



# 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.quake	1300	49.5	2625	49.5	2625
187.facerec	1900	111	1714	108	1756
188.amp	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  
IBM XL FORTRAN for AIX, Version 8.1.0.3  
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)

```
-05 -qarch=pwr3 -qtune=pwr3 -blpdata
173.applu
-03 -qarch=pwr3 -qtune=pwr3 -lmass -qhot -blpdata
177.mesa
-qpdf1/pdf2
fdpr -v -R3
-03 -qarch=pwr3 -qtune=pwr3 -qipa=level=2 -qalign=natural -blpdata
178.galgel
-qpdf1/pdf2
fdpr -v -R3
-05 -qalign=natural -qessl -lessl -lmass -blpdata
179.art
-04 -lhmu
183.quake
BASEPEAK = 1
187.facerec
fdpr -v -R3
-05 -lmass -blpdata
188.amp
BASEPEAK = 1
189.lucas
-03 -q64 -blpdata
191.fma3d
-qpdf1/pdf2
-05 -qarch=pwr4 -qtune=pwr3 -lhmu -qalign=natural -blpdata
200.sixtrack
-qpdf1/pdf2
-05 -lmass
301.apsi
-05 -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 lpgg\_regions=32 -o lpgg\_size=16777216 -o memory\_affinity=1  
chuser capabilities=CAP\_BYPASS\_RAC\_VMM,CAP\_PROPAGATE \$USER  
shutdown -r  
export MEMORY\_AFFINITY=MCM