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***Rocky Enterprise Linux 9.2 Manual Pages on command 'BN\_clear.3ossl'***

***\$ man BN\_clear.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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