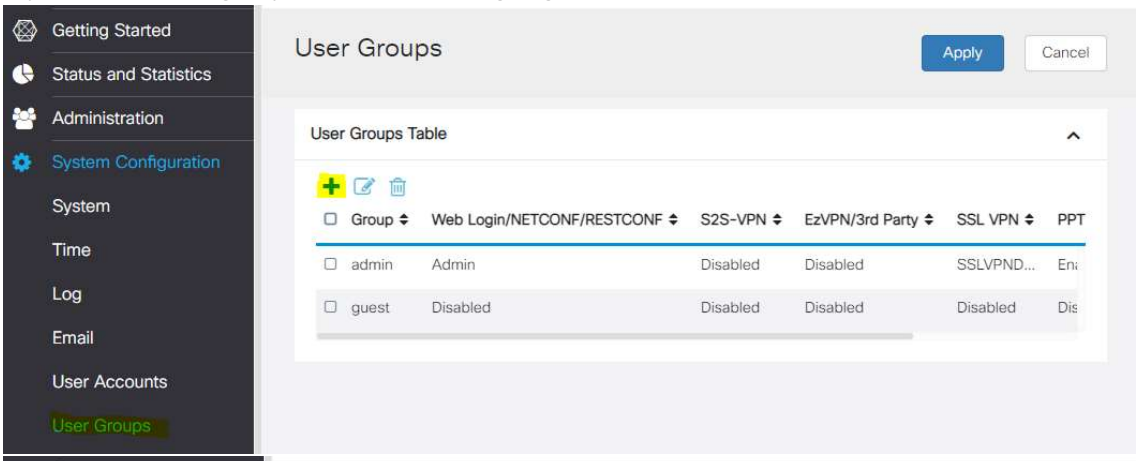
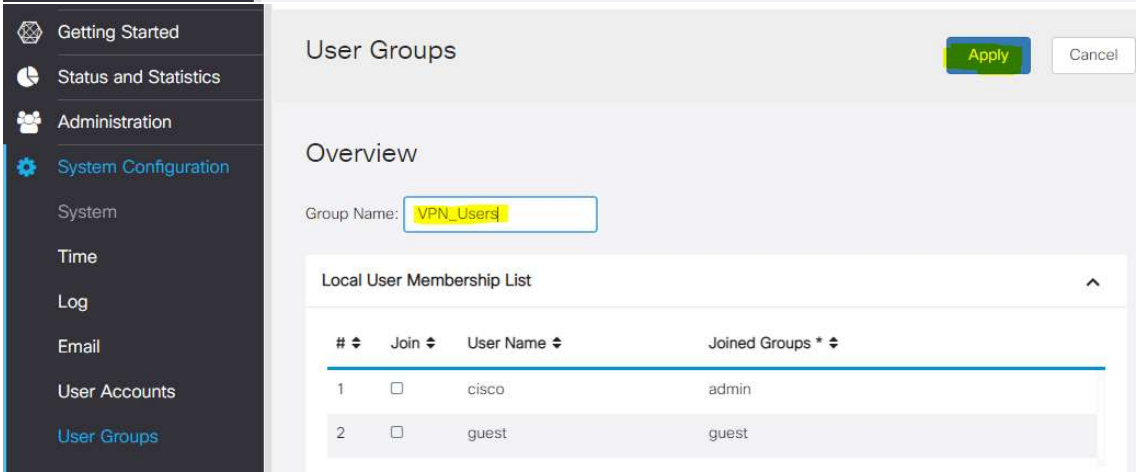
L2PT VPN on RV345 for Windows 10

