



## ***Red Hat Enterprise Linux Release 9.2 Manual Pages on 'ASN1\_tag2str.3oss1' command***

***\$ man ASN1\_tag2str.3oss1***

ASN1\_STRING\_PRINT\_EX(3oss1)      OpenSSL      ASN1\_STRING\_PRINT\_EX(3oss1)

### NAME

ASN1\_tag2str, ASN1\_STRING\_print\_ex, ASN1\_STRING\_print\_ex\_fp,  
ASN1\_STRING\_print - ASN1\_STRING output routines

### SYNOPSIS

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

int ASN1_STRING_print_ex(BIO *out, const ASN1_STRING *str, unsigned long flags);
int ASN1_STRING_print_ex_fp(FILE *fp, const ASN1_STRING *str, unsigned long flags);
int ASN1_STRING_print(BIO *out, const ASN1_STRING *str);
const char *ASN1_tag2str(int tag);
```

### DESCRIPTION

These functions output an ASN1\_STRING structure. ASN1\_STRING is used to represent all the ASN1 string types.

ASN1\_STRING\_print\_ex() outputs str to out, the format is determined by the options flags. ASN1\_STRING\_print\_ex\_fp() is identical except it outputs to fp instead.

ASN1\_STRING\_print() prints str to out but using a different format to ASN1\_STRING\_print\_ex(). It replaces unprintable characters (other than CR, LF) with '\.'

ASN1\_tag2str() returns a human-readable name of the specified ASN.1 tag.

### NOTES

ASN1\_STRING\_print() is a deprecated function which should be avoided;

use `ASN1_STRING_print_ex()` instead.

Although there are a large number of options frequently

`ASN1_STRFLGS_RFC2253` is suitable, or on UTF8 terminals

`ASN1_STRFLGS_RFC2253 & ~ASN1_STRFLGS_ESC_MSB`.

The complete set of supported options for flags is listed below.

Various characters can be escaped. If `ASN1_STRFLGS_ESC_2253` is set the characters determined by RFC2253 are escaped. If `ASN1_STRFLGS_ESC_CTRL` is set control characters are escaped. If `ASN1_STRFLGS_ESC_MSB` is set characters with the MSB set are escaped: this option should not be used if the terminal correctly interprets UTF8 sequences.

Escaping takes several forms.

If the character being escaped is a 16 bit character then the form

"\UXXXX" is used using exactly four characters for the hex

representation. If it is 32 bits then "\WXXXXXXXX" is used using eight characters of its hex representation. These forms will only be used if UTF8 conversion is not set (see below).

Printable characters are normally escaped using the backslash '\ character. If `ASN1_STRFLGS_ESC_QUOTE` is set then the whole string is instead surrounded by double quote characters: this is arguably more readable than the backslash notation. Other characters use the "\XX" using exactly two characters of the hex representation.

If `ASN1_STRFLGS_UTF8_CONVERT` is set then characters are converted to UTF8 format first. If the terminal supports the display of UTF8 sequences then this option will correctly display multi byte characters.

If `ASN1_STRFLGS_IGNORE_TYPE` is set then the string type is not interpreted at all: everything is assumed to be one byte per character. This is primarily for debugging purposes and can result in confusing output in multi character strings.

If `ASN1_STRFLGS_SHOW_TYPE` is set then the string type itself is printed out before its value (for example "BMPSTRING"), this actually uses `ASN1_tag2str()`.

The content of a string instead of being interpreted can be "dumped":

this just outputs the value of the string using the form #XXXX using hex format for each octet.

If ASN1\_STRFLGS\_DUMP\_ALL is set then any type is dumped.

Normally non character string types (such as OCTET STRING) are assumed to be one byte per character, if ASN1\_STRFLGS\_DUMP\_UNKNOWN is set then they will be dumped instead.

When a type is dumped normally just the content octets are printed, if ASN1\_STRFLGS\_DUMP\_DER is set then the complete encoding is dumped instead (including tag and length octets).

ASN1\_STRFLGS\_RFC2253 includes all the flags required by RFC2253. It is equivalent to:

```
ASN1_STRFLGS_ESC_2253 | ASN1_STRFLGS_ESC_CTRL | ASN1_STRFLGS_ESC_MSB |  
ASN1_STRFLGS_UTF8_CONVERT | ASN1_STRFLGS_DUMP_UNKNOWN  
ASN1_STRFLGS_DUMP_DER
```

## RETURN VALUES

ASN1\_STRING\_print\_ex() and ASN1\_STRING\_print\_ex\_fp() return the number of characters written or -1 if an error occurred.

ASN1\_STRING\_print() returns 1 on success or 0 on error.

ASN1\_tag2str() returns a human-readable name of the specified ASN.1 tag.

## SEE ALSO

X509\_NAME\_print\_ex(3), ASN1\_tag2str(3)

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