NEC Corporation
Express5800/GT110g-S (Intel Xeon E3-1220 v3)

SPECI\textsuperscript{nt\_rate2006} = 177
SPECI\textsuperscript{nt\_rate\_base2006} = 169

Hardware

| CPU Name: | Intel Xeon E3-1220 v3 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.50 GHz |
| CPU MHz: | 3100 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 1 chip, 4 cores/chip |
| CPU(s) orderable: | 1 chip |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 256 KB I+D on chip per core |
| L3 Cache: | 8 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 16 GB (2 x 8 GB 2Rx8 PC3-12800E-11, ECC) |
| Disk Subsystem: | 1 x 250 GB SATA, 7200 RPM |
| Other Hardware: | None |

Software

| Operating System: | Red Hat Enterprise Linux Server release 6.5 (Santiago) |
| Compiler: | CL\textsuperscript{++}: Version 14.0.2.144 of Intel Cl\textsuperscript{++} 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 |
**SPEC CINT2006 Result**

**NEC Corporation**

Express5800/GT110g-S (Intel Xeon E3-1220 v3)

**SPECint_rate2006 = 177**

**SPECint_rate_base2006 = 169**

**CPU2006 license:** 9006

**Test sponsor:** NEC Corporation

**Test date:** May-2014

**Hardware Availability:** Jul-2014

**Tested by:** NEC Corporation

**Software Availability:** Jan-2014

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### Results Table

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<td></td>
</tr>
</tbody>
</table>

**Peak**

|        |        |         |       |         |       |         |       |         |       |
| 400.perlbench | 4     | 233     | 167   | 233     | 168   |         |       |         |       |
| 401.bzip2   | 4     | 439     | 87.8  | 439     | 87.9  |         |       |         |       |
| 403.gcc     | 4     | 251     | 128   | 253     | 127   |         |       |         |       |
| 429.mcf     | 4     | 148     | 247   | 148     | 247   |         |       |         |       |
| 445.gobmk   | 4     | 399     | 105   | 399     | 105   |         |       |         |       |
| 456.hmmer   | 4     | 155     | 241   | 153     | 244   |         |       |         |       |
| 458.sjeng   | 4     | 384     | 126   | 384     | 126   |         |       |         |       |
| 462.libquantum | 4   | 51.2    | 1620  | 51.5    | 1610  |         |       |         |       |
| 464.h264ref | 4     | 372     | 238   | 374     | 237   |         |       |         |       |
| 471.omnetpp | 4     | 286     | 87.3  | 284     | 88.1  |         |       |         |       |
| 473.astar   | 4     | 312     | 90.0  | 312     | 89.9  |         |       |         |       |
| 483.xalancbmk | 4 | 134    | 206   | 134    | 206   |         |       |         |       |

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

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### 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.

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### Operating System Notes

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

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### Platform Notes

**BIOS Settings:**
- Energy Performance: Performance

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### 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`

runspec command invoked through numactl i.e.:
- `numactl --interleave=all runspec <etc>`
# SPEC CINT2006 Result

## NEC Corporation

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**CPU2006 license:** 9006  
**Test date:** May-2014

**Test sponsor:** NEC Corporation  
**Hardware Availability:** Jul-2014

**Tested by:** NEC Corporation  
**Software Availability:** Jan-2014

### Base Compiler Invocation

**C benchmarks:**  
- icc  -m32

**C++ benchmarks:**  
- icpc  -m32

### 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

400.perlbench: icc  -m64

401.bzip2: icc  -m64

456.hmmer: icc  -m64

458.sjeng: icc  -m64

Continued on next page
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Peak Compiler Invocation (Continued)

C++ benchmarks:
icpc -m32

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: basepeak = yes
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 -unroll2 -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)
-unroll4 -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)
-unroll2 -ansi-alias

C++ benchmarks:

Continued on next page
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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-ic14.0-official-linux64.20140128.html
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120-RevB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml
http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120-RevB.xml

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

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