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## Red Hat Enterprise Linux Release 9.2 Manual Pages on 'SSL\_SESSION\_set1\_ticket\_appdata.3ossl' command

**\$ man SSL\_SESSION\_set1\_ticket\_appdata.3ossl**

SSL\_CTX\_SET\_SESSION\_TICKET\_CB(3ossl)OpenSSSSL\_CTX\_SET\_SESSION\_TICKET\_CB(3ossl)

### NAME

SSL\_CTX\_set\_session\_ticket\_cb, SSL\_SESSION\_get0\_ticket\_appdata,  
SSL\_SESSION\_set1\_ticket\_appdata, SSL\_CTX\_generate\_session\_ticket\_fn,  
SSL\_CTX\_decrypt\_session\_ticket\_fn - manage session ticket application  
data

### SYNOPSIS

```
#include <openssl/ssl.h>

typedef int (*SSL_CTX_generate_session_ticket_fn)(SSL *s, void *arg);

typedef SSL_TICKET_RETURN (*SSL_CTX_decrypt_session_ticket_fn)(SSL *s, SSL_SESSION *ss,
                                                              const unsigned char *keyname,
                                                              size_t keyname_len,
                                                              SSL_TICKET_STATUS status,
                                                              void *arg);

int SSL_CTX_set_session_ticket_cb(SSL_CTX *ctx,
                                  SSL_CTX_generate_session_ticket_fn gen_cb,
                                  SSL_CTX_decrypt_session_ticket_fn dec_cb,
                                  void *arg);

int SSL_SESSION_set1_ticket_appdata(SSL_SESSION *ss, const void *data, size_t len);

int SSL_SESSION_get0_ticket_appdata(SSL_SESSION *ss, void **data, size_t *len);
```

### DESCRIPTION

SSL\_CTX\_set\_session\_ticket\_cb() sets the application callbacks  
gen\_cb and dec\_cb that are used by a server to set and get application

data stored with a session, and placed into a session ticket. Either callback function may be set to NULL. The value of arg is passed to the callbacks.

gen\_cb is the application defined callback invoked when a session ticket is about to be created. The application can call SSL\_SESSION\_set1\_ticket\_appdata() at this time to add application data to the session ticket. The value of arg is the same as that given to SSL\_CTX\_set\_session\_ticket\_cb(). The gen\_cb callback is defined as type SSL\_CTX\_generate\_session\_ticket\_fn.

dec\_cb is the application defined callback invoked after session ticket decryption has been attempted and any session ticket application data is available. If ticket decryption was successful then the ss argument contains the session data. The keyname and keyname\_len arguments identify the key used to decrypt the session ticket. The status argument is the result of the ticket decryption. See the "NOTES" section below for further details. The value of arg is the same as that given to SSL\_CTX\_set\_session\_ticket\_cb(). The dec\_cb callback is defined as type SSL\_CTX\_decrypt\_session\_ticket\_fn.

SSL\_SESSION\_set1\_ticket\_appdata() sets the application data specified by data and len into ss which is then placed into any generated session tickets. It can be called at any time before a session ticket is created to update the data placed into the session ticket. However, given that sessions and tickets are created by the handshake, the gen\_cb is provided to notify the application that a session ticket is about to be generated.

SSL\_SESSION\_get0\_ticket\_appdata() assigns data to the session ticket application data and assigns len to the length of the session ticket application data from ss. The application data can be set via SSL\_SESSION\_set1\_ticket\_appdata() or by a session ticket. NULL will be assigned to data and 0 will be assigned to len if there is no session ticket application data. SSL\_SESSION\_get0\_ticket\_appdata() can be called any time after a session has been created. The dec\_cb is provided to notify the application that a session ticket has just been

decrypted.

## NOTES

When the `dec_cb` callback is invoked, the `SSL_SESSION` `ss` has not yet been assigned to the `SSL` `s`. The status indicates the result of the ticket decryption. The callback must check the status value before performing any action, as it is called even if ticket decryption fails.

