Palo Alto Global Protect VPN - Smart Card Client Authentication Workaround

These instructions are designed to resolve an issue which can occur if you have a VPN such as Palo Alto GlobalProtect which expects a Client Authentication certificate and automatically selects an incorrect certificate on a YubiKey. If Client Authentication is removed from the Application Policies on the template, RDP and Kerberos authentication no longer work.

This guide will assist you with creating a new certificate template based on the existing one, removing Client Authentication and adding back Kerberos and RDP authentication functionality. The existing template will not be deleted. The purpose of keeping the existing template is for maximum compatibility where Client Authentication is required but GlobalProtect is not required.

These instructions are provided as-is for guidance purposes only. Ensure you are familiar with ADCS and the implications of incorrect configurations.

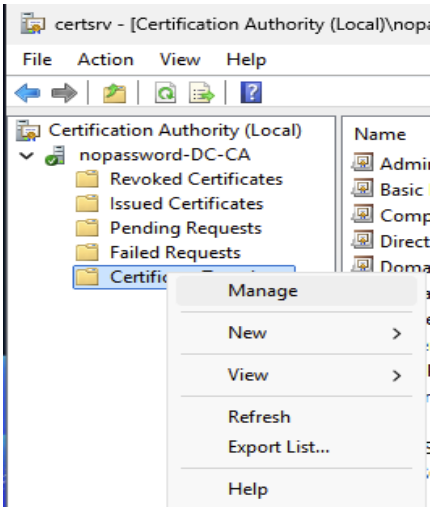
Requirements

Before starting, please ensure that you have the following available:

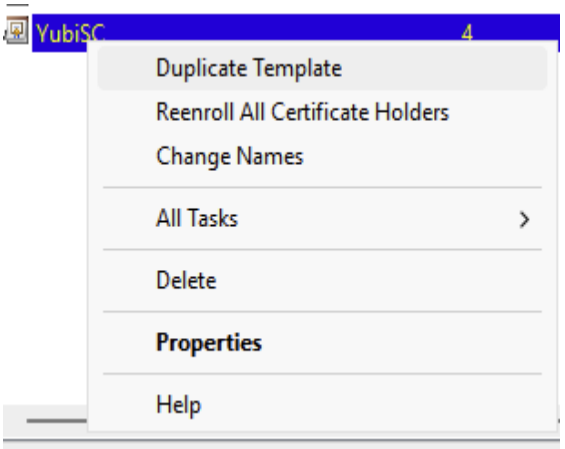
- A fully configured Active Directory Certificate Services installation with an appropriate YubiKey template already defined.
- Rights to edit the Certificate Services configuration including creation and configuration of templates
- Appropriate approved change controls in place.

