



CFP2000 Result

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IBM Corporation
IBM System p5 520 (1650 MHz, 2 CPU)

SPECfp_rate2000 = 61.5
SPECfp_rate_base2000 = 59.0

SPEC license #: 11 | Tested by: IBM | Test date: Dec-2005 | Hardware Avail: Feb-2006 | Software Avail: Feb-2006

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	112	66.3	4	100	74.0
171.swim	4	199	72.3	4	195	73.7
172.mgrid	4	171	48.8	4	163	51.1
173.applu	4	215	45.3	4	196	49.7
177.mesa	4	184	35.3	4	179	36.3
178.galgel	4	134	100	4	121	111
179.art	4	45.6	264	4	44.3	273
183.quake	4	48.8	124	4	48.1	125
187.facerec	4	137	64.2	4	140	63.1
188.amp	4	325	31.4	4	313	32.6
189.lucas	4	145	64.1	4	143	64.8
191.fma3d	4	248	39.2	4	240	40.5
200.sixtrack	4	212	24.1	4	202	25.2
301.apsi	4	289	41.8	4	284	42.4

Hardware

CPU: POWER5+
 CPU MHz: 1650
 FPU: Integrated
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip (SMT on)
 CPU(s) orderable: 1,2
 Parallel: No
 Primary Cache: 64KBI+32KBD (on chip)/core
 Secondary Cache: 1920KB unified, shared (on chip)/chip
 L3 Cache: 36MB unified (off-chip)/DCM, 1 DCM/SUT
 Other Cache: None
 Memory: 8x2GB
 Disk Subsystem: 2x73GB 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 4.2.0.3
 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 -lhm -blpdata -lmass
 C: -qpdf1/pdf2
 -O5 -blpdata -qalign=natural

Peak Optimization Flags
 168.wupwise: -O5 -qsave -blpdata -lhm -lmass
 171.swim: -qpdf1/pdf2
 -O5 -qalign=struct=natural -q64 -blpdata
 172.mgrid: -qpdf1/pdf2
 -O4 -qipa=partition=large -q64 -blpdata
 173.applu: -O5 -q64 -blpdata



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Notes/Tuning Information (Continued)

```

177.mesa:      -qpdf1/pdf2
                -O4 -qalign=natural
178.galgel:    -qpdf1/pdf2
                -O5 -qfdpr -lhmu -blpdata -lmass -qessl -lessl
                fdpr -q -O3
179.art:       -qpdf1/pdf2
                -O5 -qmaxmem=-1 -blpdata -lhmu
183.earthquake: -qpdf1/pdf2
                -O3 -qarch=auto -qtune=auto -qipa=level=2 -blpdata
187.facerec:   -O5 -qalign=struct=natural -blpdata
188.ammp:      -O5 -qalign=natural -qfdpr -blpdata -lhmu
                fdpr -q -O3
189.lucas:     -O5 -qalign=struct=natural -qfdpr -blpdata -qessl -lessl
                fdpr -q -O3
191.fma3d:     -qpdf1/pdf2
                -O3 -qarch=auto -qtune=auto -qipa=level=2 -q64 -lhmu -blpdata -lmass
200.sixtrack:  -qpdf1/pdf2
                -O5 -qfdpr
                fdpr -q -O3
301.apsi:      -O5 -qhot=arraypad -Q -qalign=struct=natural

```

The installed OS level is AIX 5L for POWER version 5.3 with the 5300-04 Recommended Technology Level.

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)

SUT: Acronym for "System Under Test"

ESSL: Engineering and Scientific Subroutine Library

```

ANSI C89:      IBM XL C for AIX invoked as xlc
Fortran 77:    IBM XL Fortran for AIX invoked as xlf90
Fortran 90:    IBM XL Fortran for AIX invoked as xlf90

```

ulimits set to unlimited.

Large page mode and memory affinity were set as follows:

```

vmo -r -o lpgg_regions=512 -o lpgg_size=16777216
chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
shutdown -rF
export MEMORY_AFFINITY=MCM

```

The following config-file entry was used to assign each benchmark process to a core:

```
submit = bindprocessor \$\$ \$SPECUSERNUM; $command
```

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