Créer sa CA et signer ses certificats

Création de la CA

Pour cela, on va se rendre dans un dossier isolé :

```
# mkdir /root/ca && cd /root/ca
```

puis on va créer l'organisation de dossier suivante:

```
# mkdir certs crl newcerts private csr
```

```
# chmod 700 private
```

Et on créer les fichiers de contrôle :

```
# touch index.txt
```

```
# echo 1000 > serial
```

puis on créer le fichier :

openssf.cnf

```
[ ca ]
# `man ca`
default_ca = CA_default

[ CA_default ]
# Directory and file locations.
dir             = .
certs           = $dir/certs
crl_dir         = $dir/crl
new_certs_dir   = $dir/newcerts
database        = $dir/index.txt
serial          = $dir/serial
RANDFILE        = $dir/private/.rand

# The root key and root certificate.
private_key     = $dir/private/ca.key
certificate     = $dir/certs/ca.pem

# For certificate revocation lists.
crlnumber       = $dir/crlnumber
crl             = $dir/crl/ca.crl
crl_extensions  = crl_ext
default_crl_days = 30
```

```
# SHA-1 is deprecated, so use SHA-2 instead.
default_md          = sha256

name_opt            = ca_default
cert_opt            = ca_default
default_days        = 375
preserve            = no
policy              = policy_loose

[ req ]
# Options for the `req` tool (`man req`).
default_bits        = 4096
distinguished_name  = req_distinguished_name
string_mask         = utf8only

# SHA-1 is deprecated, so use SHA-2 instead.
default_md          = sha256

# Extension to add when the -x509 option is used.
x509_extensions     = v3_ca



[ req_distinguished_name ]
countryName                     = Country Name (2 letter code)
stateOrProvinceName             = State or Province Name
localityName                    = Locality Name
0.organizationName              = Organization Name
organizationalUnitName          = Organizational Unit Name
commonName                      = Common Name
emailAddress                    = Email Address


countryName_default             = FR
stateOrProvinceName_default     =
localityName_default            =
0.organizationName_default      = VirtIT
#organizationalUnitName_default =
emailAddress_default            =

[ v3_ca ]
# Extensions for a typical CA (`man x509v3_config`).
subjectKeyIdentifier = hash
authorityKeyIdentifier = keyid:always,issuer
basicConstraints = critical, CA:true
keyUsage = critical, digitalSignature, cRLSign, keyCertSign

[ policy_loose ]
# Allow the intermediate CA to sign a more diverse range of
certificates.
# See the POLICY FORMAT section of the `ca` man page.
countryName             = optional
```

```
stateOrProvinceName      = optional
localityName             = optional
organizationName         = optional
organizationalUnitName   = optional
commonName               = supplied
emailAddress             = optional


[ server_cert ]
# Extensions for server certificates (`man x509v3_config`).
basicConstraints = CA:FALSE
nsCertType = server
nsComment = "OpenSSL Generated Server Certificate"
subjectKeyIdentifier = hash
authorityKeyIdentifier = keyid,issuer:always
keyUsage = critical, digitalSignature, keyEncipherment
extendedKeyUsage = serverAuth



[ usr_cert ]
# Extensions for client certificates (`man x509v3_config`).
basicConstraints = CA:FALSE
nsCertType = client, email
nsComment = "OpenSSL Generated Client Certificate"
subjectKeyIdentifier = hash
authorityKeyIdentifier = keyid,issuer
keyUsage = critical, nonRepudiation, digitalSignature, keyEncipherment
extendedKeyUsage = clientAuth, emailProtection
```

On génére ensuite la clé privé du CA root :

```
# openssl genrsa -out private/ca.key 4096
```

et puis le certificat :

```
# openssl req -config openssl.cnf \
      -key private/ca.key \
      -new -x509 -days 7300 -extensions v3_ca \
      -out certs/ca.pem
```

Création d'un certificat

If faut d'abord créer la clé privée du certificat :

```
# openssl genrsa -out private/server.key 4096
```

puis le CSR :

```
# openssl req -config openssl.cnf -key private/server.key -new -out
```

```
csr/server.csr
```

Et puis on le signe :

```
# openssl ca -config openssl.cnf -extensions server_cert -days 375 -notext -
in csr/server.csr -out certs/server.pem
```

From:
https://wiki.virtit.fr/ - **VirtIT**

Permanent link:
https://wiki.virtit.fr/doku.php/kb:crypto:creer_ca?rev=1570465355

Last update: **2019/10/07 16:22**