

**NAME**

`BN_add_word`, `BN_sub_word`, `BN_mul_word`, `BN_div_word`, `BN_mod_word` - arithmetic functions on `BIGNUM`s with integers

**SYNOPSIS**

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

```
int BN_add_word(BIGNUM *a, BN_ULONG w);
```

```
int BN_sub_word(BIGNUM *a, BN_ULONG w);
```

```
int BN_mul_word(BIGNUM *a, BN_ULONG w);
```

```
BN_ULONG BN_div_word(BIGNUM *a, BN_ULONG w);
```

```
BN_ULONG BN_mod_word(const BIGNUM *a, BN_ULONG w);
```

**DESCRIPTION**

These functions perform arithmetic operations on `BIGNUM`s with unsigned integers. They are much more efficient than the normal `BIGNUM` arithmetic operations.

**BN\_add\_word()** adds **w** to **a** ("a+=w").

**BN\_sub\_word()** subtracts **w** from **a** ("a-=w").

**BN\_mul\_word()** multiplies **a** and **w** ("a\*=w").

**BN\_div\_word()** divides **a** by **w** ("a/=w") and returns the remainder.

**BN\_mod\_word()** returns the remainder of **a** divided by **w** ("a%w").

For **BN\_div\_word()** and **BN\_mod\_word()**, **w** must not be 0.

**RETURN VALUES**

**BN\_add\_word()**, **BN\_sub\_word()** and **BN\_mul\_word()** return 1 for success, 0 on error. The error codes can be obtained by **ERR\_get\_error(3)**.

**BN\_mod\_word()** and **BN\_div\_word()** return **a%w** on success and **(BN\_ULONG)-1** if an error occurred.

**SEE ALSO**

**ERR\_get\_error(3)**, **BN\_add(3)**

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