**Zack Pelka**

Configure Windows GPO for NTLM RDP / Network Level Authentication

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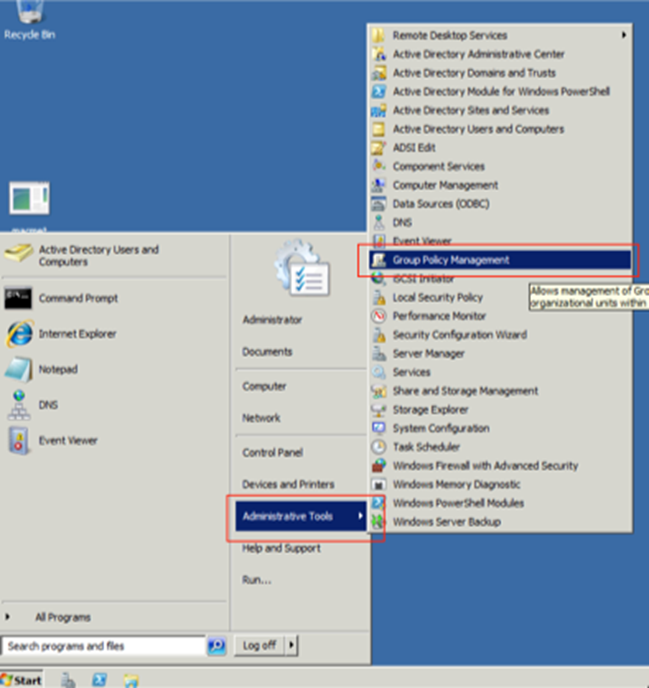
## **Purpose**

This article gives the steps to create an Active Directory Group Policy (GPO) to force the use of NTLM authentication. NLA was introduced first with RDP 6.0 in Windows Vista and later on Windows XP SP3.

One of the biggest advantages also is that since TLS is used it will warn us if it can not validate the identity of the host we are connecting to. For this we will need a PKI infrastructure integrated with AD in our Windows environment. On a Windows 2008 environment we can install on a server the role of Active Directory Certificate Service to install a Enterprise CA accepting all defaults so it can provide Computer Certificates to the machines in the domain in an automated way using Group Policy.

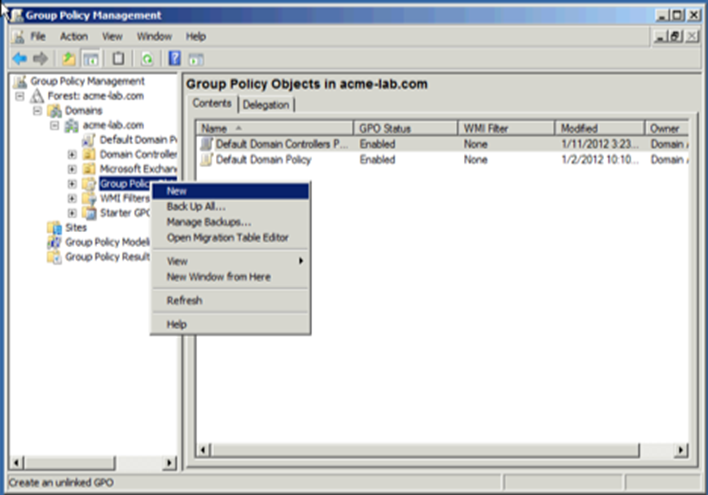
## **Basic Commands**

Launch the group policy editor:



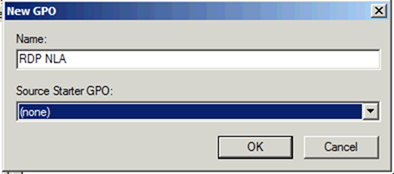
## **Create the GPO and its location**

Before you begin, create a new GPO at the Domain level:

