



CFP2000 Result

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IBM Corporation
IBM eServer pSeries 655 (1700 MHz, 1 CPU)

SPECfp2000 = 1776
SPECfp_base2000 = 1642

SPEC license #: 11 Tested by: IBM Austin Test date: Dec-2003 Hardware Avail: Feb-2004 Software Avail: Oct-2003

| Benchmark | Reference Time | Base Runtime | Base Ratio | Runtime | Ratio | |
|--------------|----------------|--------------|------------|---------|-------|--|
| 168.wupwise | 1600 | 80.5 | 1987 | 78.6 | 2037 | |
| 171.swim | 3100 | 107 | 2890 | 107 | 2898 | |
| 172.mgrid | 1800 | 155 | 1160 | 152 | 1187 | |
| 173.applu | 2100 | 161 | 1306 | 138 | 1521 | |
| 177.mesa | 1400 | 170 | 824 | 130 | 1077 | |
| 178.galgel | 2900 | 79.5 | 3648 | 59.5 | 4876 | |
| 179.art | 2600 | 114 | 2276 | 110 | 2365 | |
| 183.quake | 1300 | 48.5 | 2683 | 46.7 | 2785 | |
| 187.facerec | 1900 | 101 | 1885 | 100 | 1897 | |
| 188.ampm | 2200 | 213 | 1031 | 195 | 1128 | |
| 189.lucas | 2000 | 77.0 | 2596 | 74.4 | 2689 | |
| 191.fma3d | 2100 | 155 | 1355 | 149 | 1407 | |
| 200.sixtrack | 1100 | 154 | 713 | 151 | 729 | |
| 301.apsi | 2600 | 196 | 1329 | 182 | 1431 | |

Hardware

CPU: POWER4+
 CPU MHz: 1700
 FPU: Integrated
 CPU(s) enabled: 1 core, 4 chips, 2 cores/chip, 4 chips/MCM
 CPU(s) orderable: 1 MCM (order by # MCM)
 Parallel: No
 Primary Cache: 64KBI+32KBD (on chip) per core
 Secondary Cache: 1536KB unified (off chip) per chip
 L3 Cache: 128MB unified (off-chip) per MCM, 1 MCM in SUT
 Other Cache: None
 Memory: 32 GB
 Disk Subsystem: 2x36GB SCSI, 10K RPM
 Other Hardware: None

Software

Operating System: AIX 5L V5.2 5765-E62 (05/2003)
 Compiler: IBM C for AIX, Version 6.0
 IBM XL FORTRAN for AIX, Version 8.1.1.0
 Other Software: ESSL 4.1.0.0, MASS 3.2.1
 File System: AIX/JFS2
 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 -D_ILS_MACROS
 Fortran: -O5 -qalign=natural -blpdata -lmass

Peak Optimization Flags

168.wupwise: -O5 -qipa=partition=large -q64 -qarch=pwr4 -qtune=pwr4
 171.swim: -qpdf1/qpdf2 -O4 -blpdata -qarch=pwr4 -qtune=pwr4
 172.mgrid: fdpr -v -R3
 -O5 -qarch=pwr3 -qtune=pwr3 -blpdata -qalign=natural
 173.applu: -O4 -qarch=pwr3 -qtune=pwr3 -blpdata



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Notes/Tuning Information (Continued)

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177.mesa: -qpdf1/pdf2
          fdpr -v -R3
          -O3 -blpdata -qipa=level=2 -qalign=natural -qarch=pwr3 -qtune=pwr3
178.galgel: -qpdf1/pdf2
            -O5 -blpdata -qessl -lessl -qarch=pwr4 -qtune=pwr4
179.art: -O5 -qalign=natural -D_ILS_MACROS -qarch=pwr4 -qtune=pwr4
183.earthquake: fdpr -v -R3
                -O5 -blpdata -qalign=natural -qarch=pwr4 -qtune=pwr4 -qfdpr
187.facerec: -qpdf1/pdf2
            fdpr -v -R3
            -O5 -qarch=pwr3 -qtune=pwr3 -lmass -blpdata
188.ammp: -qpdf1/pdf2 -L/usr/vac/lib
          fdpr -v -R3
          -O5 -blpdata -qalign=natural -qipa=partition=large -qarch=pwr4 -qtune=pwr4
189.lucas: -O3 -qarch=pwr3 -qtune=pwr3 -blpdata -qipa=level=2 -qalign=natural
191.fma3d: -O3 -lhm -qarch=pwr3 -qtune=pwr3 -blpdata -qipa=level=2 -qalign=natural
200.sixtrack: -O3 -qhot -qarch=pwr4 -qtune=pwr4
301.apsi: fdpr -v -R3
          -O5 -lmass -qalign=natural -qessl -lessl -blpdata -qfdpr
          -qarch=pwr4 -qtune=pwr4 -qsave

```

C: IBM VAC++ invoked as xlc
Fortran 77 and 90: IBM XL Fortran for AIX invoked as xlf90.

fpdr: Feedback directed program restructuring tool
ulimits set to unlimited.
Large page mode and memory affinity were set as follows:
vmo -r -o lpgg_regions=400 -o lpgg_size=16777216 -o memory_affinity=1
chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE \$USER
shutdown -r
export MEMORY_AFFINITY=MCM

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

7 processors were deconfigured through the configuration menu.