NAME

BN_cmp, BN_ucmp, BN_is_zero, BN_is_one, BN_is_word, BN_abs_is_word, BN_is_odd, BN_are_coprime − 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);

int BN_are_coprime(BIGNUM *a, const BIGNUM *b, BN_CTX *ctx);
```

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.

BN_are_coprime() determines if **a** and **b** are coprime. **ctx** is used internally for storing temporary variables. The values of **a** and **b** and **ctx** must not be NULL.

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.

BN_are_coprime() returns 1 if the **BIGNUM**'s are coprime, otherwise it returns 0.

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.

The function **BN_are_coprime()** was added in OpenSSL 3.1.

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