Process

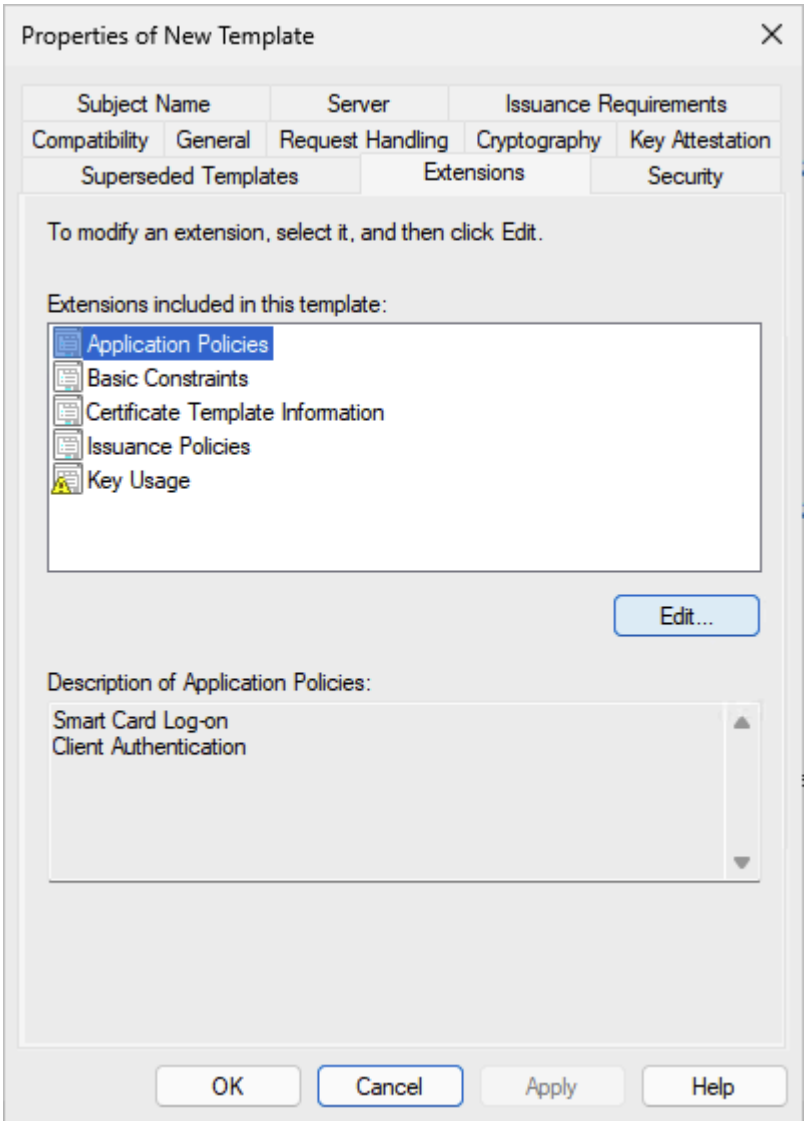
1) Open the Certification Authority mmc and expand out the CA. Right click on **Certificate Templates** and choose **Manage**.



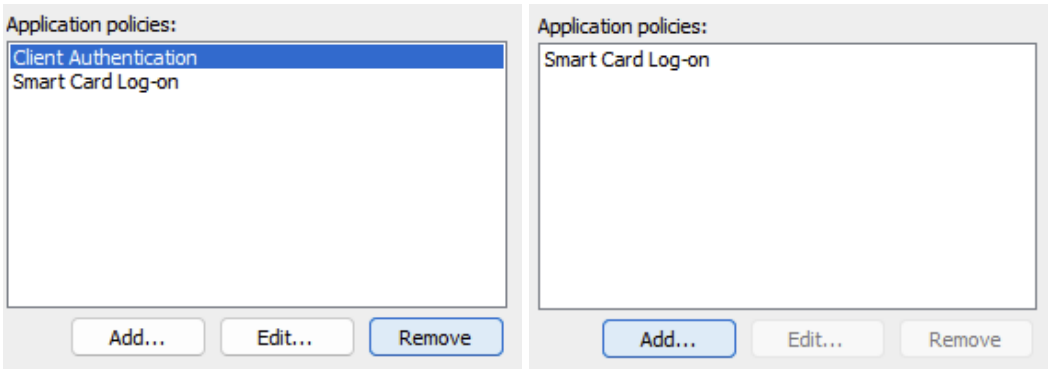
2) The certificate templates console will open. Right click your existing YubiKey template and choose **Duplicate Template**.



3) Click **Extensions**, make sure **Application Policies** is selected and click Edit.

