



# CFP2000 Result

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IBM Corporation  
IBM eServer p5 510 (1650 MHz, 1 CPU)

SPECfp2000 = 2236

SPECfp\_base2000 = 2071

SPEC license #: 11 | Tested by: IBM | Test date: Jan-2005 | Hardware Avail: Feb-2005 | Software Avail: Dec-2004

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio
168.wupwise	1600	73.5	2176	69.2	2311
171.swim	3100	140	2216	123	2522
172.mgrid	1800	83.0	2168	83.5	2156
173.applu	2100	128	1639	125	1675
177.mesa	1400	133	1049	127	1104
178.galgel	2900	62.1	4668	43.6	6645
179.art	2600	31.3	8295	26.9	9670
183.quake	1300	29.7	4384	29.6	4385
187.facerec	1900	91.1	2086	83.5	2275
188.amp	2200	185	1190	173	1270
189.lucas	2000	77.3	2588	77.3	2587
191.fma3d	2100	161	1308	151	1392
200.sixtrack	1100	150	732	144	765
301.apsi	2600	183	1424	174	1497

### Hardware

CPU: POWER5  
CPU MHz: 1650  
FPU: Integrated  
CPU(s) enabled: 1 core, 1 chip, 1 core/chip (SMT off)  
CPU(s) orderable: 1,2  
Parallel: no  
Primary Cache: 64KBI+32KBD (on chip)  
Secondary Cache: 1920KB unified (on chip)  
L3 Cache: 36MB unified (off-chip)/DCM, 1 DCM/SUT  
Other Cache: None  
Memory: 8x4GB  
Disk Subsystem: 2x36GB SCSI, 15K RPM  
Other Hardware: None

### Software

Operating System: AIX 5L V5.3  
Compiler: XL C/C++ Enterprise Edition Version 7.0 for AIX  
XL Fortran Enterprise Edition V9.1 for AIX  
Other Software: ESSL 4.2  
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 -blpdata -lmass  
C: -qpdf1/pdf2  
-O5 -blpdata -qalign=natural

### Peak Optimization Flags

168.wupwise: fdpr -q -O3  
-O5 -q64 -blpdata -lmass -qalign=struct=natural -qfdpr  
171.swim: fdpr -q -O3  
-O5 -q64 -qarch=pwr3 -qtune=pwr3 -blpdata -lmass -qalign=struct=natural -qfdpr  
F77=xl f90  
172.mgrid: -qpdf1/pdf2



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## Notes/Tuning Information (Continued)

```

-05 -q64 -blpdata -lmass
173.applu: fdpr -q -03
-05 -q64 -blpdata -qalign=struct=natural -qfdpr
177.mesa: -qpdf1/pdf2
-03 -qarch=pwr3 -qtune=pwr3 -qipa=level=2
178.galgel: fdpr -q -03
-05 -blpdata -lmass -qessl -lessl -qfdpr
179.art: -05 -lhmu -blpdata -lmass
183.earthquake: -qpdf1/pdf2
-05 -blpdata -lmass -qipa=partition=large -qmaxmem=-1
187.facerec: fdpr -q -03
-05 -blpdata -lmass -qfdpr
188.ammp: -qpdf1/pdf2
-05 -q64 -blpdata -qalign=struct=natural
189.lucas: -05 -blpdata -lmass
191.fma3d: fdpr -q -03
-05 -blpdata -qalign=struct=natural -qfdpr
200.sixtrack: fdpr -q -03
-05 -blpdata -lmass -qfdpr
301.apsi: -05 -blpdata -lmass -qessl -lessl -qsave

```

APAR IY62267 was applied to AIX 5L V5.3 to achieve Maintenance Level 1.

SMT: Acronym for "Simultaneous Multi-Threading". A processor technology that allows the simultaneous execution of multiple thread contexts within a single processor core. (Enabled by default)

DCM: Acronym for "Dual-Chip Module" (one dual-core processor chip + one L3-cache chip)

SUT: Acronym for "System Under Test"

ESSL: Engineering and Scientific Subroutine Library

C: IBM XL C for AIX invoked as xlc

Fortran 77: IBM XL Fortran for AIX invoked as xlf90 unless explicitly reassigned

Fortran 90: IBM XL Fortran for AIX invoked as xlf

ulimits set to unlimited.

Large page mode and memory affinity were set as follows:

```

vmo -r -o lpgg_regions=512 -o lpgg_size=16777216 -o memory_affinity=1
chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
reboot -q
export MEMORY_AFFINITY=MCM

```

One core was deconfigured and SMT disabled at the open-firmware prompt, using the command

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