CFP2000 Result

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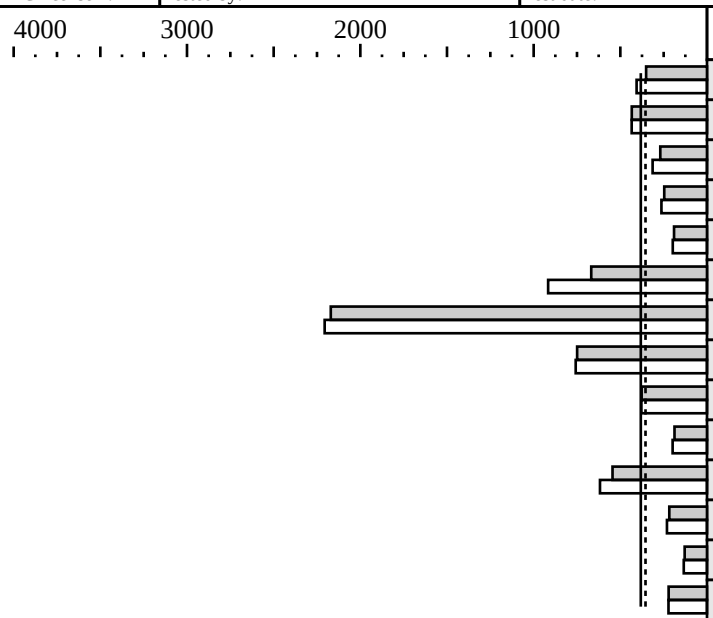
IBM Corporation

IBM System p5 575 (2200 MHz, 8 CPU)

SPECfp_rate2000 = 382

SPECfp_rate_base2000 = 355

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



Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	16	84.6	351	16	73.1	406
171.swim	16	133	434	16	132	435
172.mgrid	16	124	269	16	106	314
173.applu	16	158	247	16	148	263
177.mesa	16	137	190	16	132	197
178.galgel	16	80.6	668	8	29.4	916
179.art	16	22.2	2170	16	21.9	2206
183.equake	16	32.2	749	16	31.9	757
187.facerec	16	93.5	377	16	93.1	379
188.ammp	16	218	187	16	206	198
189.lucas	16	68.1	545	8	30.1	617
191.fma3d	16	179	217	16	169	231
200.sixtrack	16	158	129	16	152	134
301.apsi	16	218	221	16	217	222

Hardware

CPU:	POWER5+
CPU MHz:	2200
FPU:	Integrated
CPU(s) enabled:	8 cores, 8 chips, 1 core/chip (SMT on)
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:     -qpdf1/pdf2
                -O5 -qhot=arraypad -Q -qalign=struct=natural -q64 -blpdata
  172.mgrid:    -qpdf1/pdf2
                -O4 -qalign=struct=natural -lhmu -blpdata
  173.applu:    -O5 -qarch=pwr3 -qtune=pwr3 -qalign=struct=natural -qfdpr -q64 -blpdata
```

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Notes/Tuning Information (Continued)

```
                fdpr -q -O3
  177.mesa:     -qpdf1/pdf2
                -O4
  178.galgel:   -O5 -qfdpr -lhmu -blpdata -lmass -qessl -lessl
                fdpr -q -O3
                users=8
  179.art:      -qpdf1/pdf2
                -O5 -qalign=natural -lhmu -blpdata
  183.equake:   -qpdf1/pdf2
                -O3 -qarch=auto -qtune=auto -qipa=level=2 -blpdata
  187.facerec:  -O5 -qhot=arraypad -Q -qalign=struct=natural -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
                users=8
  191.fma3d:    -qpdf1/pdf2
                -O5 -qfdpr -q64 -lhmu -blpdata -lmass
                fdpr -q -O3
  200.sixtrack: -qpdf1/pdf2
                -O5 -qfdpr -qalign=struct=natural
                fdpr -q -O3
  301.apsi:     -O5 -qhot=arraypad -Q -qalign=struct=natural
```

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=1024 -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 = let "MYCPU=2*$SPECUSERNUM"; if (("$MYCPU > 15")) then let "MYCPU-=15"; fi; bindprocessor $$ $MYCPU; $command
```

The "bindprocessor" AIX command binds a process to a CPU core.