

NAME

BN_mod_inverse - compute inverse modulo n

SYNOPSIS

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

```
BIGNUM *BN_mod_inverse(BIGNUM *r, BIGNUM *a, const BIGNUM *n,  
BN_CTX *ctx);
```

DESCRIPTION

BN_mod_inverse() computes the inverse of **a** modulo **n** places the result in **r** ($(a * r) \% n == 1$). If **r** is NULL, a new **BIGNUM** is created.

ctx is a previously allocated **BN_CTX** used for temporary variables. **r** may be the same **BIGNUM** as **a** or **n**.

RETURN VALUES

BN_mod_inverse() returns the **BIGNUM** containing the inverse, and NULL on error. The error codes can be obtained by [ERR_get_error\(3\)](#).

SEE ALSO

[bn\(3\)](#), [ERR_get_error\(3\)](#), [BN_add\(3\)](#)

HISTORY

BN_mod_inverse() is available in all versions of SSLeay and OpenSSL.