# SPEC® CINT2006 Result

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## NEC Corporation

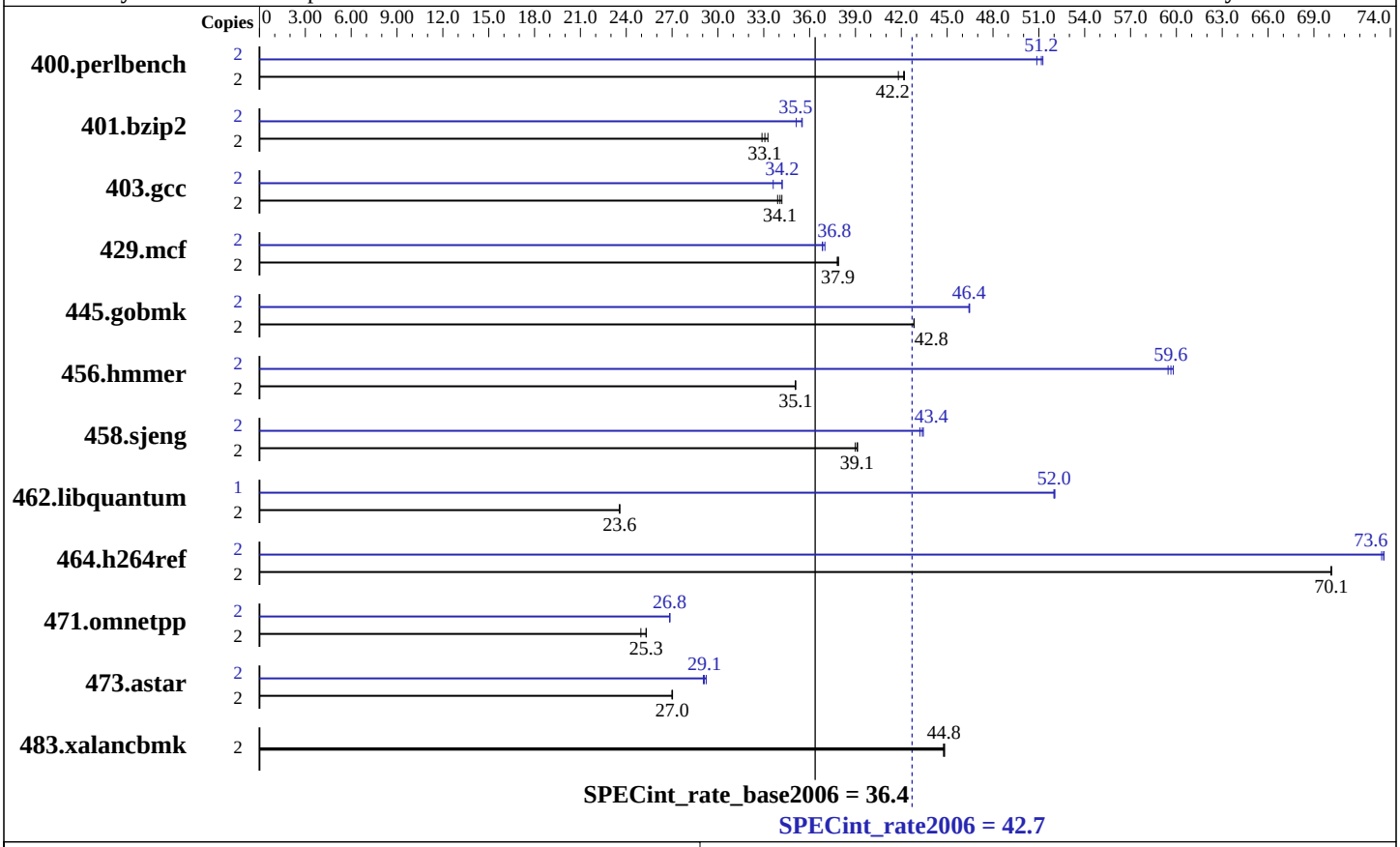
Express5800/120Rh-1
(Intel Xeon X5260)

