

## NAME

`BN_cmp`, `BN_ucmp`, `BN_is_zero`, `BN_is_one`, `BN_is_word`, `BN_abs_is_word`, `BN_is_odd` - BIGNUM comparison and test functions

## SYNOPSIS

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

```
int BN_cmp(const BIGNUM *a, const BIGNUM *b);  
int BN_ucmp(const BIGNUM *a, const BIGNUM *b);
```

```
int BN_is_zero(const BIGNUM *a);  
int BN_is_one(const BIGNUM *a);  
int BN_is_word(const BIGNUM *a, const BN_ULONG w);  
int BN_abs_is_word(const BIGNUM *a, const BN_ULONG w);  
int BN_is_odd(const BIGNUM *a);
```

## DESCRIPTION

`BN_cmp()` compares the numbers  $a$  and  $b$ . `BN_ucmp()` compares their absolute values.

`BN_is_zero()`, `BN_is_one()`, `BN_is_word()` and `BN_abs_is_word()` test if  $a$  equals 0, 1,  $w$ , or  $|w|$  respectively. `BN_is_odd()` tests if  $a$  is odd.

## RETURN VALUES

`BN_cmp()` returns -1 if  $a < b$ , 0 if  $a == b$  and 1 if  $a > b$ . `BN_ucmp()` is the same using the absolute values of  $a$  and  $b$ .

`BN_is_zero()`, `BN_is_one()`, `BN_is_word()`, `BN_abs_is_word()` and `BN_is_odd()` return 1 if the condition is true, 0 otherwise.

## HISTORY

Prior to OpenSSL 1.1.0, `BN_is_zero()`, `BN_is_one()`, `BN_is_word()`, `BN_abs_is_word()` and `BN_is_odd()` were macros.

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