CFP2000 Result

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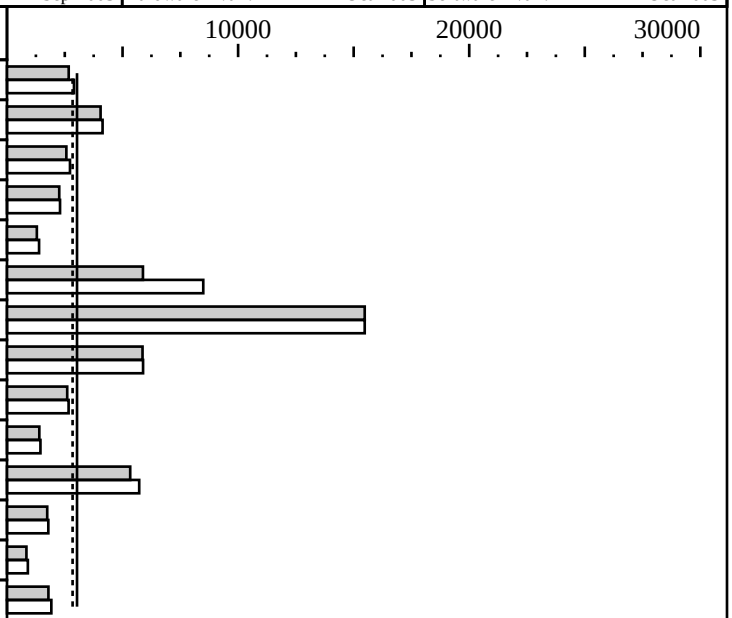
IBM Corporation
IBM System p5 520 (1900 MHz, 1 CPU)

SPECfp2000 = 3030

SPECfp_base2000 = 2839

SPEC license #: 11 | Tested by: IBM | Test date: Sep-2005 | Hardware Avail: Oct-2005 | Software Avail: Oct-2005

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio
168.wupwise	1600	59.9	2670	55.2	2898
171.swim	3100	76.6	4049	75.0	4135
172.mgrid	1800	70.1	2569	66.0	2725
173.applu	2100	92.9	2260	91.5	2295
177.mesa	1400	108	1291	101	1388
178.galgel	2900	49.3	5882	34.1	8492
179.art	2600	16.8	15478	16.8	15478
183.equake	1300	22.2	5864	22.1	5888
187.facerec	1900	72.9	2605	71.3	2665
188.ammp	2200	157	1398	152	1447
189.lucas	2000	37.5	5331	35.0	5720
191.fma3d	2100	121	1740	117	1788
200.sixtrack	1100	131	841	122	902
301.apsi	2600	145	1792	136	1918



Hardware

CPU:	POWER5+
CPU MHz:	1900
FPU:	Integrated
CPU(s) enabled:	1 core, 1 chip, 2 cores/chip (SMT off)
CPU(s) orderable:	2
Parallel:	None
Primary Cache:	64KBI+32KBD (on chip)/core
Secondary Cache:	1920KB unified (on chip)/chip
L3 Cache:	36MB unified (off-chip)/DCM, 1 DCM/SUT
Other Cache:	None
Memory:	8x2GB
Disk Subsystem:	1x73GB 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 4.2.0.2
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:  -qpdf1/pdf2
                -O5 -blpdata -qfdpr
                fdpr -q -O3
  171.swim:     F77=xlf
                -O5 -qarch=pwr3 -qtune=pwr3 -blpdata -lmass
  172.mgrid:    -qpdf1/pdf2
```

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Notes/Tuning Information (Continued)

```
                -q64 -O4 -blpdata
  173.applu:    -O5 -blpdata -lmass
  177.mesa:     -qpdf1/pdf2
                -O4 -blpdata -qalign=natural -Dfloor=__floor
  178.galgel:   -O5 -blpdata -qessl -lessl
  179.art:      basepeak=1
  183.equake:   -O5 -blpdata -lessl
  187.facerec:  -O5 -lmass -qessl -lessl -blpdata -qsave
  188.ammp:     -O5 -blpdata -qalign=natural
  189.lucas:    -O3 -qarch=pwr5x -qtune=pwr5x -lhmu -blpdata -lmass
  191.fma3d:    -qpdf1/pdf2
                -O4 -blpdata -qfdpr
                fdpr -q -O3
  200.sixtrack: -qpdf1/pdf2
                -O5 -blpdata -qfdpr
                fdpr -q -O3
  301.apsi:     -O5 -lmass -qessl -lessl -blpdata -qsave
```

The installed OS level is AIX 5L for POWER version 5.3 with the 5300-03 Recommended Maintenance package.

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

```
Extended C:     IBM XL C for AIX invoked as cc
ANSI C89:       IBM XL C for AIX invoked as xlc
Fortran 77:     IBM XL Fortran for AIX invoked as xlf90 unless explicitly reassigned
Fortran 90:     IBM XL Fortran for AIX invoked as xlf
```

ulimits set to unlimited.
Large page mode and memory affinity were set as follows:

```
    vmo -r -o lgpg_regions=400 -o lgpg_size=16777216
    chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
    reboot -q
    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 > 3")) then let "MYCPU-=3"; fi; bindprocessor $$ $MYCPU; $command
```

The "bindprocessor" AIX command binds a process to a CPU core.
One core was deconfigured and SMT disabled at the open-firmware prompt, using the command

```
            boot -s cpu=1 -s smt_off
```

Use flags-description file IBM-20051013-AIX.txt.