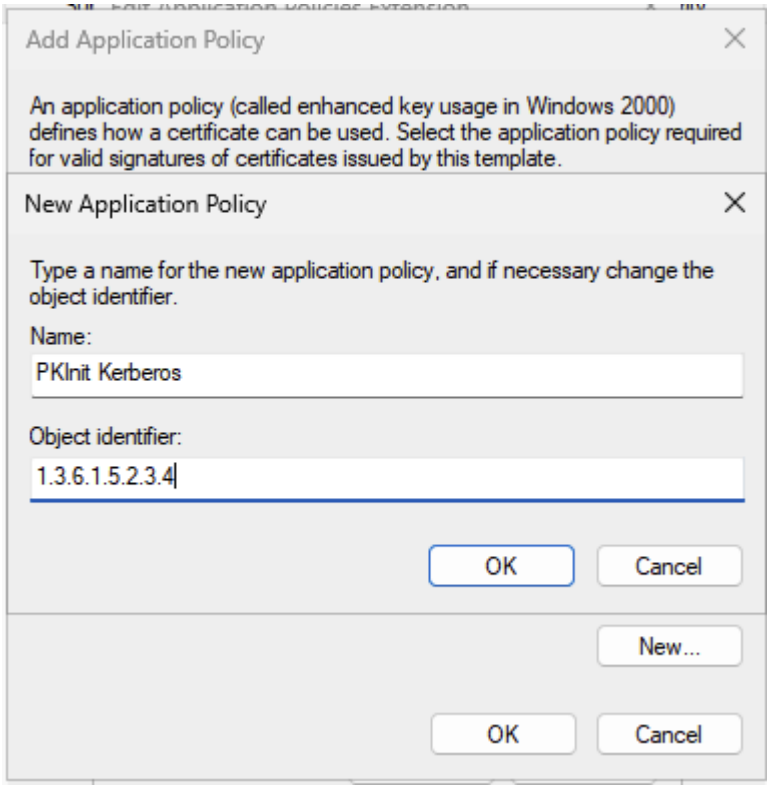


4) Select **Client Authentication** and click Remove, then click Add.



5) Click on New. In the **New Application Policy** Window type the following in the fields.

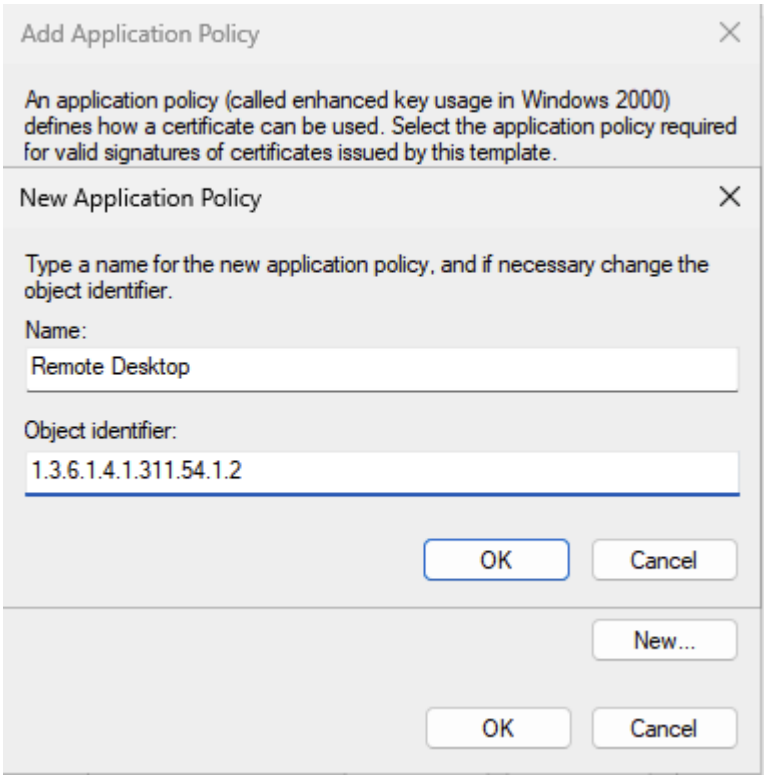
Name: PKInit Kerberos
Object Identifier: 1.3.6.1.5.2.3.4 (Replace the existing contents with this)



Click OK to save the policy.

