

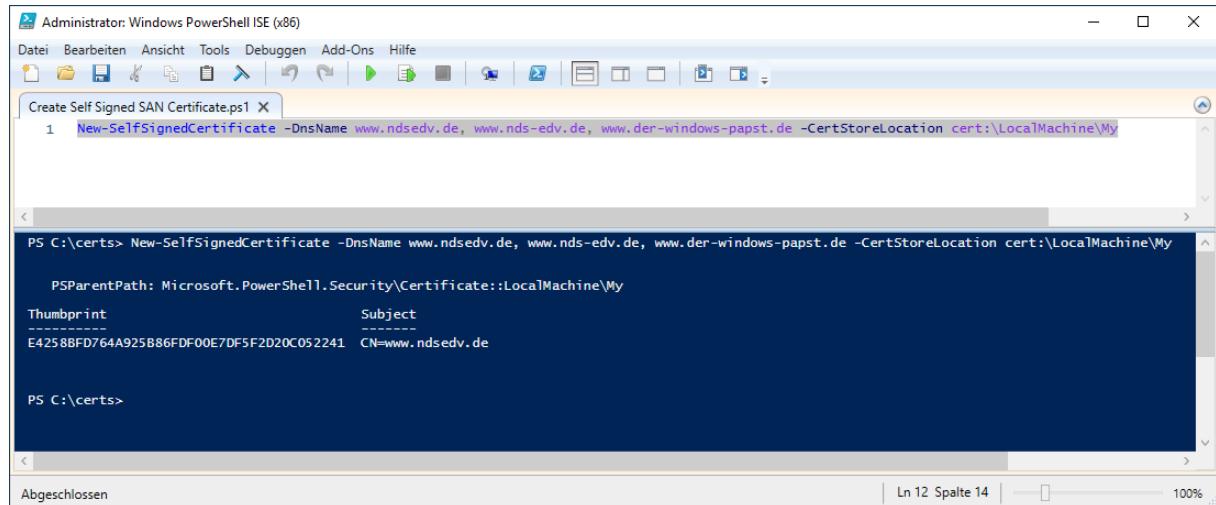


## Powershell - Create Self Signed SAN Certificate

In diesem Dokument beschreibe ich kurz den Weg zur Erstellung eines selbst signierten SAN Zertifikats. (Clientauthentifizierung, Serverauthentifizierung)

Ein Einfaches selbst signiertes Zertifikat mit nur einer Befehlszeile:

```
# 1 Jahr SAN
New-SelfSignedCertificate -DnsName www.ndsedv.de, www.nds-edv.de, www.der-windows-papst.de -CertStoreLocation cert:\LocalMachine\My
```

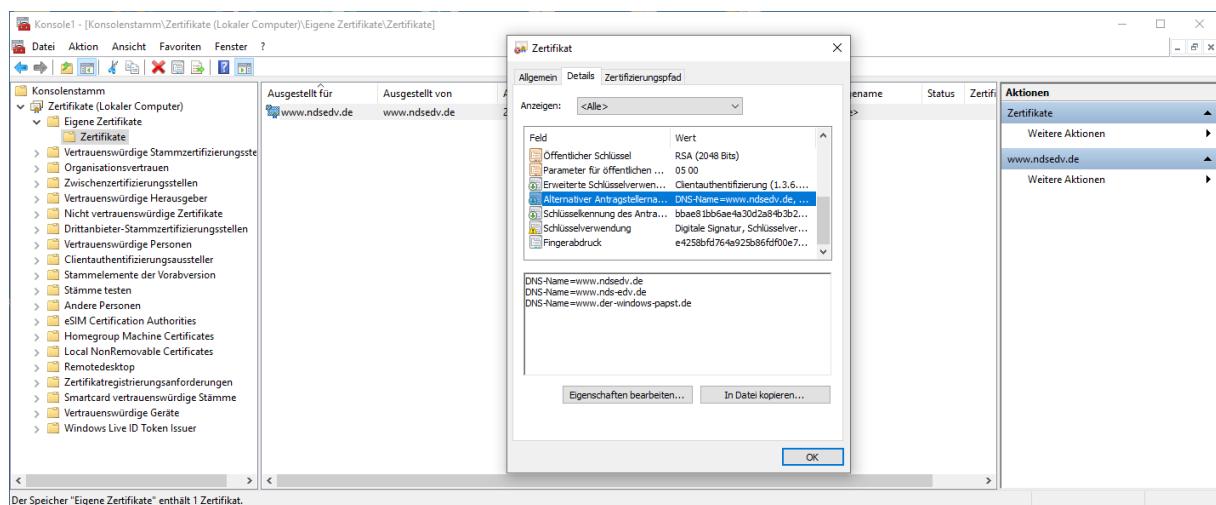


```
Administrator: Windows PowerShell ISE (x86)
Datei Bearbeiten Ansicht Tools Debuggen Add-Ons Hilfe
Create Self Signed SAN Certificate.ps1
1 New-SelfSignedCertificate -DnsName www.ndsedv.de, www.nds-edv.de, www.der-windows-papst.de -CertStoreLocation cert:\LocalMachine\My

PS C:\certs> New-SelfSignedCertificate -DnsName www.ndsedv.de, www.nds-edv.de, www.der-windows-papst.de -CertStoreLocation cert:\LocalMachine\My

PSParentPath: Microsoft.PowerShell.Security\Certificate::LocalMachine\My
Thumbprint Subject
----- E4258FD764A925B86FDF00E7DF5F2D20C052241 CN=www.ndsedv.de

PS C:\certs>
```





