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# Zertifiats Authority



**CERTIFICATE  
AUTHORITY**

## Neues CA Zertifikat erzeugen

- <https://help.univention.com/t/how-to-extend-the-end-date-of-the-ucs-ca-root-certificate/9740>
- <https://help.univention.com/t/renewing-the-ssl-certificates/37>
- <https://help.univention.com/t/add-subject-alternative-names-to-existing-certificate/7433>
- <https://help.univention.com/t/cool-solution-creation-and-management-of-user-and-windows-certificates/11782>

## neues Server Zertifikat erstellen

```
echo \(`date -d 18-Oct-2027 +%s` - `date +%s`\) /86400 | bc  
. /usr/share/univention-ssl/make-certificates.sh  
declare -x ServerName=FQHN  
univention-certificate new -name "${ServerName}" -days 1825  
cd /etc/univention/ssl/${ServerName}  
nano openssl.cnf
```

Ändern oder Anpassen der SAN auf ca Zeile 103. Die Zeile enthält bereits `subjectAltName = DNS:${ServerName}`, ... den FQDN und den einfachen Hostnamen. Es können kommagetrennt weitere SAN angegeben werden, wie z.B. `IP:1.2.3.4` oder `DNS:ein.anderer.hostname.domain`.

Es kann auch in der Sektion [ `v3_req` ] eine Linie mit `extendedKeyUsage = serverAuth` angehängt werden, damit das Zertifikat vom Host auch für RDS Verbindungen benutzt werden kann. Dann die Datei `openssl.cnf` speichern.

```
openssl req -new -key private.key -config openssl.cnf -out req.pem  
openssl req -in req.pem -noout -text | grep -E "(Subject Alternative  
Name|DNS)"  
univention-certificate renew -name ${ServerName} -days 1825
```

Zertifikatsfingerabdruck auslesen und auf dem Terminalserver via `wmic`

/namespace:rootcimv2TerminalServices PATH Win32\_TSGeneralSetting Set  
SSLCertificateSHA1Hash="Fingerabdruck" das Zertifikat für RDP verwenden.

## sub-CA Zertifikat erstellen

```
. /usr/share/univention-ssl/make-certificates.sh  
declare -x ServerName=FQHN  
univention-certificate new -name "${ServerName}" -days 1825  
cd /etc/univention/ssl/${ServerName}  
nano openssl.cnf
```

Ändern der [ v3\_req ] Sektion, um Zeile 100:

```
[ v3_req ]  
basicConstraints          = critical, CA:TRUE  
keyUsage                  = cRLSign, keyCertSign  
nsCertType                = sslCA, emailCA, objCA  
subjectAltName            = email:copy  
#issuerAltName            = issuer:copy  
nsComment                 = This is a Fake Root CA Certificate
```

Bevor der Request unterschrieben werden kann muss das /etc/univention/ssl/openssl.cnf File angepasst werden. Diese Änderung unbedingt wieder rückgängig machen nach dem signieren des Requests! Ungefähr Zeile 100 ebenfalls in der [ v3\_req ] Sektion

```
[ v3_req ]  
  
basicConstraints = critica, CA:TRUE  
keyUsage          = cRLSign, keyCertSign  
#basicConstraints = critical, CA:FALSE  
#keyUsage = nonRepudiation, digitalSignature, keyEncipherment
```

Danach den Zertifikatsrequest mit `openssl req -new -config openssl.cnf -key private.key -out req.pem` erstellen und dann von der CA unterschreiben lassen: `univention-certificate renew -name ${ServerName} -days 1825`

## .p12 Datei erzeugen

```
export ServerName=my.domain.name  
openssl pkcs12 -export -out /root/${ServerName}.p12 -in  
/etc/univention/ssl/${ServerName}/cert.pem -inkey  
/etc/univention/ssl/${ServerName}/private.key -passout  
pass:xZtGhgBBt635mTapXzK
```

[Quelle](#)

## CodeSigning

To be recognized as a CodeSigning Certificate, it is needed to set also the following extended Key Usage 'EKU' Property: Extended Use key flag -eku 1.3.6.1.5.5.7.3.3 so the cert can be used for code signing by Powershell.

To generate a CodeSigning Cert with the Univention CA, follow these steps:

1. create a new cert by using univention-certificate new, use a name you recognize as CS Cert
2. create a special extension file
3. generate the csr again manually
4. sign it by the ca again by issuing univention-certificate renew

```
declare -x CertName=CodeSign-YourName
declare -x ExportPassword=SuperSecurePasswordForP12File

echo \(`date -d 18-Oct-2027 +%s`\ - `date +%s`\) /86400 |bc > days
declare -x days=`cat days`

. /usr/share/univention-ssl/make-certificates.sh
univention-certificate new -name "${CertName}" -days ${days}
cd /etc/univention/ssl/${CertName}

echo "
authorityKeyIdentifier = keyid,issuer
basicConstraints       = CA:FALSE
subjectAltName         = @alt_names
extendedKeyUsage       = codeSigning
[alt_names]
DNS.1 = ${CertName}
" > code_sign_cert.conf

grep output_password /etc/univention/ssl/openssl.cnf
openssl x509 -req -CA ../ucsCA/CAcert.pem -CAkey ../ucsCA/private/CAkey.pem
-in req.pem -out cert.pem -days ${days} -CAcreateserial -extfile
code_sign_cert.conf

openssl pkcs12 -export -out /root/${CertName}.p12 -in cert.pem -inkey
private.key -passout pass:${ExportPassword}
```

created with thanks to the infos found here:

<https://stackoverflow.com/questions/72207572/how-to-create-a-self-signed-code-signing-certificate-from-a-csr>

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