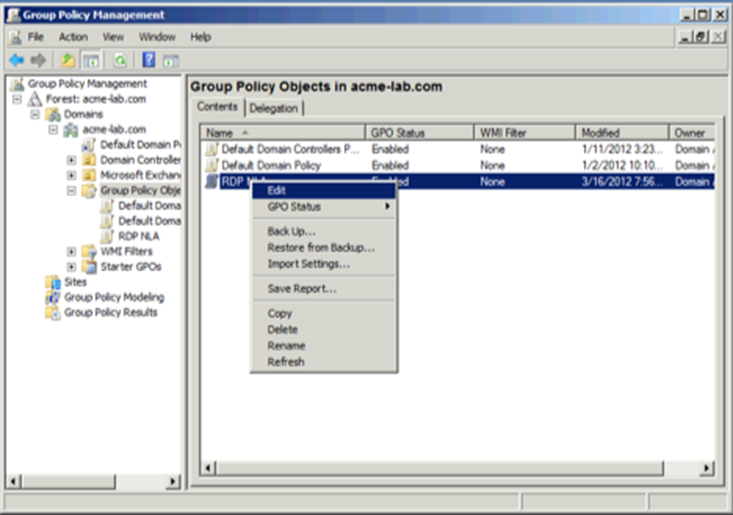


**Now create the new GPO:**

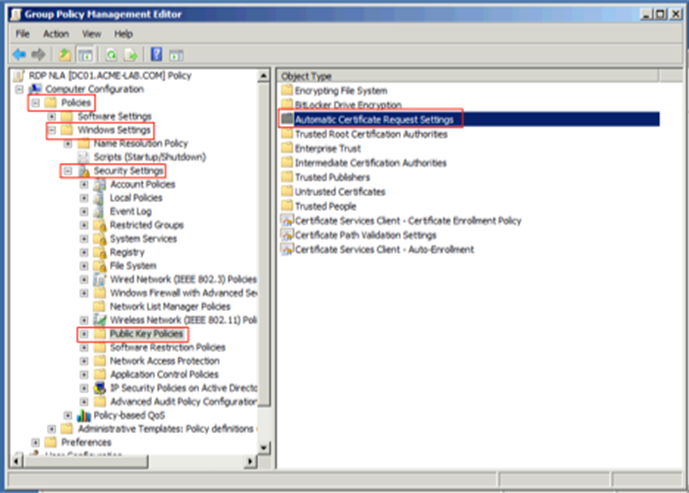
We give this policy a Name:

[](https://static.squarespace.com/static/52ad1d91e4b00a98a27ba20e/52ae5168e4b0988b43f4361f/52ae5169e4b0988b43f43abe/1331998090903/Windows-Live-Writer-Configuring-y_948B-)

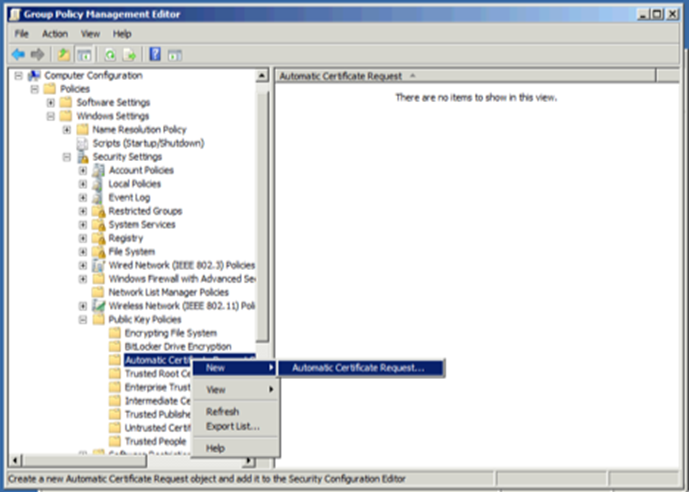
Once created we edit this policy by right clicking on it an selecting Edit:

[](https://static.squarespace.com/static/52ad1d91e4b00a98a27ba20e/52ae5168e4b0988b43f4361f/52ae5169e4b0988b43f43ac0/1331998094707/Windows-Live-Writer-Configuring-y_948B-)

