SPEC® CINT2006 Result
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IBM Corporation

IBM System x3850 X5 (Intel Xeon E7-8837)

SPECint®_rate2006 = 793

SPECint_rate_base2006 = 745

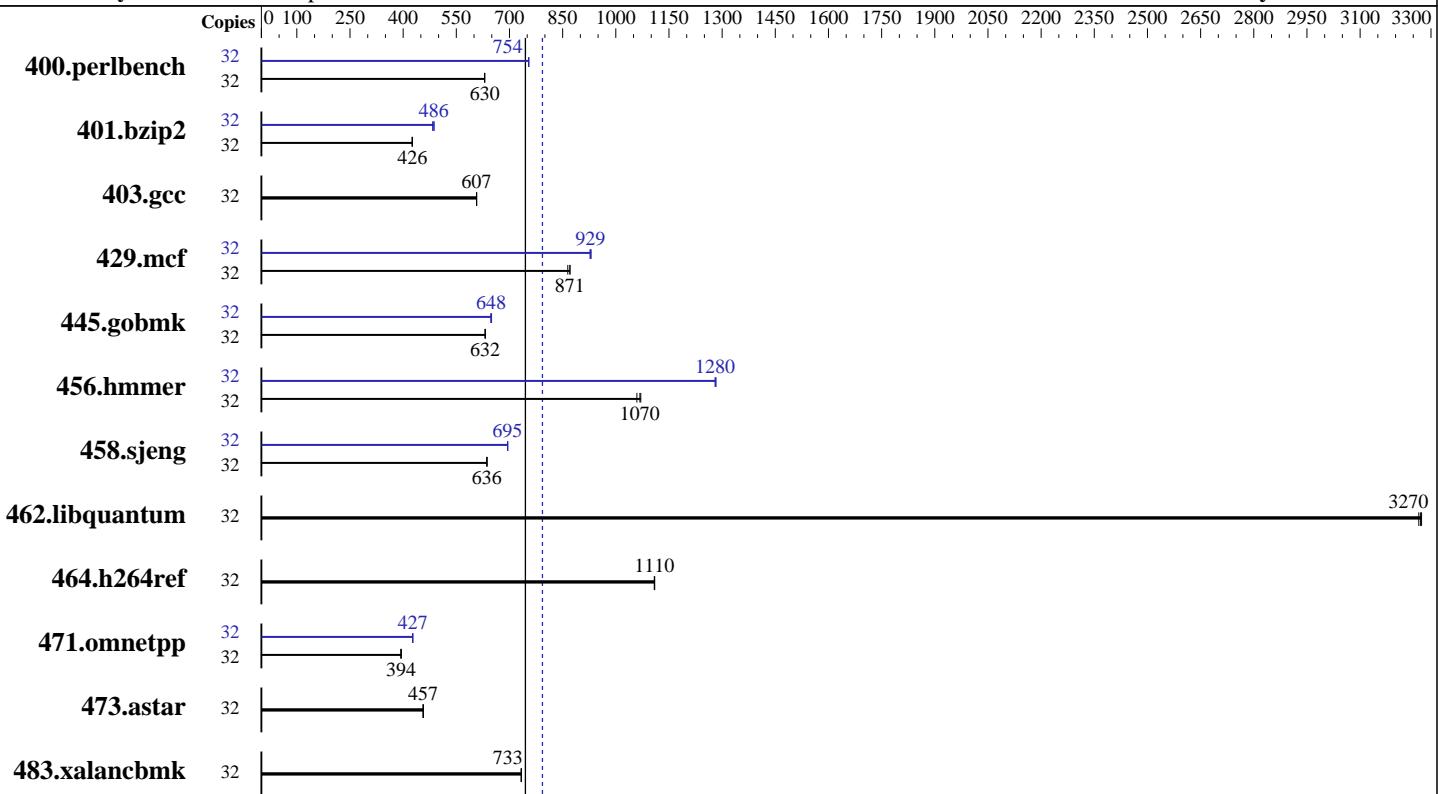**CPU2006 license:** 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation

Test date: Apr-2011
Hardware Availability: May-2011
Software Availability: Jan-2011