## Powershell - Create Self Signed SAN Certificate

Für 3 Jahre ausgestellt:

```
# 3 Jahre SAN
$heute = Get-Date
$3years = $heute.AddYears(3)
New-SelfSignedCertificate -DnsName www.ndsedv.de, www.nds-edv.de -notafter $3years
-CertStoreLocation cert:\LocalMachine\My
```

The screenshot shows the Windows PowerShell ISE window with the script content and its execution results. The script creates a self-signed certificate for 'www.ndsedv.de' and 'www.nds-edv.de' with a 3-year validity period, stored in the LocalMachine\My certificate store. The execution output shows the certificate details, including the thumbprint and subject.

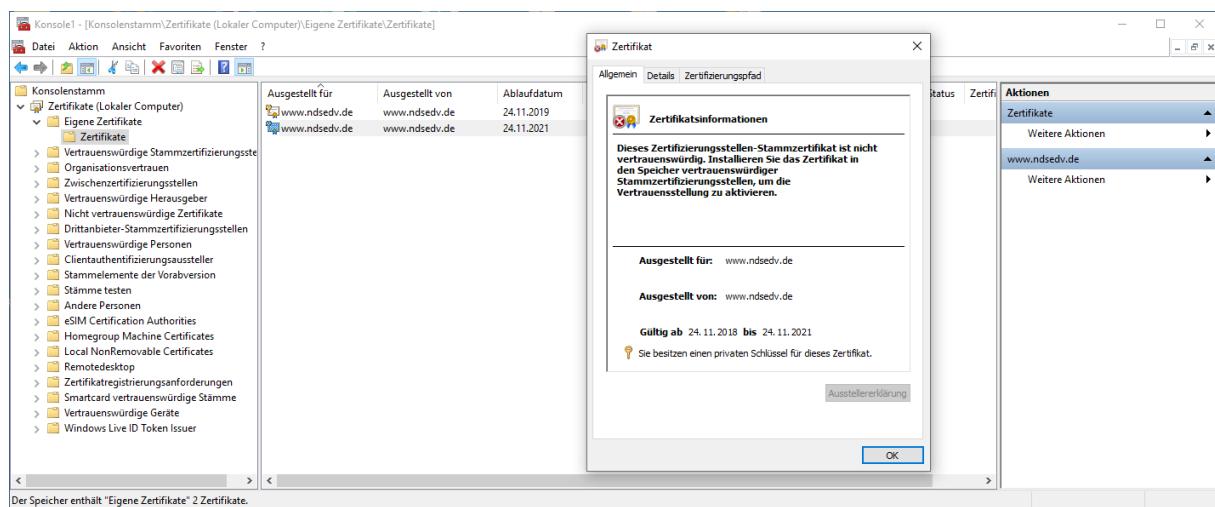
```
Administrator: Windows PowerShell ISE (x86)
Datei Bearbeiten Ansicht Tools Debuggen Add-Ons Hilfe
Create Self Signed SAN Certificate.ps1* X
1 # 1 Jahr SAN
2 New-SelfSignedCertificate -DnsName www.ndsedv.de, www.nds-edv.de -notafter 1
3
4 mmc.exe
5
6 # 3 Jahre SAN
7 $heute = Get-Date
8 $3years = $heute.AddYears(3)
9 New-SelfSignedCertificate -DnsName www.ndsedv.de, www.nds-edv.de -notafter $3years -CertStoreLocation cert:\LocalMachine\My

PS C:\certs> New-SelfSignedCertificate -DnsName www.ndsedv.de, www.nds-edv.de -notafter 1 -CertStoreLocation cert:\LocalMachine\My
PSParentPath: Microsoft.PowerShell.Security\Certificate::LocalMachine\My
Thumbprint Subject
----- -----
E42588FD764A925B86FDF00E7DF5F2D20C052241 CN=www.ndsedv.de

PS C:\certs> mmc.exe
PS C:\certs> $heute = Get-Date
$3years = $heute.AddYears(3)
New-SelfSignedCertificate -DnsName www.ndsedv.de, www.nds-edv.de -notafter $3years -CertStoreLocation cert:\LocalMachine\My

PSParentPath: Microsoft.PowerShell.Security\Certificate::LocalMachine\My
Thumbprint Subject
----- -----
ABF6BE65FFAC0002DE8BAF994D965C6E8C7EF520 CN=www.ndsedv.de

PS C:\certs>
```