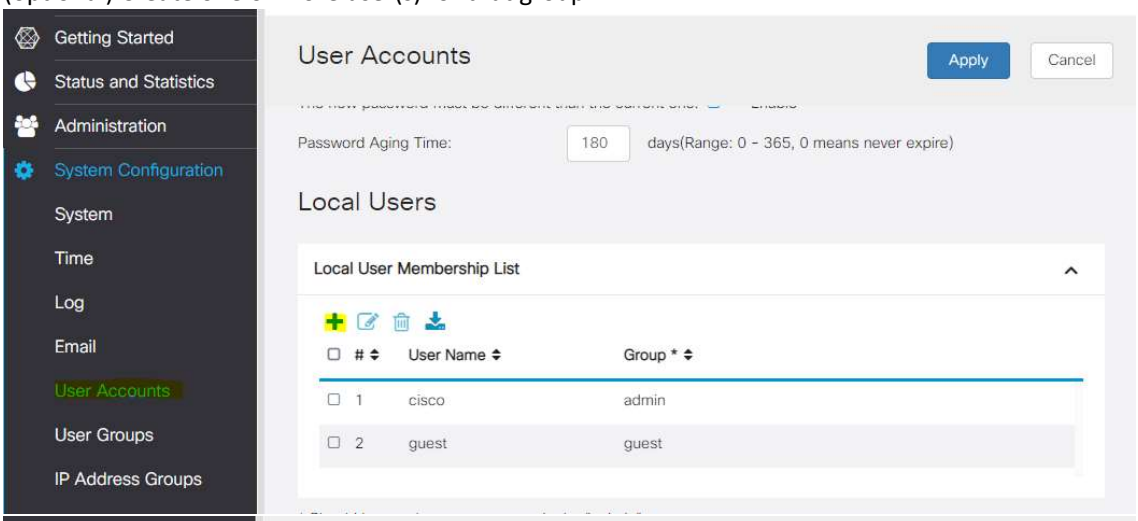
This Manual is based in Windows 10 version 20H2 and Image version 1.0.03.21 on the router.

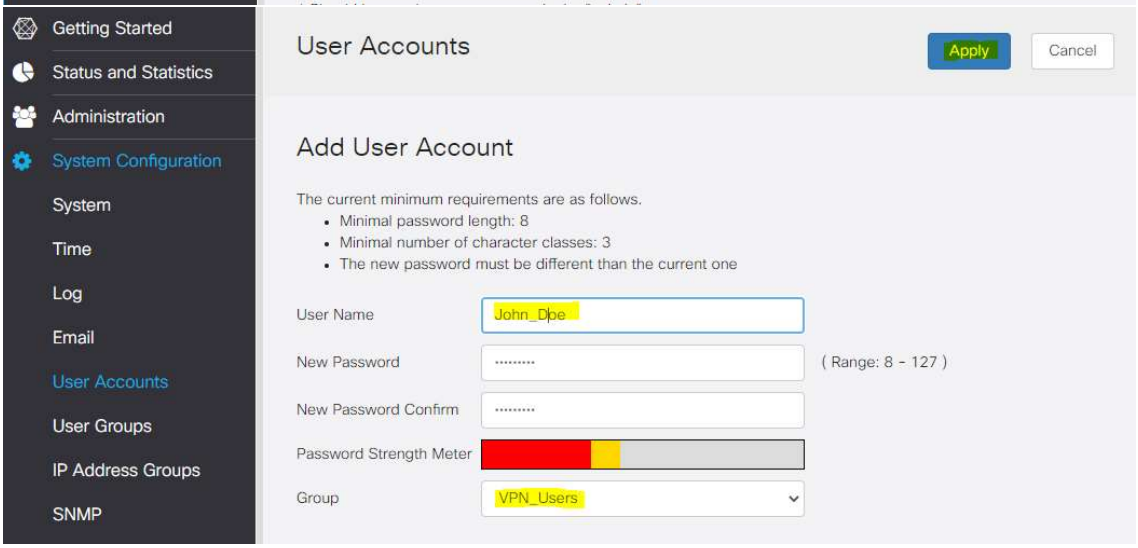
1. (optional) Create a group for users who are going to use VPN



