



# CFP2000 Result

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## IBM

eServer 325, 2.0 GHz Opteron, 64-bit pgi, SuSE SLES8 Linux

SPECfp2000 = 1231

SPECfp\_base2000 = 1217

SPEC license #: 11 | Tested by: IBM, Research Triangle Park, NC | Test date: Sep-2003 | Hardware Avail: Oct-2003 | Software Avail: Jul-2003

| Benchmark    | Reference Time | Base Runtime | Base Ratio | Runtime | Ratio |  |
|--------------|----------------|--------------|------------|---------|-------|--|
| 168.wupwise  | 1600           | 120          | 1337       | 120     | 1337  |  |
| 171.swim     | 3100           | 165          | 1882       | 165     | 1882  |  |
| 172.mgrid    | 1800           | 166          | 1086       | 162     | 1109  |  |
| 173.applu    | 2100           | 199          | 1057       | 197     | 1067  |  |
| 177.mesa     | 1400           | 95.8         | 1461       | 90.6    | 1545  |  |
| 178.galgel   | 2900           | 136          | 2127       | 137     | 2120  |  |
| 179.art      | 2600           | 209          | 1244       | 207     | 1257  |  |
| 183.quake    | 1300           | 101          | 1281       | 98.6    | 1318  |  |
| 187.facerec  | 1900           | 151          | 1255       | 151     | 1255  |  |
| 188.amp      | 2200           | 199          | 1103       | 195     | 1130  |  |
| 189.lucas    | 2000           | 164          | 1221       | 162     | 1234  |  |
| 191.fma3d    | 2100           | 170          | 1239       | 170     | 1239  |  |
| 200.sixtrack | 1100           | 221          | 498        | 221     | 498   |  |
| 301.apsi     | 2600           | 248          | 1048       | 248     | 1048  |  |

### Hardware

CPU: AMD Opteron 246  
CPU MHz: 2000  
FPU: Integrated  
CPU(s) enabled: 1 core, 1 chip, 1 core/chip  
CPU(s) orderable: 1,2  
Parallel: No  
Primary Cache: 64KBI + 64KBD on chip  
Secondary Cache: 1024KB(I+D) on chip  
L3 Cache: N/A  
Other Cache: N/A  
Memory: 4x512MB PC2700 Reg ECC DDR SDRAM CL2.5  
Disk Subsystem: 1 x 40GB IDE  
Other Hardware: None

### Software

Operating System: SuSE Linux 8.0 SLES 64 bit Kernel 2.4.19-249 (SP2)  
Compiler: PGI Fortran 5.0-1 and SuSE gcc33 optional compiler (from SLES8 SP2)  
File System: Linux/reiserfs  
System State: Multi-user SuSE Run level 5

## Notes/Tuning Information

Tested by IBM Corporation

pgf90 is the PGI Fortran compiler

gcc is the SuSE optional gcc33 package C compiler (from SLES8 SP2)

+FDO: PASS1=-fprofile-arcs PASS2=-fbranch-probabilities

ONESTEP is used for all base and peak runs

Portability:

178.galgel: -Mfixed

Baseline Fortran: pgf90 -fastsse -Mipa=fast

Baseline C: gcc -O3 -funroll-all-loops +FDO

Peak tuning:

168.wupwise: basepeak=true

171.swim: basepeak=true

172.mgrid: -fast -Mipa=fast

173.applu: -fast -Mipa=fast

177.mesa: -O3 -funroll-all-loops -finline-limit=2000 +FDO

178.galgel: -fastsse -Mipa=fast -O3

179.art: -O3 -funroll-all-loops -ffast-math -finline-limit=1500 +FDO

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info@spec.org

http://www.spec.org



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## Notes/Tuning Information (Continued)

```
183.equake:      -O3 -funroll-all-loops -ffast-math -finline-limit=2000
187.facerec:    -fastsse -Mipa=fast -O3
188.ammp:       -O3 -funroll-all-loops -ffast-math -finline-limit=2000 +FDO
189.lucas:      -fastsse -Mipa=fast -Mnosmart
191.fma3d:      basepeak=true
200.sixtrack:   basepeak=true
301.apsi:       basepeak=true
Set the following BIOS parameters:
DRAM Interleave = AUTO
```