## Powershell - Create Self Signed SAN Certificate

Für den Export eines Zertifikats ob privater oder öffentlicher Schlüssel benötigen wir zuerst den Fingerabdruck. Den ermitteln wir mit diesem Befehl:

1) Zugriff Zertifikatsspeicher und den Fingerabdruck in die Zwischenablage kopieren  
Get-ChildItem -Path Cert:\LocalMachine\My\

2) Zertifikat exportieren (Privat) Fingerabdruck einfügen

```
$Password = ConvertTo-SecureString -String "TEST" -Force -AsPlainText
Export-PfxCertificate -Cert cert:\LocalMachine\My\ABF6BE65FFAC0002DE8BAF994D965C6E8C7EF520 -FilePath
C:\Certs\NDS.pfx -Password $Password
```

3) Zertifikat exportieren (Öffentlich) Fingerabdruck einfügen

```
Export-Certificate -Cert cert:\LocalMachine\My\ABF6BE65FFAC0002DE8BAF994D965C6E8C7EF520 -FilePath
C:\Certs\NDS.cer
```

The screenshot shows the Windows PowerShell ISE window with the script 'Create Self Signed SAN Certificate.ps1' open. The script creates a self-signed certificate for 'www.ndsedv.de' with a SAN of 'www.nds-edv.de, www.der-windows-papst.de'. It then exports the certificate to 'C:\Certs\NDS.pfx' (private) and 'C:\Certs\NDS.cer' (public). The execution results show the creation of the certificate in the local machine's My store, the export of the private key to 'NDS.pfx', and the export of the public certificate to 'NDS.cer'. The PowerShell window also shows the file structure in the 'certs' folder on the C: drive.

```
# 1 Jahr SAN
New-SelfSignedCertificate -DnsName www.ndsedv.de, www.nds-edv.de, www.der-windows-papst.de -CertStoreLocation cert:\LocalMachine\My
# 3 Jahre SAN
$heute = Get-Date
$3years = $heute.AddYears(3)
New-SelfSignedCertificate -DnsName www.ndsedv.de, www.nds-edv.de -notAfter $3years -CertStoreLocation cert:\LocalMachine\My
# Zugriff Zertifikatsspeicher
Get-ChildItem -Path Cert:\LocalMachine\My\ ①
# Zertifikat exportieren (Privat) ②
$Password = ConvertTo-SecureString -String "TEST" -Force -AsPlainText
Export-PfxCertificate -Cert cert:\LocalMachine\My\ABF6BE65FFAC0002DE8BAF994D965C6E8C7EF520 -FilePath C:\Certs\NDS.pfx -Password $Password
# Zertifikat exportieren (Öffentlich) ③
Export-Certificate -Cert cert:\LocalMachine\My\ABF6BE65FFAC0002DE8BAF994D965C6E8C7EF520 -FilePath C:\Certs\NDS.cer
```

```
PS Cert:\> Get-ChildItem -Path Cert:\LocalMachine\My\

PSParentPath: Microsoft.PowerShell.Security\Certificate:::LocalMachine\My
Thumbprint Subject
----- -----
E42588FD764A925B86FDF00E7DF5F2D20C052241 CN=www.ndsedv.de
ABF6BE65FFAC0002DE8BAF994D965C6E8C7EF520 CN=www.nds-edv.de

PS Cert:\> $Password = ConvertTo-SecureString -String "TEST" -Force -AsPlainText
Export-PfxCertificate -Cert cert:\LocalMachine\My\ABF6BE65FFAC0002DE8BAF994D965C6E8C7EF520 -FilePath C:\Certs\NDS.pfx -Password $Password

Verzeichnis: C:\Certs

Mode LastWriteTime Length Name
---- ----- ----- --
-a--- 24.11.2018 20:44 2661 NDS.pfx

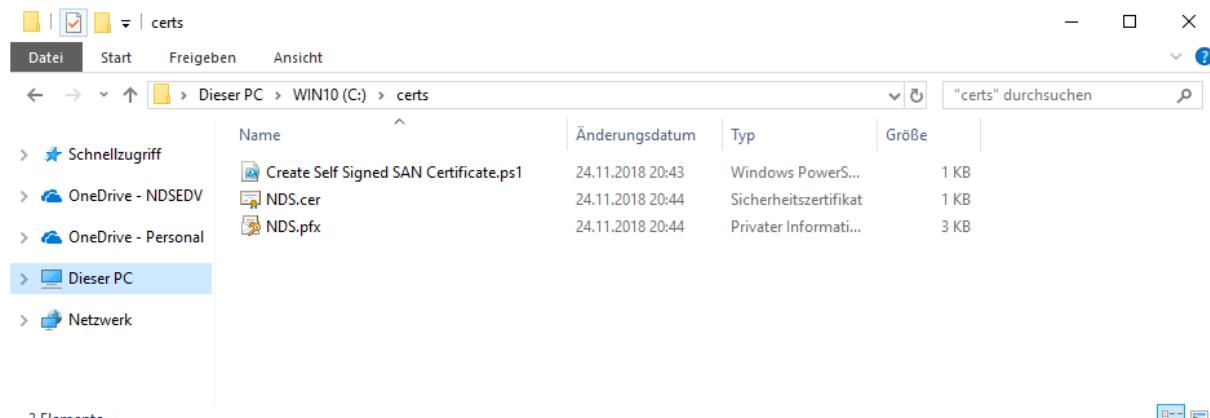
PS Cert:\> Export-Certificate -Cert Cert:\LocalMachine\My\ABF6BE65FFAC0002DE8BAF994D965C6E8C7EF520 -FilePath C:\Certs\NDS.cer

Verzeichnis: C:\Certs

Mode LastWriteTime Length Name
---- ----- ----- --
-a--- 24.11.2018 20:44 824 NDS.cer

PS Cert:\>
```

