NEC Corporation

Express5800/B120e-h (Intel Xeon E5-2650 v2)

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

CPU Characteristics:
- Intel Turbo Boost Technology up to 3.40 GHz

CPU MHz: 2600
FPU: Integrated
CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip, 2 threads/core
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core
L3 Cache: 20 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC3L-12800R-11, ECC)
Disk Subsystem: 1 x 400 GB SATA, SSD
Other Hardware: None

Operating System: Red Hat Enterprise Linux Server release 6.4 (Santiago)
Compiler: C/C++ Version 14.0.0.080 of Intel C++ Studio XE for Linux
Auto Parallel: Yes
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V8.1

SPECint®2006 = 56.9
SPECint_base2006 = 52.3
### NEC Corporation

**Express5800/B120e-h (Intel Xeon E5-2650 v2)**

<table>
<thead>
<tr>
<th>CPU2006 license: 9006</th>
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<tbody>
<tr>
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**SPEC CINT2006 Result**

- **SPECint2006 = 56.9**
- **SPECint_base2006 = 52.3**

### Results Table

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<th>Ratio</th>
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<th>Ratio</th>
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<td>32.2</td>
<td>303</td>
<td>32.3</td>
<td>303</td>
<td>32.3</td>
<td>254</td>
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<tr>
<td>401.bzip2</td>
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<td>23.3</td>
<td><strong>415</strong></td>
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<td>445.gobmk</td>
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<td><strong>3190</strong></td>
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<td>3090</td>
<td>6.49</td>
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<td><strong>6.49</strong></td>
<td><strong>3190</strong></td>
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<tr>
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<td><strong>154</strong></td>
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<tr>
<td>473.astar</td>
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<td>30.6</td>
<td>227</td>
<td>31.0</td>
<td><strong>228</strong></td>
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<td>483.xalancbmk</td>
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<td>54.7</td>
<td><strong>126</strong></td>
<td><strong>54.8</strong></td>
<td>125</td>
<td><strong>55.1</strong></td>
</tr>
</tbody>
</table>

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

### Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

### Platform Notes

- **BIOS Settings:**
  - Energy Performance: Performance
  - Memory Voltage: 1.5 V
  - Package C state Limit: C0

### General Notes

Environment variables set by runspec before the start of the run:

- KMP_AFFINITY = "granularity=fine,compact,1,0"
- LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"
- OMP_NUM_THREADS = "16"

Transparent Huge Pages enabled with:

```
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enable
```

### Base Compiler Invocation

C benchmarks:

```
icc -m64
```

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SPEC CINT2006 Result

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Base Compiler Invocation (Continued)

C++ benchmarks:
icpc -m64

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32
C++ benchmarks:
xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -Wl,-z,muldefs
-L/sh -lsmartheap64

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m64
400.perlbench: icc -m32
445.gobmk: icc -m32

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SPEC CINT2006 Result

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Peak Compiler Invocation (Continued)

464.h264ref: icc -m32

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

473.astar: icpc -m64

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch
            -ansi-alias

401.bzip2: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div -prof-use(pass 2) -auto-ilp32 -opt-prefetch
            -ansi-alias

403.gcc: -xAVX -ipo -O3 -no-prec-div -inline-calloc
         -opt-malloc-options=3 -auto-ilp32

429.mcf: basepeak = yes

445.gobmk: -xAVX(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
            -ansi-alias

456.hmmer: basepeak = yes

458.sjeng: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -prof-use(pass 2) -unroll4

462.libquantum: basepeak = yes
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### Peak Optimization Flags (Continued)

#### C++ benchmarks:

- 464.h264ref:  
  - -xAVX(pass 2)  
  - -prof-gen(pass 1)  
  - -ipo(pass 2)  
  - -O3(pass 2)  
  - -no-prec-div(pass 2)  
  - -prof-use(pass 2)  
  - -unroll2  
  - -ansi-alias

- 471.omnetpp:  
  - -xAVX(pass 2)  
  - -prof-gen(pass 1)  
  - -ipo(pass 2)  
  - -O3(pass 2)  
  - -no-prec-div(pass 2)  
  - -prof-use(pass 2)  
  - -opt-ra-region-strategy=block  
  - -ansi-alias  
  - -Wl,-z,muldefs -L/sh -lsmartheap

- 473.astar:  
  - basepeak = yes

- 483.xalancbmk:  
  - -xAVX  
  - -ipo  
  - -O3  
  - -no-prec-div  
  - -opt-prefetch  
  - -ansi-alias  
  - -Wl,-z,muldefs -L/sh -lsmartheap

### Peak Other Flags

#### C benchmarks:

- 403.gcc:  
  - -Dalloca=_alloca

The flags files that were used to format this result can be browsed at:


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