# CINT2000 Result

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## IBM Corporation

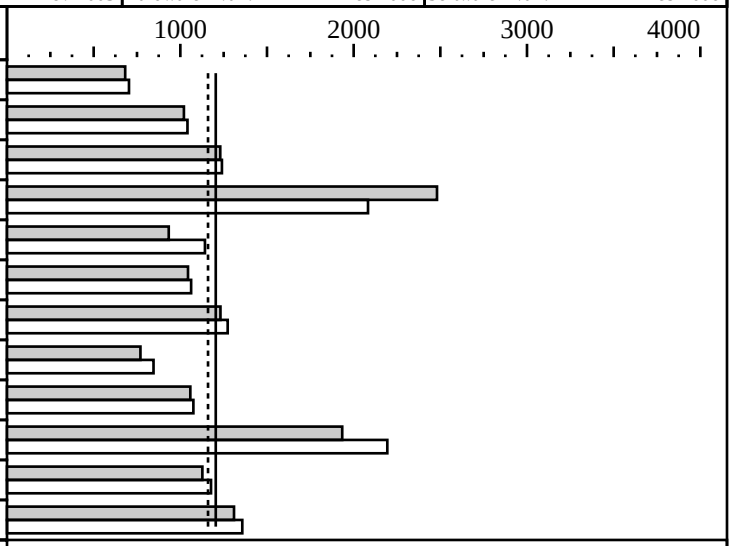
## IBM System p5 560Q (1500 MHz, 1 CPU)

SPECint2000 = 1204

SPECint_base2000 = 1160

SPEC license #: 11 | Tested by: IBM | Test date: Nov-2005 | Hardware Avail: Feb-2006 | Software Avail: Feb-2006

| Benchmark | Reference Time | Base Runtime | Base Ratio | Runtime | Ratio |
|---|---|---|---|---|---|
| 164.gzip | 1400 | 205 | 682 | 199 | 704 |
| 175.vpr | 1400 | 137 | 1021 | 134 | 1041 |
| 176.gcc | 1100 | 89.4 | 1230 | 88.7 | 1240 |
| 181.mcf | 1800 | 72.6 | 2481 | 86.4 | 2083 |
| 186.crafty | 1000 | 107 | 933 | 87.6 | 1142 |
| 197.parser | 1800 | 172 | 1044 | 169 | 1062 |
| 252.eon | 1300 | 106 | 1231 | 102 | 1273 |
| 253.perlbmk | 1800 | 234 | 770 | 213 | 845 |
| 254.gap | 1100 | 104 | 1058 | 102 | 1075 |
| 255.vortex | 1900 | 98.2 | 1934 | 86.6 | 2194 |
| 256.bzip2 | 1500 | 133 | 1127 | 127 | 1177 |
| 300.twolf | 3000 | 229 | 1310 | 221 | 1357 |




### Hardware

| | |
|---|---|
| CPU: | POWER5+ |
| CPU MHz: | 1500 |
| FPU: | Integrated |
| CPU(s) enabled: | 1 core, 4 chips, 2 cores/chip (SMT off) |
| CPU(s) orderable: | 8,16 |
| Parallel: | No |
| Primary Cache: | 64KBI+32KBD (on chip)/core |
| Secondary Cache: | 1920KB unified, shared (on chip)/chip |
| L3 Cache: | 2x36MB unified (off-chip)/QCM, 1 QCM/SUT |
| Other Cache: | None |
| Memory: | 16x2GB |
| Disk Subsystem: | 2x36GB SCSI, 15K RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | AIX 5L V5.3 |
| Compiler: | XL C/C++ Enterprise Edition Version 8.0 for AIX |
| File System: | AIX/JFS2 |
| System State: | Multi-user |

## Notes/Tuning Information

```
Portability Flags:
  176.gcc:      -ma -DHOST_WORDS_BIG_ENDIAN
  186.crafty:   -DAIX
  253.perlbmk:  -DSPEC_CPU2000_AIX
  254.gap:      -DSYS_IS_BSD -DSYS_STRING_H
                -DSYS_HAS_MALLOC_PROTO -DSYS_HAS_CALLOC_PROTO
  300.twolf:    -DHAVE_SIGNED_CHAR

Base Optimization Flags:
  C:    -qpdf1/pdf2
        -O5 -blpdata -D_ILS_MACROS
  C++:  -qpdf1/pdf2
        -O5 -lhmu -qalign=natural

Peak Optimization Flags
  164.gzip:     -qpdf1/pdf2
                -O4 -qarch=auto -qtune=auto -qfdpr -blpdata
                fdpr -q -O3
  175.vpr:      -qpdf1/pdf2
                -O5 -qfdpr -blpdata
```

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## Notes/Tuning Information (Continued)

```
                fdpr -q -O3
  176.gcc:      -qpdf1/pdf2
                -O4 -qarch=pwr4 -qtune=pwr4 -qalign=natural -blpdata
  181.mcf:      -qpdf1/pdf2
                -O4 -qarch=auto -qtune=auto -qalign=natural -blpdata
  186.crafty:   -qpdf1/pdf2
                -O4 -qarch=auto -qtune=auto -qalign=natural -q64 -lhmu -blpdata
  197.parser:   -qpdf1/pdf2
                -O4 -qfdpr -qarch=auto -qtune=auto -D_ILS_MACROS -blpdata
                fdpr -q -O3
  252.eon:      -qpdf1/pdf2
                -O4 -qarch=auto -qtune=auto -qalign=natural
  253.perlbmk:  -qpdf1/pdf2
                -O4 -qarch=pwr4 -qtune=pwr4 -qalign=natural -blpdata -lhmu
  254.gap:      -qpdf1/pdf2
                -O4 -qarch=pwr4 -qtune=pwr4 -qalign=natural -blpdata
  255.vortex:   -qpdf1/pdf2
                -O4 -qfdpr -qarch=auto -qtune=auto -lhmu -blpdata
                fdpr -q -O3
  256.bzip2:    -qpdf1/pdf2
                -O5 -qfdpr -blpdata
                fdpr -q -O3
  300.twolf:    -O5 -qfdpr -blpdata
                fdpr -q -O3


The installed OS level is AIX 5L for POWER version 5.3 with the 5300-03 Recommended Technology Level.

SMT:  Acronym for "Simultaneous Multi-Threading". A processor technology that allows
      the simultaneous execution of multiple thread contexts within a single processor
      core. (Enabled by default)
QCM:  Acronym for "Quad-Core Module" (Two dual-core processor chips + two L3-cache chips)
SUT:  Acronym for "System Under Test"

Extended C:     IBM XL C for AIX invoked as cc
C++:            IBM XL C for AIX invoked as xlC

ulimits set to unlimited.
Large page mode and memory affinity were set as follows:
    vmo -r -o lgpg_regions=800 -o lgpg_size=16777216
    chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
    shutdown -rF
    export MEMORY_AFFINITY=MCM

The following config-file entry was used to assign each benchmark process to a core:
     submit = bindprocessor $$ $SPECUSERNUM; $command
The "bindprocessor" AIX command binds a process to a CPU core.
Seven cores were deconfigured and SMT disabled using the AIX commands
     smtctl -m off -w boot
     bosboot -aD
     shutdown -rF
     drmgr -r -c cpu
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     drmgr -r -c cpu
```

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## Notes/Tuning Information (Continued)

```
drmgr -r -c cpu
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```