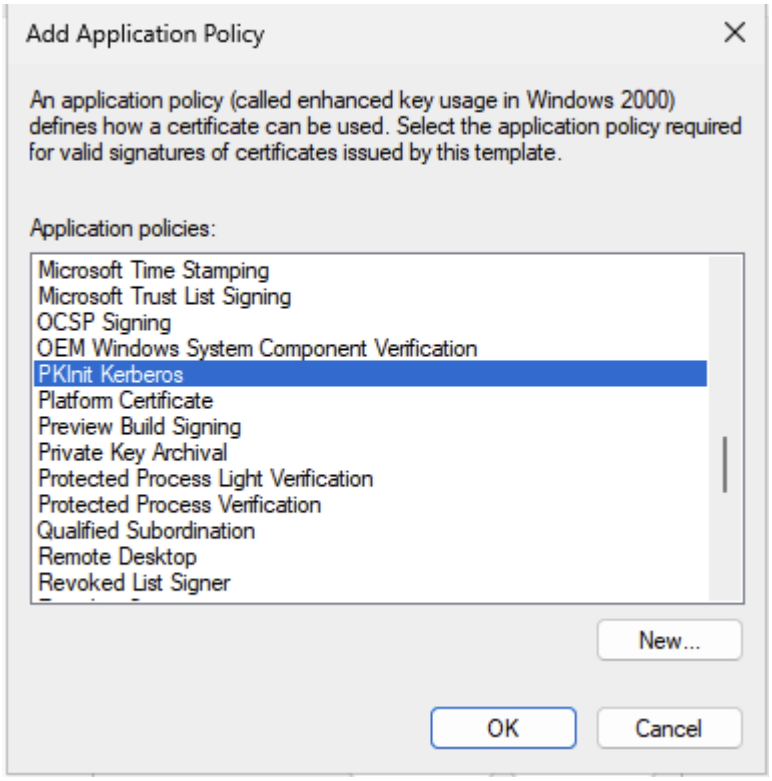
6) Add another policy by clicking New. In the **New Application Policy** Window type the following in the fields.

Name: Remote Desktop
Object Identifier: 1.3.6.1.4.311.54.1.2 (Replace the existing contents with this)

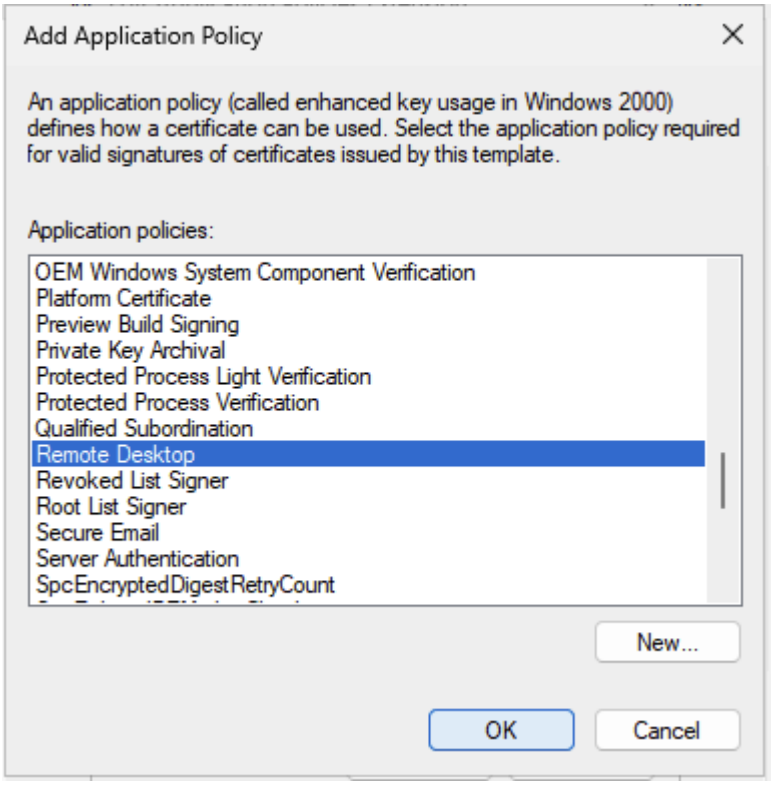


Click OK to save the policy.