Abgeschlossen

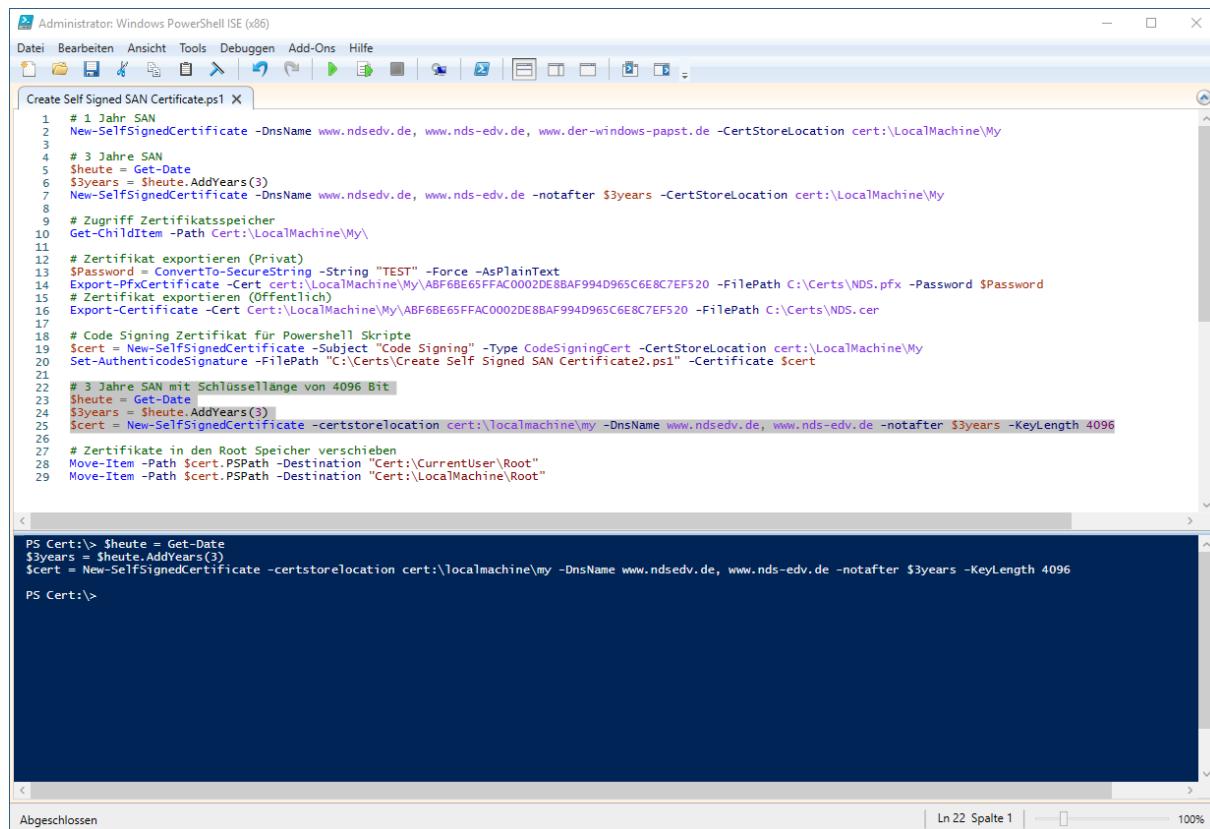




## Powershell - Create Self Signed SAN Certificate

Für 3 Jahre ausgestellt mit einer Schlüssellänge von 4096 Bits

```
# 3 Jahre SAN mit Schlüssellänge von 4096 Bits
$heute = Get-Date
$3years = $heute.AddYears(3)
$cert = New-SelfSignedCertificate -certstorelocation cert:\localmachine\my -DnsName www.ndsedv.de, www.nds-edv.de -notafter $3years -KeyLength 4096
```



The screenshot shows the Windows PowerShell ISE interface. The script in the editor pane is as follows:

```
1 # 1 Jahr SAN
2 New-SelfSignedCertificate -DnsName www.ndsedv.de, www.nds-edv.de, www.der-windows-papst.de -CertStoreLocation cert:\LocalMachine\My
3
4 # 3 Jahre SAN
5 $heute = Get-Date
6 $3years = $heute.AddYears(3)
7 New-SelfSignedCertificate -DnsName www.ndsedv.de, www.nds-edv.de -notafter $3years -CertStoreLocation cert:\LocalMachine\My
8
9 # Zugriff Zertifikatsspeicher
10 Get-ChildItem Cert:\LocalMachine\My
11
12 # Zertifikat exportieren (Privat)
13 $password = ConvertTo-SecureString -String "TEST" -Force -AsPlainText
14 Export-PfxCertificate -Cert cert:\LocalMachine\My\ABF68E65FFAC0002DE8BAF994D965C6E8C7EF520 -FilePath C:\Certs\NDS.pfx -Password $password
15 # Zertifikat exportieren (Öffentlich)
