



# CFP2000 Result

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**Bull**  
Escala PL250R+ (2100 MHz, 4 CPU)

SPECfp\_rate2000 = 73.1  
SPECfp\_rate\_base2000 = 69.4

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

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	4	89.2	83.2	4	81.3	91.3
171.swim	4	193	74.5	4	192	75.1
172.mgrid	4	146	57.1	2	65.3	64.0
173.applu	4	198	49.3	4	185	52.6
177.mesa	4	155	41.9	4	155	41.9
178.galgel	4	103	131	2	39.6	170
179.art	4	38.6	313	4	34.6	348
183.quake	4	42.2	143	4	41.7	145
187.facerec	4	119	74.3	4	119	74.3
188.amp	4	252	40.6	4	252	40.6
189.lucas	4	146	63.5	2	70.8	65.6
191.fma3d	4	212	46.0	4	212	46.0
200.sixtrack	4	167	30.6	4	160	31.8
301.apsi	4	232	51.9	4	233	51.7

Hardware	Software
CPU: POWER5+	Operating System: AIX 5L V5.3
CPU MHz: 2100	Compiler: XL C/C++ Enterprise Edition Version 8.0 for AIX with the December 2006 PTF
FPU: Integrated	XL Fortran Enterprise Edition Version 10.1 for AIX with the November 2006 PTF
CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip (SMT on)	File System: AIX/JFS2
CPU(s) orderable: 1 chip	System State: Multi-user
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 (8x4 GBB)	
Disk Subsystem: 1x73GB SCSI, 15K RPM	
Other Hardware: None	

## 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=2  
-qpdf1/pdf2  
-O4 -qipa=partition=large -q64 -blpdata  
173.applu: -qpdf1/pdf2



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## Notes/Tuning Information (Continued)

```

-05 -qarch=pwr3 -qtune=pwr3 -qalign=struct=natural -q64 -blpdata
fdpr -q -O3
177.mesa:      basepeak=yes
178.galgel:    users=2
               -qpdf1/pdf2
-04 -qfdpr -lhmu -blpdata -lmass -qessl -lessl
fdpr -q -O3
179.art:      -05 -lhmu -blpdata
183.earthquake: -qpdf1/pdf2
               -03 -qarch=auto -qtune=auto -qipa=level=2 -blpdata
187.facerec:  basepeak=yes
188.ammp:     basepeak=yes
189.lucas:    users=2
               -03 -qarch=auto -qtune=auto -qfdpr -blpdata -qessl -lessl
fdpr -q -O3
191.fma3d:    basepeak=yes
200.sixtrack: -qpdf1/pdf2
               -05 -qfdpr -qalign=struct=natural
fdpr -q -O3
301.apsi:     -05

```

The installed OS level is AIX 5L for POWER version 5.3 with the 5300-04 Recommended Maintenance 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 lpgg_regions=800 -o lpgg_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 > 3"))
```

```
then let "MYCPU-=3"; fi; bindprocessor \$\$ \$MYCPU; $command
```

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