NAME

DECLARE_ASN1_FUNCTIONS, IMPLEMENT_ASN1_FUNCTIONS, ASN1_ITEM, ACCESS_DESCRIPTION_free, ACCESS_DESCRIPTION_new, ADMISSIONS_free, ADMISSIONS_new, ADMISSION_SYNTAX_free, ADMISSION_SYNTAX_new, ASIdOrRange_free, ASIdOrRange_new, ASIdentifierChoice_free, ASIdentifierChoice_new, ASIdentifiers_free, ASIdentifiers_new, ASRange_free, ASRange_new, AUTHORITY_INFO_ACCESS_free, AUTHORITY_INFO_ACCESS_new, AUTHORITY_KEYID_free, AUTHORITY_KEYID_new, BASIC_CONSTRAINTS_free, BASIC_CONSTRAINTS_new, CERTIFICATEPOLICIES_free, CERTIFICATEPOLICIES_new, CMS_ContentInfo_free, CMS_ContentInfo_new, CMS_ContentInfo_new_ex, CMS_ContentInfo_print_ctx, CMS_EnvelopedData_it, CMS_EnvelopedData_dup, CMS_ReceiptRequest_free, CMS_ReceiptRequest_new, CMS_SignedData_free, CMS_SignedData_new, CRL_DIST_POINTS_free, CRL_DIST_POINTS_new, DIRECTORYSTRING_free, DIRECTORYSTRING_new, DISPLAYTEXT_free, DISPLAYTEXT_new, DIST_POINT_NAME_free, DIST_POINT_NAME_new, DIST_POINT_NAME_dup, DIST_POINT_free, DIST_POINT_new, DSAparams_dup, ECPARAMETERS_free, ECPARAMETERS_new, ECPKPARAMETERS_free, ECPKPARAMETERS_new, EDIPARTYNAME_free, EDIPARTYNAME_new, ESS_CERT_ID_dup, ESS_CERT_ID_free, ESS_CERT_ID_new, ESS_CERT_ID_V2_dup, ESS_CERT_ID_V2_free, ESS_CERT_ID_V2_new, ESS_ISSUER_SERIAL_dup, ESS_ISSUER_SERIAL_free, ESS_ISSUER_SERIAL_new, ESS_SIGNING_CERT_dup, ESS_SIGNING_CERT_free, ESS_SIGNING_CERT_it, ESS_SIGNING_CERT_new, ESS_SIGNING_CERT_V2_dup, ESS_SIGNING_CERT_V2_free, ESS_SIGNING_CERT_V2_it, ESS_SIGNING_CERT_V2_new, EXTENDED_KEY_USAGE_free, EXTENDED_KEY_USAGE_new, GENERAL_NAMES_free, GENERAL_NAMES_new, GENERAL_NAME_dup, GENERAL_NAME_free, GENERAL_NAME_new, GENERAL_SUBTREE_free, GENERAL_SUBTREE_new, OSSL_IETF_ATTR_SYNTAX_free, OSSL_IETF_ATTR_SYNTAX_it, OSSL_IETF_ATTR_SYNTAX_new, IPAddressChoice_free, IPAddressChoice_new, IPAddressFamily_free, IPAddressFamily_new, IPAddressOrRange_free, IPAddressOrRange_new, IPAddressRange_free, IPAddressRange_new, ISSUER_SIGN_TOOL_free, ISSUER_SIGN_TOOL_it, ISSUER_SIGN_TOOL_new, ISSUING_DIST_POINT_free, ISSUING_DIST_POINT_it, ISSUING_DIST_POINT_new, NAME_CONSTRAINTS_free, NAME_CONSTRAINTS_new, NAMING_AUTHORITY_free, NAMING_AUTHORITY_new, NETSCAPE_CERT_SEQUENCE_free, NETSCAPE_CERT_SEQUENCE_new, NETSCAPE_SPKAC_free, NETSCAPE_SPKAC_new, NETSCAPE_SPKI_free, NETSCAPE_SPKI_new, NOTICEREF_free, NOTICEREF_new, OCSP_BASICRESP_free, OCSP_BASICRESP_new, OCSP_CERTID_dup, OCSP_CERTID_new, OCSP_CERTSTATUS_free, OCSP_CERTSTATUS_new, OCSP_CRLID_free, OCSP_CRLID_new, OCSP_ONEREQ_free, OCSP_ONEREQ_new, OCSP_REQINFO_free, OCSP_REQINFO_new, OCSP_RESPBYTES_free, OCSP_RESPBYTES_new, OCSP_RESPDATA_free, OCSP_RESPDATA_new, OCSP_RESPID_free, OCSP_RESPID_new, OCSP_RESPONSE_new, OCSP_REVOKEDINFO_free, OCSP_REVOKEDINFO_new, OCSP_SERVICELOC_free, OCSP_SERVICELOC_new, OCSP_SIGNATURE_free, OCSP_SIGNATURE_new, OCSP_SINGLERESP_free, OCSP_SINGLERESP_new, OSSL_AA_DIST_POINT_free, OSSL_AA_DIST_POINT_new, OSSL_AA_DIST_POINT_it, OSSL_ALLOWED_ATTRIBUTES_CHOICE_free, OSSL_ALLOWED_ATTRIBUTES_CHOICE_new, OSSL_ALLOWED_ATTRIBUTES_CHOICE_it, OSSL_ALLOWED_ATTRIBUTES_ITEM_free, OSSL_ALLOWED_ATTRIBUTES_ITEM_new, OSSL_ALLOWED_ATTRIBUTES_ITEM_it, OSSL_ALLOWED_ATTRIBUTES_SYNTAX_free, OSSL_ALLOWED_ATTRIBUTES_SYNTAX_new, OSSL_ALLOWED_ATTRIBUTES_SYNTAX_it, OSSL_ATAV_free, OSSL_ATAV_new, OSSL_ATAV_it, OSSL_ATTRIBUTE_DESCRIPTOR_free, OSSL_ATTRIBUTE_DESCRIPTOR_new, OSSL_ATTRIBUTE_DESCRIPTOR_it, OSSL_ATTRIBUTE_MAPPING_free, OSSL_ATTRIBUTE_MAPPING_new, OSSL_ATTRIBUTE_MAPPING_it, OSSL_ATTRIBUTE_MAPPINGS_free, OSSL_ATTRIBUTE_MAPPINGS_new, OSSL_ATTRIBUTE_MAPPINGS_it, OSSL_ATTRIBUTE_TYPE_MAPPING_free, OSSL_ATTRIBUTE_TYPE_MAPPING_new, OSSL_ATTRIBUTE_TYPE_MAPPING_it, OSSL_ATTRIBUTE_VALUE_MAPPING_free, OSSL_ATTRIBUTE_VALUE_MAPPING_new,

