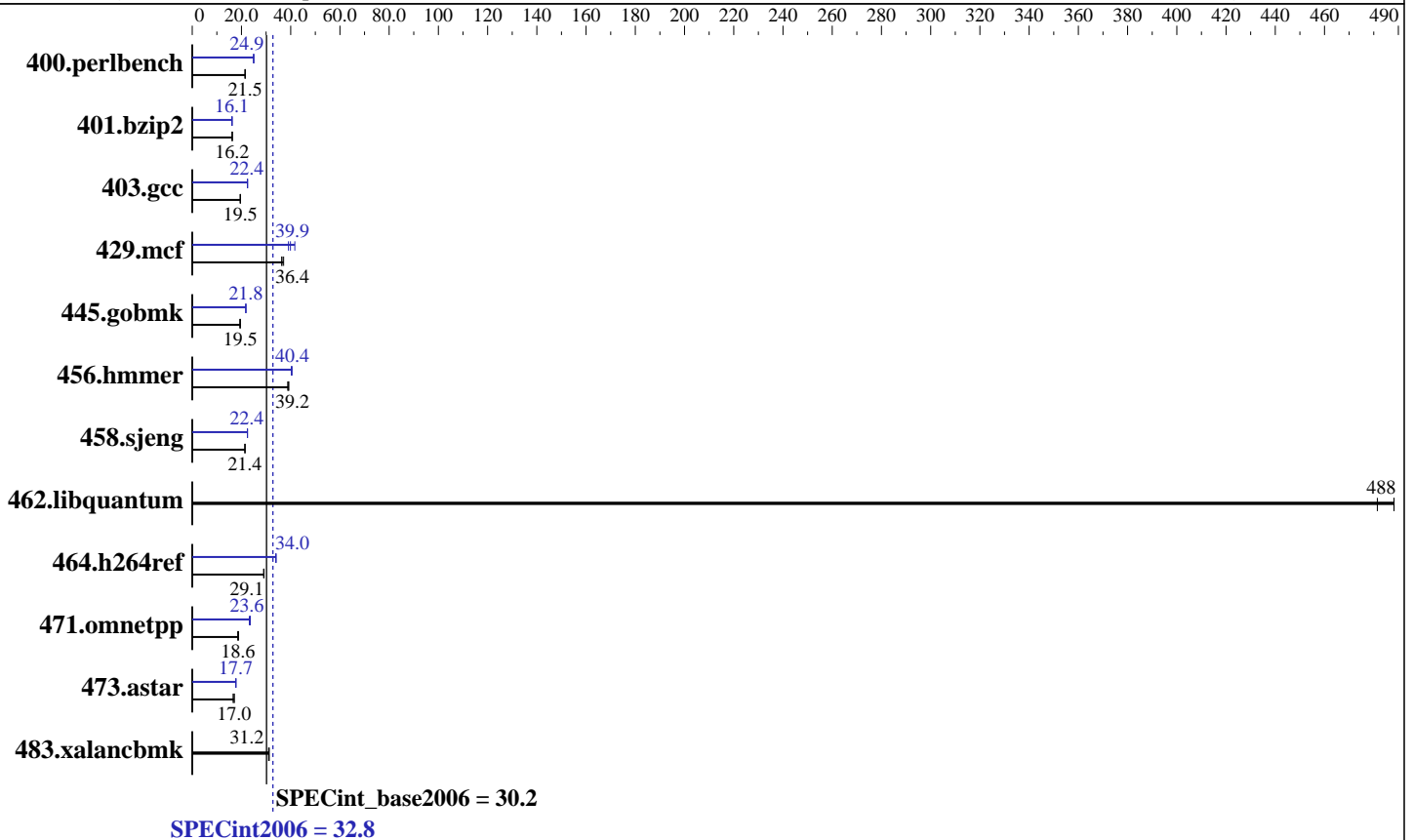
$SPECint\_base2006 =$ 30.2

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

Test date: Apr-2010
Hardware Availability: Mar-2010
Software Availability: Jan-2010

Benchmark	Peak	Base
400.perlbench	24.9	21.5
401.bzip2	16.1	16.2
403.gcc	22.4	19.5
429.mcf	39.9	36.4
445.gobmk	21.8	19.5
456.hmmer	40.4	39.2
458.sjeng	22.4	21.4
462.libquantum		488
464.h264ref	34.0	29.1
471.omnetpp	23.6	18.6
473.astar	17.7	17.0
483.xalancbmk		31.2

SPECint_base2006 = 30.2
SPECint2006 = 32.8

Hardware

CPU Name:	Intel Xeon L5640
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2267
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 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:	24 GB (12 x 2 GB PC3-10600R)
Disk Subsystem:	2 x 50 GB SATA, SSD
Other Hardware:	None

Software

Operating System:	SuSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-default
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:	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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**455**	**21.5**	453	21.5	456	21.4	392	24.9	**392**	**24.9**	390	25.0
401.bzip2	594	16.2	594	16.3	**594**	**16.2**	593	16.3	601	16.1	**598**	**16.1**
403.gcc	**412**	**19.5**	413	19.5	411	19.6	**359**	**22.4**	359	22.4	357	22.5
429.mcf	251	36.4	246	37.1	**250**	**36.4**	233	39.1	**229**	**39.9**	219	41.7
445.gobmk	**537**	**19.5**	542	19.3	537	19.5	**482**	**21.8**	481	21.8	482	21.8
456.hmmer	238	39.2	241	38.8	**238**	**39.2**	**231**	**40.4**	232	40.2	230	40.5
458.sjeng	**565**	**21.4**	564	21.4	565	21.4	540	22.4	539	22.5	**540**	**22.4**
462.libquantum	43.0	481	42.4	488	**42.4**	**488**	43.0	481	42.4	488	**42.4**	**488**
464.h264ref	**760**	**29.1**	759	29.2	763	29.0	651	34.0	651	34.0	**651**	**34.0**
471.omnetpp	**336**	**18.6**	338	18.5	332	18.8	265	23.6	**265**	**23.6**	270	23.2
473.astar	412	17.0	**412**	**17.0**	423	16.6	396	17.7	**396**	**17.7**	396	17.7
483.xalancbmk	221	31.3	222	31.0	**221**	**31.2**	221	31.3	222	31.0	**221**	**31.2**

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

Platform Notes

```
   Turbo Mode enabled
   Turbo Boost set to Traditional
   Power C-states enabled
   Demand Scrub disabled
```

General Notes

```
   'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
   OMP_NUM_THREADS set to number of cores
   KMP_AFFINITY set to granularity=fine,scatter
```

Base Compiler Invocation

C benchmarks:
```
     icc -m64
```

C++ benchmarks:
```
     icpc -m64
```

Base Portability Flags

```
     400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
```

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Base Portability Flags (Continued)

```
    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 -m64
```

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Peak Compiler Invocation (Continued)

    471.omnetpp: `icpc -m32`

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_LP64 -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: `basepeak = yes`

    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: `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.20100330.03.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.20100330.03.xml

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

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