

**NAME**

BN\_cmp, BN\_ucmp, BN\_is\_zero, BN\_is\_one, BN\_is\_word, BN\_is\_odd - BIGNUM comparison and test functions

**SYNOPSIS**

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

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

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

**DESCRIPTION**

*BN\_cmp()* compares the numbers **a** and **b**. *BN\_ucmp()* compares their absolute values.

*BN\_is\_zero()*, *BN\_is\_one()* and *BN\_is\_word()* test if **a** equals 0, 1, or **w** respectively. *BN\_is\_odd()* tests if **a** is odd.

*BN\_is\_zero()*, *BN\_is\_one()*, *BN\_is\_word()* and *BN\_is\_odd()* are macros.

**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()* and *BN\_is\_odd()* return 1 if the condition is true, 0 otherwise.

**SEE ALSO**

[bn\(3\)](#)

**HISTORY**

*BN\_cmp()*, *BN\_ucmp()*, *BN\_is\_zero()*, *BN\_is\_one()* and *BN\_is\_word()* are available in all versions of SSLeay and OpenSSL. *BN\_is\_odd()* was added in SSLeay 0.8.