OSSL_ATTRIBUTE_VALUE_MAPPING_it, OSSL_ATTRIBUTES_SYNTAX_free, OSSL_ATTRIBUTES_SYNTAX_it, OSSL_ATTRIBUTES_SYNTAX_new, OSSL_AUTHORITY_ATTRIBUTE_ID_SYNTAX_free, OSSL_AUTHORITY_ATTRIBUTE_ID_SYNTAX_it, OSSL_AUTHORITY_ATTRIBUTE_ID_SYNTAX_new, OSSL_BASIC_ATTR_CONSTRAINTS_free, OSSL_BASIC_ATTR_CONSTRAINTS_it, OSSL_BASIC_ATTR_CONSTRAINTS_new, OSSL_CMP_ATAVS_new, OSSL_CMP_ATAVS_free, OSSL_CMP_ATAVS_it, OSSL_CMP_CRLSTATUS_free, OSSL_CMP_ITAV_dup, OSSL_CMP_ITAV_free, OSSL_CMP_MSG_dup, OSSL_CMP_MSG_it, OSSL_CMP_MSG_free, OSSL_CMP_PKIHEADER_free, OSSL_CMP_PKIHEADER_it, OSSL_CMP_PKIHEADER_new, OSSL_CMP_PKISI_dup, OSSL_CMP_PKISI_free, OSSL_CMP_PKISI_it, OSSL_CMP_PKISI_new, OSSL_CMP_PKISTATUS_it, OSSL_CRMF_CERTID_dup, OSSL_CRMF_CERTID_free, OSSL_CRMF_CERTID_it, OSSL_CRMF_CERTID_new, OSSL_CRMF_CERTTEMPLATE_free, OSSL_CRMF_CERTTEMPLATE_it, OSSL_CRMF_CERTTEMPLATE_new, OSSL_CRMF_CERTTEMPLATE_dup, OSSL_CRMF_ATTRIBUTETYPEANDVALUE_dup, OSSL_CRMF_ATTRIBUTETYPEANDVALUE_free, OSSL_CRMF_ENCRYPTEDKEY_free, OSSL_CRMF_ENCRYPTEDKEY_it, OSSL_CRMF_ENCRYPTEDKEY_new, OSSL_CRMF_ENCRYPTEDVALUE_free, OSSL_CRMF_ENCRYPTEDVALUE_it, OSSL_CRMF_ENCRYPTEDVALUE_new, OSSL_CRMF_MSGS_free, OSSL_CRMF_MSGS_it, OSSL_CRMF_MSGS_new, OSSL_CRMF_MSG_dup, OSSL_CRMF_MSG_free, OSSL_CRMF_MSG_it, OSSL_CRMF_MSG_new, OSSL_CRMF_PBMPARAMETER_free, OSSL_CRMF_PBMPARAMETER_it, OSSL_CRMF_PBMPARAMETER_new, OSSL_CRMF_PKIPUBLICATIONINFO_free, OSSL_CRMF_PKIPUBLICATIONINFO_it, OSSL_CRMF_PKIPUBLICATIONINFO_new, OSSL_CRMF_SINGLEPUBINFO_free, OSSL_CRMF_SINGLEPUBINFO_it, OSSL_CRMF_SINGLEPUBINFO_new, OSSL_DAY_TIME_free, OSSL_DAY_TIME_new, OSSL_DAY_TIME_it, OSSL_DAY_TIME_BAND_free, OSSL_DAY_TIME_BAND_new, OSSL_DAY_TIME_BAND_it, OSSL_HASH_free, OSSL_HASH_it, OSSL_HASH_new, OSSL_INFO_SYNTAX_free, OSSL_INFO_SYNTAX_it, OSSL_INFO_SYNTAX_new, OSSL_INFO_SYNTAX_POINTER_free, OSSL_INFO_SYNTAX_POINTER_it, OSSL_INFO_SYNTAX_POINTER_new, OSSL_PRIVILEGE_POLICY_ID_free, OSSL_PRIVILEGE_POLICY_ID_it, OSSL_PRIVILEGE_POLICY_ID_new, OSSL_TARGET_CERT_free, OSSL_TARGET_CERT_it, OSSL_TARGET_CERT_new, OSSL_TARGET_free, OSSL_TARGET_it, OSSL_TARGET_new, OSSL_TARGETING_INFORMATION_free, OSSL_TARGETING_INFORMATION_it, OSSL_TARGETING_INFORMATION_new, OSSL_TARGETS_free, OSSL_TARGETS_it, OSSL_TARGETS_new, OSSL_IETF_ATTR_SYNTAX_VALUE_free, OSSL_IETF_ATTR_SYNTAX_VALUE_it, OSSL_IETF_ATTR_SYNTAX_VALUE_new, OSSL_ISSUER_SERIAL_free, OSSL_ISSUER_SERIAL_new, OSSL_NAMED_DAY_free, OSSL_NAMED_DAY_new, OSSL_NAMED_DAY_it, OSSL_OBJECT_DIGEST_INFO_free, OSSL_OBJECT_DIGEST_INFO_new, OSSL_ROLE_SPEC_CERT_ID_free, OSSL_ROLE_SPEC_CERT_ID_new, OSSL_ROLE_SPEC_CERT_ID_it, OSSL_ROLE_SPEC_CERT_ID_SYNTAX_free, OSSL_ROLE_SPEC_CERT_ID_SYNTAX_new, OSSL_ROLE_SPEC_CERT_ID_SYNTAX_it, OSSL_TIME_PERIOD_free, OSSL_TIME_PERIOD_new, OSSL_TIME_PERIOD_it, OSSL_TIME_SPEC_ABSOLUTE_free, OSSL_TIME_SPEC_ABSOLUTE_new, OSSL_TIME_SPEC_ABSOLUTE_it, OSSL_TIME_SPEC_free, OSSL_TIME_SPEC_new, OSSL_TIME_SPEC_it, OSSL_TIME_SPEC_DAY_free, OSSL_TIME_SPEC_DAY_new, OSSL_TIME_SPEC_DAY_it, OSSL_TIME_SPEC_MONTH_free, OSSL_TIME_SPEC_MONTH_new, OSSL_TIME_SPEC_MONTH_it, OSSL_TIME_SPEC_TIME_free, OSSL_TIME_SPEC_TIME_new, OSSL_TIME_SPEC_TIME_it, OSSL_TIME_SPEC_WEEKS_free, OSSL_TIME_SPEC_WEEKS_new, OSSL_TIME_SPEC_WEEKS_it, OSSL_TIME_SPEC_X_DAY_OF_free, OSSL_TIME_SPEC_X_DAY_OF_new, OSSL_TIME_SPEC_X_DAY_OF_it, OSSL_USER_NOTICE_SYNTAX_free, OSSL_USER_NOTICE_SYNTAX_new, OSSL_USER_NOTICE_SYNTAX_it, OTHERNAME_free, OTHERNAME_new, PBE2PARAM_free, PBE2PARAM_new, PBEPARAM_free, PBEPARAM_new,