**SPECint®_rate2006 = 42.7**

**SPECint_rate_base2006 = 36.4**

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

**Test date:** Jun-2008
**Hardware Availability:** Apr-2008
**Software Availability:** Nov-2007




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X5260 |
| CPU Characteristics: | 3.33 GHz, 6 MB L2, 1333 MHz bus |
| CPU MHz: | 3333 |
| FPU: | Integrated |
| CPU(s) enabled: | 2 cores, 1 chip, 2 cores/chip |
| CPU(s) orderable: | 1,2 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 6 MB I+D on chip per chip |
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 16 GB (8x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC) |
| Disk Subsystem: | 1x73.2 GB SAS, 15000RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp |
| Compiler: | Intel C++ Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008 |
| Auto Parallel: | Yes |
| File System: | ReiserFS |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | MicroQuill SmartHeap library 8.1 binutils 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 | 2 | **464** | **42.2** | 467 | 41.8 | 463 | 42.2 | 2 | **382** | **51.2** | 384 | 50.9 | 381 | 51.3 |
| 401.bzip2 | 2 | 587 | 32.9 | **584** | **33.1** | 580 | 33.3 | 2 | 549 | 35.1 | **544** | **35.5** | 543 | 35.5 |
| 403.gcc | 2 | 471 | 34.2 | 475 | 33.9 | **473** | **34.1** | 2 | **471** | **34.2** | 471 | 34.2 | 479 | 33.6 |
| 429.mcf | 2 | **482** | **37.9** | 481 | 37.9 | 482 | 37.8 | 2 | 493 | 37.0 | **495** | **36.8** | 495 | 36.8 |
| 445.gobmk | 2 | 490 | 42.8 | 490 | 42.8 | **490** | **42.8** | 2 | 452 | 46.4 | 451 | 46.5 | **452** | **46.4** |
| 456.hmmer | 2 | **532** | **35.1** | 532 | 35.1 | 532 | 35.1 | 2 | 312 | 59.8 | **313** | **59.6** | 314 | 59.5 |
| 458.sjeng | 2 | 618 | 39.1 | 621 | 39.0 | **619** | **39.1** | 2 | **558** | **43.4** | 560 | 43.2 | 557 | 43.4 |
| 462.libquantum | 2 | **1758** | **23.6** | 1758 | 23.6 | 1759 | 23.6 | 1 | 398 | 52.1 | **398** | **52.0** | 398 | 52.0 |
| 464.h264ref | 2 | **631** | **70.1** | 631 | 70.1 | 631 | 70.1 | 2 | 602 | 73.6 | 603 | 73.4 | **602** | **73.6** |
| 471.omnetpp | 2 | **494** | **25.3** | 494 | 25.3 | 501 | 25.0 | 2 | 465 | 26.9 | 466 | 26.8 | **466** | **26.8** |
| 473.astar | 2 | **520** | **27.0** | 519 | 27.0 | 520 | 27.0 | 2 | 483 | 29.0 | **482** | **29.1** | 480 | 29.2 |
| 483.xalancbmk | 2 | 308 | 44.8 | 308 | 44.8 | **308** | **44.8** | 2 | 308 | 44.8 | 308 | 44.8 | **308** | **44.8** |

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
 OMP_NUM_THREADS set to number of cores
```

## Platform Notes

```
Bios settings:
Hardware Prefetcher:          Enabled
Adjacent Cache Line Prefetch: Enabled
Intel SpeedStep Technology:   Disabled
```

## General Notes

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

 The NEC Express5800/120Rh-1(Intel Xeon X5260),
 the NEC Express5800/120Rj-2(Intel Xeon X5260),
 the Bull NovaScale R440 E1 (Intel Xeon X5260,3.33GHz) and
 the Bull NovaScale R460 E1 (Intel Xeon X5260,3.33GHz) models are electronically equivalent.
 The results have been measured on a NEC Express5800/120Rj-2(Intel Xeon X5260) model.
```

## Base Compiler Invocation

C benchmarks:

```
icc
```

Continued on next page

## Base Compiler Invocation (Continued)

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 -inline-calloc -opt-malloc-options=3

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/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/include

456.hmmer: /opt/intel/cce/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/include

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: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch

403.gcc: -fast -inline-calloc -opt-malloc-options=3

429.mcf: -fast -prefetch

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

456.hmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive

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

462.libquantum: -fast -unroll4 -Ob0 -prefetch -opt-streaming-stores always -vec-guard-write -opt-malloc-options=3 -parallel -par-runtime-control

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 -opt-ra-region-strategy=block -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo -no-prec-div -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap

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-Intel-ic10.1-INT-ia32-linux-flags.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-INT-ia32-linux-flags.xml`


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