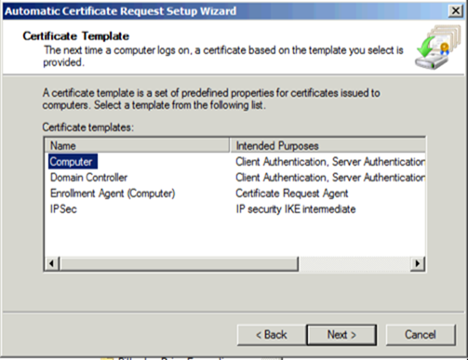
Now we select **Computer Configuration/Policies/Windows Settings/Public Key Policies/Automatic Certificate Request Settings**:

[](https://static.squarespace.com/static/52ad1d91e4b00a98a27ba20e/52ae5168e4b0988b43f4361f/52ae5169e4b0988b43f43ac2/1331998104437/Windows-Live-Writer-Configuring-y_948B-)

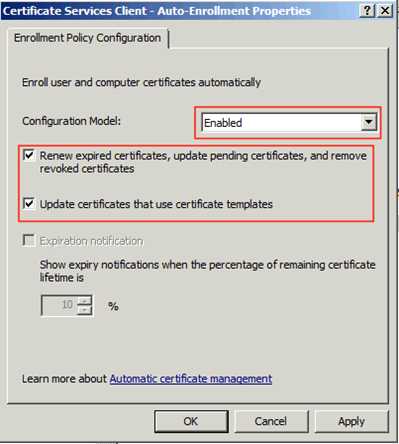
We now right click on **Automatic Certificate Request Setting** and select to create a new **Automatic Certificate Request**, this will request to the CA a new Computer Certificate and renew the certificate when it expires automatically.

[](https://static.squarespace.com/static/52ad1d91e4b00a98a27ba20e/52ae5168e4b0988b43f4361f/52ae5169e4b0988b43f43ac4/1331998114187/Windows-Live-Writer-Configuring-y_948B-)

When the wizard starts we click **Next** then we select **Computer** Certificate Template:

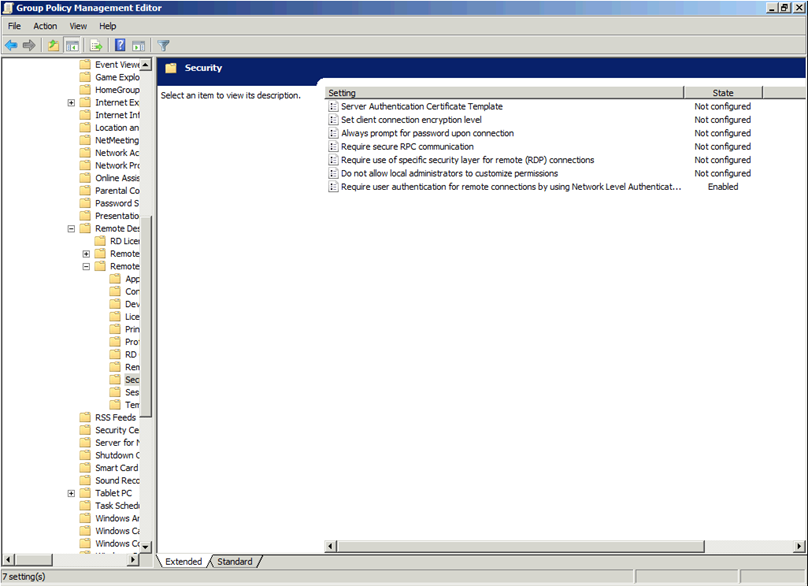
[](https://static.squarespace.com/static/52ad1d91e4b00a98a27ba20e/52ae5168e4b0988b43f4361f/52ae5169e4b0988b43f43ac6/1331998123008/Windows-Live-Writer-Configuring-y_948B-)

We click on **Next** and then on **Finish**. Now we select **Computer Configuration/Policies/Windows Settings/Public Key Policies**under that node we double click on **Certificate Services Client – Auto-Enrollment** we now select on the properties under Configuration Model we select Enable and make sure that the boxes for managing certificates in the store and for updating the certificate if the template is modified.

