



SPEC[®] CINT2006 Result

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NEC Corporation

Express5800/R120a-2
(Intel Xeon E5504)

SPECint[®]_rate2006 = 69.7

SPECint_rate_base2006 = 65.2

CPU2006 license: 9006

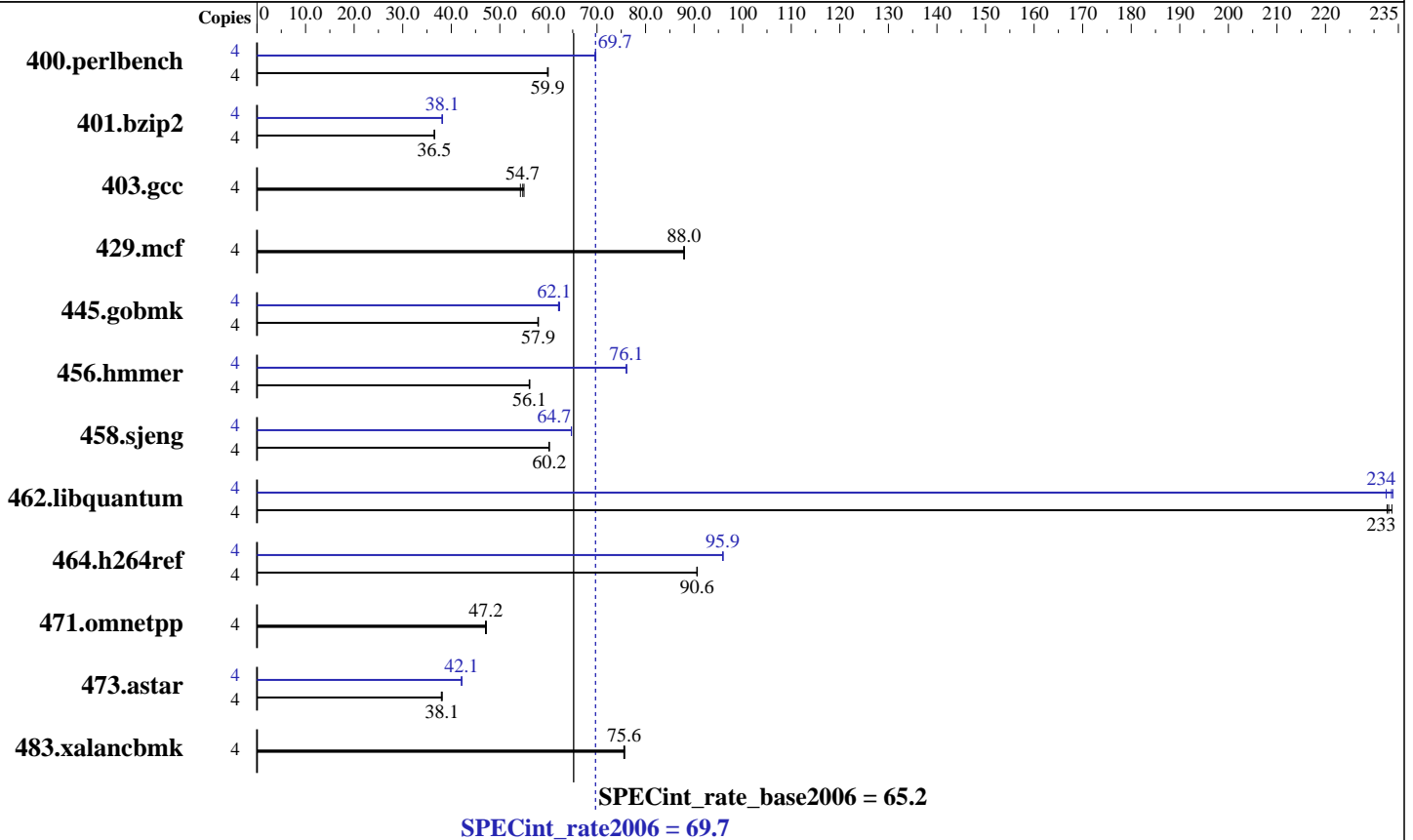
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Apr-2009

