IBM Corporation
IBM System p5 520Q (1650 Mhz, 1 CPU, SLES)

SPECfp2000 = 2580
SPECfp_base2000 = 2152

Hardware

CPU: POWER5+
CPU MHz: 1650
FPU: Integrated
CPU(s) enabled: 1 core, 1 chip, 2 cores/chip (SMT off)
CPU(s) orderable: 4 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 I+D off chip per chip
Other Cache: None
Memory: 16 GB (8x2GB)
Disk Subsystem: 1x73GB SCSI, 15K RPM
Other Hardware: None

Software

Operating System: 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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IBM Austin
Test date: Oct-2006
Hardware Avail: Aug-2006
Software Avail: Dec-2006

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.equake
   +FDO -O5
   -B/usr/share/libhugetlbfs/ -tl -Wl,--hugetlbfs-link=BDT

187.facerec
   basepeak=1

188.ammp
   +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
<table>
<thead>
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</tr>
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</tr>
</tbody>
</table>

**Notes/Tuning Information (Continued)**

System configured with libhugetlbfs library for application access to large pages

Environment variables set as follows:

```bash
export HUGETLB_MORECORE=yes
```

Linux booted with the options:

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

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

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