# CFP2000 Result

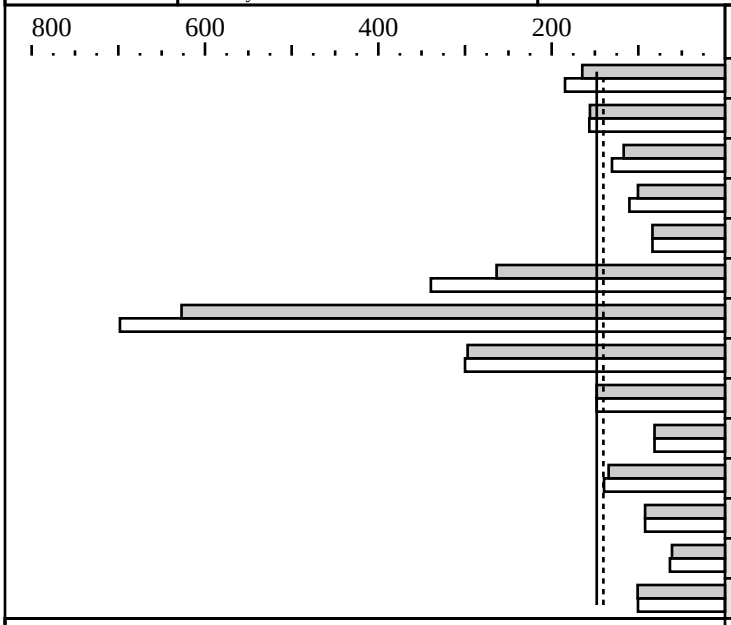


## Bull
## Escala PL450R+ (2100 MHz, 4 CPU)

SPECfp_rate2000 = 148

SPECfp_rate_base2000 = 140

SPEC license #: 20 | Tested by: Bull | Test date: Jan-2007 | Hardware Avail: Feb-2006 | Software Avail: Dec-2006




| Benchmark | Base Copies | Base Runtime | Base Ratio | Copies | Runtime | Ratio |
|---|---|---|---|---|---|---|
| 168.wupwise | 8 | 90.2 | 165 | 8 | 80.4 | 185 |
| 171.swim | 8 | 185 | 156 | 8 | 184 | 157 |
| 172.mgrid | 8 | 143 | 117 | 4 | 64.0 | 130 |
| 173.applu | 8 | 194 | 100 | 8 | 177 | 110 |
| 177.mesa | 8 | 155 | 83.7 | 8 | 155 | 83.7 |
| 178.galgel | 8 | 102 | 264 | 4 | 39.6 | 340 |
| 179.art | 8 | 38.5 | 627 | 8 | 34.6 | 698 |
| 183.equake | 8 | 40.6 | 297 | 8 | 40.2 | 300 |
| 187.facerec | 8 | 119 | 148 | 8 | 119 | 148 |
| 188.ammp | 8 | 251 | 81.3 | 8 | 251 | 81.3 |
| 189.lucas | 8 | 138 | 134 | 4 | 66.5 | 140 |
| 191.fma3d | 8 | 211 | 92.2 | 8 | 211 | 92.2 |
| 200.sixtrack | 8 | 167 | 61.2 | 8 | 161 | 63.5 |
| 301.apsi | 8 | 239 | 101 | 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: | 1, 2 chips |
| Parallel: | no |
| Primary Cache: | 64KBI+32KBD (on chip)per core |
| Secondary Cache: | 1920KB unified (on chip) per chip |
| L3 Cache: | 36MB unified off chip per chip |
| Other Cache: | None |
| Memory: | 32 GB (8x4GB) |
| Disk Subsystem: | 2x73GB SCSI, 15K RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | AIX 5L V5.3 |
| Compiler: | XL C/C++ Enterprise Edition Version 8.0 for AIX with the December 2006 PTF<br>XL Fortran Enterprise Edition Version 10.1 for AIX with the November 2006 PTF |
| File System: | AIX/JFS2 |
| System State: | Multi-user |

## Notes/Tuning Information

```
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

Base Optimization Flags:
  Fortran:    -O5 -lhmu -blpdata -lmass
  C:          -qpdf1/pdf2
              -O5 -blpdata -qalign=natural

Peak Optimization Flags
  168.wupwise:  -O5 -qsave -blpdata -lhmu -lmass
  171.swim:     -q64 -O5 -blpdata
  172.mgrid:    users=4
                -qpdf1/pdf2
                -O4 -qipa=partition=large -q64 -blpdata
  173.applu:    -qpdf1/pdf2
```

## Notes/Tuning Information (Continued)

```
                -O5 -qarch=pwr3 -qtune=pwr3 -qalign=struct=natural -q64 -blpdata
                 fdpr -q -O3
  177.mesa:      basepeak=yes
  178.galgel:   users=4
                -qpdf1/pdf2
                -O4 -qfdpr -lhmu -blpdata -lmass -qessl -lessl
                fdpr -q -O3
  179.art:      -O5 -lhmu -blpdata
  183.equake:   -qpdf1/pdf2
                -O3 -qarch=auto -qtune=auto -qipa=level=2 -blpdata
  187.facerec:  basepeak=yes
  188.ammp:     basepeak=yes
  189.lucas:    users=4
                -O3 -qarch=auto -qtune=auto -qfdpr -blpdata -qessl -lessl
                fdpr -q -O3
  191.fma3d:    basepeak=yes
  200.sixtrack: -qpdf1/pdf2
                -O5 -qfdpr -qalign=struct=natural
                fdpr -q -O3
  301.apsi:     -O5
```

The installed OS level is AIX 5L for POWER version 5.3 with the 5300-05 Recommended Maintenence package.

SMT: Acronym for "Simultaneous Multi-Threading". A processor technology that allows the simultaneous execution of multiple thread contexts within a single processor core. (Enabled by default)
DCM: Acronym for "Dual-Chip Module" (one dual-core processor chip + one L3-cache chip)
SUT: Acronym for "System Under Test"

```
Extended C:     IBM XL C for AIX invoked as cc
ANSI C89:       IBM XL C for AIX invoked as xlc
C++:            IBM XL C for AIX invoked as xlC
Fortran 77:     IBM XL Fortran for AIX invoked as xlf90 unless explicitly reassigned
Fortran 90:     IBM XL Fortran for AIX invoked as xlf
```

ulimits set to unlimited.
Large page mode was set as follows:

```
    vmo -r -o lgpg_regions=800 -o lgpg_size=16777216
    bosboot -aD
    shutdown -rF
```

The following config-file entry was used to assign each benchmark process to a core:

```
submit = let "MYCPU=2*\$SPECUSERNUM"; if (("\$MYCPU > 7")) notes450= then let "MYCPU-=7"; fi; bindprocessor \$\$ \$MYCPU; $command
```

The "bindprocessor" AIX command binds a process to a CPU core.