[](https://static.squarespace.com/static/52ad1d91e4b00a98a27ba20e/52ae5168e4b0988b43f4361f/52ae5169e4b0988b43f43ac8/1331998127035/Windows-Live-Writer-Configuring-y_948B-)

Now we have finished the section that will cover the certificate assignment for computers that get this GPO applied to.

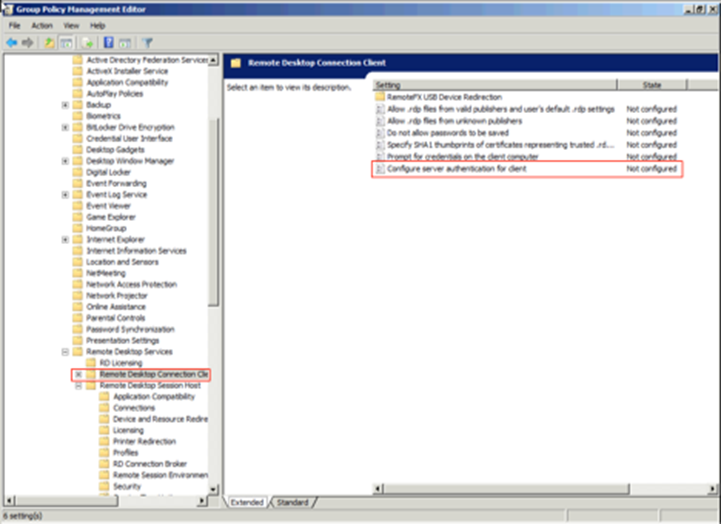
For configuring RDP to use NLA we now go to **Computer Configuration/Policies/Administrative Templates/Windows Components/Remote Desktop Settings/Remote Desktop Session Host/Security.** This GPO Tree Expansion is too large to include a screen shot, so please follow the navigation in bold just above.

[](https://static.squarespace.com/static/52ad1d91e4b00a98a27ba20e/52ae5168e4b0988b43f4361f/52ae5169e4b0988b43f43aca/1331998136047/Windows-Live-Writer-Configuring-y_948B-)

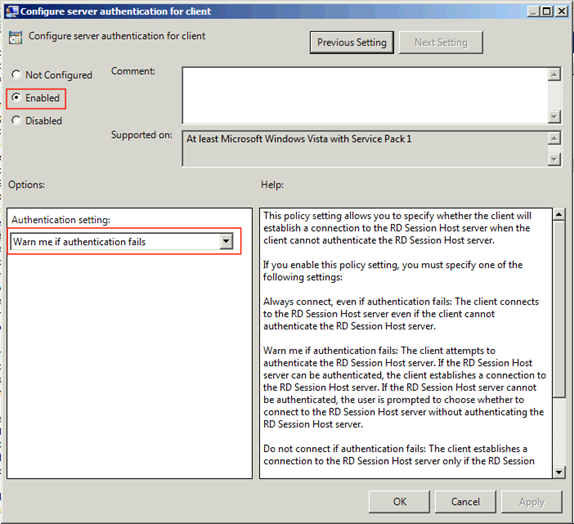
Select **Require user authentication for remote connections by using Network Level Authentication** and double click on it. On the properties screen select **Enable**and click on**OK.**

Now lets configure the client settings to make sure that we always select to warn in the case the host certificate con not be authenticated. We select **Computer Configuration/Policies/Administrative Templates/Windows Components/Remote Desktop Settings/Remote Desktop Connection Client.** This is just above the branch we just navigated to.

