



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.quake | 16 | 55.9 | 432 | 8 | 25.7 | 469 |
| 187.facerec | 16 | 119 | 297 | 16 | 112 | 315 |
| 188.amp | 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



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Notes/Tuning Information (Continued)

```

-05 -q64 -blpdata -lmass
users=8
173.applu: basepeak=1
users=8
177.mesa: -qpdf1/pdf2
-03 -qarch=auto -qtune=auto -qipa=level=2
178.galgel: fdpr -q -03
-05 -blpdata -lmass -qessl -lessl -qalign=struct=natural -qfdpr
179.art: -05 -lhmu -blpdata -lmass
183.earthquake: -qpdf1/pdf2
-05 -blpdata -lmass -qipa=partition=large -qmaxmem=-1
users=8
187.facerec: fdpr -q -03
-05 -blpdata -lmass -qfdpr
188.ammp: -qpdf1/pdf2
-05 -q64 -blpdata -qalign=natural
189.lucas: basepeak=1
191.fma3d: fdpr -q -03
-05 -blpdata -qalign=struct=natural -qfdpr
200.sixtrack: fdpr -q -03
-05 -blpdata -lmass -qfdpr
F77=xlF90
301.apsi: -05 -blpdata -lmass -qessl -lessl -qsave
F77=xlF90

```

APAR IY62267 was applied to AIX 5L V5.3 to achieve Maintenance 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 lpgg_regions=512 -o lpgg_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.