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## **Red Hat Enterprise Linux Release 9.2 Manual Pages on 'SSL\_SESSION\_up\_ref.3ossl' command**

**\$ man SSL\_SESSION\_up\_ref.3ossl**

SSL\_SESSION\_FREE(3ossl)      OpenSSL      SSL\_SESSION\_FREE(3ossl)

### NAME

SSL\_SESSION\_new, SSL\_SESSION\_dup, SSL\_SESSION\_up\_ref, SSL\_SESSION\_free  
- create, free and manage SSL\_SESSION structures

### SYNOPSIS

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

SSL_SESSION *SSL_SESSION_new(void);

SSL_SESSION *SSL_SESSION_dup(const SSL_SESSION *src);

int SSL_SESSION_up_ref(SSL_SESSION *ses);

void SSL_SESSION_free(SSL_SESSION *session);
```

### DESCRIPTION

SSL\_SESSION\_new() creates a new SSL\_SESSION structure and returns a pointer to it.

SSL\_SESSION\_dup() copies the contents of the SSL\_SESSION structure in src and returns a pointer to it.

SSL\_SESSION\_up\_ref() increments the reference count on the given SSL\_SESSION structure.

SSL\_SESSION\_free() decrements the reference count of session and removes the SSL\_SESSION structure pointed to by session and frees up the allocated memory, if the reference count has reached 0. If session is NULL nothing is done.

### NOTES

SSL\_SESSION objects are allocated, when a TLS/SSL handshake operation

is successfully completed. Depending on the settings, see `SSL_CTX_set_session_cache_mode(3)`, the `SSL_SESSION` objects are internally referenced by the `SSL_CTX` and linked into its session cache. `SSL` objects may be using the `SSL_SESSION` object; as a session may be reused, several `SSL` objects may be using one `SSL_SESSION` object at the same time. It is therefore crucial to keep the reference count (usage information) correct and not delete a `SSL_SESSION` object that is still used, as this may lead to program failures due to dangling pointers. These failures may also appear delayed, e.g. when an `SSL_SESSION` object was completely freed as the reference count incorrectly became 0, but it is still referenced in the internal session cache and the cache list is processed during a `SSL_CTX_flush_sessions(3)` operation. `SSL_SESSION_free()` must only be called for `SSL_SESSION` objects, for which the reference count was explicitly incremented (e.g. by calling `SSL_get1_session()`, see `SSL_get_session(3)`) or when the `SSL_SESSION` object was generated outside a TLS handshake operation, e.g. by using `d2i_SSL_SESSION(3)`. It must not be called on other `SSL_SESSION` objects, as this would cause incorrect reference counts and therefore program failures.

## RETURN VALUES

`SSL_SESSION_new` returns a pointer to the newly allocated `SSL_SESSION` structure or `NULL` on error.

`SSL_SESSION_up_ref` returns 1 on success or 0 on error.

## SEE ALSO

`ssl(7)`, `SSL_get_session(3)`, `SSL_CTX_set_session_cache_mode(3)`, `SSL_CTX_flush_sessions(3)`, `d2i_SSL_SESSION(3)`

## HISTORY

The `SSL_SESSION_dup()` function was added in OpenSSL 1.1.1.

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