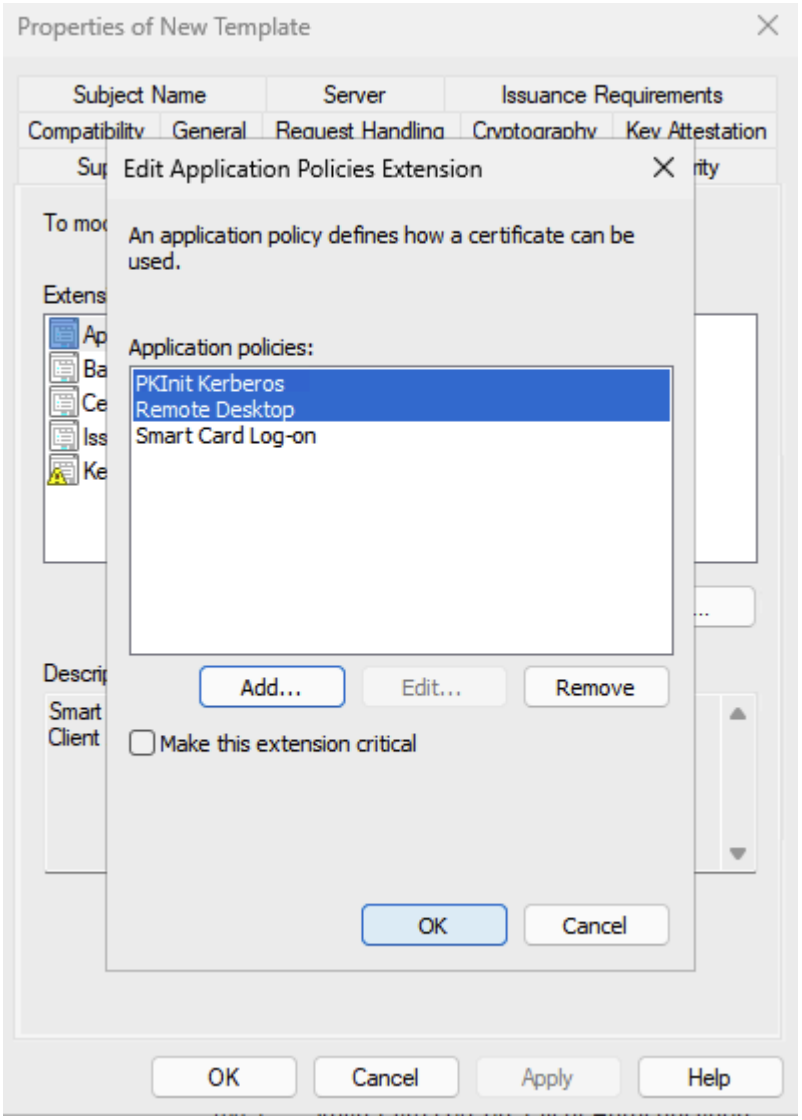
7) Add both of the new policies to the template. Find **PKInit Kerberos**, select it and then click **OK**.