PBKDF2PARAM_free, PBKDF2PARAM_new, PBMAC1PARAM_free, PBMAC1PARAM_it, PBMAC1PARAM_new, PKCS12_BAGS_free, PKCS12_BAGS_new, PKCS12_MAC_DATA_free, PKCS12_MAC_DATA_new, PKCS12_SAFEBAG_free, PKCS12_SAFEBAG_new, PKCS12_free, PKCS12_new, PKCS7_DIGEST_free, PKCS7_DIGEST_new, PKCS7_ENCRYPT_free, PKCS7_ENCRYPT_new, PKCS7_ENC_CONTENT_free, PKCS7_ENC_CONTENT_new, PKCS7_ENVELOPE_free, PKCS7_ENVELOPE_new, PKCS7_ISSUER_AND_SERIAL_free, PKCS7_ISSUER_AND_SERIAL_new, PKCS7_RECIP_INFO_free, PKCS7_RECIP_INFO_new, PKCS7_SIGNED_free, PKCS7_SIGNED_new, PKCS7_SIGNER_INFO_free, PKCS7_SIGNER_INFO_new, PKCS7_SIGN_ENVELOPE_free, PKCS7_SIGN_ENVELOPE_new, PKCS7_dup, PKCS7_free, PKCS7_new_ex, PKCS7_new, PKCS7_print_ctx, PKCS8_PRIV_KEY_INFO_free, PKCS8_PRIV_KEY_INFO_new, PKEY_USAGE_PERIOD_free, PKEY_USAGE_PERIOD_new, POLICYINFO_free, POLICYINFO_new, POLICYQUALINFO_free, POLICYQUALINFO_new, POLICY_CONSTRAINTS_free, POLICY_CONSTRAINTS_new, POLICY_MAPPING_free, POLICY_MAPPING_new, PROFESSION_INFOS_free, PROFESSION_INFOS_new, PROFESSION_INFO_free, PROFESSION_INFO_new, PROXY_CERT_INFO_EXTENSION_free, PROXY_CERT_INFO_EXTENSION_new, PROXY_POLICY_free, PROXY_POLICY_new, RSAPrivateKey_dup, RSAPublicKey_dup, RSA_OAEP_PARAMS_free, RSA_OAEP_PARAMS_new, RSA_PSS_PARAMS_free, RSA_PSS_PARAMS_new, RSA_PSS_PARAMS_dup, SCRYPT_PARAMS_free, SCRYPT_PARAMS_new, SXNETID_free, SXNETID_new, SXNET_free, SXNET_new, TLS_FEATURE_free, TLS_FEATURE_new, TS_ACCURACY_dup, TS_ACCURACY_free, TS_ACCURACY_new, TS_MSG_IMPRINT_dup, TS_MSG_IMPRINT_free, TS_MSG_IMPRINT_new, TS_REQ_dup, TS_REQ_free, TS_REQ_new, TS_RESP_dup, TS_RESP_free, TS_RESP_new, TS_STATUS_INFO_dup, TS_STATUS_INFO_free, TS_STATUS_INFO_new, TS_TST_INFO_dup, TS_TST_INFO_free, TS_TST_INFO_new, USERNOTICE_free, USERNOTICE_new, X509_ACERT_dup, X509_ACERT_free, X509_ACERT_it, X509_ACERT_new, X509_ACERT_INFO_free, X509_ACERT_INFO_it, X509_ACERT_INFO_new, X509_ACERT_ISSUER_V2FORM_free, X509_ACERT_ISSUER_V2FORM_new, X509_ALGOR_free, X509_ALGOR_it, X509_ALGOR_new, X509_ATTRIBUTE_dup, X509_ATTRIBUTE_free, X509_ATTRIBUTE_new, X509_CERT_AUX_free, X509_CERT_AUX_new, X509_CINF_free, X509_CINF_new, X509_CRL_INFO_free, X509_CRL_INFO_new, X509_CRL_dup, X509_CRL_free, X509_CRL_new_ex, X509_CRL_new, X509_EXTENSION_dup, X509_EXTENSION_free, X509_EXTENSION_new, X509_NAME_ENTRY_dup, X509_NAME_ENTRY_free, X509_NAME_ENTRY_new, X509_NAME_dup, X509_NAME_free, X509_NAME_new, X509_REQ_INFO_free, X509_REQ_INFO_new, X509_REQ_dup, X509_REQ_free, X509_REQ_new, X509_REQ_new_ex, X509_REVOKED_dup, X509_REVOKED_free, X509_REVOKED_new, X509_SIG_free, X509_SIG_new, X509_VAL_free, X509_VAL_new, X509_dup, − ASN1 object utilities