Hardware Availability: Apr-2009

Software Availability: Feb-2009



Hardware

CPU Name: Intel Xeon E5504
 CPU Characteristics:
 CPU MHz: 2000
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 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: 4 MB I+D on chip per chip
 Other Cache: None
 Memory: 24 GB (6 X 4 GB PC3-8500R running at 800 MHz)
 Disk Subsystem: 1x146.5 GB SAS, 15000 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_11.0.081
 Auto Parallel: No
 File System: ReiserFS
 System State: Run level 3 (multi-user)
 Base Pointers: 32-bit
 Peak Pointers: 32/64-bit
 Other Software: MicroQuill SmartHeap Library 8.1 Binutils 2.18.50.0.7.20080502



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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	4	<u>653</u>	<u>59.9</u>	652	60.0	653	59.8	4	560	69.8	562	69.6	<u>561</u>	<u>69.7</u>
401.bzip2	4	<u>1057</u>	<u>36.5</u>	1055	36.6	1058	36.5	4	1013	38.1	<u>1012</u>	<u>38.1</u>	1010	38.2
403.gcc	4	586	55.0	594	54.2	<u>588</u>	<u>54.7</u>	4	586	55.0	594	54.2	<u>588</u>	<u>54.7</u>
429.mcf	4	415	88.0	<u>415</u>	<u>88.0</u>	415	87.9	4	415	88.0	<u>415</u>	<u>88.0</u>	415	87.9
445.gobmk	4	726	57.8	<u>725</u>	<u>57.9</u>	724	57.9	4	<u>675</u>	<u>62.1</u>	673	62.3	676	62.1
456.hammer	4	666	56.0	<u>665</u>	<u>56.1</u>	665	56.1	4	<u>491</u>	<u>76.1</u>	491	76.1	490	76.1
458.sjeng	4	<u>804</u>	<u>60.2</u>	805	60.1	804	60.2	4	<u>748</u>	<u>64.7</u>	747	64.7	748	64.7
462.libquantum	4	356	233	<u>356</u>	<u>233</u>	355	234	4	356	232	<u>355</u>	<u>234</u>	354	234
464.h264ref	4	977	90.6	976	90.7	<u>977</u>	<u>90.6</u>	4	923	95.9	<u>923</u>	<u>95.9</u>	922	96.0
471.omnetpp	4	530	47.2	<u>530</u>	<u>47.2</u>	531	47.0	4	530	47.2	<u>530</u>	<u>47.2</u>	531	47.0
473.astar	4	<u>737</u>	<u>38.1</u>	740	38.0	737	38.1	4	667	42.1	666	42.2	<u>667</u>	<u>42.1</u>
483.xalancbmk	4	<u>365</u>	<u>75.6</u>	365	75.7	365	75.5	4	<u>365</u>	<u>75.6</u>	365	75.7	365	75.5

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

Default BIOS settings were used.

General Notes

The NEC Express5800/R120a-1(Intel Xeon E5504),
the NEC Express5800/R120a-2(Intel Xeon E5504),
the Bull NovaScale R440 E2 (Intel Xeon E5504, 2.00 GHz) and
the Bull NovaScale R460 E2 (Intel Xeon E5504, 2.00 GHz) models are electronically equivalent.
The results have been measured on a NEC Express5800/R120a-2(Intel Xeon E5504) model.

Base Compiler Invocation

C benchmarks:
icc

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Base Compiler Invocation (Continued)

C++ benchmarks:
icpc

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 -inline-calloc
-opt-malloc-options=3 -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

401.bzip2: /opt/intel/Compiler/11.0/081/bin/intel64/icc
456.hmmer: /opt/intel/Compiler/11.0/081/bin/intel64/icc
458.sjeng: /opt/intel/Compiler/11.0/081/bin/intel64/icc

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

473.astar: /opt/intel/Compiler/11.0/081/bin/intel64/icpc



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

403.gcc: basepeak = yes

429.mcf: basepeak = yes

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: -xSSE4.2 -ipo -O3 -no-prec-div -static
                -opt-malloc-options=3 -opt-prefetch

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: basepeak = yes

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/opt/SmartHeap_8.1/lib64 -lsmartheap64

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Peak Optimization Flags (Continued)

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-ic11.0-int-linux64-revF.html>

<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revE.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revF.xml>

<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revE.xml>

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For other inquiries, please contact webmaster@spec.org.

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