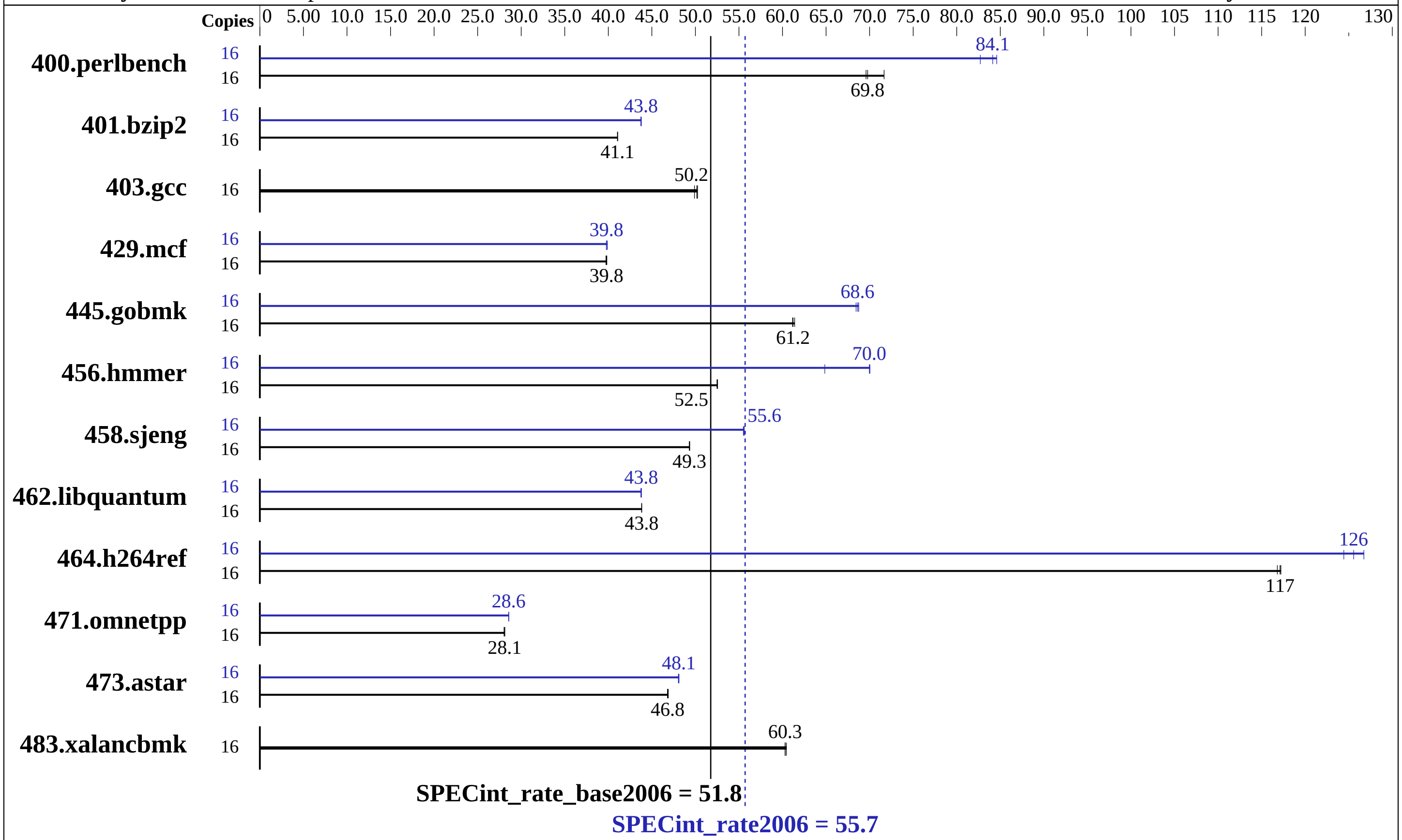
## NEC Corporation

Express5800/140Re-4
(Intel Xeon processor 7110M)

SPECint®_rate2006 = 55.7

SPECint_rate_base2006 = 51.8

| | | | |
|---|---|---|---|
| **CPU2006 license:** | 9006 | **Test date:** | Nov-2007 |
| **Test sponsor:** | NEC Corporation | **Hardware Availability:** | Oct-2006 |
| **Tested by:** | NEC Corporation | **Software Availability:** | Jun-2007 |




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon 7110M |
| CPU Characteristics: | 2.60 GHz, 800 MHz bus |
| CPU MHz: | 2600 |
| FPU: | Integrated |
| CPU(s) enabled: | 8 cores, 4 chips, 2 cores/chip, 2 threads/core |
| CPU(s) orderable: | 1,2,4 chips |
| Primary Cache: | 12 K micro-ops I + 16 KB D on chip per core |
| Secondary Cache: | 1 MB I+D on chip per core |
| L3 Cache: | 4 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 32 GB (16x2 GB PC2-3200R, 2 rank, CL3-3-3, ECC) |
| Disk Subsystem: | 1x146.5 GB SAS, 15000RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 10 (x86_64), Kernel 2.6.16.21-0.8-smp |
| Compiler: | Intel C++ Compiler for IA32/EM64T application, Version 10.0 - Build 20070426 Package ID: l_cc_p_10.0.023 |
| Auto Parallel: | No |
| File System: | ext2 |
| System State: | Multiuser, Runlevel 3 |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | MicroQuill SmartHeap library 8.1 |

