CFP2000 Result

IBM Corporation

IBM eServer p5 520 Express (1500 MHz, 1 CPU)

SPECfp2000 = NC

SPECfp_base2000 = NC

SPEC license #: 11 Tested by: IBM Test date: Sep-2004 Hardware Avail: Oct-2004 Software Avail: Oct-2004

SPEC has determined that this result was not in compliance with the SPEC CPU2000 run and reporting rules. Specifically, the submitter has reported that measurements on a production system were not, as required by the SPEC CPU2000 Run Rules, within the 1.75% lower bound of the preproduction system.

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio
168.wupwise	1600	NC	NC	NC	NC
171.swim	3100	NC	NC	NC	NC
172.mgrid	1800	NC	NC	NC	NC
173.applu	2100	NC	NC	NC	NC
177.mesa	1400	NC	NC	NC	NC
178.galgel	2900	NC	NC	NC	NC
179.art	2600	NC	NC	NC	NC
183.equake	1300	NC	NC	NC	NC
187.facerec	1900	NC	NC	NC	NC
188.ammp	2200	NC	NC	NC	NC
189.lucas	2000	NC	NC	NC	NC
191.fma3d	2100	NC	NC	NC	NC
200.sixtrack	1100	NC	NC	NC	NC
301.apsi	2600	NC	NC	NC	NC

Hardware

CPU:	POWER5
CPU MHz:	1500
FPU:	Integrated
CPU(s) enabled:	1 core, 1 chip, 2 cores/chip (SMT off)
CPU(s) orderable:	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:	8x2 GB
Disk Subsystem:	2x36GB SCSI, 15K RPM
Other Hardware:	

Software

Operating System:	AIX 5L V5.3
Compiler:	XL C/C++ Enterprise Edition V7.0 for AIX XL Fortran Enterprise Edition V9.1 for AIX Other Software: IBM ESSL for AIX V4.2
File System:	AIX/JFS2
System State:	Multi-user

Notes/Tuning Information

```
Tested by IBM
  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:
```

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Notes/Tuning Information (Continued)

```
  C:          -qpdf1/pdf2
              -O5 -blpdata -lmass
  Fortran:    -qpdf1/pdf2
              -O5 -blpdata -lmass

Peak Optimization Flags:
   168.wupwise:    -O5 -qarch=pwr3 -qtune=pwr3 -blpdata -lmass
                   F77=xlf
   171.swim:       -O5 -qarch=pwr3 -qtune=pwr3 -blpdata -lmass
                   F77=xlf
   172.mgrid:      -qpdf1/pdf2
                   -O5 -blpdata -lmass
   173.applu:      -O5 -qarch=pwr3 -qtune=pwr3 -blpdata -lmass
                   F77=xlf
   177.mesa:       -qpdf1/pdf2
                   -O5
   178.galgel:     -O5 -blpdata -qessl -lessl
   179.art:        -O5 -lmass -qessl -lessl -blpdata -qsave
   183.equake:     -qpdf1/pdf2
                   -O5 -blpdata -lmass
   187.facerec:    -O3 -qhot -qarch=pwr5 -qtune=pwr5 -qfdpr
                   fdpr -R3
   188.ammp:       -qpdf1/pdf2
                   -O5 -blpdata -qalign=natural -D_ILS_MACROS
   189.lucas:      -O5 -blpdata -lmass
   191.fma3d:      -qpdf1/pdf2
                   -O5 -blpdata -qalign=natural -qhot=arraypad -Q
   200.sixtrack:   -O3 -qhot -qarch=pwr5 -qtune=pwr5 -qfdpr
                   fdpr -R3
   301.apsi:       -O5 -lmass -qessl -lessl -blpdata -qsave


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)
ESSL: Engineering and Scientific Subroutine Library
DCM:  Acronym for "Dual-Chip Module" (one dual-core processor chip + one L3-cache chip)
SUT:  Acronym for "System Under Test"

C:       IBM XL C for AIX invoked as xlc
Fortran: IBM XL Fortran for AIX invoked as xlf90

APAR IY 62534 was applied to AIX to enable new hardware support.
ulimits set to unlimited.
Large page mode and memory affinity were set as follows:
   vmo -r -o lgpg_regions=400 -o lgpg_size=16777216 -o memory_affinity=1
```

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Notes/Tuning Information (Continued)

```
chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
shutdown -r
export MEMORY_AFFINITY=MCM

One core was deconfigured and SMT disabled at the open-firmware prompt, using the
command
          boot -s cpu=1 -s smt_off
```