

**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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