



Red Hat Enterprise Linux Release 9.2 Manual Pages on 'ASN1_STRING_print.3oss1' command

\$ man ASN1_STRING_print.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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