# SPEC CINT2006 Result



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## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 16 | 2181 | 71.7 | 2246 | 69.6 | **2240** | **69.8** | 16 | 1848 | 84.6 | 1890 | 82.7 | **1858** | **84.1** |
| 401.bzip2 | 16 | **3760** | **41.1** | 3761 | 41.0 | 3759 | 41.1 | 16 | 3526 | 43.8 | **3528** | **43.8** | 3531 | 43.7 |
| 403.gcc | 16 | 2581 | 49.9 | 2563 | 50.2 | **2568** | **50.2** | 16 | 2581 | 49.9 | 2563 | 50.2 | **2568** | **50.2** |
| 429.mcf | 16 | 3673 | 39.7 | **3667** | **39.8** | 3663 | 39.8 | 16 | 3658 | 39.9 | 3669 | 39.8 | **3667** | **39.8** |
| 445.gobmk | 16 | 2734 | 61.4 | **2742** | **61.2** | 2745 | 61.2 | 16 | **2446** | **68.6** | 2452 | 68.4 | 2441 | 68.7 |
| 456.hmmer | 16 | 2841 | 52.5 | 2845 | 52.5 | **2841** | **52.5** | 16 | **2134** | **70.0** | 2302 | 64.9 | 2132 | 70.0 |
| 458.sjeng | 16 | **3925** | **49.3** | 3923 | 49.4 | 3927 | 49.3 | 16 | 3482 | 55.6 | **3483** | **55.6** | 3488 | 55.5 |
| 462.libquantum | 16 | **7563** | **43.8** | 7563 | 43.8 | 7564 | 43.8 | 16 | 7568 | 43.8 | 7579 | 43.7 | **7574** | **43.8** |
| 464.h264ref | 16 | 3021 | 117 | 3032 | 117 | **3024** | **117** | 16 | 2794 | 127 | **2820** | **126** | 2846 | 124 |
| 471.omnetpp | 16 | **3557** | **28.1** | 3567 | 28.0 | 3557 | 28.1 | 16 | 3500 | 28.6 | **3501** | **28.6** | 3502 | 28.6 |
| 473.astar | 16 | 2396 | 46.9 | 2400 | 46.8 | **2399** | **46.8** | 16 | 2334 | 48.1 | **2336** | **48.1** | 2338 | 48.0 |
| 483.xalancbmk | 16 | 1826 | 60.4 | **1831** | **60.3** | 1831 | 60.3 | 16 | 1826 | 60.4 | **1831** | **60.3** | 1831 | 60.3 |

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
'/usr/bin/taskset' used to bind processes to CPUs
```

## General Notes

```
All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer,
for peak, are compiled in 64-bit mode

 The Express5800/140Hf and the Express5800/140Re-4 models are
 electronically equivalent.
 The results have been measured on a Express5800/140Re-4 model.
```

## Base Compiler Invocation

C benchmarks:
`icc -static(*)`

C++ benchmarks:
`icpc`

(*) Indicates a compiler flag that was found in a non-compiler variable.

## Base Portability Flags

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

## Base Optimization Flags

C benchmarks:
-xP -ipo -O3 -no-prec-div

C++ benchmarks:
-xP -ipo -O3 -no-prec-div -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 -static(*)

401.bzip2: /opt/intel/cce/10.0.023/bin/icc
-L/opt/intel/cce/10.0.023/lib
-I/opt/intel/cce/10.0.023/include

445.gobmk: icc

456.hmmer: /opt/intel/cce/10.0.023/bin/icc
-L/opt/intel/cce/10.0.023/lib
-I/opt/intel/cce/10.0.023/include -static(*)

C++ benchmarks:
icpc

(*) Indicates a compiler flag that was found in a non-compiler variable.

# Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

# Peak Optimization Flags

C benchmarks:

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

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -no-prec-div

403.gcc: basepeak = yes

429.mcf: -xP -ipo -O3 -no-prec-div -prefetch

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xP -O2 -ipo -no-prec_div -ansi-alias

456.hmmer: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -no-prec-div -unroll2 -ansi-alias

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

462.libquantum: Same as 458.sjeng

464.h264ref: Same as 456.hmmer

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xP -O3 -ipo -no-prec_div -ansi-alias -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap

473.astar: Same as 471.omnetpp

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/NEC-ic10-INT-ia32-intel64-linux-flags.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/NEC-ic10-INT-ia32-intel64-linux-flags.xml



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