NAME

SSL_SESSION_new, 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);
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_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(3), *SSL_get_session(3)*, *SSL_CTX_set_session_cache_mode(3)*, *SSL_CTX_flush_sessions(3)*, *d2i_SSL_SESSION(3)*

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