



CFP2000 Result

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IBM Corporation

IBM eServer pSeries 655 Model 651 (1300 MHz, 4 CPU)

SPECfp_rate2000 = 51.7

SPECfp_rate_base2000 = 48.7

SPEC license #: 11 | Tested by: IBM, Austin, TX | Test date: Oct-2002 | Hardware Avail: Dec-2002 | Software Avail: Dec-2002

| Benchmark | Base Copies | Base Runtime | Base Ratio | Copies | Runtime | Ratio |
|--------------|-------------|--------------|------------|--------|---------|-------|
| 168.wupwise | 4 | 120 | 62.1 | 4 | 120 | 62.0 |
| 171.swim | 4 | 210 | 68.4 | 4 | 211 | 68.2 |
| 172.mgrid | 4 | 232 | 35.9 | 4 | 199 | 42.0 |
| 173.applu | 4 | 246 | 39.6 | 4 | 219 | 44.4 |
| 177.mesa | 4 | 213 | 30.5 | 4 | 181 | 36.0 |
| 178.galgel | 4 | 122 | 110 | 4 | 97.9 | 137 |
| 179.art | 4 | 207 | 58.3 | 4 | 202 | 59.7 |
| 183.equake | 4 | 84.6 | 71.3 | 4 | 84.6 | 71.3 |
| 187.facerec | 4 | 145 | 60.9 | 4 | 141 | 62.4 |
| 188.amp | 4 | 294 | 34.7 | 4 | 294 | 34.7 |
| 189.lucas | 4 | 168 | 55.1 | 4 | 157 | 59.2 |
| 191.fma3d | 4 | 246 | 39.7 | 4 | 234 | 41.6 |
| 200.sixtrack | 4 | 201 | 25.3 | 4 | 195 | 26.1 |
| 301.apsi | 4 | 284 | 42.5 | 4 | 283 | 42.6 |

Hardware

CPU: POWER4
CPU MHz: 1300
FPU: Integrated
CPU(s) enabled: 4 cores, 4 chips, 1 core/chip, 4 chips/MCM
CPU(s) orderable: 1 (order by # MCM)
Parallel: No
Primary Cache: 64KBI+32KBD (on chip) per core
Secondary Cache: 1440KB unified (on chip) per chip
L3 Cache: 128MB unified (off-chip) per MCM, 1 MCM in SUT (4 chips per MCM)
Other Cache: None
Memory: 16 GB
Disk Subsystem: 1x18.2 GB SCSI
Other Hardware: None

Software

Operating System: AIX 5L V5.1
Compiler: IBM C for AIX, Version 6.0
IBM XL FORTRAN for AIX, Version 8.1.0.1
Other Software: ESSL 3.3, MASS 3.0
File System: AIX/JFS
System State: Multi-User

Notes/Tuning Information

Portability Flags

-qfixed used in: wupwise, swim, mgrid, applu, galgel, sixtrack, apsi
-qsuffix=f=f90 used in: galgel, facerec, lucas, fma3d

Base Optimization Flags:

C:
-O5 -qalign=natural -blpdata -lmass
Fortran:
-O5 -qalign=natural -blpdata -lmass

Floating Point Peak Flags

168.wupwise
-O5 -qipa=partition=large
171.swim
-O4 -q64 -blpdata
172.mgrid



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Notes/Tuning Information (Continued)

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-05 -qarch=pwr3 -qtune=pwr3 -blpdata
173.applu
-03 -qarch=pwr3 -qtune=pwr3 -lmass -qhot -blpdata
177.mesa
-qpdf1/pdf2
fdpr -v -R3
-03 -qarch=pwr3 -qtune=pwr3 -qipa=level=2 -qalign=natural -blpdata
178.galgel
-qpdf1/pdf2
fdpr -v -R3
-05 -qalign=natural -qessl -lessl -lmass -blpdata
179.art
-04 -lhmu
183.quake
BASEPEAK = 1
187.facerec
fdpr -v -R3
-05 -lmass -blpdata
188.amp
BASEPEAK = 1
189.lucas
-03 -q64 -blpdata
191.fma3d
-qpdf1/pdf2
-05 -qarch=pwr4 -qtune=pwr3 -lhmu -qalign=natural -blpdata
200.sixtrack
-qpdf1/pdf2
-05 -lmass
301.apsi
-05 -qarch=pwr4 -qtune=pwr3 -blpdata
```

MCM: Acronym for "Multi-Chip Module"

SUT: Acronym for "System Under Test"

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fpdr: Feedback directed program restructuring tool
/usr/spec2000 filesystem mounted with no JFS log file I/O.
APAR IY 35692 was applied to AIX to enable new hardware support.
ulimits set to unlimited.
C: IBM VAC++ invoked as xlc
Fortran 77 and 90: IBM XL Fortran for AIX invoked as xlf90.
Large page mode and memory affinity were set as follows:
vmtune64 -g 16777216 -L 128 -y1
chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
bosboot -a
shutdown -r
```