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	Hardware	
CPU Name:	Intel Xeon E7-8837	
CPU Characteristics:	Intel Turbo Boost Technology up to 2.8 GHz	
CPU MHz:	2667	
FPU:	Integrated	
CPU(s) enabled:	32 cores, 4 chips, 8 cores/chip	
CPU(s) orderable:	1,2,3,4 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:	24 MB I+D on chip per chip	
Other Cache:	None	
Memory:	512 GB (64 x 8 GB 4Rx8 PC3-8500R-7, ECC)	
Disk Subsystem:	2 x 147 GB 15k RPM SAS, RAID 0	
Other Hardware:	None	

Software

Operating System:	SUSE Linux Enterprise Server 11 SP1 (x86_64), Kernel 2.6.32.12-0.7-default
Compiler:	Intel C++ Compiler XE for applications running on IA-32 Version 12.0.1.116 Build 20101116
Auto Parallel:	No
File System:	ext3
System State:	Run level 3 (multi-user)
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	Microquill SmartHeap V9.01

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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	32	496	630	**496**	**630**	496	630	32	415	754	**415**	**754**	414	755
401.bzip2	32	725	426	726	425	**725**	**426**	32	639	483	634	487	**635**	**486**
403.gcc	32	424	607	424	607	**424**	**607**	32	424	607	424	607	**424**	**607**
429.mcf	32	338	865	**335**	**871**	335	871	32	**314**	**929**	315	927	314	930
445.gobmk	32	532	631	531	632	**532**	**632**	32	**518**	**648**	518	647	517	649
456.hmmer	32	**280**	**1070**	282	1060	279	1070	32	233	1280	**233**	**1280**	233	1280
458.sjeng	32	608	636	609	636	**608**	**636**	32	557	695	**557**	**695**	557	695
462.libquantum	32	**203**	**3270**	203	3270	203	3270	32	**203**	**3270**	203	3270	203	3270
464.h264ref	32	**638**	**1110**	639	1110	638	1110	32	**638**	**1110**	639	1110	638	1110
471.omnetpp	32	508	393	**507**	**394**	507	395	32	**468**	**427**	468	427	468	427
473.astar	32	492	457	492	456	**492**	**457**	32	492	457	492	456	**492**	**457**
483.xalancbmk	32	301	734	**301**	**733**	301	733	32	301	734	**301**	**733**	301	733

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.
 numactl was used to bind copies to the cores
```

Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
echo 1 > /proc/sys/vm/zone_reclaim_mode
'mount -t hugetlbfs nodev /mnt/hugepages' was used to enable large pages
echo 20800 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

Platform Notes

```
BIOS Settings:
Turbo Boost Power Optimization set to Traditional
```

General Notes

```
Binaries were compiled on RHEL5.5
```

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Base Compiler Invocation

C benchmarks:
    icc -m32

C++ benchmarks:
    icpc -m32

Base Portability Flags

    400.perlbench: -DSPEC_CPU_LINUX_IA32
    462.libquantum: -DSPEC_CPU_LINUX
    483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch
    -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

C++ benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
    -L/smartheap -lsmartheap
    -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

Base Other Flags

C benchmarks:

        403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
    icc -m32

    400.perlbench: icc -m64

    401.bzip2: icc -m64

    456.hmmer: icc -m64

    458.sjeng: icc -m64

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Peak Compiler Invocation (Continued)

C++ benchmarks:
    icpc -m32

Peak Portability Flags

        400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
           401.bzip2: -DSPEC_CPU_LP64
          456.hmmer: -DSPEC_CPU_LP64
           458.sjeng: -DSPEC_CPU_LP64
      462.libquantum: -DSPEC_CPU_LINUX
       483.xalancbmk: -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) -prof-use(pass 2)
                -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

           401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                -opt-prefetch -auto-ilp32 -ansi-alias
                -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

             403.gcc: basepeak = yes

             429.mcf: -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 -auto-ilp32

           445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
                -ansi-alias -auto-ilp32

          456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
                -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

           458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
                -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
                -unroll4 -auto-ilp32
                -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

      462.libquantum: basepeak = yes

          464.h264ref: basepeak = yes

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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/smartheap -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

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-ic12.0-linux64-revB.html
http://www.spec.org/cpu2006/flags/IBM-platform-linux64-revA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml
http://www.spec.org/cpu2006/flags/IBM-platform-linux64-revA.xml

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

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