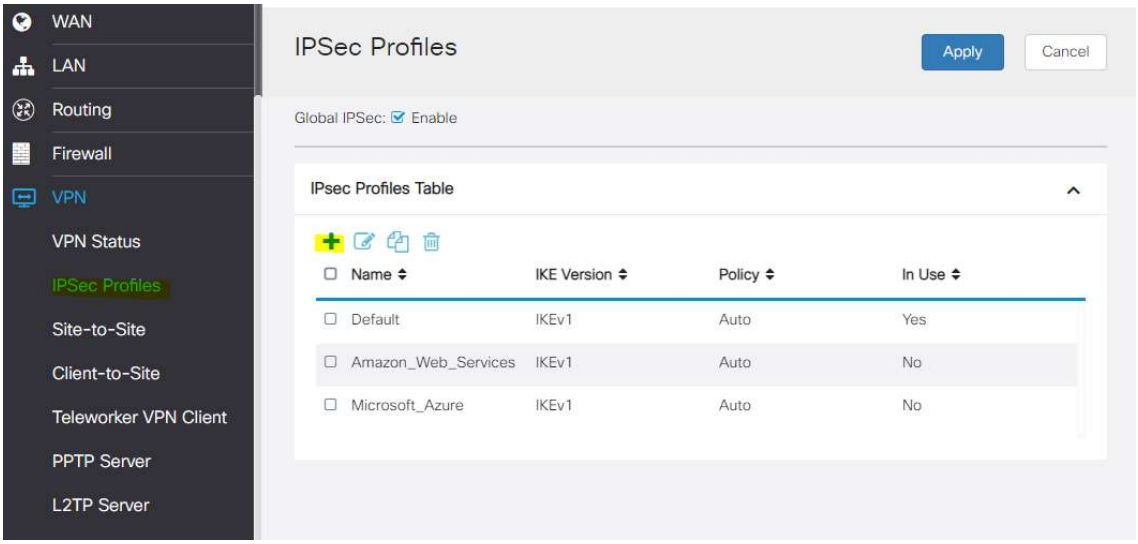


2. (optional) Create one or more user(s) for that group.