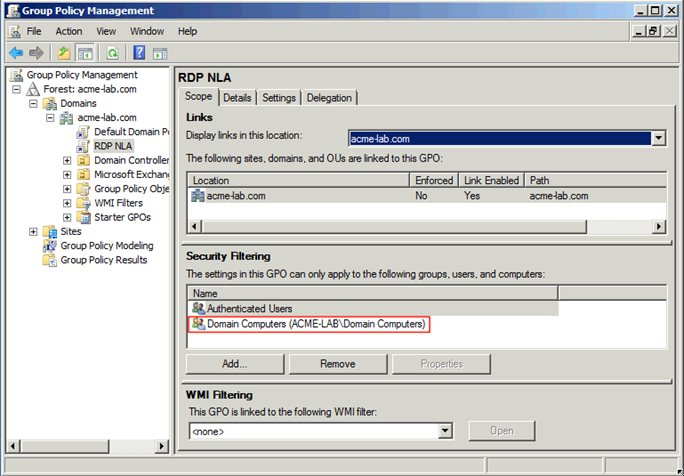
We double click on **Configure Authentication for Client**

[](https://static.squarespace.com/static/52ad1d91e4b00a98a27ba20e/52ae5168e4b0988b43f4361f/52ae5169e4b0988b43f43acc/1331998143893/Windows-Live-Writer-Configuring-y_948B-)

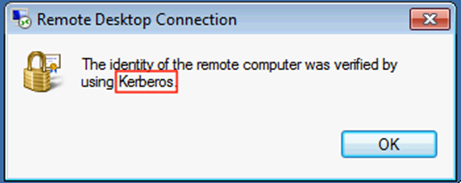
Select **Enable** and set the Option to **Warn me if authentication fails**

[](https://static.squarespace.com/static/52ad1d91e4b00a98a27ba20e/52ae5168e4b0988b43f4361f/52ae5169e4b0988b43f43ace/1331998151707/Windows-Live-Writer-Configuring-y_948B-)

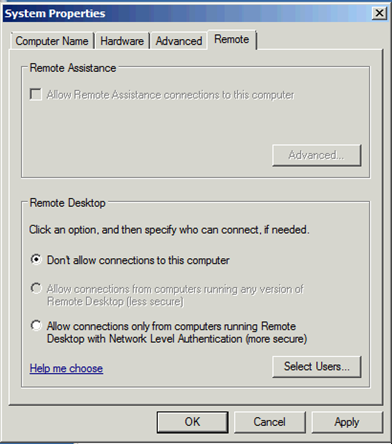
Click on **OK** and close the screen. Know you should have a proper policy that can be applied, but before we apply the policy we have to give permission on the **Domain Computers** group in the domain the permission to apply it:

[](https://static.squarespace.com/static/52ad1d91e4b00a98a27ba20e/52ae5168e4b0988b43f4361f/52ae5169e4b0988b43f43ad0/1331998158263/Windows-Live-Writer-Configuring-y_948B-)

And now we have a GPO that can be linked to any Domain in the forest or Organization Unit. Once applied when a connection is made, we can see the security in use by clicking on the lock on the top of a Remote Desktop Session in Windows and it will tell us how we were authenticated:

[](https://static.squarespace.com/static/52ad1d91e4b00a98a27ba20e/52ae5168e4b0988b43f4361f/52ae5169e4b0988b43f43ad2/1331998163677/Windows-Live-Writer-Configuring-y_948B-)

On those host that do not have RDP enabled you will see that the only option available is to use NLA

[](https://static.squarespace.com/static/52ad1d91e4b00a98a27ba20e/52ae5168e4b0988b43f4361f/52ae5169e4b0988b43f43ad4/1331998166113/Windows-Live-Writer-Configuring-y_948B-)

 As always, I hope you find this blog post informative and useful.

## **Sources**

**Revision History**

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| --- | --- | --- | --- |
| **Version** | **Date** | **By** | **Changes** |
| **1.0** | 7DEC2020 | Zachary Pelka | Initial Draft |
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