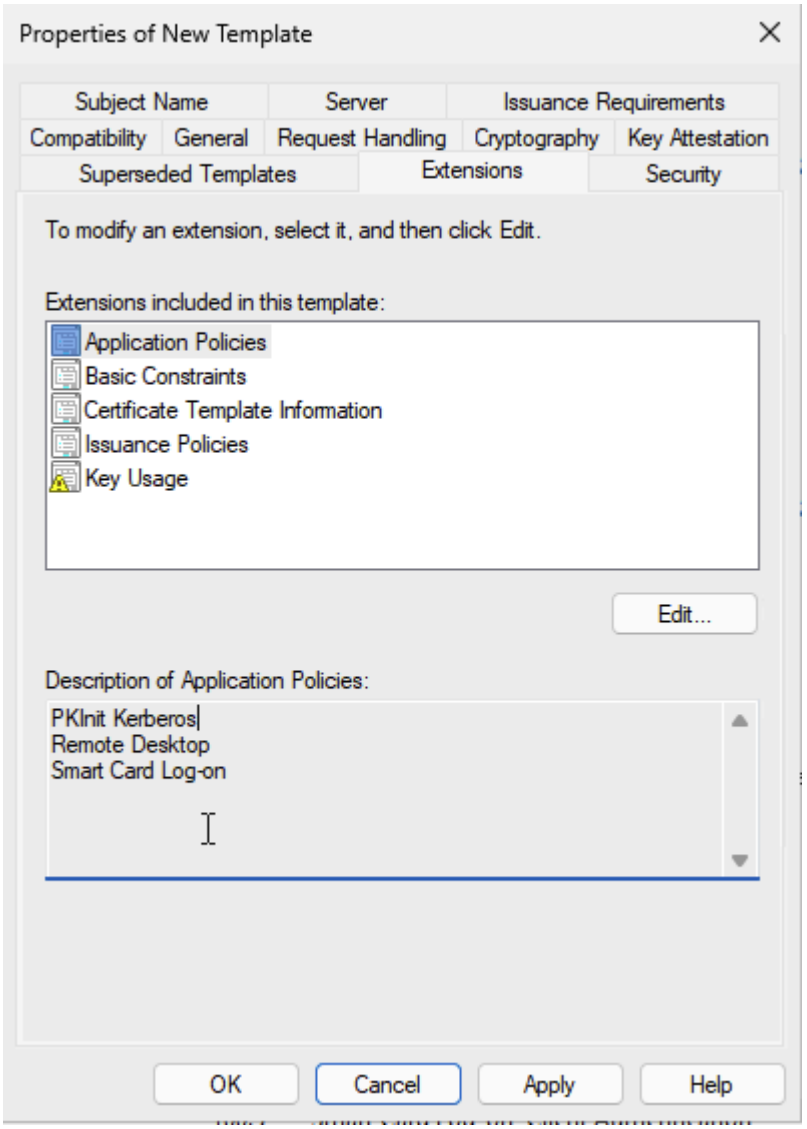
Do the same for Remote Desktop by clicking **Add** on the **Edit Application Policies Extension** window, then search for Remote Desktop and click OK.



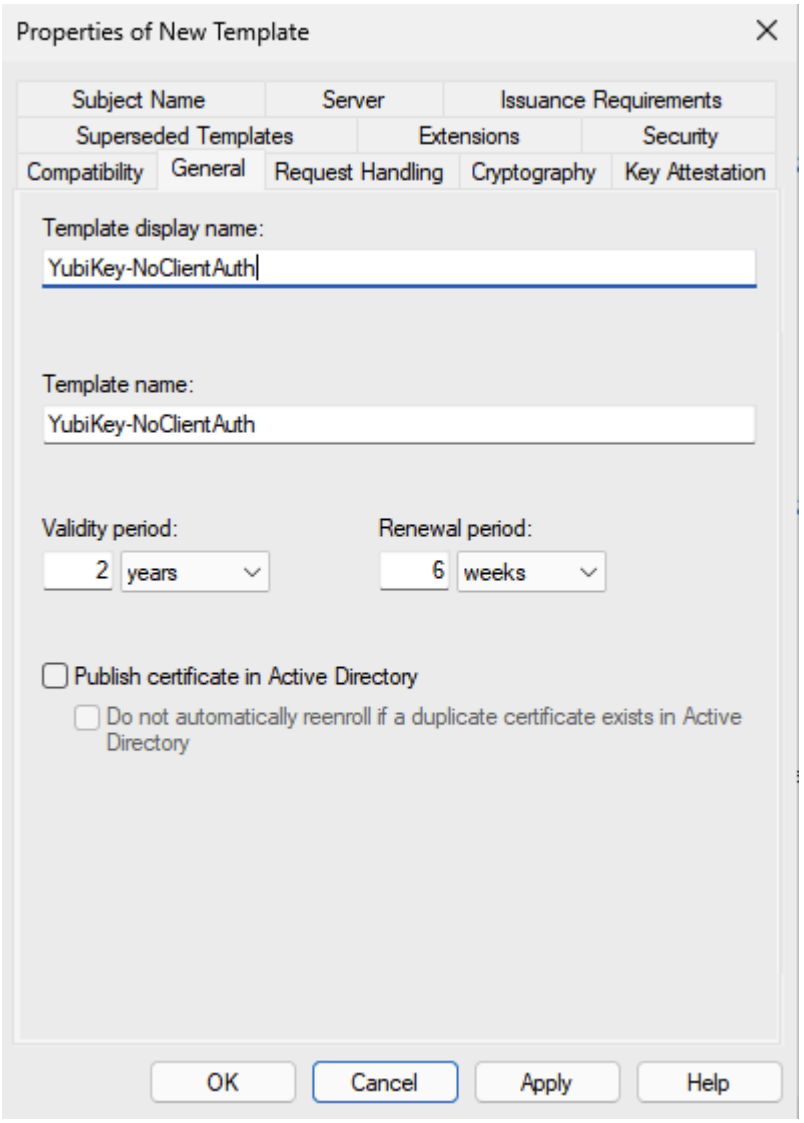
8) Click OK to accept the new additions to the template.



