



# CFP2000 Result

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**Bull**  
Escala PL1650R+ (2200 MHz, 16 CPU)

SPECfp\_rate2000 = 564  
SPECfp\_rate\_base2000 = 535

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	32	93.3	637	32	80.2	740
171.swim	32	247	467	32	245	470
172.mgrid	32	150	446	16	70.3	476
173.applu	32	229	340	32	220	355
177.mesa	32	150	346	32	150	346
178.galgel	32	97.8	1101	16	38.1	1414
179.art	32	37.0	2605	32	33.2	2908
183.quake	32	49.8	969	32	50.1	963
187.facerec	32	109	647	32	109	647
188.amp	32	244	335	32	244	335
189.lucas	32	161	460	16	75.5	492
191.fma3d	32	202	385	32	202	385
200.sixtrack	32	162	252	32	156	262
301.apsi	32	255	379	32	255	378

**Hardware**

CPU: POWER5+  
 CPU MHz: 2200  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 8 chips, 2 cores/chip (SMT on)  
 CPU(s) orderable: 2, 4, 6, 8 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: 128 GB (32x4 GB)  
 Disk Subsystem: 1x73GB 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  
 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 -lhm -blpdata -lmass  
 C: -qpdf1/pdf2  
 -O5 -blpdata -qalign=natural

Peak Optimization Flags  
 168.wupwise: -O5 -qsave -blpdata -lhm -lmass  
 171.swim: -q64 -O5 -blpdata  
 172.mgrid: users=16  
 -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=16
               -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=16
               -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=3200 -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 > 31"))
then let "MYCPU=31"; fi; bindprocessor \$ \$ \$MYCPU; $command

```

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