CFP2000 Result

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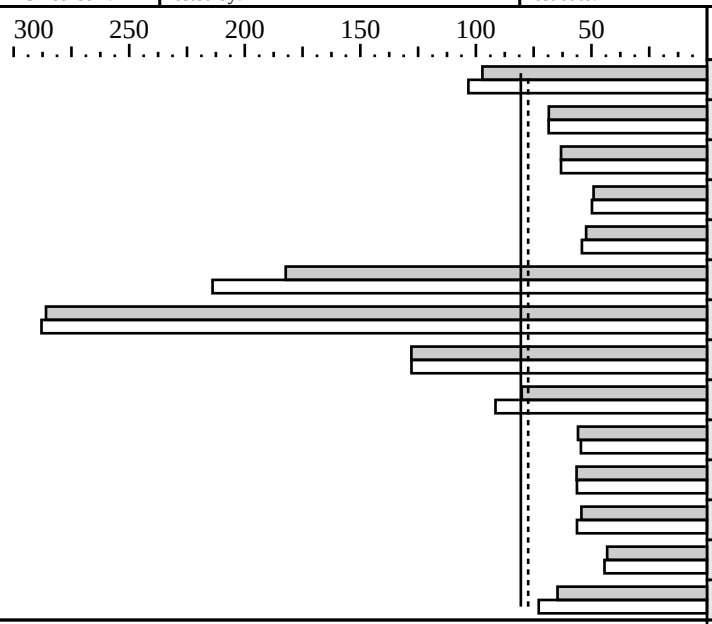
IBM Corporation

IBM eServer p5 550 Express (1500 MHz, 4 CPU)

SPECfp_rate2000 = 80.6

SPECfp_rate_base2000 = 77.4

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



Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	8	153	97.2	8	144	103
171.swim	8	420	68.4	8	420	68.5
172.mgrid	8	264	63.2	8	264	63.2
173.applu	8	397	49.1	8	392	49.8
177.mesa	8	248	52.3	8	240	54.1
178.galgel	8	148	182	8	126	214
179.art	8	84.4	286	8	83.8	288
183.equake	8	94.3	128	8	94.3	128
187.facerec	8	220	80.2	8	193	91.5
188.ammp	8	366	55.8	8	374	54.6
189.lucas	8	329	56.4	8	330	56.3
191.fma3d	8	359	54.3	8	346	56.3
200.sixtrack	8	236	43.2	8	230	44.3
301.apsi	8	373	64.7	8	331	72.8

Hardware

CPU:	POWER5
CPU MHz:	1500
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 2 cores/chip (SMT on)
CPU(s) orderable:	2,4
Parallel:	No
Primary Cache:	64KBI+32KBD (on-chip)/core
Secondary Cache:	1920KB unified (on-chip)/chip
L3 Cache:	36MB unified (off-chip)/DCM, 2 DCM/SUT
Other Cache:	None
Memory:	16x2GB
Disk Subsystem:	1x73GB SCSI, 15K RPM
Other Hardware:	None

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: ESSL V4.2 for AIX
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:  -q64 -O5 -blpdata -lmass -qalign=struct=natural -qfdpr
                fdpr -q -O3
  171.swim:     F77=xlf
              -q64 -O5 -qarch=pwr3 -qtune=pwr3 -blpdata -lmass -qalign=struct=natural -qfdpr
                fdpr -q -O3
  172.mgrid:    basepeak=1
```

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Notes/Tuning Information (Continued)

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

APAR IY62267 was applied to AIX 5L V5.3 to achieve Mantainence Level 1.
November 2004 PTF was applied to XL C/C++ Enterprise Edition V7.0.
November 2004 PTF was applied to XL Fortran Enterprise Edition V9.1.

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 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 -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.

Use flags-description file IBM-20050208-AIX.txt.
```