



# CFP2000 Result

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IBM Corporation  
IBM System p5 550 (2100 MHz, 1 CPU)

SPECfp2000 = 3321  
SPECfp\_base2000 = 3125

SPEC license #: 11 | Tested by: IBM Austin | Test date: Jun-2006 | Hardware Avail: Aug-2006 | Software Avail: Aug-2006

| Benchmark    | Reference Time | Base Runtime | Base Ratio | Runtime | Ratio |
|--------------|----------------|--------------|------------|---------|-------|
| 168.wupwise  | 1600           | 51.8         | 3086       | 44.0    | 3636  |
| 171.swim     | 3100           | 74.1         | 4186       | 74.1    | 4186  |
| 172.mgrid    | 1800           | 64.2         | 2805       | 61.1    | 2948  |
| 173.applu    | 2100           | 84.4         | 2488       | 79.0    | 2658  |
| 177.mesa     | 1400           | 92.1         | 1520       | 91.1    | 1536  |
| 178.galgel   | 2900           | 41.9         | 6915       | 31.3    | 9275  |
| 179.art      | 2600           | 15.1         | 17207      | 15.3    | 16948 |
| 183.earth    | 1300           | 20.3         | 6396       | 20.0    | 6505  |
| 187.facerec  | 1900           | 66.9         | 2838       | 65.7    | 2893  |
| 188.amp      | 2200           | 140          | 1570       | 127     | 1737  |
| 189.lucas    | 2000           | 36.2         | 5523       | 33.6    | 5960  |
| 191.fma3d    | 2100           | 113          | 1859       | 111     | 1884  |
| 200.sixtrack | 1100           | 119          | 924        | 112     | 978   |
| 301.apsi     | 2600           | 135          | 1921       | 135     | 1919  |

### Hardware

CPU: POWER5+  
CPU MHz: 2100  
FPU: Integrated  
CPU(s) enabled: 1 core, 1 chip, 2 cores/chip (SMT off)  
CPU(s) orderable: 2,4 cores  
Parallel: No  
Primary Cache: 64 KB I + 32 KB D on chip per core  
Secondary Cache: 1920 KB I+D on chip per chip  
L3 Cache: 36 MB I+D off chip per chip  
Other Cache: None  
Memory: 32 GB (8x4 GB)  
Disk Subsystem: 1x73GB SCSI, 15K RPM  
Other Hardware: None

### 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 -lmass  
171.swim: basepeak=1  
172.mgrid: -qpdf1/pdf2  
-O4 -qipa=partition=large -q64 -blpdata  
173.applu: -O5 -qarch=pwr3 -qtune=pwr3 -qalign=struct=natural -qfdpr -q64 -blpdata  
fdpr -q -O3



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## Notes/Tuning Information (Continued)

```

177.mesa:      -qpdf1/pdf2
               -O5 -qfdpr
               fdpr -q -O3
178.galgel:    -qpdf1/pdf2
               -O5 -qfdpr -qalign=struct=natural -lhmu -blpdata -lmass -qessl -lessl
               fdpr -q -O3
179.art:       -O5 -lhmu -blpdata
183.earthquake: -qpdf1/pdf2
               -O3 -qarch=auto -qtune=auto -qipa=level=2 -blpdata
187.facerec:   -O5 -qsave -blpdata
188.ammpp:     -O5 -qalign=natural -qfdpr -blpdata -lhmu
               fdpr -q -O3
189.lucas:     -O3 -qarch=auto -qtune=auto -qfdpr -blpdata -qessl -lessl
               fdpr -q -O3
191.fma3d:     -qpdf1/pdf2
               -O3 -qarch=auto -qtune=auto -qipa=level=2 -q64 -lhmu -blpdata -lmass
200.sixtrack:  -O3 -qarch=auto -qtune=auto -qfdpr
               fdpr -q -O3
301.apsi:      -O5

```

The installed OS level is AIX 5L for POWER Version 5.3 with the 5300-05 Recommended Technology Level.  
 The installed C/C++ compiler is XL C/C++ Enterprise Edition Version 8.0 for AIX with the March 2006 PTF.  
 The installed Fortran compiler is XL Fortran Enterprise Edition Version 10.1 with the May 2006 AIX PTF.

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)

SUT: Acronym for "System Under Test"

ESSL: Engineering and Scientific Subroutine Library

PTF: IBM identifier for "Program Fix Level"

```

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=128 -o lpgg_size=16777216
chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
bosboot -aD
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 and SMT disabled using the AIX commands

```

smtctl -m off -w boot
bosboot -aD
shutdown -rF
drmgr -r -c cpu
drmgr -r -c cpu
drmgr -r -c cpu

```