NAME

BN_CTX_new, BN_CTX_init, BN_CTX_free - allocate and free BN_CTX structures

SYNOPSIS

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

BN_CTX *BN_CTX_new(void);

void BN_CTX_free(BN_CTX *c);
```

Deprecated:

```
void BN_CTX_init(BN_CTX *c);
```

DESCRIPTION

A **BN_CTX** is a structure that holds **BIGNUM** temporary variables used by library functions. Since dynamic memory allocation to create **BIGNUM**s is rather expensive when used in conjunction with repeated subroutine calls, the **BN_CTX** structure is used.

BN_CTX_new() allocates and initializes a **BN_CTX** structure.

BN_CTX_free() frees the components of the **BN_CTX**, and if it was created by *BN_CTX_new()*, also the structure itself. If *BN_CTX_start(3)* has been used on the **BN_CTX**, *BN_CTX_end(3)* must be called before the **BN_CTX** may be freed by *BN_CTX_free()*.

BN_CTX_init() (deprecated) initializes an existing uninitialized **BN_CTX**. This should not be used for new programs. Use *BN_CTX_new()* instead.

RETURN VALUES

BN_CTX_new() returns a pointer to the **BN_CTX**. If the allocation fails, it returns **NULL** and sets an error code that can be obtained by *ERR_get_error(3)*.

BN_CTX_init() and *BN_CTX_free()* have no return values.

SEE ALSO

bn(3), *ERR_get_error(3)*, *BN_add(3)*, *BN_CTX_start(3)*

HISTORY

BN_CTX_new() and *BN_CTX_free()* are available in all versions on SSLeay and OpenSSL. *BN_CTX_init()* was added in SSLeay 0.9.1b.