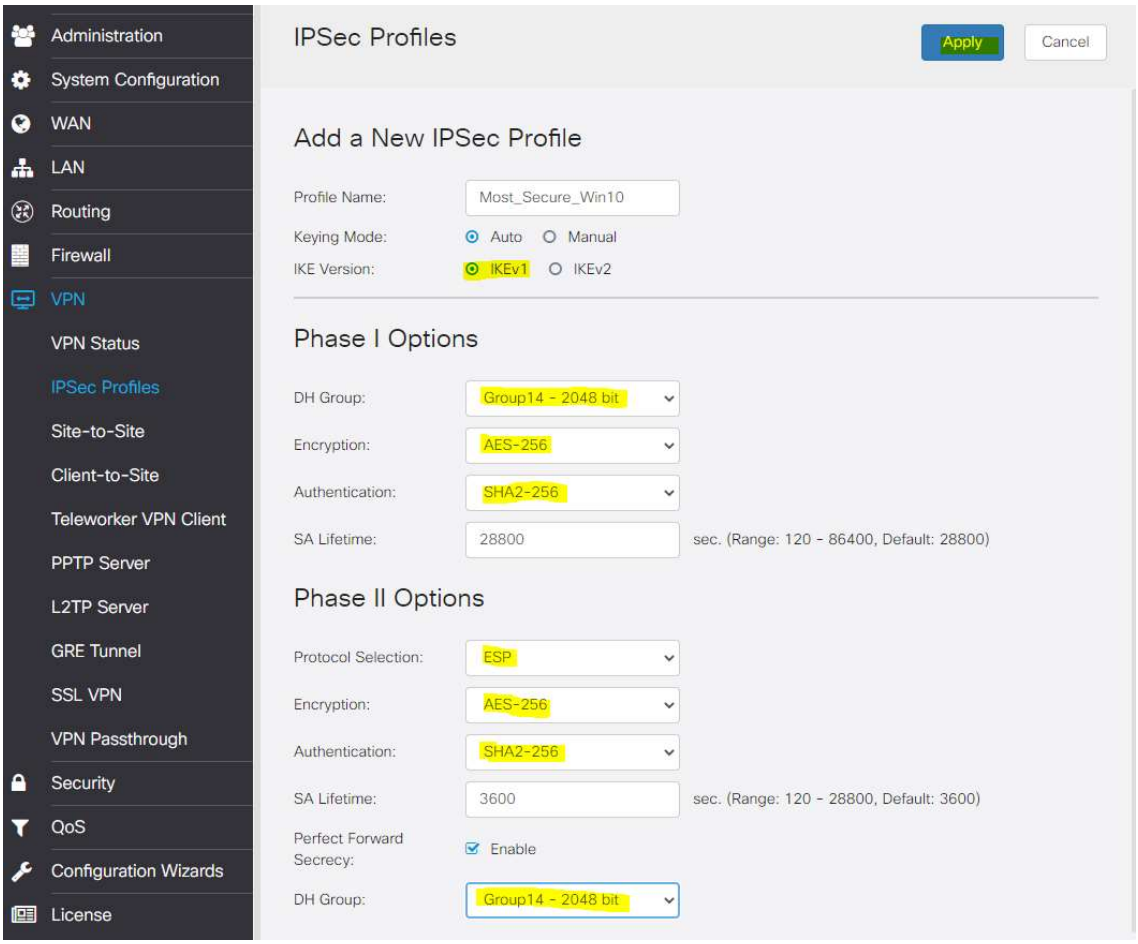




3. Create a new IPSec profile for the L2TP server



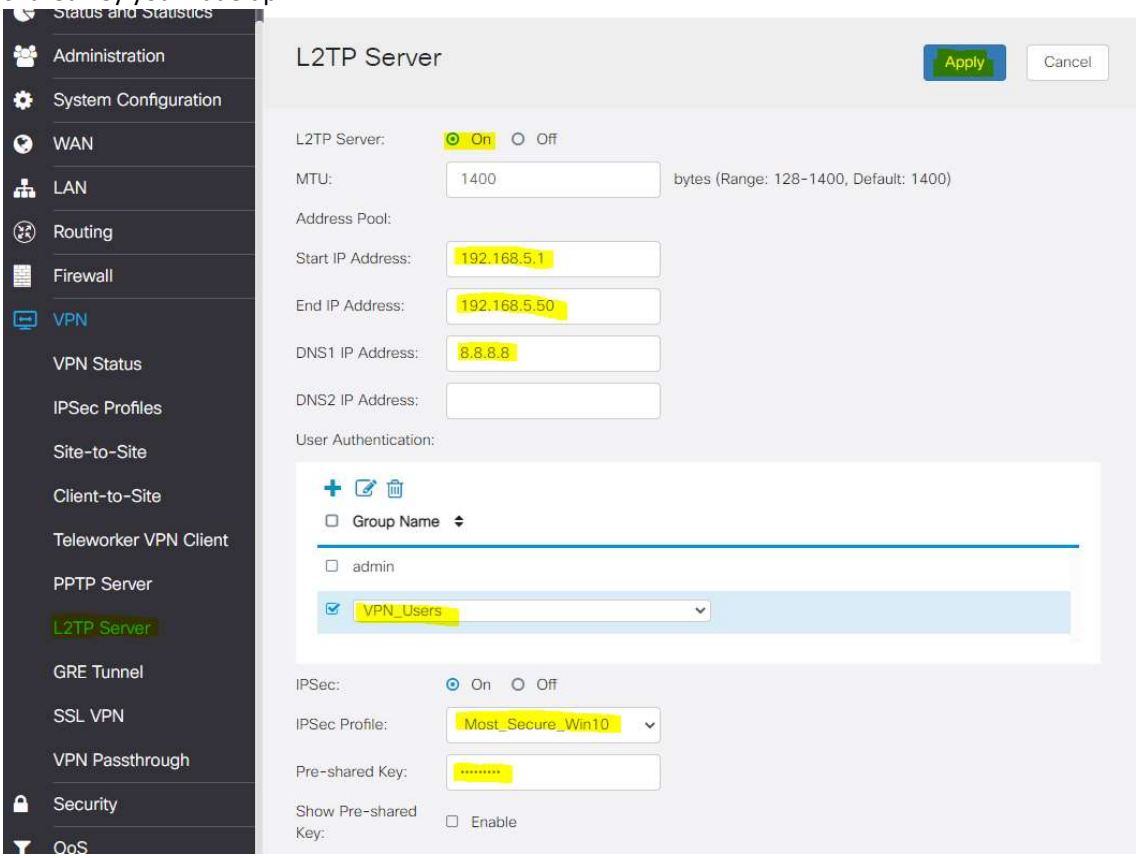
4. Here we are going for the high security possible at this time. If you need to make different choices, apply these to the Windows 10 part of this manual.



Note: AH Protocol is not supported by Win10. Also, if you cannot select DH Group 14, you need to update your router.

