CFP2000 Result

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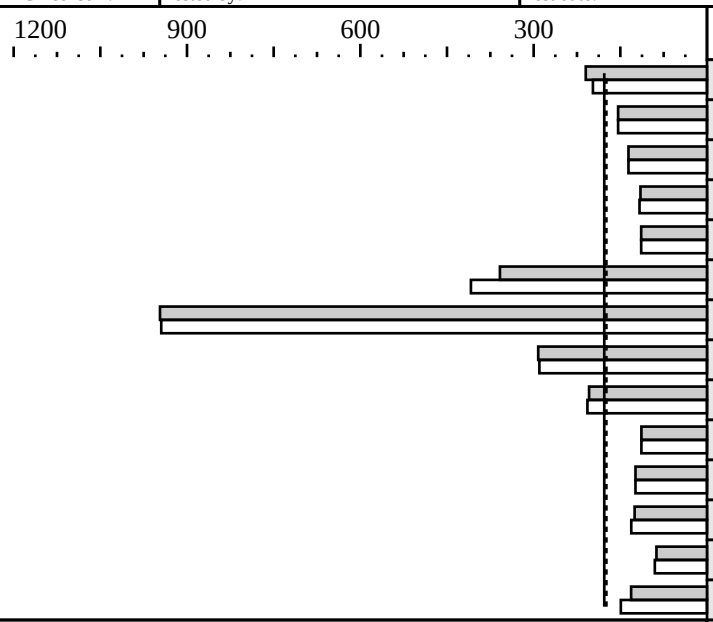
IBM Corporation

IBM System p5 550Q (1500 MHz, 8 CPU)

SPECfp_rate2000 = 178

SPECfp_rate_base2000 = 174

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



Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	16	142	210	16	150	197
171.swim	16	374	154	16	374	154
172.mgrid	16	246	136	16	246	136
173.applu	16	338	115	16	334	117
177.mesa	16	228	114	16	228	114
178.galgel	16	150	358	16	132	409
179.art	16	51.0	947	16	51.1	945
183.equake	16	82.6	292	16	83.2	290
187.facerec	16	173	204	16	170	207
188.ammp	16	360	114	16	360	114
189.lucas	16	300	124	16	300	124
191.fma3d	16	311	125	16	297	131
200.sixtrack	16	233	87.5	16	226	90.3
301.apsi	16	367	131	16	324	149

Hardware

CPU:	POWER5+
CPU MHz:	1500
FPU:	Integrated
CPU(s) enabled:	8 cores, 4 chips, 2 cores/chip (SMT on)
CPU(s) orderable:	4,8
Parallel:	None
Primary Cache:	64KBI+32KBD (on chip)/core
Secondary Cache:	1920KB unified (on chip)/chip
L3 Cache:	2x36MB unified (off-chip)/QCM, 2 QCM/SUT
Other Cache:	None
Memory:	16x4GB
Disk Subsystem:	1x36GB SCSI, 15K RPM
Other Hardware:	None

Software

Operating System:	AIX 5L V5.3
Compiler:	XL C/C++ Enterprise Edition Version 8.0 for AIX XL Fortran Enterprise Edition Version 10.1 for AIX Other Software: ESSL 4.2.0.2
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:  -qpdf1/pdf2
                -O5 -blpdata -qfdpr -qalign=struct=natural
                fdpr -q -O3
  171.swim:     basepeak=1
  172.mgrid:    basepeak=1
  173.applu:    -O5 -blpdata -lmass
```

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Notes/Tuning Information (Continued)

```
  177.mesa:     basepeak=1
  178.galgel:   -O5 -blpdata -qessl -lessl
  179.art:      -qpdf1/pdf2
                -O5 -blpdata -qhot=arraypad -Q -qalign=natural
  183.equake:   -O5 -blpdata -lessl
  187.facerec:  -O5 -lmass -qessl -lessl -blpdata -qsave
  188.ammp:     basepeak=1
  189.lucas:    basepeak=1
  191.fma3d:    -qpdf1/pdf2
                -O5 -blpdata -qfdpr -qalign=struct=natural
                fdpr -q -O3
  200.sixtrack: -qpdf1/pdf2
                -O5 -blpdata -qfdpr -qalign=struct=natural
                fdpr -q -O3
  301.apsi:     -O5 -lmass -qessl -lessl -blpdata -qsave
```

The installed OS level is AIX 5L for POWER version 5.3 with the 5300-03 Recommended Maintenance package.

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)
QCM: Acronym for "Quad-Core Module" (two dual-core processor chips + two L3-cache chips)
SUT: Acronym for "System Under Test"
ESSL: Engineering and Scientific Subroutine Library

Extended C: IBM XL C for AIX invoked as cc
ANSI C89: 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=1600 -o lgpg_size=16777216
    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.

Use flags-description file IBM-20050919-AIX.txt.