



CFP2000 Result

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IBM Corporation
IBM System p5 520 (1650 MHz, 1 CPU)

SPECfp2000 = 2676
SPECfp_base2000 = 2502

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	69.8	2292	59.9	2671
171.swim	3100	83.2	3727	83.2	3727
172.mgrid	1800	80.6	2234	75.8	2373
173.applu	2100	101	2087	94.3	2228
177.mesa	1400	121	1158	118	1184
178.galgel	2900	56.6	5121	39.2	7397
179.art	2600	19.3	13485	18.5	14058
183.quake	1300	25.5	5100	25.1	5189
187.facerec	1900	83.9	2266	81.9	2320
188.amp	2200	180	1221	164	1345
189.lucas	2000	42.5	4705	39.1	5109
191.fma3d	2100	139	1513	137	1530
200.sixtrack	1100	150	733	149	736
301.apsi	2600	162	1601	163	1598

Hardware

CPU: POWER5+
CPU MHz: 1650
FPU: Integrated
CPU(s) enabled: 1 core, 1 chip, 2 cores/chip (SMT off)
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: 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=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.

One core was deconfigured and SMT disabled using the AIX commands

```

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

```