# SPEC® CINT2006 Result

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## NEC Corporation

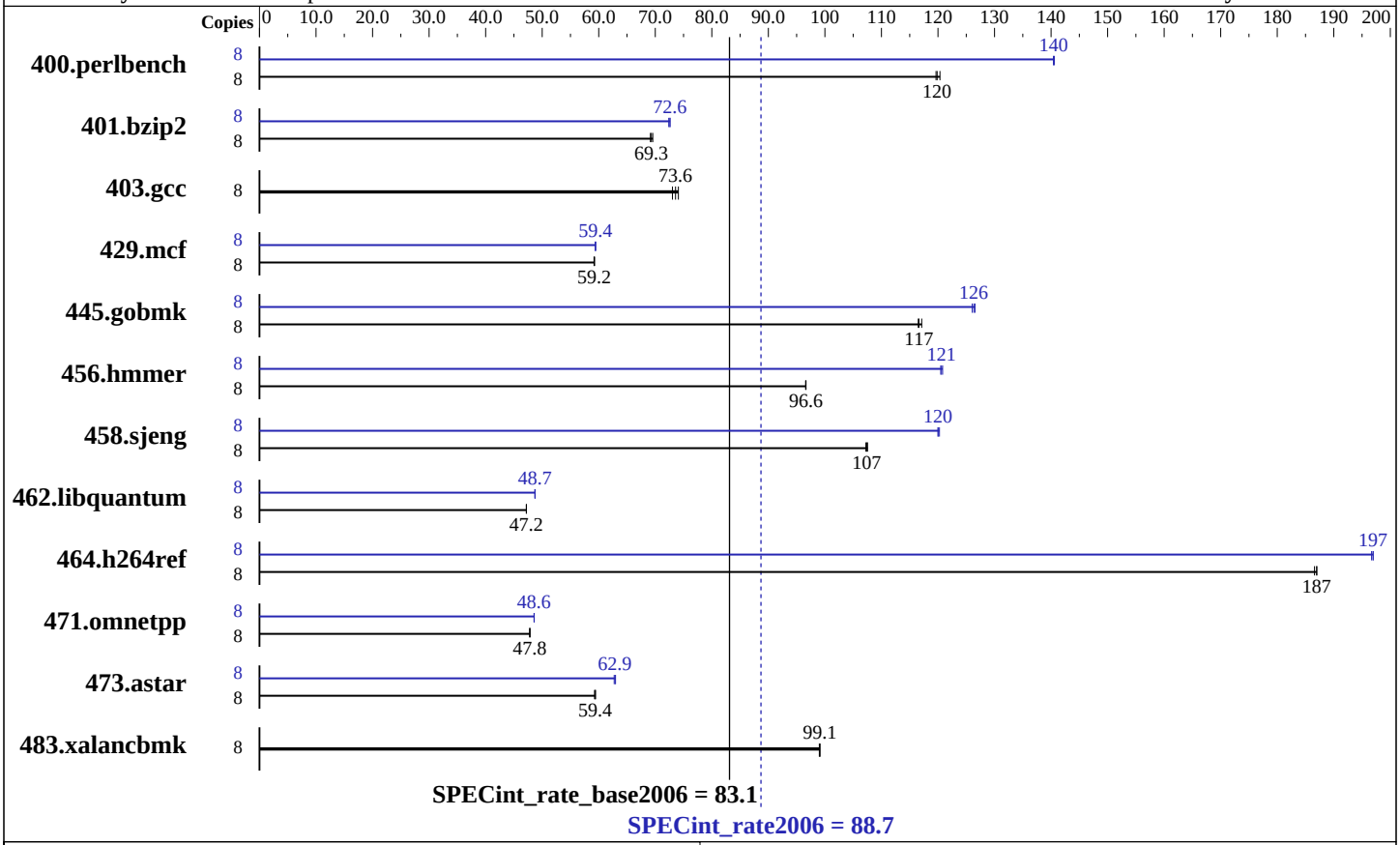
Express5800/120Rg-1
(Intel Xeon processor E5345)

