SPEC® CINT2006 Result
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IBM Corporation

IBM BladeCenter HS22 (Intel Xeon L5520)

$SPECint®2006 =$ 26.5
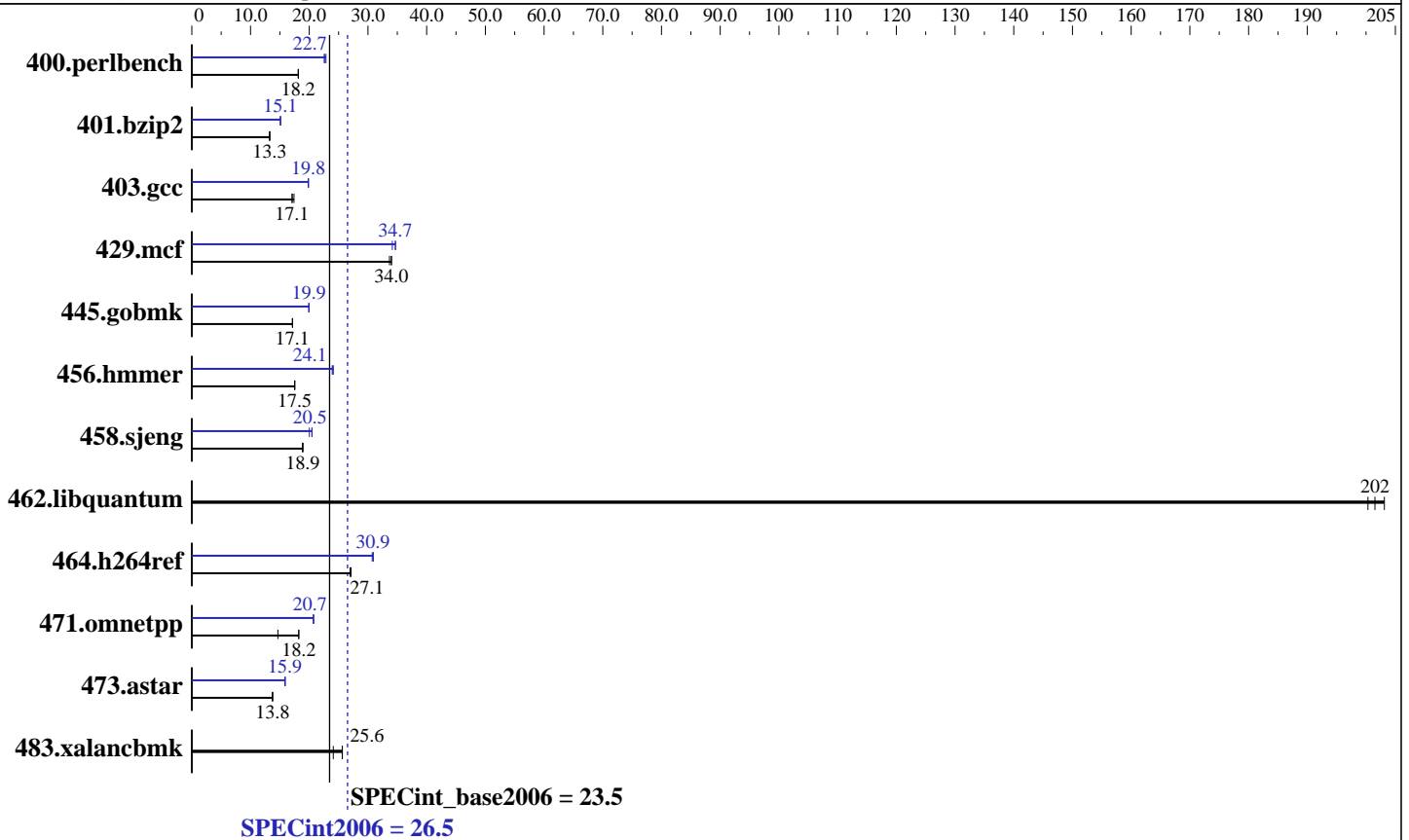
$SPECint\_base2006 =$ 23.5

