CFP2000 Result

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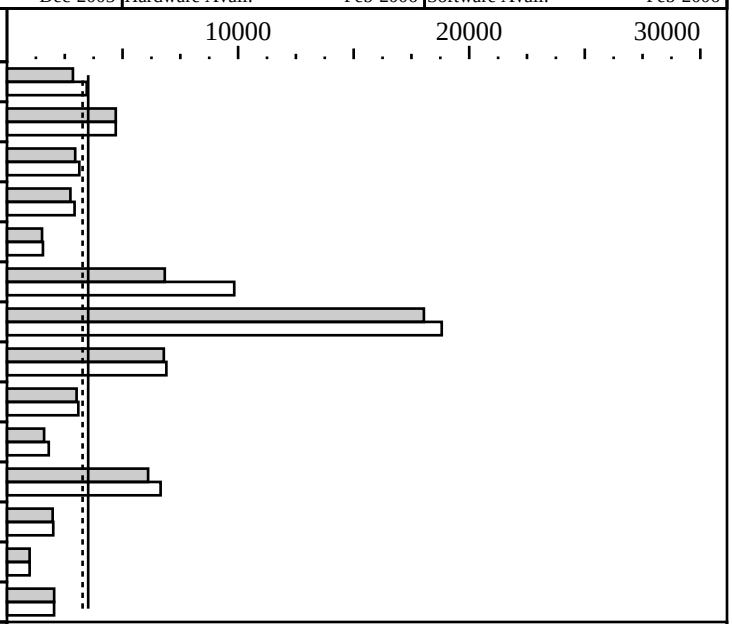
IBM Corporation
IBM System p5 575 (2200 MHz, 1 CPU)

SPECfp2000 = 3513

SPECfp_base2000 = 3271

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	56.1	2853	46.4	3450
171.swim	3100	65.9	4706	65.9	4706
172.mgrid	1800	61.0	2951	57.5	3129
173.applu	2100	76.5	2744	71.8	2924
177.mesa	1400	92.4	1516	90.0	1555
178.galgel	2900	42.5	6827	29.5	9832
179.art	2600	14.4	18039	13.8	18810
183.equake	1300	19.2	6785	18.9	6896
187.facerec	1900	63.1	3011	61.6	3085
188.ammp	2200	137	1605	122	1807
189.lucas	2000	32.8	6106	30.1	6647
191.fma3d	2100	106	1975	105	2002
200.sixtrack	1100	112	979	112	980
301.apsi	2600	127	2040	128	2037



Hardware

CPU:	POWER5+
CPU MHz:	2200
FPU:	Integrated
CPU(s) enabled:	1 core, 8 chips, 1 core/chip (SMT off)
CPU(s) orderable:	8,16
Parallel:	No
Primary Cache:	64KBI+32KBD (on chip)/core
Secondary Cache:	1920KB unified, shared (on chip)/chip
L3 Cache:	36MB unified (off-chip)/DCM, 8 DCMs/SUT
Other Cache:	None
Memory:	64x512MB
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.equake:   -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 lgpg_regions=800 -o lgpg_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.
Seven 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
drmgr -r -c cpu
drmgr -r -c cpu
drmgr -r -c cpu
```

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Notes/Tuning Information (Continued)

```
drmgr -r -c cpu
```