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

\$ man BN_clear_free.3ossl

BN_NEW(3ossl) OpenSSL BN_NEW(3ossl)

NAME

BN_new, BN_secure_new, BN_clear, BN_free, BN_clear_free - allocate and free BIGNUMs

SYNOPSIS

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

```
BIGNUM *BN_new(void);
```

```
BIGNUM *BN_secure_new(void);
```

```
void BN_clear(BIGNUM *a);
```

```
void BN_free(BIGNUM *a);
```

```
void BN_clear_free(BIGNUM *a);
```

DESCRIPTION

BN_new() allocates and initializes a BIGNUM structure. BN_secure_new() does the same except that the secure heap OPENSSL_secure_malloc(3) is used to store the value.

`BN_clear()` is used to destroy sensitive data such as keys when they are no longer needed. It erases the memory used by `a` and sets it to the value 0. If `a` is NULL, nothing is done.

`BN_free()` frees the components of the BIGNUM, and if it was created by `BN_new()`, also the structure itself. `BN_clear_free()` additionally overwrites the data before the memory is returned to the system. If `a` is NULL, nothing is done.

RETURN VALUES

`BN_new()` and `BN_secure_new()` return a pointer to the BIGNUM initialised to the value 0. If the allocation fails, they return NULL and set an error code that can be obtained by `ERR_get_error(3)`.

`BN_clear()`, `BN_free()` and `BN_clear_free()` have no return values.

SEE ALSO

`ERR_get_error(3)`, `OPENSSL_secure_malloc(3)`

HISTORY

`BN_init()` was removed in OpenSSL 1.1.0; use `BN_new()` instead.

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