



CFP2000 Result

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IBM Corporation
IBM System p5 575 (1900 Mhz, 1 CPU, SLES)

SPECfp2000 = 2979
SPECfp_base2000 = 2543

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio
168.wupwise	1600	50.7	3155	46.5	3439
171.swim	3100	95.5	3246	83.6	3708
172.mgrid	1800	81.0	2221	64.4	2794
173.applu	2100	104	2023	82.5	2546
177.mesa	1400	110	1275	110	1275
178.galgel	2900	57.8	5015	35.6	8156
179.art	2600	20.3	12781	18.0	14480
183.quake	1300	26.0	4997	21.4	6062
187.facerec	1900	74.3	2556	74.3	2556
188.amp	2200	174	1265	171	1284
189.lucas	2000	63.2	3166	34.7	5770
191.fma3d	2100	131	1609	120	1745
200.sixtrack	1100	133	830	128	859
301.apsi	2600	142	1837	141	1840

Hardware

CPU: POWER5+
CPU MHz: 1900
FPU: Integrated
CPU(s) enabled: 1 core, 1 chip, 2 cores/chip (SMT off)
CPU(s) orderable: 8,16 core
Parallel: No
Primary Cache: 64 KB I + 32 KB D on chip per core
Secondary Cache: 1920 KB I+D on chip per chip
L3 Cache: 36 MB unified off chip per chip
Other Cache: None
Memory: 64 GB (32x2GB)
Disk Subsystem: 1x73GB SCSI, 15K RPM
Other Hardware:

Software

Operating System: SLES
SUSE Linux Enterprise Server 10 (ppc) VERSION = 10
w/2.6.16.21-0.8-ppc64 Linux kernel
Compiler: IBM XL C/C++ Advanced Edition V8.0.1 for Linux
IBM XL Fortran Advanced Edition V10.1.1 for Linux
Other software:
- IBM Engineering and Scientific Subroutine
Library (ESSL) for Linux - Version 4.2.5
File System: reiserfs
System State: Multi-User

Notes/Tuning Information

+FDO

Feedback directed optimization enabled by: PASS1=-qpdf1 PASS2=-qpdf2

FP compilers

C: invoked as xlc

Fortran 77 and Fortran 90: invoked as xlf90, except as noted below

FP 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

FP Base Optimization Flags:

C: +FDO -O5

Fortran: +FDO -O5



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Notes/Tuning Information (Continued)

Floating Point Peak Flags

```
168.wupwise
  +FDO -O5 -qsave -lmass
  -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT
171.swim
  +FDO -O5
  -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT
172.mgrid
  +FDO -O4 -q64
  -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT
173.applu
  +FDO -O5 -q64
  -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT
177.mesa
  basepeak=1
178.galgel
  Fortran invoked as xlf90_r
  +FDO -O5 -qessl -lessl -lmass
  -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT
179.art
  +FDO -O5
  -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT
183.quake
  +FDO -O5
  -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT
187.facerec
  basepeak=1
188.amp
  +FDO -O3 -qalign=linuxppc
189.lucas
  +FDO -O3 -qarch=auto -qtune=auto
  -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT
191.fma3d
  +FDO -O5
  -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT
200.sixtrack
  +FDO -O3 -qarch=auto -qtune=auto
  -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT
301.apsi
  Fortran invoked as xlf90_r
  +FDO -O5 -qessl
  -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT
  extra_libs = -lessl
```

System Settings:

```
-- ulimit stack size set to unlimited
```

SMT: Acronym for 'Simultaneous Multi-Threading'. A processor technology that allows the simultaneous execution of multiple thread contexts within a single processor core. SMT is enabled by default.

Large pages reserved as follows by root user:

```
echo 30 > /proc/sys/vm/nr_hugepages
```



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Notes/Tuning Information (Continued)

System configured with libhugetlbfs library for application access to large pages

Environment variables set as follows:

```
export HUGETLB_MORECORE=yes
```

Linux booted with the options:

```
maxcpus=1 smt-enabled=off
```

Each process was bound to a cpu using submit= with the taskset command

```
submit = taskset -p -c \${SPECUSERNUM} \${\$} >/dev/null ; \$command
```