



CINT2000 Result

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IBM Corporation
IBM System p5 560Q (1500 MHz, 16 CPU)

SPECint_rate2000 = 248
SPECint_rate_base2000 = 243

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

| Benchmark | Base Copies | Base Runtime | Base Ratio | Copies | Runtime | Ratio |
|-------------|-------------|--------------|------------|--------|---------|-------|
| 164.gzip | 32 | 309 | 168 | 32 | 309 | 168 |
| 175.vpr | 32 | 249 | 209 | 32 | 244 | 213 |
| 176.gcc | 32 | 155 | 263 | 32 | 154 | 264 |
| 181.mcf | 32 | 194 | 344 | 32 | 229 | 292 |
| 186.crafty | 32 | 195 | 191 | 32 | 162 | 229 |
| 197.parser | 32 | 281 | 237 | 32 | 284 | 235 |
| 252.eon | 32 | 166 | 290 | 32 | 166 | 291 |
| 253.perlbnk | 32 | 371 | 180 | 32 | 346 | 193 |
| 254.gap | 32 | 173 | 236 | 32 | 171 | 239 |
| 255.vortex | 32 | 179 | 394 | 32 | 169 | 417 |
| 256.bzip2 | 32 | 209 | 267 | 32 | 202 | 276 |
| 300.twolf | 32 | 483 | 230 | 32 | 484 | 230 |

Hardware

CPU: POWER5+
CPU MHz: 1500
FPU: Integrated
CPU(s) enabled: 16 cores, 8 chips, 2 cores/chip (SMT on)
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, 2 QCMs/SUT
Other Cache: None
Memory: 32x2GB
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.perlbnk: -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
      -O4 -qalign=natural
```

Peak Optimization Flags

```
164.gzip: -qpdf1/pdf2
          -O4 -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 -qalign=natural -blpdata
186.crafty: -qpdf1/pdf2
        -O4 -qalign=natural -q64 -lhm -blpdata
197.parser: -qpdf1/pdf2
        -O4 -qfdpr -D_ILS_MACROS -blpdata
fdpr -q -O3
252.eon: -qpdf1/pdf2
        -O4 -qalign=natural
253.perlbnk: -qpdf1/pdf2
        -O4 -qarch=pwr4 -qtune=pwr4 -qalign=natural -blpdata -lhm
254.gap: -qpdf1/pdf2
        -O4 -qarch=pwr4 -qtune=pwr4 -qalign=natural -blpdata
255.vortex: -qpdf1/pdf2
        -O4 -qfdpr -lhm -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 5300-04 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 lpgg_regions=2400 -o lpgg_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.