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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'DSA_generate_parameters.3ossl' command

$ man DSA_generate_parameters.3ossl

DSA_GENERATE_PARAMETERS(3ossl) OpenSSL DSA_GENERATE_PARAMETERS(3ossl)

NAME

DSA_generate_parameters_ex, DSA_generate_parameters - generate DSA parameters

SYNOPSIS

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

The following functions have been deprecated since OpenSSL 3.0, and can be hidden entirely by defining OPENSSL_API_COMPAT with a suitable version value, see openssl_user_macros(7):

```
int DSA_generate_parameters_ex(DSA *dsa, int bits,
                               const unsigned char *seed, int seed_len,
                               int *counter_ret, unsigned long *h_ret,
                               BN_GENCB *cb);
```

The following functions have been deprecated since OpenSSL 0.9.8, and can be hidden entirely by defining OPENSSL_API_COMPAT with a suitable version value, see openssl_user_macros(7):

```
DSA *DSA_generate_parameters(int bits, unsigned char *seed, int seed_len,
```

```
                int *counter_ret, unsigned long *h_ret,
                void (*callback)(int, int, void *), void *cb_arg);
```

DESCRIPTION

All of the functions described on this page are deprecated.
Applications should instead use EVP_PKEY_paramgen_init(3) and
EVP_PKEY_keygen(3) as described in EVP_PKEY-DSA(7).

DSA_generate_parameters_ex() generates primes p and q and a generator g
for use in the DSA and stores the result in dsa.

bits is the length of the prime p to be generated. For lengths under
2048 bits, the length of q is 160 bits; for lengths greater than or
equal to 2048 bits, the length of q is set to 256 bits.

If seed is NULL, the primes will be generated at random. If seed_len
is less than the length of q, an error is returned.

DSA_generate_parameters_ex() places the iteration count in *counter_ret
and a counter used for finding a generator in *h_ret, unless these are
NULL.

A callback function may be used to provide feedback about the progress
of the key generation. If cb is not NULL, it will be called as shown
below. For information on the BN_GENCB structure and the BN_GENCB_call
function discussed below, refer to BN_generate_prime(3).

DSA_generate_prime() is similar to DSA_generate_prime_ex() but expects
an old-style callback function; see BN_generate_prime(3) for
information on the old-style callback.

? When a candidate for q is generated, BN_GENCB_call(cb, 0, m++) is
called (m is 0 for the first candidate).

? When a candidate for q has passed a test by trial division, BN_GENCB_call(cb, 1, -1) is called. While a candidate for q is tested by Miller-Rabin primality tests, BN_GENCB_call(cb, 1, i) is called in the outer loop (once for each witness that confirms that the candidate may be prime); i is the loop counter (starting at 0).

? When a prime q has been found, BN_GENCB_call(cb, 2, 0) and BN_GENCB_call(cb, 3, 0) are called.

? Before a candidate for p (other than the first) is generated and tested, BN_GENCB_call(cb, 0, counter) is called.

? When a candidate for p has passed the test by trial division, BN_GENCB_call(cb, 1, -1) is called. While it is tested by the Miller-Rabin primality test, BN_GENCB_call(cb, 1, i) is called in the outer loop (once for each witness that confirms that the candidate may be prime). i is the loop counter (starting at 0).

? When p has been found, BN_GENCB_call(cb, 2, 1) is called.

? When the generator has been found, BN_GENCB_call(cb, 3, 1) is called.

RETURN VALUES

DSA_generate_parameters_ex() returns a 1 on success, or 0 otherwise. The error codes can be obtained by ERR_get_error(3).

DSA_generate_parameters() returns a pointer to the DSA structure or NULL if the parameter generation fails.

BUGS

Seed lengths greater than 20 are not supported.

SEE ALSO

DSA_new(3), ERR_get_error(3), RAND_bytes(3), DSA_free(3),
BN_generate_prime(3)

HISTORY

DSA_generate_parameters_ex() was deprecated in OpenSSL 3.0.

DSA_generate_parameters() was deprecated in OpenSSL 0.9.8; use
DSA_generate_parameters_ex() instead.

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