



CFP2000 Result

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IBM Corporation
IBM System p5 510 (1900 MHz, 2 CPU)

SPECfp_rate2000 = 67.1
SPECfp_rate_base2000 = 65.9

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	105	71.0	4	90.6	82.0
171.swim	4	191	75.2	4	191	75.2
172.mgrid	4	154	54.2	4	146	57.2
173.applu	4	183	53.3	4	196	49.6
177.mesa	4	160	40.7	4	162	40.0
178.galgel	4	116	116	4	106	127
179.art	4	39.9	302	4	38.7	312
183.quake	4	43.9	138	4	43.1	140
187.facerec	4	127	69.3	4	126	70.0
188.amp	4	284	35.9	4	275	37.1
189.lucas	4	141	65.6	4	142	65.2
191.fma3d	4	221	44.1	4	221	44.0
200.sixtrack	4	184	27.7	4	187	27.2
301.apsi	4	249	48.4	4	252	47.8

Hardware

CPU: POWER5+
CPU MHz: 1900
FPU: Integrated
CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip (SMT on)
CPU(s) orderable: 1,2
Parallel: No
Primary Cache: 64KBI+32KBD (on chip)/core
Secondary Cache: 1920KB unified, shared (on chip)/chip
L3 Cache: 36MB unified (off-chip)/DCM, 1 DCM/SUT
Other Cache: None
Memory: 8x2GB
Disk Subsystem: 2x146GB 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.quake: -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=512 -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.