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## **Red Hat Enterprise Linux Release 9.2 Manual Pages on 'ASN1\_INTEGER\_to\_BN.3ossl' command**

**`$ man ASN1_INTEGER_to_BN.3ossl`**

ASN1\_INTEGER\_GET\_INT64(3ossl)    OpenSSL    ASN1\_INTEGER\_GET\_INT64(3ossl)

### NAME

ASN1\_INTEGER\_get\_uint64, ASN1\_INTEGER\_set\_uint64,  
ASN1\_INTEGER\_get\_int64, ASN1\_INTEGER\_get, ASN1\_INTEGER\_set\_int64,  
ASN1\_INTEGER\_set, BN\_to\_ASN1\_INTEGER, ASN1\_INTEGER\_to\_BN,  
ASN1\_ENUMERATED\_get\_int64, ASN1\_ENUMERATED\_get,  
ASN1\_ENUMERATED\_set\_int64, ASN1\_ENUMERATED\_set, BN\_to\_ASN1\_ENUMERATED,  
ASN1\_ENUMERATED\_to\_BN - ASN.1 INTEGER and ENUMERATED utilities

### SYNOPSIS

```
#include <openssl/asn1.h>

int ASN1_INTEGER_get_int64(int64_t *pr, const ASN1_INTEGER *a);

long ASN1_INTEGER_get(const ASN1_INTEGER *a);

int ASN1_INTEGER_set_int64(ASN1_INTEGER *a, int64_t r);

int ASN1_INTEGER_set(ASN1_INTEGER *a, long v);

int ASN1_INTEGER_get_uint64(uint64_t *pr, const ASN1_INTEGER *a);

int ASN1_INTEGER_set_uint64(ASN1_INTEGER *a, uint64_t r);

ASN1_INTEGER *BN_to_ASN1_INTEGER(const BIGNUM *bn, ASN1_INTEGER *ai);

BIGNUM *ASN1_INTEGER_to_BN(const ASN1_INTEGER *ai, BIGNUM *bn);

int ASN1_ENUMERATED_get_int64(int64_t *pr, const ASN1_ENUMERATED *a);

long ASN1_ENUMERATED_get(const ASN1_ENUMERATED *a);

int ASN1_ENUMERATED_set_int64(ASN1_ENUMERATED *a, int64_t r);

int ASN1_ENUMERATED_set(ASN1_ENUMERATED *a, long v);

ASN1_ENUMERATED *BN_to_ASN1_ENUMERATED(const BIGNUM *bn, ASN1_ENUMERATED *ai);
```

```
BIGNUM *ASN1_ENUMERATED_to_BN(const ASN1_ENUMERATED *ai, BIGNUM *bn);
```

## DESCRIPTION

These functions convert to and from ASN1\_INTEGER and ASN1\_ENUMERATED structures.

ASN1\_INTEGER\_get\_int64() converts an ASN1\_INTEGER into an int64\_t type

If successful it returns 1 and sets \*pr to the value of a. If it fails

(due to invalid type or the value being too big to fit into an int64\_t type) it returns 0.

ASN1\_INTEGER\_get\_uint64() is similar to ASN1\_INTEGER\_get\_int64\_t()

except it converts to a uint64\_t type and an error is returned if the passed integer is negative.

ASN1\_INTEGER\_get() also returns the value of a but it returns 0 if a is NULL and -1 on error (which is ambiguous because -1 is a legitimate value for an ASN1\_INTEGER). New applications should use

ASN1\_INTEGER\_get\_int64() instead.

ASN1\_INTEGER\_set\_int64() sets the value of ASN1\_INTEGER a to the int64\_t value r.

ASN1\_INTEGER\_set\_uint64() sets the value of ASN1\_INTEGER a to the uint64\_t value r.

ASN1\_INTEGER\_set() sets the value of ASN1\_INTEGER a to the long value v.

BN\_to\_ASN1\_INTEGER() converts BIGNUM bn to an ASN1\_INTEGER. If ai is NULL a new ASN1\_INTEGER structure is returned. If ai is not NULL then the existing structure will be used instead.

ASN1\_INTEGER\_to\_BN() converts ASN1\_INTEGER ai into a BIGNUM. If bn is NULL a new BIGNUM structure is returned. If bn is not NULL then the existing structure will be used instead.

ASN1\_ENUMERATED\_get\_int64(), ASN1\_ENUMERATED\_set\_int64(),

ASN1\_ENUMERATED\_set(), BN\_to\_ASN1\_ENUMERATED() and

ASN1\_ENUMERATED\_to\_BN() behave in an identical way to their

ASN1\_INTEGER counterparts except they operate on an ASN1\_ENUMERATED value.

ASN1\_ENUMERATED\_get() returns the value of a in a similar way to

ASN1\_INTEGER\_get() but it returns 0xffffffffL if the value of a will not fit in a long type. New applications should use ASN1\_ENUMERATED\_get\_int64() instead.

## NOTES

In general an ASN1\_INTEGER or ASN1\_ENUMERATED type can contain an integer of almost arbitrary size and so cannot always be represented by a C int64\_t type. However, in many cases (for example version numbers) they represent small integers which can be more easily manipulated if converted to an appropriate C integer type.

## BUGS

The ambiguous return values of ASN1\_INTEGER\_get() and ASN1\_ENUMERATED\_get() mean these functions should be avoided if possible. They are retained for compatibility. Normally the ambiguous return values are not legitimate values for the fields they represent.

## RETURN VALUES

ASN1\_INTEGER\_set\_int64(), ASN1\_INTEGER\_set(), ASN1\_ENUMERATED\_set\_int64() and ASN1\_ENUMERATED\_set() return 1 for success and 0 for failure. They will only fail if a memory allocation error occurs.

ASN1\_INTEGER\_get\_int64() and ASN1\_ENUMERATED\_get\_int64() return 1 for success and 0 for failure. They will fail if the passed type is incorrect (this will only happen if there is a programming error) or if the value exceeds the range of an int64\_t type.

BN\_to\_ASN1\_INTEGER() and BN\_to\_ASN1\_ENUMERATED() return an ASN1\_INTEGER or ASN1\_ENUMERATED structure respectively or NULL if an error occurs.

They will only fail due to a memory allocation error.

ASN1\_INTEGER\_to\_BN() and ASN1\_ENUMERATED\_to\_BN() return a BIGNUM structure or NULL if an error occurs. They can fail if the passed type is incorrect (due to programming error) or due to a memory allocation failure.

## SEE ALSO

ERR\_get\_error(3)

## HISTORY

ASN1\_INTEGER\_set\_int64(), ASN1\_INTEGER\_get\_int64(),  
ASN1\_ENUMERATED\_set\_int64() and ASN1\_ENUMERATED\_get\_int64() were added  
in OpenSSL 1.1.0.

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