9) Description of Application Policies should now contain the three items as shown in the image below.

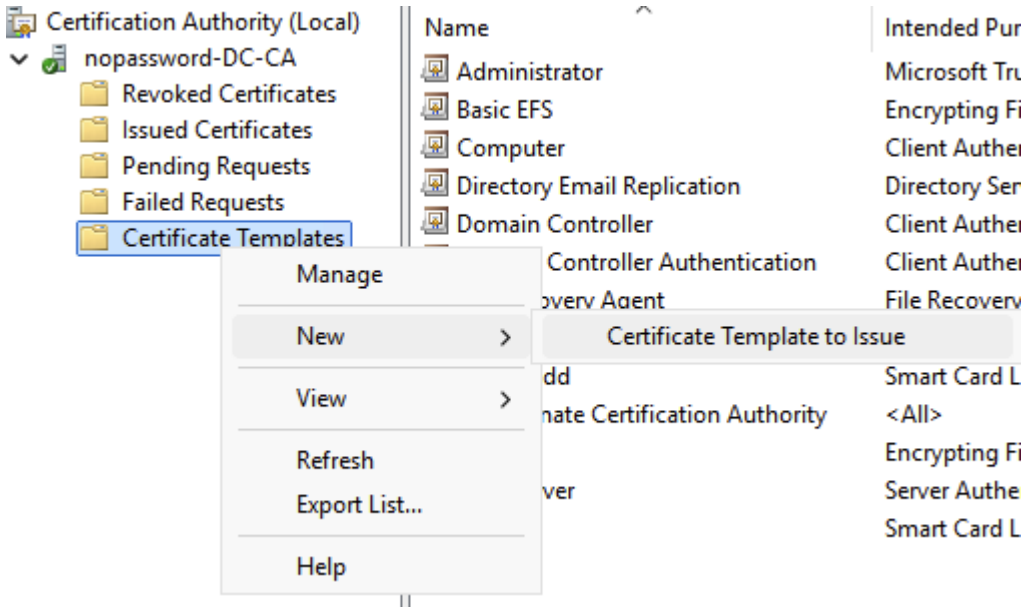


10) Click on **General** and rename the template to a suitable name for your environment then click **OK. Important:** This template name **must** be fundamentally different from the existing template if you have Auto Enrollment enabled.