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

Test date: Jun-2009
Hardware Availability: Apr-2009
Software Availability: Feb-2009

Benchmark	Peak	Base
400.perlbench	22.7	18.2
401.bzip2	15.1	13.3
403.gcc	19.8	17.1
429.mcf	34.7	34.0
445.gobmk	19.9	17.1
456.hmmer	24.1	17.5
458.sjeng	20.5	18.9
462.libquantum		202
464.h264ref	30.9	27.1
471.omnetpp	20.7	18.2
473.astar	15.9	13.8
483.xalancbmk		25.6

SPECint_base2006 = 23.5
SPECint2006 = 26.5

Hardware

CPU Name:	Intel Xeon L5520
CPU Characteristics:	Intel Turbo Boost Technology up to 2.53 GHz
CPU MHz:	2267
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:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	24 GB (12 x 2 GB PC3-10600R, 2 Rank, running at 1066 MHz)
Disk Subsystem:	1 x 73 GB SAS, 10000 RPM
Other Hardware:	None

Software

Operating System:	SuSE Linux Enterprise Server 10 (x86_64) SP2 with patch Linux kernel 20090119, Kernel 2.6.16.60-0.34-smp
Compiler:	Intel C++ Compiler Professional 11.0 for Linux Build 20090131 Package ID: l_cproc_p_11.0.080
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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	539	18.1	**538**	**18.2**	538	18.2	**431**	**22.7**	428	22.9	433	22.5
401.bzip2	727	13.3	728	13.2	**728**	**13.3**	639	15.1	**639**	**15.1**	639	15.1
403.gcc	463	17.4	**471**	**17.1**	471	17.1	**406**	**19.8**	405	19.9	406	19.8
429.mcf	271	33.7	**268**	**34.0**	268	34.0	267	34.1	**263**	**34.7**	263	34.7
445.gobmk	612	17.2	**612**	**17.1**	612	17.1	**526**	**19.9**	526	19.9	526	20.0
456.hmmer	**532**	**17.5**	532	17.5	532	17.5	390	23.9	388	24.1	**388**	**24.1**
458.sjeng	640	18.9	**640**	**18.9**	642	18.9	605	20.0	591	20.5	**592**	**20.5**
462.libquantum	102	203	103	200	**103**	**202**	102	203	103	200	**103**	**202**
464.h264ref	821	27.0	**817**	**27.1**	816	27.1	716	30.9	**717**	**30.9**	720	30.7
471.omnetpp	343	18.2	**343**	**18.2**	426	14.7	302	20.7	**302**	**20.7**	302	20.7
473.astar	**510**	**13.8**	510	13.8	511	13.7	441	15.9	**442**	**15.9**	442	15.9
483.xalancbmk	286	24.1	269	25.6	**269**	**25.6**	286	24.1	269	25.6	**269**	**25.6**

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

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
Processor CPU C-States Enabled
```

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:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel
-par-runtime-control -opt-prefetch
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -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/Compiler/11.0/080/bin/intel64/icc`

> 456.hmmer: `/opt/intel/Compiler/11.0/080/bin/intel64/icc`

> 458.sjeng: `/opt/intel/Compiler/11.0/080/bin/intel64/icc`

C++ benchmarks (except as noted below):
```
icpc
```

> 473.astar: `/opt/intel/Compiler/11.0/080/bin/intel64/icpc`

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_LINUX`
473.astar: `-DSPEC_CPU_LP64`
483.xalancbmk: `-DSPEC_CPU_LINUX`

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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(pass 2) -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

    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: 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

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/spec/cpu2006.1.1/lib -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 -auto-ilp32
                -Wl,-z,muldefs -L/spec/cpu2006.1.1/lib -lsmartheap64

    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-ic11.0-int-linux64-revA.html`

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

`http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revA.xml`

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