



# CFP2000 Result

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IBM Corporation

IBM System p5 575 (2200 Mhz, 8 CPU, SLES)

SPECfp\_rate2000 = 370

SPECfp\_rate\_base2000 = 310

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	16	73.0	407	16	63.1	470
171.swim	16	167	345	16	130	442
172.mgrid	16	138	242	16	106	316
173.applu	16	180	217	16	146	267
177.mesa	16	144	180	16	144	180
178.galgel	16	96.3	559	16	67.4	799
179.art	16	28.6	1686	16	24.9	1936
183.quake	16	42.0	574	16	31.7	762
187.facerec	16	99.4	355	16	99.4	355
188.amp	16	241	169	16	244	167
189.lucas	16	114	325	16	56.2	660
191.fma3d	16	190	205	16	172	227
200.sixtrack	16	173	118	16	169	121
301.apsi	16	216	223	16	216	223

**Hardware**

CPU: POWER5+  
CPU MHz: 2200  
FPU: Integrated  
CPU(s) enabled: 8 cores, 8 chips, 1 core/chip (SMT on)  
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 480 > /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

Each process was bound to a cpu using submit= with the taskset command  
submit = taskset -p -c \\${SPECUSERNUM} \\${\\$} >/dev/null ; \$command