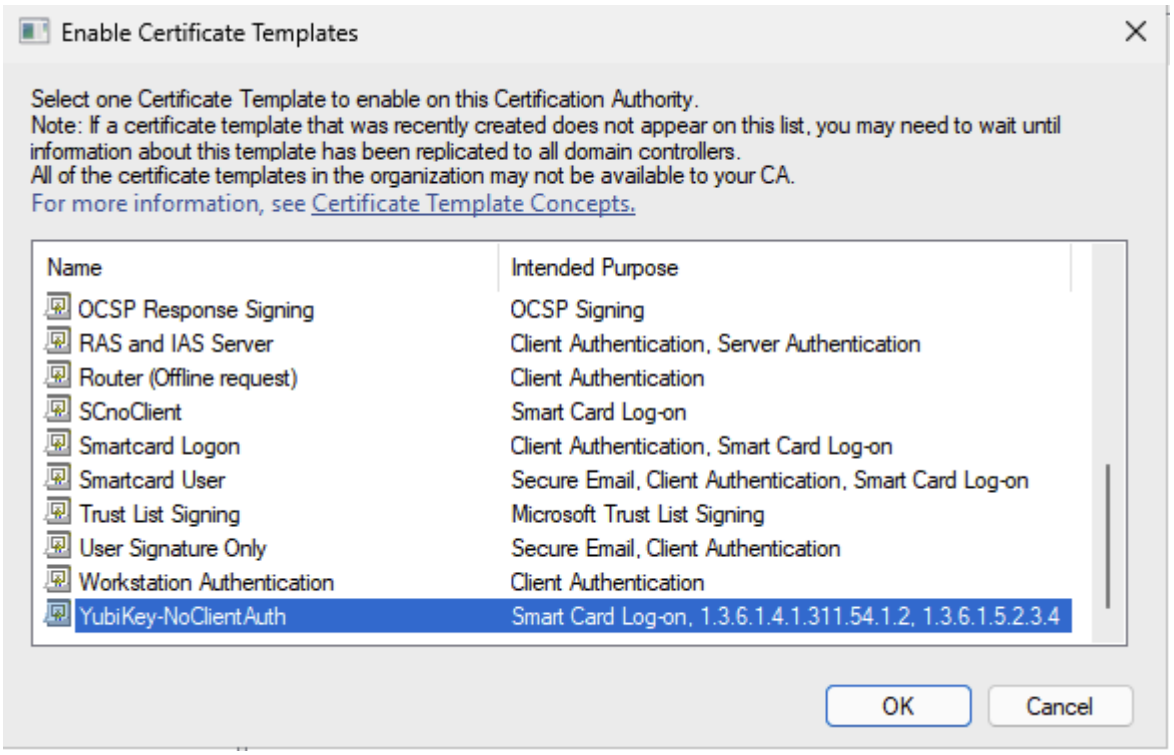


11) No other template changes are required as this is a direct copy of your existing YubiKey template. Close the **Certificate Templates** window and return to the **Certification Authority** window.

12) Right click on **Certificate Templates**, choose **New** > **Certificate Template to Issue**.



Find your new template in the list, select it and click **OK**

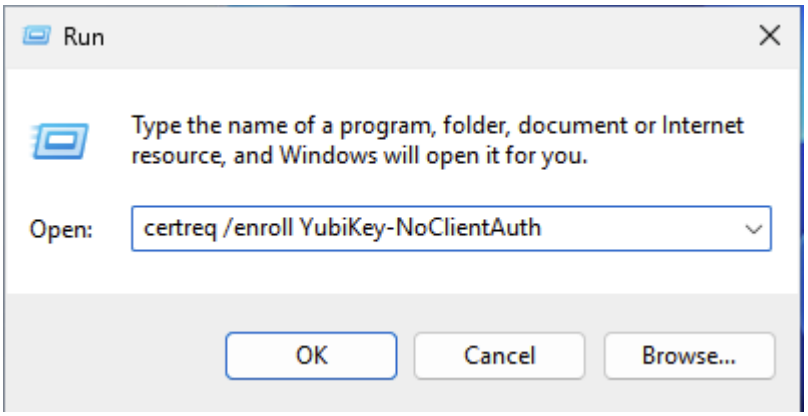


13) Allow for Certificate Services and Active Directory replication to propagate the template. This will vary depending on your individual domain setup.

    After this has completed, use a new YubiKey to enroll using the new template. The easiest way to achieve this is to sign on as the target user and run certreq.exe as shown below.

    Note: Replace the template name with your new template name.

    certreq /enroll YubiKey-NoClientAuth



14) Click **Next** when prompted and then click **Enroll**. Type the YubiKey PIN when prompted and click **OK** to finish the provisioning process.

15) Perform testing to ensure the YubiKey is able to authenticate your Kerberos and RDP based sessions as well as Windows Logon.