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## **Red Hat Enterprise Linux Release 9.2 Manual Pages on 'ASN1\_item\_d2i.3ossl' command**

**\$ man ASN1\_item\_d2i.3ossl**

ASN1\_ITEM\_D2I\_BIO(3ossl)      OpenSSL      ASN1\_ITEM\_D2I\_BIO(3ossl)

### NAME

ASN1\_item\_d2i\_ex, ASN1\_item\_d2i, ASN1\_item\_d2i\_bio\_ex,  
ASN1\_item\_d2i\_bio, ASN1\_item\_d2i\_fp\_ex, ASN1\_item\_d2i\_fp,  
ASN1\_item\_i2d\_mem\_bio - decode and encode DER-encoded ASN.1 structures

### SYNOPSIS

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

```
ASN1_VALUE *ASN1_item_d2i_ex(ASN1_VALUE **pval, const unsigned char **in,  
                             long len, const ASN1_ITEM *it,  
                             OSSL_LIB_CTX *libctx, const char *propq);
```

```
ASN1_VALUE *ASN1_item_d2i(ASN1_VALUE **pval, const unsigned char **in,  
                          long len, const ASN1_ITEM *it);
```

```
void *ASN1_item_d2i_bio_ex(const ASN1_ITEM *it, BIO *in, void *x,  
                          OSSL_LIB_CTX *libctx, const char *propq);
```

```
void *ASN1_item_d2i_bio(const ASN1_ITEM *it, BIO *in, void *x);
```

```
void *ASN1_item_d2i_fp_ex(const ASN1_ITEM *it, FILE *in, void *x,  
                          OSSL_LIB_CTX *libctx, const char *propq);
```

```
void *ASN1_item_d2i_fp(const ASN1_ITEM *it, FILE *in, void *x);
```

BIO \*ASN1\_item\_i2d\_mem\_bio(const ASN1\_ITEM \*it, const ASN1\_VALUE \*val);

## DESCRIPTION

ASN1\_item\_d2i\_ex() decodes the contents of the data stored in \*in of length len which must be a DER-encoded ASN.1 structure, using the ASN.1 template it. It places the result in \*pval unless pval is NULL. If \*pval is non-NULL on entry then the ASN1\_VALUE present there will be reused. Otherwise a new ASN1\_VALUE will be allocated. If any algorithm fetches are required during the process then they will use the OSSL\_LIB\_CTX provided in the libctx parameter and the property query string in propq. See "ALGORITHM FETCHING" in crypto(7) for more information about algorithm fetching. On exit \*in will be updated to point to the next byte in the buffer after the decoded structure.

ASN1\_item\_d2i() is the same as ASN1\_item\_d2i\_ex() except that the default OSSL\_LIB\_CTX is used (i.e. NULL) and with a NULL property query string.

ASN1\_item\_d2i\_bio\_ex() decodes the contents of its input BIO in, which must be a DER-encoded ASN.1 structure, using the ASN.1 template it and places the result in \*pval unless pval is NULL. If in is NULL it returns NULL, else a pointer to the parsed structure. If any algorithm fetches are required during the process then they will use the OSSL\_LIB\_CTX provided in the libctx parameter and the property query string in propq. See "ALGORITHM FETCHING" in crypto(7) for more information about algorithm fetching.

ASN1\_item\_d2i\_bio() is the same as ASN1\_item\_d2i\_bio\_ex() except that the default OSSL\_LIB\_CTX is used (i.e. NULL) and with a NULL property query string.

ASN1\_item\_d2i\_fp\_ex() is the same as ASN1\_item\_d2i\_bio\_ex() except that

a FILE pointer is provided instead of a BIO.

ASN1\_item\_d2i\_fp() is the same as ASN1\_item\_d2i\_fp\_ex() except that the default OSSL\_LIB\_CTX is used (i.e. NULL) and with a NULL property query string.

ASN1\_item\_i2d\_mem\_bio() encodes the given ASN.1 value val using the ASN.1 template it and returns the result in a memory BIO.

## RETURN VALUES

ASN1\_item\_d2i\_bio() returns a pointer to an ASN1\_VALUE or NULL.

ASN1\_item\_i2d\_mem\_bio() returns a pointer to a memory BIO or NULL on error.

## HISTORY

The functions ASN1\_item\_d2i\_ex(), ASN1\_item\_d2i\_bio\_ex(), ASN1\_item\_d2i\_fp\_ex() and ASN1\_item\_i2d\_mem\_bio() were added in OpenSSL 3.0.

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