SYNOPSIS

```
#include <openssl/asn1t.h>

DECLARE_ASN1_FUNCTIONS(type)
IMPLEMENT_ASN1_FUNCTIONS(stname)

typedef struct ASN1_ITEM_st ASN1_ITEM;

extern const ASN1_ITEM TYPE_it;
TYPE *TYPE_new(void);
TYPE *TYPE_dup(const TYPE *a);
void TYPE_free(TYPE *a);
int TYPE_print_ctx(BIO *out, TYPE *a, int indent, const ASN1_PCTX *pctx);
```

The following functions have been deprecated since OpenSSL 3.0, and can be hidden entirely by defining **OPENSSL_API_COMPAT** with a suitable version value, see **openssl_user_macros** (7):

```
DSA *DSAparams_dup(const DSA *dsa);
RSA *RSAPrivateKey_dup(const RSA *rsa);
RSA *RSAPublicKey_dup(const RSA *rsa);
```

DESCRIPTION

In the description below, ***TYPE*** is used as a placeholder for any of the OpenSSL datatypes, such as **X509**.

The OpenSSL ASN1 parsing library templates are like a data−driven bytecode interpreter. Every ASN1 object as a global variable, TYPE_it, that describes the item such as its fields. (On systems which cannot export variables from shared libraries, the global is instead a function which returns a pointer to a static variable.

The macro **DECLARE_ASN1_FUNCTIONS()** is typically used in header files to generate the function declarations.

The macro **IMPLEMENT_ASN1_FUNCTIONS()** is used once in a source file to generate the function bodies.

***TYPE*_new**() allocates an empty object of the indicated type. The object returned must be released by calling ***TYPE*_free**().

TYPE*_new_ex**() is similar to ***TYPE*_new**() but also passes the library context *libctx* and the property query *propq* to use when retrieving algorithms from providers. This created object can then be used when loading binary data using **d2i_*TYPE().

***TYPE*_dup**() copies an existing object, leaving it untouched. Note, however, that the internal representation of the object may contain (besides the ASN.1 structure) further data, which is not copied. For instance, an **X509** object usually is augmented by cached information on X.509v3 extensions, etc., and losing it can lead to wrong validation results. To avoid such situations, better use ***TYPE*_up_ref**() if available. For the case of **X509** objects, an alternative to using **X509_up_ref** (3) may be to still call ***TYPE*_dup**(), e.g., *copied_cert = X509_dup(cert)*, followed by *X509_check_purpose(copied_cert, −1, 0)*, which re−builds the cached data.

***TYPE*_free**() releases the object and all pointers and sub−objects within it. If the argument is NULL, nothing is done.

***TYPE*_print_ctx**() prints the object *a* on the specified BIO *out*. Each line will be prefixed with *indent* spaces. The*pctx* specifies the printing conte xt and is for internal use; use NULL to get the default behavior. If a print function is user−defined, then pass in any *pctx* down to any nested calls.

RETURN VALUES

***TYPE*_new**(), ***TYPE*_new_ex**() and ***TYPE*_dup**() return a pointer to the object or NULL on failure.

***TYPE*_print_ctx**() returns 1 on success or zero on failure.

SEE ALSO

X509_up_ref (3)

HISTORY

The functions **X509_REQ_new_ex()**, **X509_CRL_new_ex()**, **PKCS7_new_ex()** and **CMS_ContentInfo_new_ex()** were added in OpenSSL 3.0.

