SPEC® CINT2006 Result
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NEC Corporation

Express5800/R120b-1
(Intel Xeon X5680)

SPECint®_rate2006 =   378

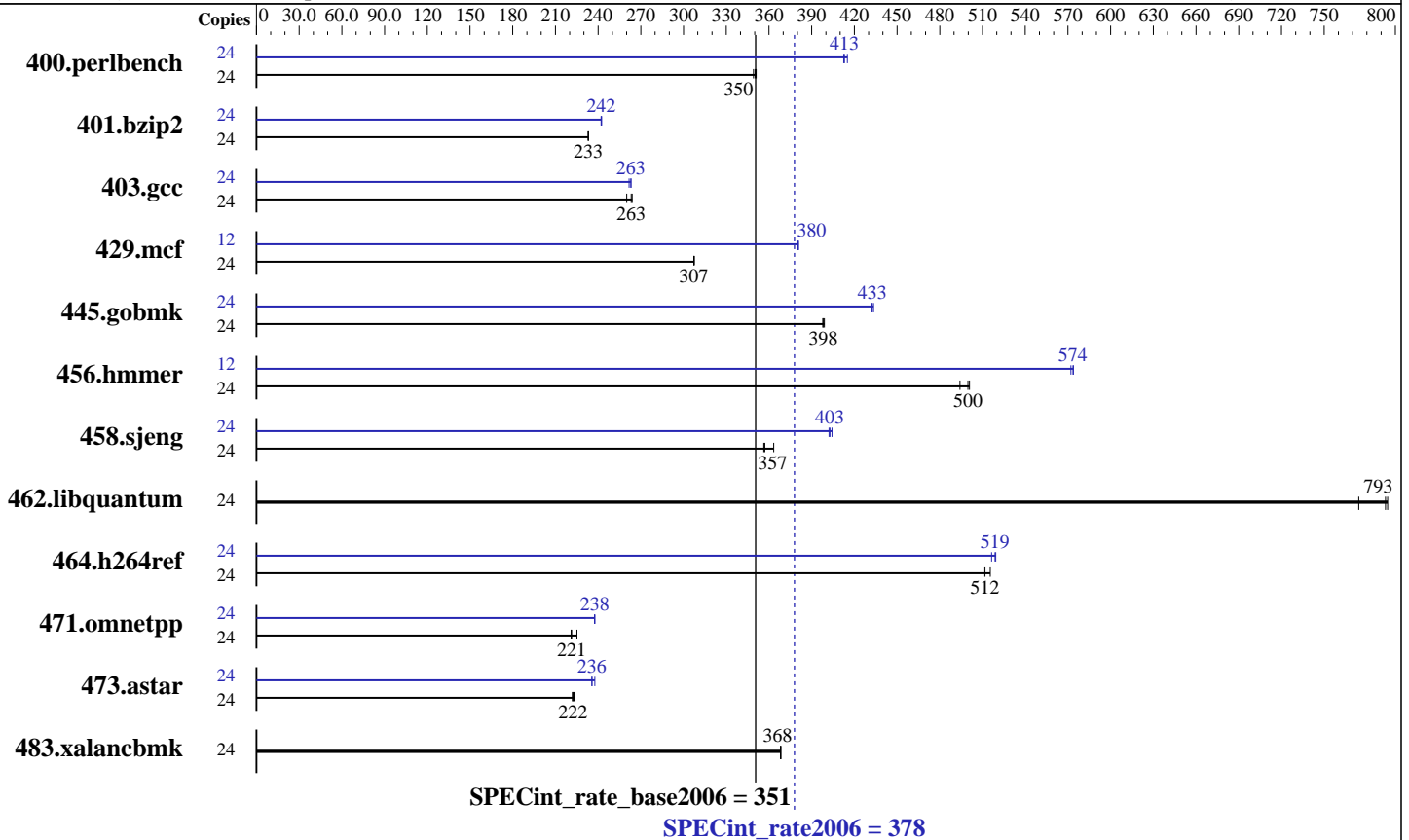SPECint_rate_base2006 =   351

CPU2006 license: 9006   **Test date:**   Aug-2010
Test sponsor: NEC Corporation   **Hardware Availability:** Sep-2010
Tested by: NEC Corporation   **Software Availability:** Dec-2009

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Hardware

CPU Name:	Intel Xeon X5680
CPU Characteristics:	Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz:	3333
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:	96 GB (12 x 8 GB PC3L-10600R, 2 rank, CL9, ECC)
Disk Subsystem:	1x160 GB SATA, 7200 RPM
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:	No
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

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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	24	**669**	**350**	672	349	668	351	24	565	415	568	413	**568**	**413**
401.bzip2	24	994	233	993	233	**994**	**233**	24	955	242	957	242	**956**	**242**
403.gcc	24	732	264	**734**	**263**	743	260	24	734	263	**735**	**263**	738	262
429.mcf	24	713	307	712	308	**712**	**307**	12	**288**	**380**	288	380	287	381
445.gobmk	24	631	399	633	398	**632**	**398**	24	581	433	582	432	**582**	**433**
456.hmmer	24	453	494	**448**	**500**	447	501	12	196	572	195	574	**195**	**574**
458.sjeng	24	815	356	**813**	**357**	799	363	24	718	404	**721**	**403**	722	402
462.libquantum	24	**627**	**793**	642	774	626	795	24	**627**	**793**	642	774	626	795
464.h264ref	24	1030	515	**1038**	**512**	1041	510	24	1029	516	**1024**	**519**	1023	519
471.omnetpp	24	**678**	**221**	679	221	666	225	24	632	237	**631**	**238**	631	238
473.astar	24	755	223	**758**	**222**	759	222	24	709	238	715	236	**715**	**236**
483.xalancbmk	24	450	368	450	368	**450**	**368**	24	450	368	450	368	**450**	**368**

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

Platform Notes

    BIOS setting:
    Performance/Watt: Traditional
    Server Class: Custom
    Data Reuse Optimization: Disabled
    Memory Voltage: Normal

General Notes

    The Express5800/R120b-1 and
    the Express5800/R120b-2 models are electronically equivalent.
    The results have been measured on the Express5800/R120b-1 model.

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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 -static -opt-prefetch

C++ benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
    -L/opt/SmartHeap_8.1/lib -lsmartheap

Base Other Flags

C benchmarks:

    403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

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

    401.bzip2: icc -m64

    456.hmmer: icc -m64

    458.sjeng: icc -m64

C++ benchmarks (except as noted below):
    icpc -m32

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Peak Compiler Invocation (Continued)

    473.astar: `icpc -m64`

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`

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`

      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) -opt-prefetch -ansi-alias -auto-ilp32`

        403.gcc: `-xSSE4.2 -ipo -O3 -no-prec-div -static`

        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:

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Peak Optimization Flags (Continued)

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/opt/SmartHeap_8.1/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 -Wl,-z,muldefs
-L/opt/SmartHeap_8.1/lib64 -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-R120b.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-R120b.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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