



CFP2000 Result

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IBM Corporation

IBM eServer BladeCenter JS20 (2200 MHz, 1 CPU)

SPECfp2000 = 1241

SPECfp_base2000 = 1178

SPEC license #: 11 | Tested by: IBM | Test date: Oct-2004 | Hardware Avail: Oct-2004 | Software Avail: Jan-2005

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	
168.wupwise	1600	102	1570	84.4	1895	
171.swim	3100	225	1375	220	1412	
172.mgrid	1800	214	842	186	968	
173.applu	2100	253	830	237	887	
177.mesa	1400	107	1306	107	1308	
178.galgel	2900	177	1641	154	1877	
179.art	2600	87.5	2971	88.7	2932	
183.earthquake	1300	77.0	1688	77.0	1689	
187.facerec	1900	132	1441	132	1444	
188.amp	2200	407	540	400	550	
189.lucas	2000	168	1191	167	1195	
191.fma3d	2100	182	1151	185	1137	
200.sixtrack	1100	127	865	124	890	
301.apsi	2600	394	660	338	768	

Hardware

CPU: PowerPC 970
CPU MHz: 2200
FPU: Integrated
CPU(s) enabled: 2 cores, 2 chips, 1 core/chip
CPU(s) orderable: 1,2
Parallel: No
Primary Cache: 64KBI+32KBD (on chip)/chip
Secondary Cache: 512KB unified (on chip)/chip
L3 Cache: None
Other Cache: None
Memory: 4x1 GB
Disk Subsystem: 1x40GB SCSI, 15K RPM
Other Hardware: None

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: 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:

C: -qpdf1/pdf2
-05 -blpdata -qalign=natural
Fortran: -qpdf1/pdf2
-05 -blpdata -lmass

Peak Optimization Flags:

168.wupwise: -05 -qarch=pwr3 -qtune=pwr3 -blpdata -lmass
171.swim: -03 -qhot -qarch=pwr5 -qtune=pwr5 -qfdpr
fdpr -R3



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Notes/Tuning Information (Continued)

```

172.mgrid:      -qpdf1/pdf2
                 -O5 -qessl -lessl
173.applu:      -O5 -qarch=pwr3 -qtune=pwr3 -blpdata -lmass
                 F77=xlf
177.mesa:       -qpdf1/pdf2
                 -O5 -blpdata -qalign=natural
178.galgel:     -O5 -lmass -qessl -lessl -blpdata -qsave
179.art:        -qpdf1/pdf2
                 -O5 -lhmua -qalign=natural
183.earthquake: -qpdf1/pdf2
                 -O5 -blpdata -qalign=natural -qhot=arraypad -Q
187.facerec:    -pdf1/pdf2
                 -O5 -blpdata -qalign=natural -qhot=arraypad -Q
188.ammmp:      -qpdf1/pdf2
                 -O5 -blpdata -qalign=natural -D_ILS_MACROS
189.lucas:      -O5 -lmass -qessl -lessl -blpdata -qsave
191.fma3d:      -qpdf1/pdf2
                 -O5 -blpdata -lmass
200.sixtrack:   -O3 -qarch=pwr4 -qtune=pwr4
301.apsi:       -O5 -lmass -qessl -lessl -blpdata -qsave

```

```

C:              IBM XL C for AIX invoked as xlc
Fortran :       IBM XL Fortran for AIX invoked as xlf90
ESSL:          Engineering and Scientific Subroutine Library

```

APAR IY 62532 was applied to AIX to enable new hardware support.
 APAR PQ 95435 was applied to ESSL to enable new hardware support.
 ulimits set to unlimited.

Large page mode and memory affinity were set as follows:

```

vmo -r -o lpgg_regions=200 -o lpgg_size=16777216 -o memory_affinity=1
chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
shutdown -r
export MEMORY_AFFINITY=MCM

```

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

```

use_submit_for_speed = 1
submit = let "MYCPU=\$SPECUSERNUM"; bindprocessor \$\$ \$MYCPU; $command

```

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