CFP2000 Result

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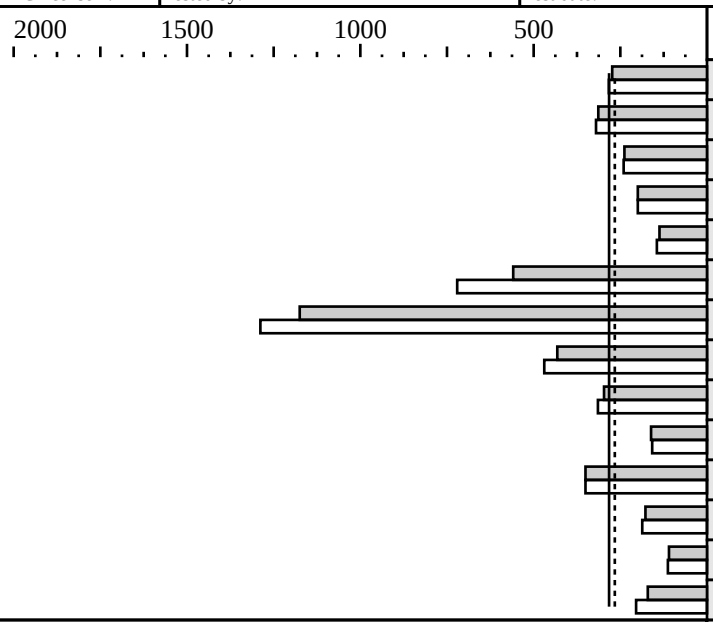
IBM Corporation
IBM eServer p5 575 (1900 MHz, 8 CPU)

SPECfp_rate2000 = 282

SPECfp_rate_base2000 = 266

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



Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	16	109	273	16	105	283
171.swim	16	183	314	16	180	320
172.mgrid	16	140	238	8	69.5	240
173.applu	16	195	200	16	195	200
177.mesa	16	190	137	16	180	145
178.galgel	16	96.3	559	16	74.7	721
179.art	16	41.1	1175	16	37.5	1288
183.equake	16	55.9	432	8	25.7	469
187.facerec	16	119	297	16	112	315
188.ammp	16	253	161	16	258	158
189.lucas	16	106	351	16	106	351
191.fma3d	16	220	178	16	209	187
200.sixtrack	16	186	110	16	181	113
301.apsi	16	283	171	16	236	205

Hardware

CPU:	POWER5
CPU MHz:	1900
FPU:	Integrated
CPU(s) enabled:	8 cores, 8 chips, 1 core/chip (SMT on)
CPU(s) orderable:	8
Parallel:	no
Primary Cache:	64KBI+32KBD (on chip)
Secondary Cache:	1920KB unified (on chip)
L3 Cache:	36MB unified (off-chip)/DCM, 8 DCM/SUT
Other Cache:	None
Memory:	32 GB
Disk Subsystem:	2x36GB 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 4.2
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 -lhmu -blpdata -lmass
  C:          -qpdf1/pdf2
              -O5 -blpdata -qalign=natural

Peak Optimization Flags
  168.wupwise:  fdpr -q -O3
                -O5 -q64 -lmass -qalign=struct=natural -qfdpr
  171.swim:     fdpr -q -O3
              -O5 -q64 -qarch=pwr3 -qtune=pwr3 -blpdata -lmass -qalign=struct=natural -qfdpr
                F77=xlf90
  172.mgrid:    -qpdf1/pdf2
```

Notes/Tuning Information (Continued)

```
                -O5 -q64 -blpdata -lmass
                users=8
  173.applu:    basepeak=1
                users=8
  177.mesa:     -qpdf1/pdf2
                -O3 -qarch=auto -qtune=auto -qipa=level=2
  178.galgel:   fdpr -q -O3
                -O5 -blpdata -lmass -qessl -lessl -qalign=struct=natural -qfdpr
  179.art:      -O5 -lhmu -blpdata -lmass
  183.equake:   -qpdf1/pdf2
                -O5 -blpdata -lmass -qipa=partition=large -qmaxmem=-1
                users=8
  187.facerec:  fdpr -q -O3
                -O5 -blpdata -lmass -qfdpr
  188.ammp:     -qpdf1/pdf2
                -O5 -q64 -blpdata -qalign=natural
  189.lucas:    basepeak=1
  191.fma3d:    fdpr -q -O3
                -O5 -blpdata -qalign=struct=natural -qfdpr
  200.sixtrack: fdpr -q -O3
                -O5 -blpdata -lmass -qfdpr
                F77=xlf90
  301.apsi:     -O5 -blpdata -lmass -qessl -lessl -qsave
                F77=xlf90

APAR IY62267 was applied to AIX 5L V5.3 to achieve Mantainence Level 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).
      For the 575, only one core is active per 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 xlf

ulimits set to unlimited.
Large page mode and memory affinity were set as follows:
    vmo -r -o lgpg_regions=512 -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=2*$SPECUSERNUM"; if (("$MYCPU > 15")) then let "MYCPU-=15"; fi; bindprocessor $$ $MYCPU; $command
The "bindprocessor" AIX command binds a process to a CPU core.
```