



## **Red Hat Enterprise Linux Release 9.2 Manual Pages on 'X509\_cmp\_time.3oss1' command**

**\$ man X509\_cmp\_time.3oss1**

X509\_CMP\_TIME(3oss1)          OpenSSL          X509\_CMP\_TIME(3oss1)

### NAME

X509\_cmp\_time, X509\_cmp\_current\_time, X509\_cmp\_timeframe,  
X509\_time\_adj, X509\_time\_adj\_ex, X509\_gmtime\_adj - X509 time functions

### SYNOPSIS

```
int X509_cmp_time(const ASN1_TIME *asn1_time, time_t *in_tm);
int X509_cmp_current_time(const ASN1_TIME *asn1_time);
int X509_cmp_timeframe(const X509_VERIFY_PARAM *vpm,
                       const ASN1_TIME *start, const ASN1_TIME *end);
ASN1_TIME *X509_time_adj(ASN1_TIME *asn1_time, long offset_sec, time_t *in_tm);
ASN1_TIME *X509_time_adj_ex(ASN1_TIME *asn1_time, int offset_day, long
                             offset_sec, time_t *in_tm);
ASN1_TIME *X509_gmtime_adj(ASN1_TIME *asn1_time, long offset_sec);
```

### DESCRIPTION

X509\_cmp\_time() compares the ASN1\_TIME in `asn1_time` with the time in `<in_tm>`.

X509\_cmp\_current\_time() compares the ASN1\_TIME in `asn1_time` with the current time, expressed as `time_t`.

X509\_cmp\_timeframe() compares the given time period with the reference time included in the verification parameters `vpm` if they are not NULL and contain `X509_V_FLAG_USE_CHECK_TIME`; else the current time is used as reference time.

X509\_time\_adj\_ex() sets the ASN1\_TIME structure `asn1_time` to the time

offset\_day and offset\_sec after in\_tm.

X509\_time\_adj() sets the ASN1\_TIME structure asn1\_time to the time offset\_sec after in\_tm. This method can only handle second offsets up to the capacity of long, so the newer X509\_time\_adj\_ex() API should be preferred.

In both methods, if asn1\_time is NULL, a new ASN1\_TIME structure is allocated and returned.

In all methods, if in\_tm is NULL, the current time, expressed as time\_t, is used.

asn1\_time must satisfy the ASN1\_TIME format mandated by RFC 5280, i.e., its format must be either YYMMDDHHMMSSZ or YYYYMMDDHHMMSSZ.

X509\_gmtime\_adj() sets the ASN1\_TIME structure asn1\_time to the time offset\_sec after the current time. It is equivalent to calling X509\_time\_adj() with the last parameter as NULL.

## BUGS

Unlike many standard comparison functions, X509\_cmp\_time() and X509\_cmp\_current\_time() return 0 on error.

## RETURN VALUES

X509\_cmp\_time() and X509\_cmp\_current\_time() return -1 if asn1\_time is earlier than, or equal to, in\_tm (resp. current time), and 1 otherwise.

These methods return 0 on error.

X509\_cmp\_timeframe() returns 0 if vpm is not NULL and the verification parameters do not contain X509\_V\_FLAG\_USE\_CHECK\_TIME but do contain X509\_V\_FLAG\_NO\_CHECK\_TIME. Otherwise it returns 1 if the end time is not NULL and the reference time (which has determined as stated above) is past the end time, -1 if the start time is not NULL and the reference time is before, else 0 to indicate that the reference time is in range (implying that the end time is not before the start time if both are present).

X509\_time\_adj(), X509\_time\_adj\_ex() and X509\_gmtime\_adj() return a pointer to the updated ASN1\_TIME structure, and NULL on error.

## HISTORY

X509\_cmp\_timeframe() was added in OpenSSL 3.0.

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