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## **Red Hat Enterprise Linux Release 9.2 Manual Pages on 'life\_cycle-rand.7oss1' command**

```
$ man life_cycle-rand.7oss1
```

```
LIFE_CYCLE-RAND(7oss1)      OpenSSL      LIFE_CYCLE-RAND(7oss1)
```

### NAME

life\_cycle-rand - The RAND algorithm life-cycle

### DESCRIPTION

All random number generator (RANDs) go through a number of stages in their life-cycle:

#### start

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

#### newed

This state represents the RAND after it has been allocated but unable to generate any output.

#### instantiated

This state represents the RAND when it is set up and capable of generating output.

#### uninstantiated

This state represents the RAND when it has been shutdown and it is

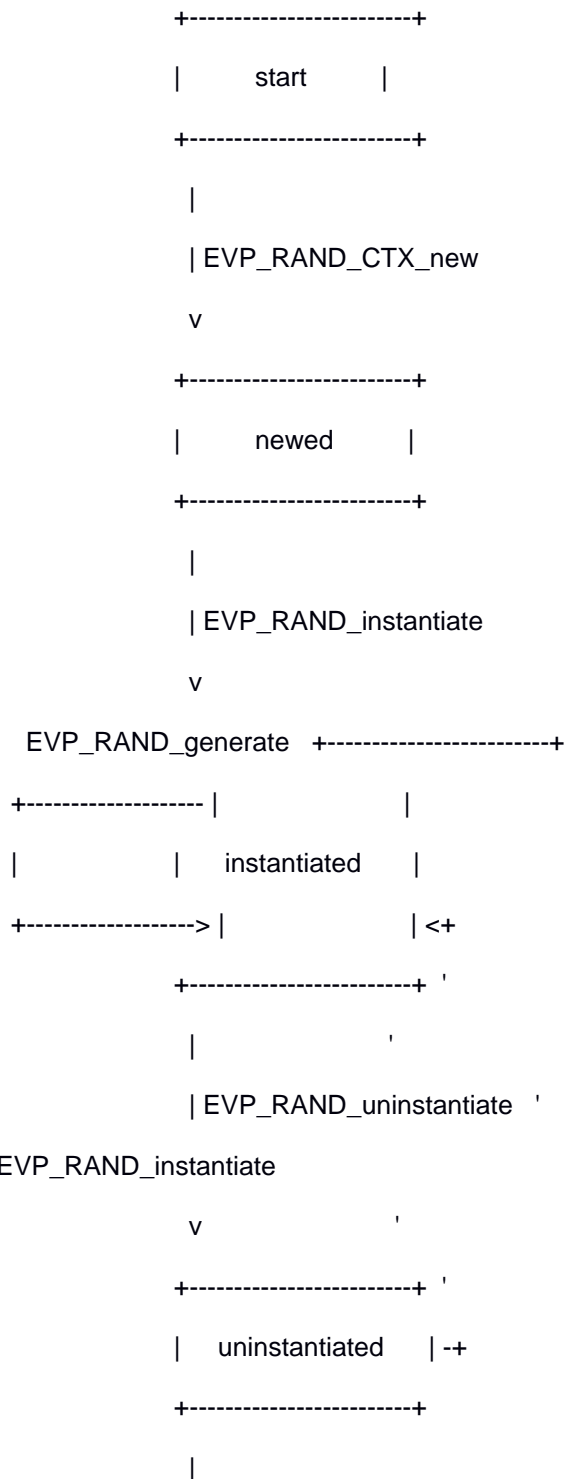
no longer capable of generating output.

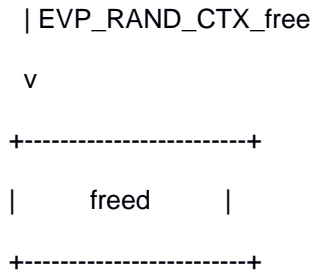
freed

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

### State Transition Diagram

The usual life-cycle of a RAND is illustrated:





### Formal State Transitions

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

Function Call	-----	Current State
-----		
		start newed instantiated
uninstantiated freed		
EVP RAND_CTX_new		newed
EVP RAND_instantiate		instantiated
EVP RAND_generate		instantiated
EVP RAND_uninstantiate		uninstantiated
EVP RAND_CTX_free	freed freed freed freed	
EVP RAND_CTX_get_params		newed instantiated
uninstantiated freed		
EVP RAND_CTX_set_params		newed instantiated
uninstantiated freed		
EVP RAND_CTX_gettable_params		newed instantiated
uninstantiated freed		
EVP RAND_CTX_settable_params		newed instantiated
uninstantiated freed		

### NOTES

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

### SEE ALSO

provider-rand(7), EVP RAND(3).

## HISTORY

The provider RAND interface was introduced in OpenSSL 3.0.

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