# CFP2000 Result

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## IBM Corporation

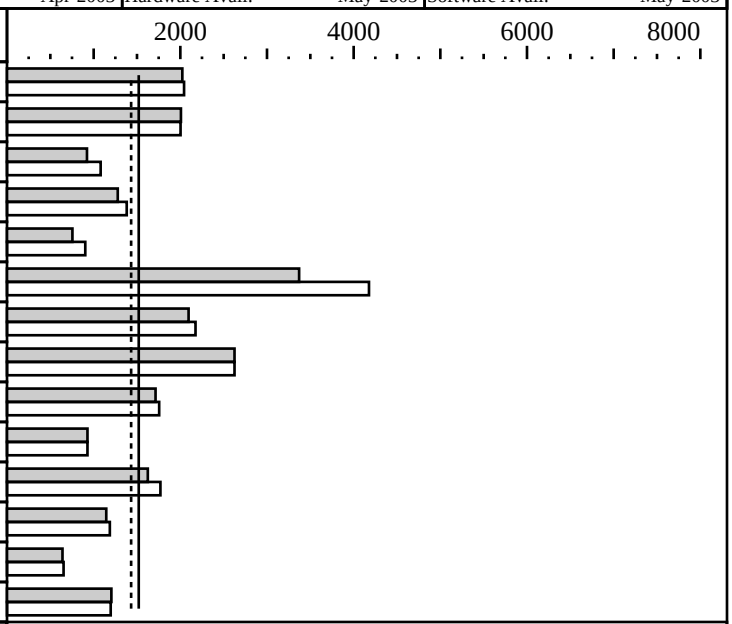
IBM eServer pSeries 670 (1500 MHz, 1 CPU)

SPECfp2000 = 1520

SPECfp_base2000 = 1432

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

| Benchmark | Reference Time | Base Runtime | Base Ratio | Runtime | Ratio |
|---|---|---|---|---|---|
| 168.wupwise | 1600 | 79.1 | 2023 | 78.3 | 2043 |
| 171.swim | 3100 | 154 | 2007 | 155 | 2003 |
| 172.mgrid | 1800 | 195 | 923 | 167 | 1081 |
| 173.applu | 2100 | 164 | 1278 | 152 | 1381 |
| 177.mesa | 1400 | 185 | 755 | 155 | 903 |
| 178.galgel | 2900 | 86.0 | 3371 | 69.4 | 4177 |
| 179.art | 2600 | 124 | 2095 | 120 | 2175 |
| 183.equake | 1300 | 49.5 | 2625 | 49.5 | 2625 |
| 187.facerec | 1900 | 111 | 1714 | 108 | 1756 |
| 188.ammp | 2200 | 237 | 928 | 237 | 928 |
| 189.lucas | 2000 | 123 | 1625 | 113 | 1770 |
| 191.fma3d | 2100 | 183 | 1145 | 177 | 1187 |
| 200.sixtrack | 1100 | 172 | 640 | 169 | 653 |
| 301.apsi | 2600 | 216 | 1204 | 217 | 1196 |




### Hardware

| | |
|---|---|
| CPU: | POWER4+ |
| CPU MHz: | 1500 |
| FPU: | Integrated |
| CPU(s) enabled: | 1 core, 4 chips, 2 cores/chip, 4 chips/MCM |
| CPU(s) orderable: | 4,8,16 cores (order by # cores) |
| Parallel: | No |
| Primary Cache: | 64KBI+32KBD (on chip) per core |
| Secondary Cache: | 1536KB unified (on chip) per chip |
| L3 Cache: | 128MB unified (off-chip) per MCM, 2 MCMs in SUT |
| Other Cache: | None |
| Memory: | 32 GB |
| Disk Subsystem: | 1x36GB SCSI, 10K RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | AIX 5L V5.2 |
| Compiler: | IBM C for AIX, Version 6.0<br>IBM XL FORTRAN for AIX, Version 8.1.0.3<br>Other Software: ESSL 3.3, MASS 3.0 |
| File System: | AIX/JFS |
| System State: | Multi-User |

## Notes/Tuning Information

```
Portability Flags
  -qfixed used in: 168.wupwise, 171.swim, 172.mgrid, 173.applu, 178.galgel,
   200.sixtrack, 301.apsi
  -qsuffix=f=f90 used in: 178.galgel, 187.facerec, 189.lucas, 191.fma3d

Base Optimization Flags:
  C:
  -O5 -qalign=natural -blpdata -lmass
  Fortran:
  -O5 -qalign=natural -blpdata -lmass

Floating Point Peak Flags
168.wupwise
  -O5 -qipa=partition=large
171.swim
  -O4 -q64 -blpdata
172.mgrid
```

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## Notes/Tuning Information (Continued)

```
    -O5 -qarch=pwr3 -qtune=pwr3 -blpdata
  173.applu
    -O3 -qarch=pwr3 -qtune=pwr3 -lmass -qhot -blpdata
  177.mesa
    -qpdf1/pdf2
    fdpr -v -R3
    -O3 -qarch=pwr3 -qtune=pwr3 -qipa=level=2 -qalign=natural -blpdata
  178.galgel
    -qpdf1/pdf2
    fdpr -v -R3
    -O5 -qalign=natural -qessl -lessl -lmass -blpdata
  179.art
   -O4 -lhmu
  183.equake
    BASEPEAK = 1
  187.facerec
    fdpr -v -R3
    -O5 -lmass -blpdata
  188.ammp
    BASEPEAK = 1
  189.lucas
    -O3 -q64 -blpdata
  191.fma3d
    -qpdf1/pdf2
    -O5 -qarch=pwr4 -qtune=pwr3 -lhmu -qalign=natural -blpdata
  200.sixtrack
    -qpdf1/pdf2
    -O5 -lmass
  301.apsi
    -O5 -qarch=pwr4 -qtune=pwr3 -blpdata

    MCM: Acronym for "Multi-Chip Module"
    SUT: Acronym for "System Under Test"

    15 processors were deconfigured through the configuration menu.
    2 memory-cards were deconfigured through the configuration menu.

    fpdr: Feedback directed program restructuring tool
    /usr/spec2000 filesystem mounted with no JFS log file I/O.
    APAR IY 39795 was applied to AIX to enable new hardware support.
    ulimits set to unlimited.
    C: IBM VAC++ invoked as xlc
    Fortran 77 and 90: IBM XL Fortran for AIX invoked as xlf90.
    Large page mode and memory affinity were set as follows:
    vmo -r -o lgpg_regions=32 -o lgpg_size=16777216 -o memory_affinity=1
      chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
      shutdown -r
      export MEMORY_AFFINITY=MCM
```