



# CFP2000 Result

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IBM Corporation  
IBM BladeCenter JS21 (2500 MHz, 1 CPU)

SPECfp2000 = 2119  
SPECfp\_base2000 = 1936

SPEC license #: 11 | Tested by: IBM | Test date: Jan-2006 | Hardware Avail: Mar-2006 | Software Avail: Mar-2006

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	
168.wupwise	1600	74.1	2160	69.2	2312	
171.swim	3100	133	2329	130	2382	
172.mgrid	1800	115	1561	83.9	2146	
173.applu	2100	171	1226	145	1452	
177.mesa	1400	90.4	1550	82.4	1699	
178.galgel	2900	98.7	2939	87.5	3314	
179.art	2600	34.9	7454	33.5	7755	
183.quake	1300	37.3	3483	36.5	3559	
187.facerec	1900	78.2	2431	76.9	2471	
188.amp	2200	232	947	192	1143	
189.lucas	2000	107	1875	94.6	2115	
191.fma3d	2100	138	1518	130	1614	
200.sixtrack	1100	109	1010	105	1046	
301.apsi	2600	188	1383	190	1370	

### Hardware

CPU: IBM PowerPC 970MP  
 CPU MHz: 2500  
 FPU: Integrated  
 CPU(s) enabled: 1 core, 2 chips, 2 cores/chip  
 CPU(s) orderable: 4  
 Parallel: No  
 Primary Cache: 64KBI+32KBD (on chip)/core  
 Secondary Cache: 1MB unified (on chip)/core  
 L3 Cache: None  
 Other Cache: None  
 Memory: 4x2GB PC2-4200 533MHz ECC Chipkill DDR2  
 Disk Subsystem: 2x 73GB 10,000 rpm 2.5" SFF Serial Attached SCSI  
 Other Hardware: BladeCenter H

### Software

Operating System: AIX 5L V5.3  
 Compiler: XL C/C++ Enterprise Edition Version 8.0 for AIX  
 XL Fortran Enterprise Edition Version 10.1 for AIX  
 Other Software: ESSL 4.2.0.4  
 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:

Fortran: -O5 -lhmu -blpdata -lmass  
 C: -qpdf1/pdf2  
 -O5 -blpdata -qalign=natural

### Peak Optimization Flags

168.wupwise: -O5 -qsave -blpdata -lhmu -qenablevmx -lmass  
 171.swim: -qpdf1/pdf2  
 -O4 -qfdpr -blpdata  
 fdpr -q -O3  
 172.mgrid: -qpdf1/pdf2  
 -O4 -q64 -blpdata



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## Notes/Tuning Information (Continued)

```

173.applu: -O5 -qalign=struct=natural -qfdpr -q64 -blpdata -qenablevmx
           fdpr -q -O3
177.mesa:  -qpdf1/pdf2
           -O5 -qfdpr
           fdpr -q -O3
178.galgel: -qpdf1/pdf2
           -O5 -qfdpr -qalign=struct=natural -q64 -blpdata -qenablevmx -lmass -qessl -lessl
           fdpr -q -O3
179.art:   -O5 -blpdata -lhmu
183.equake: -qpdf1/pdf2
           -O3 -qarch=auto -qtune=auto -qipa=level=2 -blpdata
187.facerec: -O5 -qfdpr -blpdata -qenablevmx -lmass -qessl -lessl
           fdpr -q -O3
188.ammp:  -O5 -qalign=natural -blpdata -lhmu -qenablevmx -lmass
189.lucas: -O3 -qarch=auto -qtune=auto -qfdpr -blpdata
           fdpr -q -O3
191.fma3d: -O5 -qarch=pwr3 -qtune=pwr3 -qalign=struct=natural -qfdpr -blpdata
           fdpr -q -O3
200.sixtrack: -O3 -qarch=auto -qtune=auto -qfdpr -q64 -qenablevmx -lmass
           fdpr -q -O3
301.apsi:  -O5 -qhot=arraypad -Q -qalign=struct=natural -q64 -qenablevmx -lmass

```

The installed OS level is AIX 5L for POWER version 5.3 with the 5300-04 Recommended Technology Level.

ESSL: Engineering and Scientific Subroutine Library

```

ANSI C89:      IBM XL C for AIX invoked as xlc
Fortran 77:    IBM XL Fortran for AIX invoked as xlf90
Fortran 90:    IBM XL Fortran for AIX invoked as xlf90

```

ulimits set to unlimited.

Large page mode and memory affinity were set as follows:

```

vmo -r -o lpgg_regions=200 -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.

Three cores were deconfigured at the open-firmware prompt, using the command

```
boot -s cpu=1
```