SPECint®_rate2006 = 88.7

SPECint_rate_base2006 = 83.1

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

**Test date:** Jun-2007
**Hardware Availability:** Jan-2007
**Software Availability:** Jun-2007




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5345 |
| CPU Characteristics: | 2.33 GHz, 2x4 MB L2 shared, 1333 MHz bus |
| CPU MHz: | 2333 |
| 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: | 8 MB I+D on chip per chip, 4 MB shared / 2 cores |
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 16 GB (8x2 GB DDR2 5300F, 2 rank, CL5-5-5, ECC) |
| Disk Subsystem: | 1x73.2 GB SAS, 15000RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | 64-Bit SUSE LINUX Enterprise Server 10, Kernel 2.6.16.21-0.8-smp for x86_64 |
| 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<br>binutils-2.17.tar.gz, Version 2.17 |

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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 | 8 | **652** | **120** | 653 | 120 | 649 | 120 | 8 | 556 | 141 | 557 | 140 | **556** | **140** |
| 401.bzip2 | 8 | **1114** | **69.3** | 1117 | 69.1 | 1110 | 69.6 | 8 | **1064** | **72.6** | 1067 | 72.4 | 1063 | 72.6 |
| 403.gcc | 8 | 869 | 74.1 | 882 | 73.0 | **875** | **73.6** | 8 | 869 | 74.1 | 882 | 73.0 | **875** | **73.6** |
| 429.mcf | 8 | 1231 | 59.3 | **1232** | **59.2** | 1233 | 59.2 | 8 | 1227 | 59.5 | 1229 | 59.4 | **1228** | **59.4** |
| 445.gobmk | 8 | 720 | 117 | 717 | 117 | **720** | **117** | 8 | 666 | 126 | **664** | **126** | 663 | 127 |
| 456.hmmer | 8 | 772 | 96.7 | 773 | 96.6 | **772** | **96.6** | 8 | 618 | 121 | **619** | **121** | 620 | 120 |
| 458.sjeng | 8 | 900 | 108 | 903 | 107 | **901** | **107** | 8 | 805 | 120 | **807** | **120** | 807 | 120 |
| 462.libquantum | 8 | 3510 | 47.2 | **3512** | **47.2** | 3512 | 47.2 | 8 | **3401** | **48.7** | 3401 | 48.7 | 3402 | 48.7 |
| 464.h264ref | 8 | 949 | 187 | **947** | **187** | 947 | 187 | 8 | 899 | 197 | **899** | **197** | 900 | 197 |
| 471.omnetpp | 8 | **1046** | **47.8** | 1045 | 47.8 | 1046 | 47.8 | 8 | **1029** | **48.6** | 1029 | 48.6 | 1030 | 48.6 |
| 473.astar | 8 | 948 | 59.3 | 945 | 59.4 | **945** | **59.4** | 8 | 892 | 63.0 | 895 | 62.7 | **893** | **62.9** |
| 483.xalancbmk | 8 | 557 | 99.1 | 558 | 99.0 | **557** | **99.1** | 8 | 557 | 99.1 | 558 | 99.0 | **557** | **99.1** |

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 Express5800/120Rg-1(Intel Xeon processor E5345) and
the Express5800/120Ri-2(Intel Xeon processor E5345) models are electronically equivalent.
The results have been measured on a Express5800/120Ri-2(Intel Xeon processor E5345) model.

## 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

## Base Optimization Flags

C benchmarks:
-fast

C++ benchmarks:
-xT -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

401.bzip2: /opt/intel/cce/10.0.023/bin/icc

456.hmmer: /opt/intel/cce/10.0.023/bin/icc

C++ benchmarks:
icpc

## 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) `-fast -ansi-alias -prefetch`

401.bzip2: `-L/opt/intel/cce/10.0.023/lib -I/opt/intel/cce/10.0.023/include -prof-gen`(pass 1) `-prof-use`(pass 2) `-fast`

403.gcc: `basepeak = yes`

429.mcf: `-fast -prefetch`

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

456.hmmer: `-L/opt/intel/cce/10.0.023/lib -I/opt/intel/cce/10.0.023/include -prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -ansi-alias`

458.sjeng: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll4`

462.libquantum: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll4 -Ob0 -prefetch -opt-streaming-stores always`

464.h264ref: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -ansi-alias`

C++ benchmarks:

471.omnetpp: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-xT -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-linux-flags.html`

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


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