# CFP2000 Result



## IBM Corporation

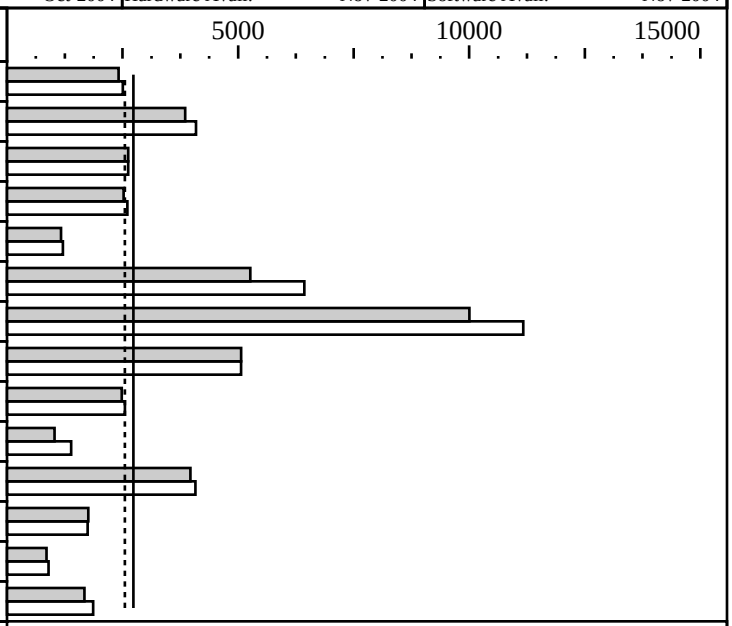
## IBM eServer p5 595 (1900 MHz, 1 CPU)

SPECfp2000 = 2733

SPECfp_base2000 = 2549

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

| Benchmark | Reference Time | Base Runtime | Base Ratio | Runtime | Ratio |
|---|---|---|---|---|---|
| 168.wupwise | 1600 | 66.3 | 2414 | 63.9 | 2506 |
| 171.swim | 3100 | 80.4 | 3855 | 75.8 | 4089 |
| 172.mgrid | 1800 | 68.6 | 2623 | 68.6 | 2622 |
| 173.applu | 2100 | 83.2 | 2523 | 80.6 | 2604 |
| 177.mesa | 1400 | 120 | 1169 | 116 | 1209 |
| 178.galgel | 2900 | 55.1 | 5264 | 45.1 | 6434 |
| 179.art | 2600 | 26.0 | 10004 | 23.3 | 11171 |
| 183.equake | 1300 | 25.7 | 5066 | 25.7 | 5064 |
| 187.facerec | 1900 | 76.5 | 2482 | 74.5 | 2551 |
| 188.ammp | 2200 | 214 | 1029 | 158 | 1388 |
| 189.lucas | 2000 | 50.4 | 3968 | 49.1 | 4076 |
| 191.fma3d | 2100 | 119 | 1759 | 120 | 1745 |
| 200.sixtrack | 1100 | 129 | 855 | 122 | 899 |
| 301.apsi | 2600 | 155 | 1675 | 139 | 1864 |




### Hardware

| | |
|---|---|
| CPU: | POWER5 |
| CPU MHz: | 1900 |
| FPU: | Integrated |
| CPU(s) enabled: | 64 cores, 32 chips, 2 cores/chip (SMT off) |
| CPU(s) orderable: | 16,24,32,40,48,56,64 |
| Parallel: | No |
| Primary Cache: | 64KBI+32KBD (on chip)/core |
| Secondary Cache: | 1920KB unified (on chip)/chip |
| L3 Cache: | 36MB unified (off-chip)/chip, 4 chips/MCM, 8 MCMs/SUT |
| Other Cache: | None |
| Memory: | 256 GB DDR2 |
| Disk Subsystem: | 3x36GB SCSI, 15K RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | AIX 5L V5.3 |
| Compiler: | XL C/C++ Enterprise Edition V7.0 for AIX<br>XL Fortran Enterprise Edition V9.1 for AIX<br>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
                -O5 -blpdata -lmass
    Fortran:    -qpdf1/pdf2
                -O5 -blpdata -lmass

  Peak Optimization Flags:
     168.wupwise:    -O5
     171.swim:       -O5 -qarch=pwr3 -qtune=pwr3 -blpdata -lmass
                     F77=xlf
```

## Notes/Tuning Information (Continued)

```
   172.mgrid:      -qpdf1/pdf2
                   -O5 -blpdata -lmass
   173.applu:      -O5 -qarch=pwr3 -qtune=pwr3 -blpdata -lmass
                   F77=xlf
   177.mesa:       -qpdf1/pdf2
                   -O5
   178.galgel:     -O5 -blpdata -qessl -lessl
   179.art:        -O5 -lmass -qessl -lessl -blpdata -qsave
   183.equake:     -qpdf1/pdf2
                   -O5 -blpdata -lmass
   187.facerec:    -O3 -qhot -qarch=pwr5 -qtune=pwr5 -qfdpr
                   fdpr -R3
   188.ammp:       -qpdf1/pdf2
                   -O5 -blpdata -qalign=natural -D_ILS_MACROS
   189.lucas:      -O5 -blpdata -lmass
   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)
MCM: Acronym for "Multi-Chip Module" (four dual-core processor chips + four L3-cache chips)
     This system contains 8 MCMs.
SUT: Acronym for "System Under Test"
ESSL: Engineering and Scientific Subroutine Library

C:       IBM XL C for AIX invoked as xlc
Fortran: IBM XL Fortran for AIX invoked as xlf90

APAR IY60349 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 lgpg_regions=7000 -o lgpg_size=16777216 -o memory_affinity=1
   chuser capabilities=CAP_BYPASS_RAC_VMM,CAP_PROPAGATE $USER
   shutdown -r
   export MEMORY_AFFINITY=MCM

SMT was disabled at the open-firmware prompt, using the command
           boot -s smt_off
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.
```