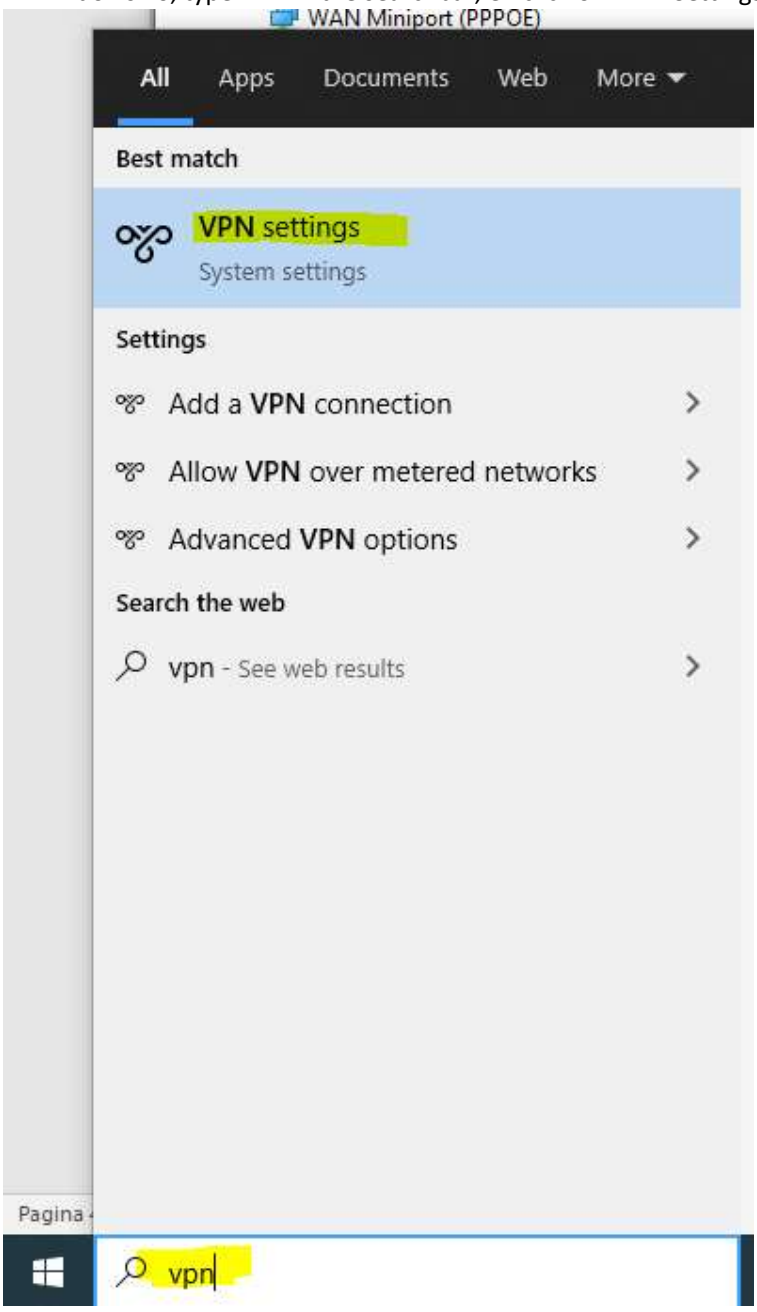
5. Now turn on the L2TP VPN server in fill in some parameters to your liking. An Ip range the users gonna use, DNS servers you like. Then select the IPSec Profile you created for this connection, optionally select the Usergroup you may have created, and fill in some pre-

shared key you made up.



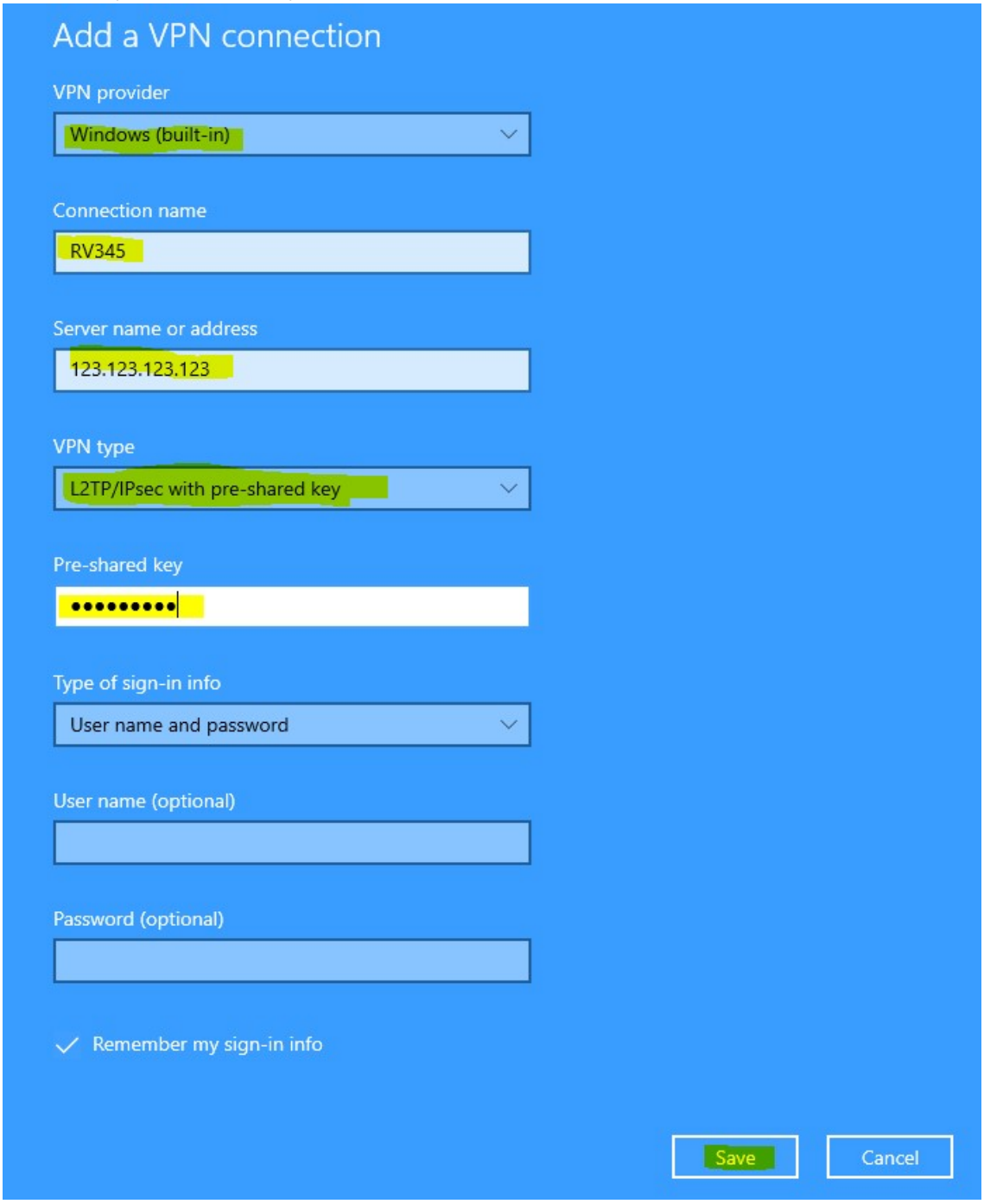
6. Ok, the server is configured now. On to Windows 10.