16 Export-Certificate -Cert cert:\LocalMachine\My\ABF68E65FFAC0002DE8BAF994D965C6E8C7EF520 -FilePath C:\Certs\NDS.cer
17
18 # Code Signing Zertifikat für PowerShell Skripte
19 $cert = New-SelfSignedCertificate -Subject "Code Signing" -Type CodeSigningCert -CertStoreLocation cert:\LocalMachine\My
20 Set-AuthenticodeSignature -FilePath "C:\Certs\Create Self Signed SAN Certificate2.ps1" -Certificate $cert
21
22 # 3 Jahre SAN mit Schlüssellänge von 4096 Bit
23 $heute = Get-Date
24 $3years = $heute.AddYears(3)
25 $cert = New-SelfSignedCertificate -certstorelocation cert:\localmachine\my -DnsName www.ndsedv.de, www.nds-edv.de -notafter $3years -KeyLength 4096
26
27 # Zertifikate in den Root Speicher verschieben
28 Move-Item -Path $cert.PSPPath -Destination "Cert:\CurrentUser\Root"
29 Move-Item -Path $cert.PSPPath -Destination "Cert:\LocalMachine\Root"
```

At the bottom of the editor, the command PS Cert:\> is shown. The output pane below shows the command and the resulting certificate details:

```
PS Cert:\> $heute = Get-Date
$3years = $heute.AddYears(3)
$cert = New-SelfSignedCertificate -certstorelocation cert:\localmachine\my -DnsName www.ndsedv.de, www.nds-edv.de -notafter $3years -KeyLength 4096
PS Cert:\>
```

Abgeschlossen

