SPEC® CINT2006 Result
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NEC Corporation

Express5800/B120a-d
(Intel Xeon E5504)

SPECint®2006 = 21.4

SPECint_base2006 = 19.2

CPU2006 license: 9006
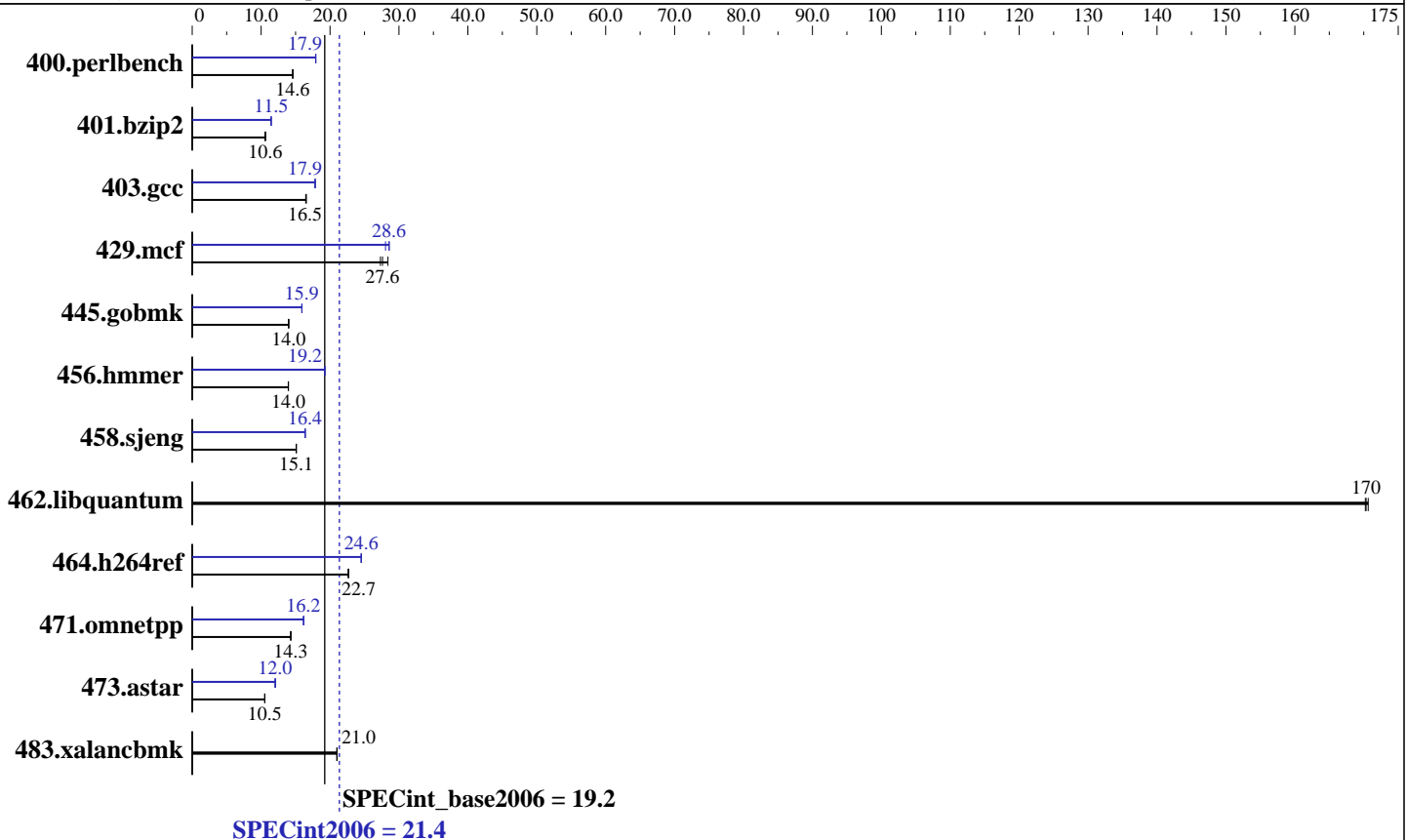**Test sponsor:** NEC Corporation
Tested by: NEC Corporation

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

SPECint_base2006 = 19.2

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Hardware

CPU Name:	Intel Xeon E5504
CPU Characteristics:	
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 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:	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	**<u>669</u>**	**<u>14.6</u>**	669	14.6	671	14.6	**<u>545</u>**	**<u>17.9</u>**	545	17.9	545	17.9
401.bzip2	914	10.6	**<u>908</u>**	**<u>10.6</u>**	907	10.6	841	11.5	**<u>842</u>**	**<u>11.5</u>**	843	11.4
403.gcc	**<u>487</u>**	**<u>16.5</u>**	486	16.5	489	16.5	452	17.8	451	17.9	**<u>451</u>**	**<u>17.9</u>**
429.mcf	334	27.3	**<u>330</u>**	**<u>27.6</u>**	321	28.4	325	28.1	**<u>319</u>**	**<u>28.6</u>**	319	28.6
445.gobmk	749	14.0	**<u>749</u>**	**<u>14.0</u>**	750	14.0	**<u>659</u>**	**<u>15.9</u>**	659	15.9	659	15.9
456.hmmer	668	14.0	670	13.9	**<u>668</u>**	**<u>14.0</u>**	485	19.2	485	19.3	**<u>485</u>**	**<u>19.2</u>**
458.sjeng	802	15.1	801	15.1	**<u>802</u>**	**<u>15.1</u>**	738	16.4	**<u>738</u>**	**<u>16.4</u>**	739	16.4
462.libquantum	122	170	**<u>122</u>**	**<u>170</u>**	121	171	122	170	**<u>122</u>**	**<u>170</u>**	121	171
464.h264ref	978	22.6	975	22.7	**<u>975</u>**	**<u>22.7</u>**	901	24.6	**<u>901</u>**	**<u>24.6</u>**	904	24.5
471.omnetpp	436	14.3	438	14.3	**<u>437</u>**	**<u>14.3</u>**	387	16.2	386	16.2	387	16.2
473.astar	666	10.5	**<u>666</u>**	**<u>10.5</u>**	668	10.5	581	12.1	**<u>583</u>**	**<u>12.0</u>**	584	12.0
483.xalancbmk	328	21.0	**<u>328</u>**	**<u>21.0</u>**	329	21.0	328	21.0	**<u>328</u>**	**<u>21.0</u>**	329	21.0

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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