



# CFP2000 Result

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IBM Corporation  
IBM eServer p5 550 Express (1500 MHz, 4 CPU)

SPECfp\_rate2000 = NC  
SPECfp\_rate\_base2000 = NC

SPEC license #: 11 | Tested by: IBM | Test date: Sep-2004 | Hardware Avail: Oct-2004 | Software Avail: Oct-2004

**SPEC has determined that this result was not in compliance with the SPEC CPU2000 run and reporting rules. Specifically, the submitter has reported that measurements on a production system were not, as required by the SPEC CPU2000 Run Rules, within the 1.75% lower bound of the preproduction system.**

5	4	3	2	1	Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
					168.wupwise	8	NC	NC	8	NC	NC
					171.swim	8	NC	NC	8	NC	NC
					172.mgrid	8	NC	NC	8	NC	NC
					173.applu	8	NC	NC	8	NC	NC
					177.mesa	8	NC	NC	8	NC	NC
					178.galgel	8	NC	NC	8	NC	NC
					179.art	8	NC	NC	8	NC	NC
					183.equake	8	NC	NC	8	NC	NC
					187.facerec	8	NC	NC	8	NC	NC
					188.ampp	8	NC	NC	8	NC	NC
					189.lucas	8	NC	NC	8	NC	NC
					191.fma3d	8	NC	NC	8	NC	NC
					200.sixtrack	8	NC	NC	8	NC	NC
					301.apsi	8	NC	NC	8	NC	NC

### Hardware

CPU: POWER5  
 CPU MHz: 1500  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip (SMT on)  
 CPU(s) orderable: 2,4  
 Parallel: No  
 Primary Cache: 64KBI+32KBD (on chip)/core  
 Secondary Cache: 1920KB unified (on chip)/chip  
 L3 Cache: 36MB unified (off chip)/DCM, 2 DCM/SUT  
 Other Cache: None  
 Memory: 16x2 GB  
 Disk Subsystem: 2x36GB SCSI, 15K RPM  
 Other Hardware:

### Software

Operating System: AIX 5L V5.3  
 Compiler: XL C/C++ Enterprise Edition V7.0 for AIX  
 XL Fortran Enterprise Edition V9.1 for AIX  
 Other Software: IBM ESSL for AIX V4.2  
 File System: AIX/JFS2  
 System State: Multi-user

## Notes/Tuning Information

Tested by IBM

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:



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## Notes/Tuning Information (Continued)

C: -qpdf1/pdf2  
-O5 -blpdata -lmass  
Fortran: -qpdf1/pdf2  
-O5 -blpdata -lmass

### Peak Optimization Flags:

168.wupwise: -O5 -qarch=pwr3 -qtune=pwr3 -blpdata -lmass  
F77=xlfi  
171.swim: -O5 -qarch=pwr3 -qtune=pwr3 -blpdata -lmass  
F77=xlfi  
172.mgrid: -qpdf1/pdf2  
-O5 -blpdata -lmass  
173.applu: -O5 -qarch=pwr3 -qtune=pwr3 -blpdata -lmass  
F77=xlfi  
177.mesa: -qpdf1/pdf2  
-O5  
178.galgel: -O5 -blpdata -qessl -lessl  
179.art: basepeak=1  
183.earthquake: -qpdf1/pdf2  
-O5 -blpdata -lmass  
187.facerec: -qpdf1/pdf2  
-O5 -blpdata -lmass  
188.ammp: -qpdf1/pdf2  
-O5 -blpdata -qalign=natural -D\_ILS\_MACROS  
189.lucas: basepeak=1  
191.fma3d: -qpdf1/pdf2  
-O5 -blpdata -qalign=natural -qhot=arraypad -Q  
200.sixtrack: -O3 -qhot -qarch=pwr5 -qtune=pwr5 -qfdpr  
fdpr -R3  
301.apsi: -O5 -lmass -qessl -lessl -blpdata -qsave

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)

ESSL: Engineering and Scientific Subroutine Library

DCM: Acronym for "Dual-Chip Module" (one dual-core processor chip + one L3-cache chip)

SUT: Acronym for "System Under Test"

C: IBM XL C for AIX invoked as xlc

Fortran: IBM XL Fortran for AIX invoked as xlf90

APAR IY 62534 was applied to AIX to enable new hardware support.

ulimits set to unlimited.

Large page mode and memory affinity were set as follows:

vmo -r -o lpgg\_regions=800 -o lpgg\_size=16777216 -o memory\_affinity=1

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info@spec.org

http://www.spec.org



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## Notes/Tuning Information (Continued)

```
chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
shutdown -r
export MEMORY_AFFINITY=MCM
```