Y2K - iocCore

iocCore components related to time

- drvTs - Obtains time stamps
- tsLib - Converts between time stamps and ascii

The following were not tested

- vxWorks
- NPT servers
- GPS
- Solaris, etc

TS Formats (All use UTC)

NTP - Network Time Protocal
- 32 bit integer - seconds since 1900
- 32 bit integer - fractions of second - 0x80000000 = 1/2 second

EPICS
- unsigned long - seconds since 1990
- unsigned long - nanoseconds

Unix
- 32 bit integer - seconds since 1970
- BSD & SVR4 also has microseconds within second

POSIX
- seconds since 1970 - typically unsigned long - may be double,etc
- POSIX/4 also provides nanoseconds within second

Microsoft
- 64 bit integer
  - 100's of nanoseconds since start Gregorian calender

EPICS Time Stamps

drvTS obtains time stamps from
- NTP time server if possible
- Unix time server if NTP not found

Overflow of 32 bit seconds
- For epics no overflow until 2126
- drvTs properly handles NTP overflow

tsDefs.h tsLib.c - Conversion of time stamps
- OK Y&2K
- Does leap year correctly
- Unix problem in 2038 unless long => unsigned long
- Still a problem in 2106

Testing
- IOC Only
- drvTS without NTP or Unix server
- Set date to various time up to 2106
- All looked OK. Did see problem in 2106

HOST Software that uses tsLib
- tsLib provides 2,4 digit year
- If client uses 2 digit year this is the clients problem