CFP2000 Result

IBM Corporation

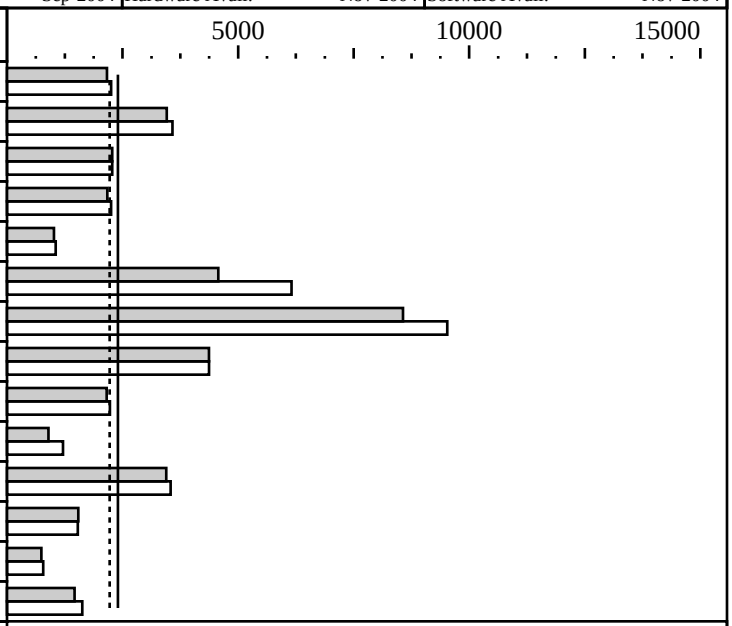
IBM eServer p5 590 (1650 MHz, 1 CPU)

SPECfp2000 = 2398

SPECfp_base2000 = 2223

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio
168.wupwise	1600	74.0	2163	71.0	2253
171.swim	3100	89.7	3456	86.6	3580
172.mgrid	1800	79.1	2276	79.1	2277
173.applu	2100	96.8	2170	93.2	2252
177.mesa	1400	138	1016	133	1053
178.galgel	2900	63.4	4571	47.1	6156
179.art	2600	30.3	8567	27.3	9523
183.equake	1300	29.8	4370	29.7	4371
187.facerec	1900	88.1	2156	85.3	2226
188.ammp	2200	245	897	182	1211
189.lucas	2000	58.1	3445	56.5	3540
191.fma3d	2100	136	1543	137	1532
200.sixtrack	1100	148	743	140	784
301.apsi	2600	178	1462	160	1628



Hardware

CPU:	POWER5
CPU MHz:	1650
FPU:	Integrated
CPU(s) enabled:	32 cores, 16 chips, 2 cores/chip (SMT off)
CPU(s) orderable:	8,16,24,32
Parallel:	No
Primary Cache:	64KBI+32KBD (on chip)/core
Secondary Cache:	1920KB unified (on chip)/chip
L3 Cache:	36MB unified (off-chip)/chip, 4 chips/MCM, 4 MCMs/SUT
Other Cache:	None
Memory:	128 GB DDR2
Disk Subsystem:	2x36GB 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 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:
    C:          -qpdf1/pdf2
                -O5 -blpdata -lmass
    Fortran:    -qpdf1/pdf2
                -O5 -blpdata -lmass

  Peak Optimization Flags:
     168.wupwise:    -O5
     171.swim:       -O5 -qarch=pwr3 -qtune=pwr3 -blpdata -lmass
                     F77=xlf
```

Notes/Tuning Information (Continued)

```
   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)
MCM: Acronym for "Multi-Chip Module" (four dual-core processor chips + four L3-cache chips)
     This system contains 4 MCMs.
SUT: Acronym for "System Under Test"
ESSL: Engineering and Scientific Subroutine Library

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

APAR IY60349 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=4096 -o lgpg_size=16777216 -o memory_affinity=1
   chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
   shutdown -r
   export MEMORY_AFFINITY=MCM

SMT was disabled at the open-firmware prompt, using the command
   boot -s smt_off
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.
```