

NAME

hx509 CA functions -

Functions

```

int hx509_ca_tbs_init (hx509_context context, hx509_ca_tbs *tbs)
void hx509_ca_tbs_free (hx509_ca_tbs *tbs)
int hx509_ca_tbs_set_notBefore (hx509_context context, hx509_ca_tbs tbs, time_t t)
int hx509_ca_tbs_set_notAfter (hx509_context context, hx509_ca_tbs tbs, time_t t)
int hx509_ca_tbs_set_notAfter_lifetime (hx509_context context, hx509_ca_tbs tbs, time_t delta)
struct units * hx509_ca_tbs_template_units (void)
int hx509_ca_tbs_set_template (hx509_context context, hx509_ca_tbs tbs, int flags, hx509_cert cert)
int hx509_ca_tbs_set_ca (hx509_context context, hx509_ca_tbs tbs, int pathLenConstraint)
int hx509_ca_tbs_set_proxy (hx509_context context, hx509_ca_tbs tbs, int pathLenConstraint)
int hx509_ca_tbs_set_domaincontroller (hx509_context context, hx509_ca_tbs tbs)
int hx509_ca_tbs_set_spki (hx509_context context, hx509_ca_tbs tbs, const SubjectPublicKeyInfo *spki)
int hx509_ca_tbs_set_serialnumber (hx509_context context, hx509_ca_tbs tbs, const heim_integer
*serialNumber)
int hx509_ca_tbs_add_eku (hx509_context context, hx509_ca_tbs tbs, const heim_oid *oid)
int hx509_ca_tbs_add_crl_dp_uri (hx509_context context, hx509_ca_tbs tbs, const char *uri, hx509_name
issuename)
int hx509_ca_tbs_add_san_otherName (hx509_context context, hx509_ca_tbs tbs, const heim_oid *oid,
const heim_octet_string *os)
int hx509_ca_tbs_add_san_pkinit (hx509_context context, hx509_ca_tbs tbs, const char *principal)
int hx509_ca_tbs_add_san_ms_upn (hx509_context context, hx509_ca_tbs tbs, const char *principal)
int hx509_ca_tbs_add_san_jid (hx509_context context, hx509_ca_tbs tbs, const char *jid)
int hx509_ca_tbs_add_san_hostname (hx509_context context, hx509_ca_tbs tbs, const char *dnsname)
int hx509_ca_tbs_add_san_rfc822name (hx509_context context, hx509_ca_tbs tbs, const char
*rfc822Name)
int hx509_ca_tbs_set_subject (hx509_context context, hx509_ca_tbs tbs, hx509_name subject)
int hx509_ca_tbs_set_unique (hx509_context context, hx509_ca_tbs tbs, const heim_bit_string
*subjectUniqueID, const heim_bit_string *issuerUniqueID)
int hx509_ca_tbs_subject_expand (hx509_context context, hx509_ca_tbs tbs, hx509_env env)
int hx509_ca_sign (hx509_context context, hx509_ca_tbs tbs, hx509_cert signer, hx509_cert *certificate)
int hx509_ca_sign_self (hx509_context context, hx509_ca_tbs tbs, hx509_private_key signer, hx509_cert
*certificate)

```

Detailed Description

See the **Hx509 CA functions** for description and examples.

Function Documentation

int hx509_ca_sign (hx509_context context, hx509_ca_tbs tbs, hx509_cert signer, hx509_cert * certificate)

Sign a to-be-signed certificate object with a issuer certificate.

The caller needs to at least have called the following functions on the to-be-signed certificate object:

⊕ **hx509_ca_tbs_init()**

⊕ **hx509_ca_tbs_set_subject()**

⊕ **hx509_ca_tbs_set_spki()**

When done the to-be-signed certificate object should be freed with **hx509_ca_tbs_free()**.

When creating self-signed certificate use **hx509_ca_sign_self()** instead.

Parameters:

context A hx509 context.

tbs object to be signed.

signer the CA certificate object to sign with (need private key).

certificate return certificate, free with **hx509_cert_free()**.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_sign_self (hx509_context context, hx509_ca_tbs tbs, hx509_private_key signer, hx509_cert * certificate)

Work just like **hx509_ca_sign()** but signs it-self.

Parameters:

context A hx509 context.

tbs object to be signed.

signer private key to sign with.

certificate return certificate, free with **hx509_cert_free()**.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_tbs_add_crl_dp_uri (hx509_context context, hx509_ca_tbs tbs, const char * uri, hx509_name issuername)

Add CRL distribution point URI to the to-be-signed certificate object.

Parameters:

context A hx509 context.

tbs object to be signed.

uri uri to the CRL.

issuename name of the issuer.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

issuename not supported

int hx509_ca_tbs_add_eku (hx509_context context, hx509_ca_tbs tbs, const heim_oid * oid)

An an extended key usage to the to-be-signed certificate object. Duplicates will detected and not added.

Parameters:

context A hx509 context.

tbs object to be signed.

oid extended key usage to add.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_tbs_add_san_hostname (hx509_context context, hx509_ca_tbs tbs, const char * dnsname)

Add a Subject Alternative Name hostname to to-be-signed certificate object. A domain match starts with ., an exact match does not.

Example of a an domain match: .domain.se matches the hostname host.domain.se.

Parameters:

context A hx509 context.

tbs object to be signed.

dnsname a hostame.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_tbs_add_san_jid (hx509_context context, hx509_ca_tbs tbs, const char * jid)

Add a Jabber/XMPP jid Subject Alternative Name to the to-be-signed certificate object. The jid is an

UTF8 string.