The functions **DSAparams_dup()**, **RSAPrivateKey_dup()** and **RSAPublicKey_dup()** were deprecated in 3.0.

CMS_EnvelopedData_it(), **CMS_SignedData_free()**, **CMS_SignedData_new()** were added in OpenSSL 3.2.

DIST_POINT_NAME_dup(), **OSSL_IETF_ATTR_SYNTAX_free()**, **OSSL_IETF_ATTR_SYNTAX_it()**, **OSSL_IETF_ATTR_SYNTAX_new()**, **OSSL_ATTRIBUTES_SYNTAX_free()**, **OSSL_ATTRIBUTES_SYNTAX_it()**, **OSSL_ATTRIBUTES_SYNTAX_new()**, **OSSL_BASIC_ATTR_CONSTRAINTS_free()**, **OSSL_BASIC_ATTR_CONSTRAINTS_it()**, **OSSL_BASIC_ATTR_CONSTRAINTS_new()**, **OSSL_CMP_ATAVS_new()**, **OSSL_CMP_ATAVS_free()**, **OSSL_CMP_ATAVS_it()**,

OSSL_CMP_CRLSTATUS_free(), **OSSL_CRMF_CERTTEMPLATE_dup()**, **OSSL_CRMF_ATTRIBUTETYPEANDVALUE_dup()**, **OSSL_CRMF_ATTRIBUTETYPEANDVALUE_free()**, **OSSL_TARGET_free()**, **OSSL_TARGET_it()**, **OSSL_TARGET_new()**, **OSSL_TARGETING_INFORMATION_free()**, **OSSL_TARGETING_INFORMATION_it()**, **OSSL_TARGETING_INFORMATION_new()**, **OSSL_TARGETS_free()**, **OSSL_TARGETS_it()**, **OSSL_TARGETS_new()**, **OSSL_IETF_ATTR_SYNTAX_VALUE_free()**, **OSSL_IETF_ATTR_SYNTAX_VALUE_it()**, **OSSL_IETF_ATTR_SYNTAX_VALUE_new()**, **OSSL_ISSUER_SERIAL_free()**, **OSSL_ISSUER_SERIAL_new()**, **OSSL_OBJECT_DIGEST_INFO_free()**, **OSSL_OBJECT_DIGEST_INFO_new()**, **OSSL_USER_NOTICE_SYNTAX_free()**, **OSSL_USER_NOTICE_SYNTAX_new()**, **OSSL_USER_NOTICE_SYNTAX_it()**, **PBMAC1PARAM_free()**, **PBMAC1PARAM_it()**, **PBMAC1PARAM_new()**, **X509_ACERT_dup()**, **X509_ACERT_free()**, **X509_ACERT_it()**, **X509_ACERT_new()**, **X509_ACERT_INFO_free()**, **X509_ACERT_INFO_it()**, **X509_ACERT_INFO_new()**, **X509_ACERT_ISSUER_V2FORM_free()**, **X509_ACERT_ISSUER_V2FORM_new()** were added in OpenSSL 3.4.

