CFP2000 Result

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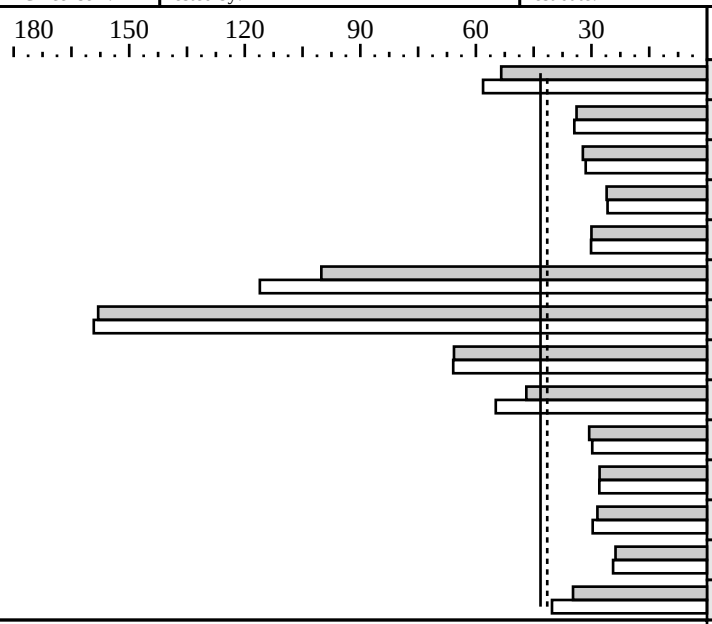
IBM Corporation

IBM eServer p5 510 (1650 MHz, 2 CPU)

SPECfp_rate2000 = 43.2

SPECfp_rate_base2000 = 41.5

SPEC license #: 11 | Tested by: IBM | Test date: Jan-2005 | Hardware Avail: Feb-2005 | Software Avail: Dec-2004



Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	139	53.4	4	128	58.1
171.swim	4	425	33.9	4	418	34.4
172.mgrid	4	259	32.2	4	265	31.5
173.applu	4	374	26.1	4	377	25.8
177.mesa	4	217	30.0	4	216	30.1
178.galgel	4	134	100	4	116	116
179.art	4	76.3	158	4	75.8	159
183.equake	4	91.8	65.7	4	91.6	65.9
187.facerec	4	188	46.9	4	161	54.8
188.ammp	4	334	30.6	4	343	29.8
189.lucas	4	333	27.9	4	332	28.0
191.fma3d	4	343	28.4	4	328	29.7
200.sixtrack	4	215	23.7	4	209	24.4
301.apsi	4	347	34.8	4	300	40.2

Hardware

CPU:	POWER5
CPU MHz:	1650
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 (on chip)/chip
L3 Cache:	36MB unified (off-chip)/DCM, 1 DCM/SUT
Other Cache:	None
Memory:	8x4GB
Disk Subsystem:	2x36GB SCSI, 15K RPM
Other Hardware:	None

Software

Operating System:	AIX 5L V5.3
Compiler:	XL C/C++ Enterprise Edition Version 7.0 for AIX XL Fortran Enterprise Edition V9.1 for AIX Other Software: ESSL 4.2
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 -blpdata -lmass
  C:          -qpdf1/pdf2
              -O5 -blpdata -qalign=natural

Peak Optimization Flags
  168.wupwise:  fdpr -q -O3
                -O5 -q64 -blpdata -lmass -qalign=struct=natural -qfdpr
  171.swim:     fdpr -q -O3
              -O5 -q64 -qarch=pwr3 -qtune=pwr3 -blpdata -lmass -qalign=struct=natural -qfdpr
                F77=xlf90
  172.mgrid:    -qpdf1/pdf2
```

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Notes/Tuning Information (Continued)

```
                -O5 -q64 -blpdata -lmass
                F77=xlf90
  173.applu:    fdpr -q -O3
                -O5 -q64 -blpdata -qalign=struct=natural -qfdpr
                F77=xlf90
  177.mesa:     -qpdf1/pdf2
                -O3 -qarch=pwr3 -qtune=pwr3 -qipa=level=2
  178.galgel:   fdpr -q -O3
                -O5 -blpdata -lmass -qessl -lessl -qfdpr
  179.art:      -O5 -lhmu -blpdata -lmass
  183.equake:   -qpdf1/pdf2
                -O5 -blpdata -lmass -qipa=partition=large -qmaxmem=-1
  187.facerec:  fdpr -q -O3
                -O5 -blpdata -lmass -qfdpr
  188.ammp:     -qpdf1/pdf2
                -O5 -q64 -blpdata -qalign=natural
  189.lucas:    -O5 -blpdata -lmass
  191.fma3d:    fdpr -q -O3
                -O5 -blpdata -qalign=struct=natural -qfdpr
  200.sixtrack: fdpr -q -O3
                -O5 -blpdata -lmass -qfdpr
  301.apsi:     -O5 -blpdata -lmass -qessl -lessl -qsave

APAR IY62267 was applied to AIX 5L V5.3 to achieve Mantainence Level 1.

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

C:           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=1024 -o lgpg_size=16777216 -o memory_affinity=1
    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=$SPECUSERNUM"; bindprocessor $$ $MYCPU; $command
The "bindprocessor" AIX command binds a process to a CPU core.
```