CFP2000 Result

Copyright ©1999-2004, Standard Performance Evaluation Corporation

IBM Corporation

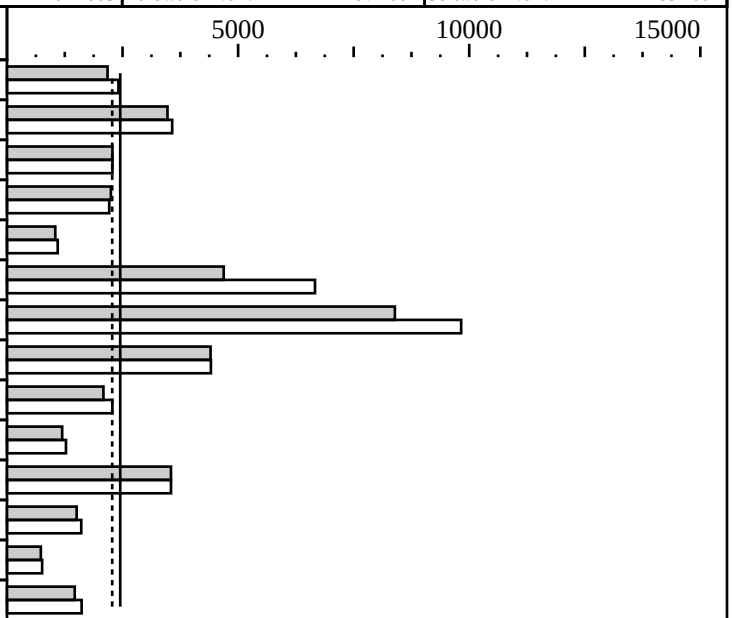
IBM eServer pSeries 590 (1650 MHz, 1 CPU)

SPECfp2000 = 2450

SPECfp_base2000 = 2276

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio
168.wupwise	1600	73.5	2175	66.4	2411
171.swim	3100	89.3	3472	86.7	3574
172.mgrid	1800	78.9	2281	78.9	2281
173.applu	2100	93.4	2248	94.9	2212
177.mesa	1400	134	1045	128	1097
178.galgel	2900	61.9	4688	43.5	6663
179.art	2600	31.0	8391	26.5	9826
183.equake	1300	29.5	4404	29.5	4412
187.facerec	1900	91.1	2086	83.3	2280
188.ammp	2200	184	1194	172	1276
189.lucas	2000	56.4	3548	56.4	3548
191.fma3d	2100	139	1507	131	1606
200.sixtrack	1100	150	732	145	760
301.apsi	2600	177	1466	161	1615



Hardware

CPU:	POWER5
CPU MHz:	1650
FPU:	Integrated
CPU(s) enabled:	1 core, 1 chip, 2 cores/chip (SMT off)
CPU(s) orderable:	8,16,24,32
Parallel:	No
Primary Cache:	64KBI+32KBD (on chip)
Secondary Cache:	1920KB unified (on chip)
L3 Cache:	36MB unified (off-chip)/chip, 4 chips/MCM, 2 MCM/SUT
Other Cache:	None
Memory:	64 GB DDR2
Disk Subsystem:	1x73GB 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 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
```

Copyright ©1999-2004, Standard Performance Evaluation Corporation

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).
MCM:  Acronym for "Multi-Chip Module" (four dual-core processor chips + four L3-cache chips).
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=1736 -o lgpg_size=16777216 -o memory_affinity=1
    chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
    reboot -q
    export MEMORY_AFFINITY=MCM
15 (out of 16) cores were deconfigured and SMT disabled at the open-firmware prompt, using the
command
    boot -s cpu=1 -s smt_off

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