OSSL_AA_DIST_POINT_free(), **OSSL_AA_DIST_POINT_new()**, **OSSL_AA_DIST_POINT_it()**, **OSSL_ALLOWED_ATTRIBUTES_CHOICE_free()**, **OSSL_ALLOWED_ATTRIBUTES_CHOICE_new()**, **OSSL_ALLOWED_ATTRIBUTES_CHOICE_it()**, **OSSL_ALLOWED_ATTRIBUTES_ITEM_free()**, **OSSL_ALLOWED_ATTRIBUTES_ITEM_new()**, **OSSL_ALLOWED_ATTRIBUTES_ITEM_it()**, **OSSL_ALLOWED_ATTRIBUTES_SYNTAX_free()**, **OSSL_ALLOWED_ATTRIBUTES_SYNTAX_new()**, **OSSL_ALLOWED_ATTRIBUTES_SYNTAX_it()**, **OSSL_ATAV_free()**, **OSSL_ATAV_it()**, **OSSL_ATAV_new()**, **OSSL_ATTRIBUTE_DESCRIPTOR_free()**, **OSSL_ATTRIBUTE_DESCRIPTOR_new()**, **OSSL_ATTRIBUTE_DESCRIPTOR_it()**, **OSSL_ATTRIBUTE_MAPPINGS_free()**, **OSSL_ATTRIBUTE_MAPPINGS_it()**, **OSSL_ATTRIBUTE_MAPPINGS_new()**, **OSSL_ATTRIBUTE_MAPPING_free()**, **OSSL_ATTRIBUTE_MAPPING_it()**, **OSSL_ATTRIBUTE_MAPPING_new()**, **OSSL_ATTRIBUTE_TYPE_MAPPING_free()**, **OSSL_ATTRIBUTE_TYPE_MAPPING_it()**, **OSSL_ATTRIBUTE_TYPE_MAPPING_new()**, **OSSL_ATTRIBUTE_VALUE_MAPPING_free()**, **OSSL_ATTRIBUTE_VALUE_MAPPING_it()**, **OSSL_ATTRIBUTE_VALUE_MAPPING_new()**, **OSSL_AUTHORITY_ATTRIBUTE_ID_SYNTAX_free()**, **OSSL_AUTHORITY_ATTRIBUTE_ID_SYNTAX_it()**, **OSSL_AUTHORITY_ATTRIBUTE_ID_SYNTAX_new()**, **OSSL_HASH_free()**, **OSSL_HASH_it()**, **OSSL_HASH_new()**, **OSSL_INFO_SYNTAX_free()**, **OSSL_INFO_SYNTAX_it()**, **OSSL_INFO_SYNTAX_new()**, **OSSL_INFO_SYNTAX_POINTER_free()**, **OSSL_INFO_SYNTAX_POINTER_it()**, **OSSL_INFO_SYNTAX_POINTER_new()**, **OSSL_PRIVILEGE_POLICY_ID_free()**, **OSSL_PRIVILEGE_POLICY_ID_it()**, **OSSL_PRIVILEGE_POLICY_ID_new()**, **OSSL_ROLE_SPEC_CERT_ID_free()**, **OSSL_ROLE_SPEC_CERT_ID_new()**, **OSSL_ROLE_SPEC_CERT_ID_it()**, **OSSL_ROLE_SPEC_CERT_ID_SYNTAX_free()**, **OSSL_ROLE_SPEC_CERT_ID_SYNTAX_new()**, **OSSL_ROLE_SPEC_CERT_ID_SYNTAX_it()**, **OSSL_DAY_TIME_BAND_free()**, **OSSL_DAY_TIME_BAND_it()**, **OSSL_DAY_TIME_BAND_new()**, **OSSL_DAY_TIME_free()**, **OSSL_DAY_TIME_it()**, **OSSL_DAY_TIME_new()**, **OSSL_NAMED_DAY_free()**, **OSSL_NAMED_DAY_it()**, **OSSL_NAMED_DAY_new()**, **OSSL_TIME_PERIOD_free()**, **OSSL_TIME_PERIOD_it()**, **OSSL_TIME_PERIOD_new()**, **OSSL_TIME_SPEC_ABSOLUTE_free()**, **OSSL_TIME_SPEC_ABSOLUTE_it()**, **OSSL_TIME_SPEC_ABSOLUTE_new()**, **OSSL_TIME_SPEC_DAY_free()**, **OSSL_TIME_SPEC_DAY_it()**, **OSSL_TIME_SPEC_DAY_new()**, **OSSL_TIME_SPEC_MONTH_free()**, **OSSL_TIME_SPEC_MONTH_it()**, **OSSL_TIME_SPEC_MONTH_new()**, **OSSL_TIME_SPEC_TIME_free()**, **OSSL_TIME_SPEC_TIME_it()**, **OSSL_TIME_SPEC_TIME_new()**, **OSSL_TIME_SPEC_WEEKS_free()**, **OSSL_TIME_SPEC_WEEKS_it()**, **OSSL_TIME_SPEC_WEEKS_new()**, **OSSL_TIME_SPEC_X_DAY_OF_free()**,

OSSL_TIME_SPEC_X_DAY_OF_it(), **OSSL_TIME_SPEC_X_DAY_OF_new()**, **OSSL_TIME_SPEC_free()**, **OSSL_TIME_SPEC_it()**, **OSSL_TIME_SPEC_new()**, **CMS_EnvelopedData_dup()**, **OSSL_CRMF_ENCRYPTEDKEY_free()**, **OSSL_CRMF_ENCRYPTEDKEY_it()** and **OSSL_CRMF_ENCRYPTEDKEY_new()** were added in OpenSSL 3.5.

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