NAME

life_cycle−mac − The MAC algorithm life−cycle

DESCRIPTION

All message authentication codes (MACs) go through a number of stages in their life-cycle:

start
: This state represents the MAC before it has been allocated. It is the starting state for any life-cycle transitions.

newed
: This state represents the MAC after it has been allocated.

initialised
: This state represents the MAC when it is set up and capable of processing input.

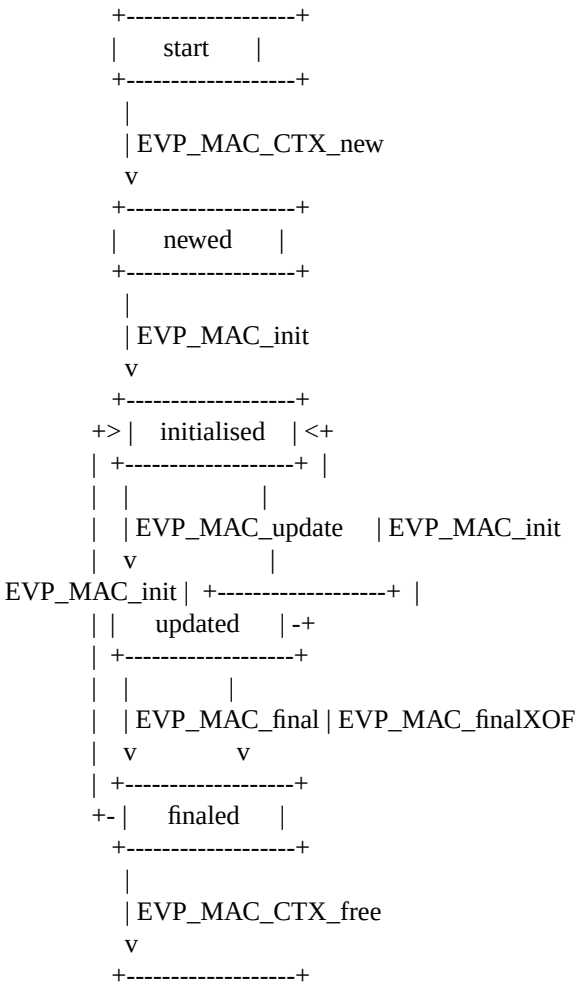
updated
: This state represents the MAC when it is set up and capable of processing additional input or generating output.

finaled
: This state represents the MAC when it has generated output.

freed
: This state is entered when the MAC is freed. It is the terminal state for all life-cycle transitions.

State Transition Diagram

The usual life-cycle of a MAC is illustrated:



```
|     freed     |
+---------------+
```

Formal State Transitions

This section defines all of the legal state transitions. This is the canonical list.

Function Call	Current State				
	start	newed	initialised	updated	finaled	freed
EVP_MAC_CTX_new		newed				
EVP_MAC_init		initialised	initialised	initialised	initialised	
EVP_MAC_update			updated	updated		
EVP_MAC_final				finaled		
EVP_MAC_finalXOF				finaled		
EVP_MAC_CTX_free		freed	freed	freed	freed	freed
EVP_MAC_CTX_get_params			newed	initialised	updated	
EVP_MAC_CTX_set_params			newed	initialised	updated	
EVP_MAC_CTX_gettable_params			newed	initialised	updated	
EVP_MAC_CTX_settable_params			newed	initialised	updated	

NOTES

At some point the EVP layer will begin enforcing the transitions described herein.

SEE ALSO

provider−mac (7), **EVP_MAC** (3).

HISTORY

The provider MAC interface was introduced in OpenSSL 3.0.

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