

NAME

tzfile – timezone information

SYNOPSIS

```
#include <tzfile.h>
```

DESCRIPTION

The timezone information files used by **tzset(3)** begin with the magic characters "TZif" to identify then as timezone information files, followed by sixteen bytes reserved for future use, followed by six four-byte values of type *long*, written in a "standard" byte order (the high-order byte of the value is written first). These values are, in order:

tz_h_ttisgmtcnt

The number of UTC/local indicators stored in the file.

tz_h_ttisstdcnt

The number of standard/wall indicators stored in the file.

tz_h_leapcnt

The number of leap seconds for which data is stored in the file.

tz_h_timecnt

The number of "transition times" for which data is stored in the file.

tz_h_typecnt

The number of "local time types" for which data is stored in the file (must not be zero).

tz_h_charcnt

The number of characters of "timezone abbreviation strings" stored in the file.

The above header is followed by *tz_h_timecnt* four-byte values of type *long*, sorted in ascending order. These values are written in "standard" byte order. Each is used as a transition time (as returned by **time(2)**) at which the rules for computing local time change. Next come *tz_h_timecnt* one-byte values of type *unsigned char*; each one tells which of the different types of "local time" types described in the file is associated with the same-indexed transition time. These values serve as indices into an array of *ttinfo* structures that appears next in the file; these structures are defined as follows:

```
struct ttinfo {
    long    tt_gmtoff;
    int     tt_isdst;
    unsigned int tt_abbrind;
};
```

Each structure is written as a four-byte value for *tt_gmtoff* of type *long*, in a standard byte order, followed by a one-byte value for *tt_isdst* and a one-byte value for *tt_abbrind*. In each structure, *tt_gmtoff* gives the number of seconds to be added to UTC, *tt_isdst* tells whether *tm_isdst* should be set by **localtime(3)**, and *tt_abbrind* serves as an index into the array of timezone abbreviation characters that follow the *ttinfo* structure(s) in the file.

Then there are *tz_h_leapcnt* pairs of four-byte values, written in standard byte order; the first value of each pair gives the time (as returned by **time(2)**) at which a leap second occurs; the second gives the *total* number of leap seconds to be applied after the given time. The pairs of values are sorted in ascending order by time.

Then there are *tz_h_ttisstdcnt* standard/wall indicators, each stored as a one-byte value; they tell whether the transition times associated with local time types were specified as standard time or wall clock time, and are used when a timezone file is used in handling POSIX-style timezone environment variables.

Finally, there are *tz_h_ttisgmtcnt* UTC/local indicators, each stored as a one-byte value; they tell whether the transition times associated with local time types were specified as UTC or local time, and are used when a timezone file is used in handling POSIX-style timezone environment variables.

Localtime uses the first standard-time *tinfo* structure in the file (or simply the first *tinfo* structure in the absence of a standard-time structure) if either *tzh_timecnt* is zero or the time argument is less than the first transition time recorded in the file.

COLOPHON

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