Parameters:

context A hx509 context.

tbs object to be signed.

jid string of an a jabber id in UTF8.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_tbs_add_san_ms_upn (hx509_context context, hx509_ca_tbs tbs, const char * principal)

Add Microsoft UPN Subject Alternative Name to the to-be-signed certificate object. The principal string is a UTF8 string.

Parameters:

context A hx509 context.

tbs object to be signed.

principal Microsoft UPN string.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_tbs_add_san_otherName (hx509_context context, hx509_ca_tbs tbs, const heim_oid * oid, const heim_octet_string * os)

Add Subject Alternative Name otherName to the to-be-signed certificate object.

Parameters:

context A hx509 context.

tbs object to be signed.

oid the oid of the OtherName.

os data in the other name.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_tbs_add_san_pkinit (hx509_context context, hx509_ca_tbs tbs, const char * principal)

Add Kerberos Subject Alternative Name to the to-be-signed certificate object. The principal string is a UTF8 string.

Parameters:

context A hx509 context.
tbs object to be signed.
principal Kerberos principal to add to the certificate.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_tbs_add_san_rfc822name (hx509_context context, hx509_ca_tbs tbs, const char * rfc822Name)

Add a Subject Alternative Name rfc822 (email address) to to-be-signed certificate object.

Parameters:

context A hx509 context.
tbs object to be signed.
rfc822Name a string to a email address.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

void hx509_ca_tbs_free (hx509_ca_tbs * tbs)

Free an To Be Signed object.

Parameters:

tbs object to free.

int hx509_ca_tbs_init (hx509_context context, hx509_ca_tbs * tbs)

Allocate an to-be-signed certificate object that will be converted into an certificate.

Parameters:

context A hx509 context.
tbs returned to-be-signed certificate object, free with **hx509_ca_tbs_free()**.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_tbs_set_ca (hx509_context context, hx509_ca_tbs tbs, int pathLenConstraint)

Make the to-be-signed certificate object a CA certificate. If the pathLenConstraint is negative path length constraint is used.

Parameters:

context A hx509 context.

tbs object to be signed.

pathLenConstraint path length constraint, negative, no constraint.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_tbs_set_domaincontroller (hx509_context context, hx509_ca_tbs tbs)

Make the to-be-signed certificate object a windows domain controller certificate.

Parameters:

context A hx509 context.

tbs object to be signed.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_tbs_set_notAfter (hx509_context context, hx509_ca_tbs tbs, time_t t)

Set the absolute time when the certificate is valid to.

Parameters:

context A hx509 context.

tbs object to be signed.

t time when the certificate will expire

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_tbs_set_notAfter_lifetime (hx509_context context, hx509_ca_tbs tbs, time_t delta)

Set the relative time when the certificate is going to expire.

Parameters:

context A hx509 context.

tbs object to be signed.

delta seconds to the certificate is going to expire.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_tbs_set_notBefore (hx509_context context, hx509_ca_tbs tbs, time_t t)

Set the absolute time when the certificate is valid from. If not set the current time will be used.

Parameters:

context A hx509 context.

tbs object to be signed.

t time the certificated will start to be valid

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_tbs_set_proxy (hx509_context context, hx509_ca_tbs tbs, int pathLenConstraint)

Make the to-be-signed certificate object a proxy certificate. If the pathLenConstraint is negative path length constraint is used.

Parameters:

context A hx509 context.

tbs object to be signed.

pathLenConstraint path length constraint, negative, no constraint.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_tbs_set_serialnumber (hx509_context context, hx509_ca_tbs tbs, const heim_integer * serialNumber)

Set the serial number to use for to-be-signed certificate object.

Parameters:

context A hx509 context.

tbs object to be signed.

serialNumber serial number to use for the to-be-signed certificate object.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_tbs_set_spki (hx509_context context, hx509_ca_tbs tbs, const SubjectPublicKeyInfo * spki)

Set the subject public key info (SPKI) in the to-be-signed certificate object. SPKI is the public key and key related parameters in the certificate.

Parameters:

context A hx509 context.

tbs object to be signed.

spki subject public key info to use for the to-be-signed certificate object.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_tbs_set_subject (hx509_context context, hx509_ca_tbs tbs, hx509_name subject)

Set the subject name of a to-be-signed certificate object.

Parameters:

context A hx509 context.

tbs object to be signed.

subject the name to set a subject.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_tbs_set_template (hx509_context context, hx509_ca_tbs tbs, int flags, hx509_cert cert)

Initialize the to-be-signed certificate object from a template certifiante.

Parameters:

context A hx509 context.

tbs object to be signed.

flags bit field selecting what to copy from the template certifiante.

cert template certificate.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

**int hx509_ca_tbs_set_unique (hx509_context context, hx509_ca_tbs tbs, const heim_bit_string *
subjectUniqueID, const heim_bit_string * issuerUniqueID)**

Set the issuerUniqueID and subjectUniqueID

These are only supposed to be used considered with version 2 certificates, replaced by the two extensions SubjectKeyIdentifier and IssuerKeyIdentifier. This function is to allow application using legacy protocol to issue them.

Parameters:

context A hx509 context.

tbs object to be signed.
issuerUniqueID to be set
subjectUniqueID to be set

Returns:

An hx509 error code, see **hx509_get_error_string()**.

int hx509_ca_tbs_subject_expand (hx509_context context, hx509_ca_tbs tbs, hx509_env env)

Expand the the subject name in the to-be-signed certificate object using **hx509_name_expand()**.

Parameters:

context A hx509 context.
tbs object to be signed.
env enviroment variable to expand variables in the subject name, see **hx509_env_init()**.

Returns:

An hx509 error code, see **hx509_get_error_string()**.

struct units* hx509_ca_tbs_template_units (void) [read]

Make of template units, use to build flags argument to **hx509_ca_tbs_set_template()** with **parse_units()**.

Returns:

an units structure.