



# CFP2000 Result

Copyright ©1999-2005, Standard Performance Evaluation Corporation

**IBM Corporation**  
IBM System p5 550 (2100 Mhz, 1 CPU, SLES)

SPECfp2000 = **3282**  
SPECfp\_base2000 = **2778**

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

| Benchmark      | Reference Time | Base Runtime | Base Ratio | Runtime | Ratio |
|----------------|----------------|--------------|------------|---------|-------|
| 168.wupwise    | 1600           | 47.0         | 3401       | 41.0    | 3901  |
| 171.swim       | 3100           | 91.0         | 3406       | 74.2    | 4179  |
| 172.mgrid      | 1800           | 74.4         | 2418       | 58.3    | 3089  |
| 173.applu      | 2100           | 96.4         | 2180       | 73.4    | 2860  |
| 177.mesa       | 1400           | 99.7         | 1404       | 99.7    | 1404  |
| 178.galgel     | 2900           | 52.0         | 5575       | 32.3    | 8980  |
| 179.art        | 2600           | 18.4         | 14164      | 16.2    | 16090 |
| 183.earthquake | 1300           | 23.5         | 5523       | 19.3    | 6739  |
| 187.facerec    | 1900           | 67.5         | 2815       | 67.5    | 2815  |
| 188.amp        | 2200           | 157          | 1399       | 155     | 1420  |
| 189.lucas      | 2000           | 58.9         | 3397       | 34.5    | 5801  |
| 191.fma3d      | 2100           | 121          | 1735       | 110     | 1901  |
| 200.sixtrack   | 1100           | 120          | 916        | 116     | 949   |
| 301.apsi       | 2600           | 127          | 2051       | 127     | 2047  |

### Hardware

CPU: POWER5+  
CPU MHz: 2100  
FPU: Integrated  
CPU(s) enabled: 1 core, 1 chip, 2 cores/chip (SMT off)  
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



# CFP2000 Result

Copyright ©1999-2005, Standard Performance Evaluation Corporation

IBM Corporation

IBM System p5 550 (2100 Mhz, 1 CPU, SLES)

SPECfp2000 = 3282

SPECfp\_base2000 = 2778

SPEC license #: 11 | Tested by: 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/ -t1 -Wl,--hugetlbfs-link=BDT
171.swim
  +FDO -O5
  -B/usr/share/libhugetlbfs/ -t1 -Wl,--hugetlbfs-link=BDT
172.mgrid
  +FDO -O4 -q64
  -B/usr/share/libhugetlbfs/ -t1 -Wl,--hugetlbfs-link=BDT
173.applu
  +FDO -O5 -q64
  -B/usr/share/libhugetlbfs/ -t1 -Wl,--hugetlbfs-link=BDT
177.mesa
  basepeak=1
178.galgel
  Fortran invoked as xlf90_r
  +FDO -O5 -qessl -lessl -lmass
  -B/usr/share/libhugetlbfs/ -t1 -Wl,--hugetlbfs-link=BDT
179.art
  +FDO -O5
  -B/usr/share/libhugetlbfs/ -t1 -Wl,--hugetlbfs-link=BDT
183.quake
  +FDO -O5
  -B/usr/share/libhugetlbfs/ -t1 -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/ -t1 -Wl,--hugetlbfs-link=BDT
191.fma3d
  +FDO -O5
  -B/usr/share/libhugetlbfs/ -t1 -Wl,--hugetlbfs-link=BDT
200.sixtrack
  +FDO -O3 -qarch=auto -qtune=auto
  -B/usr/share/libhugetlbfs/ -t1 -Wl,--hugetlbfs-link=BDT
301.apsi
  Fortran invoked as xlf90_r
  +FDO -O5 -qessl
  -B/usr/share/libhugetlbfs/ -t1 -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



# CFP2000 Result

Copyright ©1999-2005, Standard Performance Evaluation Corporation

IBM Corporation

IBM System p5 550 (2100 Mhz, 1 CPU, SLES)

SPECfp2000 = 3282

SPECfp\_base2000 = 2778

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

## 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
```