



# CFP2000 Result

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IBM Corporation

IBM System p5 550 (2100 Mhz, 4 CPU, SLES)

SPECfp\_rate2000 = 143

SPECfp\_rate\_base2000 = 131

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	8	81.1	183	8	71.5	208
171.swim	8	198	146	8	186	155
172.mgrid	8	166	101	8	137	122
173.applu	8	218	89.6	8	189	103
177.mesa	8	155	84.1	8	155	84.1
178.galgel	8	123	220	8	98.2	274
179.art	8	40.2	601	8	37.3	647
183.equake	8	52.2	231	8	39.8	303
187.facerec	8	120	147	8	120	147
188.amp	8	283	72.2	8	287	71.2
189.lucas	8	153	121	8	140	132
191.fma3d	8	213	91.4	8	207	94.2
200.sixtrack	8	172	59.4	8	167	61.1
301.apsi	8	237	102	8	240	100

**Hardware**

CPU: POWER5+  
CPU MHz: 2100  
FPU: Integrated  
CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip (SMT on)  
CPU(s) orderable: 2,4 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: 32 GB (16x2GB)  
Disk Subsystem: 1x73GB SCSI, 15K RPM  
Other Hardware: None

**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 240 > /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