# CINT2000 Result

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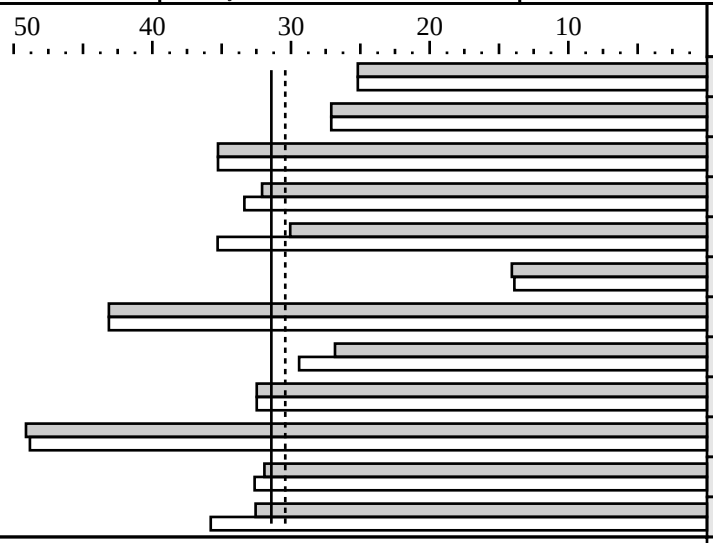
## IBM Corporation

IBM eServer pSeries 630 Model 6E4 (1200 MHz, 4 CPU)

SPECint_rate2000 = 31.4

SPECint_rate_base2000 = 30.4

SPEC license #: 11 | Tested by: IBM, Austin, TX | Test date: Mar-2003 | Hardware Avail: Apr-2003 | Software Avail: Feb-2003




| Benchmark | Base Copies | Base Runtime | Base Ratio | Copies | Runtime | Ratio |
|---|---|---|---|---|---|---|
| 164.gzip | 4 | 258 | 25.2 | 4 | 258 | 25.2 |
| 175.vpr | 4 | 240 | 27.1 | 4 | 240 | 27.1 |
| 176.gcc | 4 | 145 | 35.3 | 4 | 145 | 35.3 |
| 181.mcf | 4 | 260 | 32.1 | 4 | 250 | 33.4 |
| 186.crafty | 4 | 154 | 30.1 | 4 | 131 | 35.3 |
| 197.parser | 4 | 593 | 14.1 | 4 | 601 | 13.9 |
| 252.eon | 4 | 140 | 43.1 | 4 | 140 | 43.1 |
| 253.perlbmk | 4 | 311 | 26.8 | 4 | 284 | 29.4 |
| 254.gap | 4 | 157 | 32.5 | 4 | 157 | 32.5 |
| 255.vortex | 4 | 180 | 49.1 | 4 | 181 | 48.8 |
| 256.bzip2 | 4 | 218 | 31.9 | 4 | 213 | 32.6 |
| 300.twolf | 4 | 428 | 32.6 | 4 | 389 | 35.8 |

### Hardware

| | |
|---|---|
| CPU: | POWER4+ |
| CPU MHz: | 1200 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 2 chips, 2 cores/chip, 1 chip/SCM |
| CPU(s) orderable: | 1,2,4 (order by # cores) |
| Parallel: | No |
| Primary Cache: | 64KBI+32KBD (on chip) per core |
| Secondary Cache: | 1536KB unified (on chip) per chip |
| L3 Cache: | 8MB unified (off-chip) per SCM, 2 SCMs in SUT |
| Other Cache: | None |
| Memory: | 16 GB |
| Disk Subsystem: | 1x36GB SCSI |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | AIX 5L V5.2 PTF 2 |
| Compiler: | IBM C for AIX, Version 6.0<br>IBM VisualAge C++ Professional for AIX, Version 6.0 |
| File System: | AIX/JFS |
| System State: | Multi-User |

## Notes/Tuning Information

```
Integer Portability Flags:
  176.gcc:     -ma -DHOST_WORDS_BIG_ENDIAN
  186.crafty:  -DAIX
  252.eon:     -DNEED_EXPLICIT_SPECIALIZATION
               -I. -DNDEBUG
  253.perlbmk: -DSPEC_CPU2000_AIX
  254.gap:     -DSYS_IS_BSD -DSYS_STRING_H -DSYS_HAS_TIME_PROTO
               -DSYS_HAS_MALLOC_PROTO -DSYS_HAS_CALLOC_PROTO
  300.twolf:   -DHAVE_SIGNED_CHAR

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

Integer Peak Optimization Flags
164.gzip
```

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## Notes/Tuning Information (Continued)

```
    BASEPEAK = 1
    "CC      = /usr/vac/bin/xlc"
  175.vpr
    BASEPEAK = 1
  176.gcc
    BASEPEAK = 1
  181.mcf
    fdpr -v -R3
    -O5 -blpdata
  186.crafty
    -qpdf1/pdf2
    fdpr -v -R3
    -O3 -q64
  197.parser
    -O5 -blpdata
  252.eon
    BASEPEAK = 1
  253.perlbmk
    -qpdf1/pdf2
    -O5 -lhmu -qalign=natural
  254.gap
    BASEPEAK = 1
  255.vortex
    -qpdf1/pdf2
    -O5 -lhmu -qalign=natural
  256.bzip2
    -qpdf1/pdf2
    -O5 -blpdata -qarch=pwr3 -qtune=pwr3
  300.twolf
    -qpdf1/pdf2
    -O5 -lhmu -qalign=natural -blpdata
    "CC      = /usr/vac/bin/xlc"

    SCM: Acronym for "Single-Chip Module"
    SUT: Acronym for "System Under Test"

    fpdr: Feedback directed program restructuring tool
    /usr/spec2000 filesystem mounted with no JFS log file I/O.
    APAR IY 38292 was applied to AIX to enable new hardware support.
    ulimits set to unlimited.
    C: IBM VAC++ invoked as cc except where noted as xlc
    C++: IBM VAC++ invoked as xlC
    Large page mode and memory affinity were set as follows:
      vmo -r -o lgpg_regions=128 -o lgpg_size=16777216 -o memory_affinity=1
      chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
      shutdown -r
      export MEMORY_AFFINITY=MCM
```