CFP2000 Result

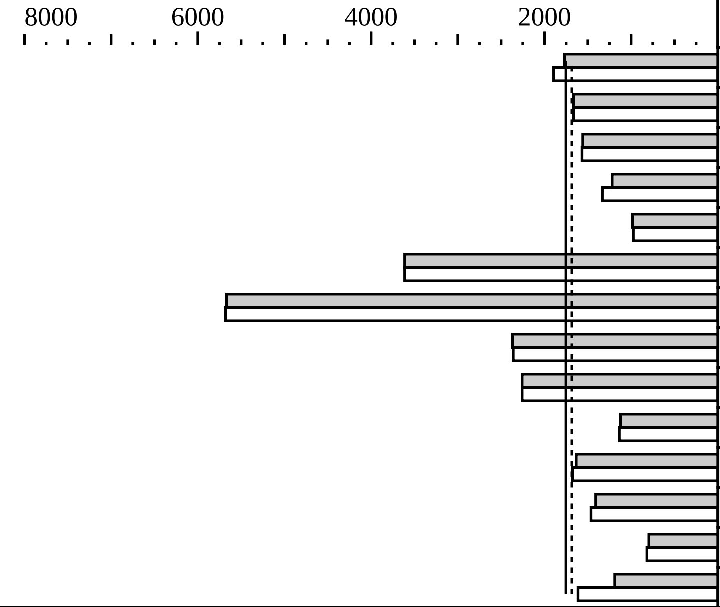
IBM Corporation

IBM eServer p5 595 (1900 MHz, 64 CPU)

SPECfp_rate2000 = 1752

SPECfp_rate_base2000 = 1684

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



Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	128	134	1769	128	125	1894
171.swim	128	277	1664	128	277	1664
172.mgrid	128	172	1558	128	171	1567
173.applu	128	256	1218	64	117	1331
177.mesa	128	211	984	128	213	974
178.galgel	128	119	3613	128	119	3613
179.art	128	68.1	5667	128	68.0	5679
183.equake	128	81.5	2369	128	81.8	2360
187.facerec	128	125	2257	128	125	2257
188.ammp	128	291	1122	128	288	1136
189.lucas	128	182	1633	64	88.6	1677
191.fma3d	128	221	1409	128	213	1463
200.sixtrack	128	205	795	128	200	817
301.apsi	128	325	1189	128	239	1613

Hardware

CPU:	POWER5
CPU MHz:	1900
FPU:	Integrated
CPU(s) enabled:	64 cores, 32 chips, 2 cores/chip (SMT on)
CPU(s) orderable:	16,24,32,40,48,56,64
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, 8 MCMs/SUT
Other Cache:	None
Memory:	256 GB DDR2
Disk Subsystem:	3x36GB SCSI, 15K RPM
Other Hardware:	None

Software

Operating System:	AIX 5L V5.3 ML_1
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 -qalign=natural
    Fortran:   -qpdf1/pdf2
               -O5 -blpdata -lmass

  Peak Optimization Flags:
     168.wupwise:    -O5 -qarch=pwr3 -qtune=pwr3 -blpdata -lmass
     171.swim:       basepeak=1
     172.mgrid:      -qpdf1/pdf2
```

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Notes/Tuning Information (Continued)

```
                     -O5 -blpdata -lmass
   173.applu:        -O5 -blpdata -lmass
                     F77=xlf
                     users=64
   177.mesa:         -qpdf1/pdf2
                     -O5 -blpdata -lmass -qalign=natural
   178.galgel:       basepeak=1
   179.art:          -qpdf1/pdf2
                     -O5 -blpdata -lmass -qalign=natural
   183.equake:       -qpdf1/pdf2
                     -O5 -blpdata -lmass -qalign=natural
   187.facerec:      basepeak=1
   188.ammp:         -qpdf1/pdf2
                     -O5 -blpdata -qalign=natural -D_ILS_MACROS
   189.lucas:        -O5 -blpdata -lmass
                     users=64
   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 8 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 IY62267 was applied to AIX 53 to achieve Mantainence 1 Level.
ulimits set to unlimited.
Large page mode and memory affinity were set as follows:
   vmo -r -o lgpg_regions=8192 -o lgpg_size=16777216 -o memory_affinity=1 -o v_pinshm=1
   chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
   shutdown -r
   export MEMORY_AFFINITY=MCM

The following config-file entry was used to assign each benchmark process to a core:
   submit = schedule.128 $SPECUSERNUM $command
with the "schedule.128" function defined as follows:
   #!/bin/ksh
   index=$1
   shift 1                      # Strip off the residual arguments; the rest is the command.
   if [[ $index -ge 64 ]]
   then
       target=$((1+2*(index-64)))
   else
       target=$((2*index))
   fi
   bindprocessor $$ $target       # Schedule this job to the corresponding core.
   $*                             # Now run the command.
```

Notes/Tuning Information (Continued)

```
The "bindprocessor" AIX command binds a process to a CPU core.
```