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***Rocky Enterprise Linux 9.2 Manual Pages on command 'ASN1\_item\_d2i\_fp\_ex.3oss1'***

***\$ man ASN1\_item\_d2i\_fp\_ex.3oss1***

ASN1\_ITEM\_D2I\_BIO(3oss1)      OpenSSL      ASN1\_ITEM\_D2I\_BIO(3oss1)

**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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