## NEC Corporation

**Express5800/B120f (Intel Xeon E5-2630L v3)**

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>SPECint_rate_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>292</td>
<td>280</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 9006  
**Test sponsor:** NEC Corporation  
**Tested by:** NEC Corporation  
**Test date:** Jan-2015  
**Hardware Availability:** Apr-2015  
**Software Availability:** Jul-2014

**SPECint_rate2006 = 292**

### Hardware

- **CPU Name:** Intel Xeon E5-2630L v3  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 2.90 GHz  
- **CPU MHz:** 1800  
- **FPU:** Integrated  
- **CPU(s) enabled:** 8 cores, 1 chip, 8 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:** 20 MB I+D on chip per chip  
- **Other Cache:** None  
- **Memory:** 48 GB (3 x 16 GB 2Rx4 PC4-2133P-R, running at 1866 MHz)  
- **Disk Subsystem:** 1 x 300 GB SAS, 10000 RPM  
- **Other Hardware:** None

### Software

- **Operating System:** Red Hat Enterprise Linux Server release 6.5 (Santiago)  
  - Kernel 2.6.32-431.20.3.el6.x86_64  
- **Compiler:** C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux  
- **Auto Parallel:** No  
- **File System:** ext4  
- **System State:** Run level 3 (multi-user)  
- **Base Pointers:** 32-bit  
- **Peak Pointers:** 32/64-bit  
- **Other Software:** Microquill SmartHeap V8.1
### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>462.libquantum</td>
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<td><strong>711</strong></td>
<td><strong>158</strong></td>
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<tr>
<td>483.xalancbmk</td>
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<td>311</td>
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<td>357</td>
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<td><strong>355</strong></td>
<td><strong>311</strong></td>
<td>357</td>
<td>309</td>
</tr>
</tbody>
</table>

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

### Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

### Operating System Notes

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

### Platform Notes

BIOS Settings:
- Processor C6 Report: Enabled
- Energy Performance: Performance
- Patrol Scrub: Disabled

### General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"

Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

Filesystem page cache cleared with:
echo 1 > /proc/sys/vm/drop_caches

runcspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>
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### Base Compiler Invocation

- **C benchmarks:**
  ```
  icc  -m32 -L/opt/intel/composer_xe_2015/lib/ia32
  ```
- **C++ benchmarks:**
  ```
  icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
  ```

### Base Portability Flags

- 400.perlbench: -DSPEC_CPU_LINUX_IA32
- 462.libquantum: -DSPEC_CPU_LINUX
- 483.xalancbmk: -DSPEC_CPU_LINUX

### Base Optimization Flags

- **C benchmarks:**
  ```
  -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
  -opt-mem-layout-trans=3
  ```
- **C++ benchmarks:**
  ```
  -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
  -opt-mem-layout-trans=3 -Wl,-z,muldefs -L/sh -lsmartheap
  ```

### Base Other Flags

- **C benchmarks:**
  ```
  403.gcc: -Dalloca=_alloca
  ```

### Peak Compiler Invocation

- **C benchmarks (except as noted below):**
  ```
  icc  -m32 -L/opt/intel/composer_xe_2015/lib/ia32
  ```
  - 400.perlbench: icc -m64
  - 401.bzip2: icc -m64
  - 456.hmmer: icc -m64
  - 458.sjeng: icc -m64

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SPEC CINT2006 Result

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Peak Compiler Invocation (Continued)

C++ benchmarks:
icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-auto-ilp32

401.bzip2: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32 -ansi-alias

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias -opt-mem-layout-trans=3

456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll12 -auto-ilp32

458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll14 -auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll12 -ansi-alias

C++ benchmarks:

Continued on next page
PEC CINT2006 Result

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Peak Optimization Flags (Continued)

471.omnetpp: -xCORE-AVX2(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/sh -lsmartheap

473.astar: basepeak = yes
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-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-B120f-RevB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-B120f-RevB.xml

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