The `keyname` and `keyname_len` arguments to `dec_cb` may be used to identify the key that was used to encrypt the session ticket.

The status argument can be any of these values:

### `SSL_TICKET_EMPTY`

Empty ticket present. No ticket data will be used and a new ticket should be sent to the client. This only occurs in TLSv1.2 or below.

In TLSv1.3 it is not valid for a client to send an empty ticket.

### `SSL_TICKET_NO_DECRYPT`

The ticket couldn't be decrypted. No ticket data will be used and a new ticket should be sent to the client.

### `SSL_TICKET_SUCCESS`

A ticket was successfully decrypted, any session ticket application data should be available. A new ticket should not be sent to the client.

### `SSL_TICKET_SUCCESS_RENEW`

Same as `SSL_TICKET_SUCCESS`, but a new ticket should be sent to the client.

The return value can be any of these values:

### `SSL_TICKET_RETURN_ABORT`

The handshake should be aborted, either because of an error or because of some policy. Note that in TLSv1.3 a client may send more than one ticket in a single handshake. Therefore, just because one ticket is unacceptable it does not mean that all of them are. For this reason this option should be used with caution.

### `SSL_TICKET_RETURN_IGNORE`

Do not use a ticket (if one was available). Do not send a renewed ticket to the client.

## SSL\_TICKET\_RETURN\_IGNORE\_RENEW

Do not use a ticket (if one was available). Send a renewed ticket to the client.

If the callback does not wish to change the default ticket behaviour then it should return this value if status is `SSL_TICKET_EMPTY` or `SSL_TICKET_NO_DECRYPT`.

## SSL\_TICKET\_RETURN\_USE

Use the ticket. Do not send a renewed ticket to the client. It is an error for the callback to return this value if status has a value other than `SSL_TICKET_SUCCESS` or `SSL_TICKET_SUCCESS_RENEW`.

If the callback does not wish to change the default ticket behaviour then it should return this value if status is `SSL_TICKET_SUCCESS`.

## SSL\_TICKET\_RETURN\_USE\_RENEW

Use the ticket. Send a renewed ticket to the client. It is an error for the callback to return this value if status has a value other than `SSL_TICKET_SUCCESS` or `SSL_TICKET_SUCCESS_RENEW`.

If the callback does not wish to change the default ticket behaviour then it should return this value if status is `SSL_TICKET_SUCCESS_RENEW`.

If status has the value `SSL_TICKET_EMPTY` or `SSL_TICKET_NO_DECRYPT` then no session data will be available and the callback must not use the `ssl` argument. If status has the value `SSL_TICKET_SUCCESS` or `SSL_TICKET_SUCCESS_RENEW` then the application can call `SSL_SESSION_get0_ticket_appdata()` using the session provided in the `ssl` argument to retrieve the application data.

When the `gen_cb` callback is invoked, the `SSL_get_session()` function can be used to retrieve the `SSL_SESSION` for `SSL_SESSION_set1_ticket_appdata()`.

By default, in TLSv1.2 and below, a new session ticket is not issued on a successful resumption and therefore `gen_cb` will not be called. In TLSv1.3 the default behaviour is to always issue a new ticket on resumption. In both cases this behaviour can be changed if a ticket key

callback is in use (see `SSL_CTX_set_tlsext_ticket_key_cb(3)`).

## RETURN VALUES

The `SSL_CTX_set_session_ticket_cb()`, `SSL_SESSION_set1_ticket_appdata()` and `SSL_SESSION_get0_ticket_appdata()` functions return 1 on success and 0 on failure.

The `gen_cb` callback must return 1 to continue the connection. A return of 0 will terminate the connection with an `INTERNAL_ERROR` alert.

The `dec_cb` callback must return a value as described in "NOTES" above.

## SEE ALSO

`ssl(7)`, `SSL_get_session(3)`

## HISTORY

The `SSL_CTX_set_session_ticket_cb()`, `SSL_SESSION_set1_ticket_appdata()` and `SSL_SESSION_get_ticket_appdata()` functions were added in OpenSSL 1.1.1.

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