SPEC® CINT2006 Result
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NEC Corporation

Express5800/B120a-d
(Intel Xeon E5502)

SPECint®2006 = 19.9

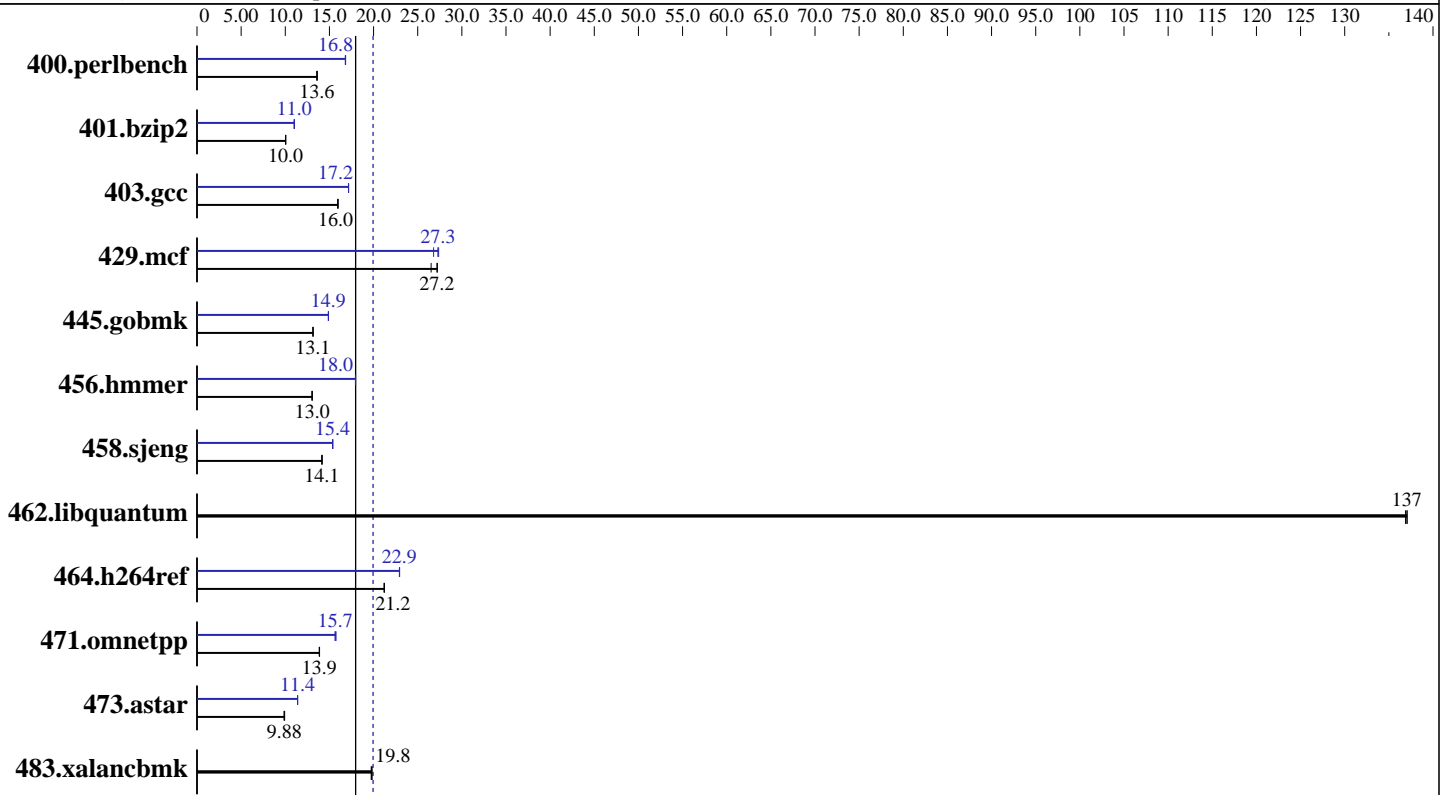SPECint_base2006 = 18.0

CPU2006 license: 9006

Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Jul-2009

Hardware Availability: Jun-2009

Software Availability: Feb-2009

Benchmark	Result
400.perlbench	16.8 / 13.6
401.bzip2	11.0 / 10.0
403.gcc	17.2 / 16.0
429.mcf	27.3 / 27.2
445.gobmk	14.9 / 13.1
456.hmmer	18.0 / 13.0
458.sjeng	15.4 / 14.1
462.libquantum	137
464.h264ref	22.9 / 21.2
471.omnetpp	15.7 / 13.9
473.astar	11.4 / 9.88
483.xalancbmk	19.8

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Hardware

CPU Name: Intel Xeon E5502

CPU Characteristics:

CPU MHz: 1867

FPU: Integrated

CPU(s) enabled: 4 cores, 2 chips, 2 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: 48 GB (12 X 4 GB PC3-8500R running at 800 MHz)

Disk Subsystem: 1x73.2 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_11.0.081

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 Library 8.1 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	717	13.6	**718**	**13.6**	720	13.6	**581**	**16.8**	581	16.8	582	16.8
401.bzip2	960	10.1	962	10.0	**960**	**10.0**	**875**	**11.0**	874	11.0	878	11.0
403.gcc	504	16.0	505	15.9	**504**	**16.0**	469	17.2	469	17.2	**469**	**17.2**
429.mcf	344	26.5	335	27.2	**336**	**27.2**	340	26.8	333	27.4	**334**	**27.3**
445.gobmk	798	13.1	**798**	**13.1**	799	13.1	704	14.9	**704**	**14.9**	705	14.9
456.hmmer	715	13.0	**715**	**13.0**	716	13.0	520	17.9	**519**	**18.0**	519	18.0
458.sjeng	856	14.1	**855**	**14.1**	854	14.2	787	15.4	787	15.4	**787**	**15.4**
462.libquantum	151	137	**151**	**137**	151	137	151	137	**151**	**137**	151	137
464.h264ref	**1043**	**21.2**	1044	21.2	1043	21.2	965	22.9	964	23.0	**965**	**22.9**
471.omnetpp	**451**	**13.9**	451	13.8	450	13.9	**399**	**15.7**	399	15.6	397	15.7
473.astar	**711**	**9.88**	711	9.88	707	9.93	**616**	**11.4**	616	11.4	616	11.4
483.xalancbmk	**349**	**19.8**	350	19.7	348	19.8	**349**	**19.8**	350	19.7	348	19.8

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

Operating System Notes

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

Platform Notes

```
BIOS setting:
NUMA configuration : 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/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`

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/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` `-auto-ilp32`
`-Wl,-z,muldefs` `-L/opt/SmartHeap_8.1/lib64` `-lsmartheap64`

483.xalancbmk: basepeak = yes

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

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

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