



# CFP2000 Result

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IBM Corporation  
IBM System p5 550 (1650 MHz, 1 CPU)

SPECfp2000 = 2657  
SPECfp\_base2000 = 2483

SPEC license #: 11 | Tested by: IBM | Test date: Dec-2005 | Hardware Avail: Feb-2006 | Software Avail: Feb-2006

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio
168.wupwise	1600	70.6	2268	60.6	2638
171.swim	3100	85.5	3625	85.5	3625
172.mgrid	1800	80.8	2228	76.1	2364
173.applu	2100	102	2050	95.9	2190
177.mesa	1400	121	1156	117	1195
178.galgel	2900	56.7	5114	39.3	7379
179.art	2600	19.3	13487	18.5	14067
183.quake	1300	25.5	5091	25.1	5185
187.facerec	1900	83.9	2264	81.9	2320
188.amp	2200	180	1220	164	1344
189.lucas	2000	43.0	4648	39.9	5014
191.fma3d	2100	139	1508	138	1524
200.sixtrack	1100	150	733	149	736
301.apsi	2600	166	1566	166	1566

### Hardware

CPU: POWER5+  
CPU MHz: 1650  
FPU: Integrated  
CPU(s) enabled: 1 core, 2 chips, 2 cores/chip (SMT off)  
CPU(s) orderable: 2,4  
Parallel: No  
Primary Cache: 64KBI+32KBD (on chip)/core  
Secondary Cache: 1920KB unified, shared (on chip)/chip  
L3 Cache: 36MB unified (off-chip)/DCM, 2 DCMs/SUT  
Other Cache: None  
Memory: 8x4GB  
Disk Subsystem: 2x73GB 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 4.2.0.3  
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 -lhmu -blpdata -lmass -qessl -lessl
                fdpr -q -O3
179.art:       -qpdf1/pdf2
                -O5 -qhot=arraypad -Q -qalign=natural -blpdata -lhmu
183.earthquake: -qpdf1/pdf2
                -O3 -qarch=auto -qtune=auto -qipa=level=2 -blpdata
187.facerec:   -O5 -qsave -blpdata
188.ammp:      -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: -qpdf1/pdf2
                -O4 -qfdpr
                fdpr -q -O3
301.apsi:      -O5

```

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

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

```

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=400 -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 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

```