7. In Windows 10, type VPN in the searchbar, en click on 'VPN Settings'



8. Click on the + to create an new Connection

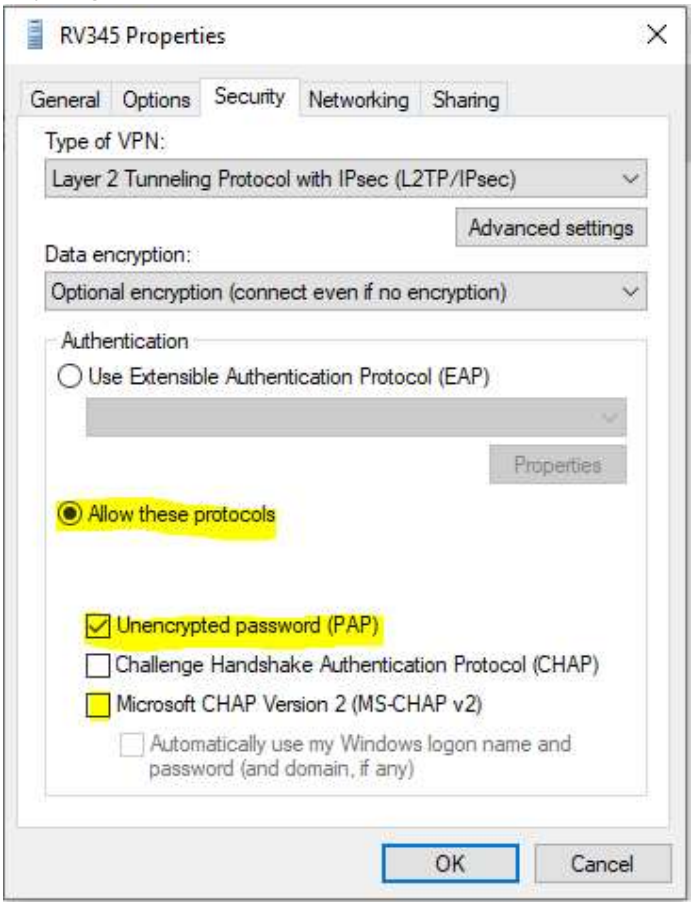
9. Now fill in like in the picture. Make up some Connection name, at Server Name of Address fill in the IP-addressof the WAN Interface on the RV345 you intent to use. A Pre-shared key fill in the key you made up at step 5. Optionally, you can fill in the user name and password of the user you created at step 2.



10. When returned in the previous windows, select ‘Change Adapter Options’

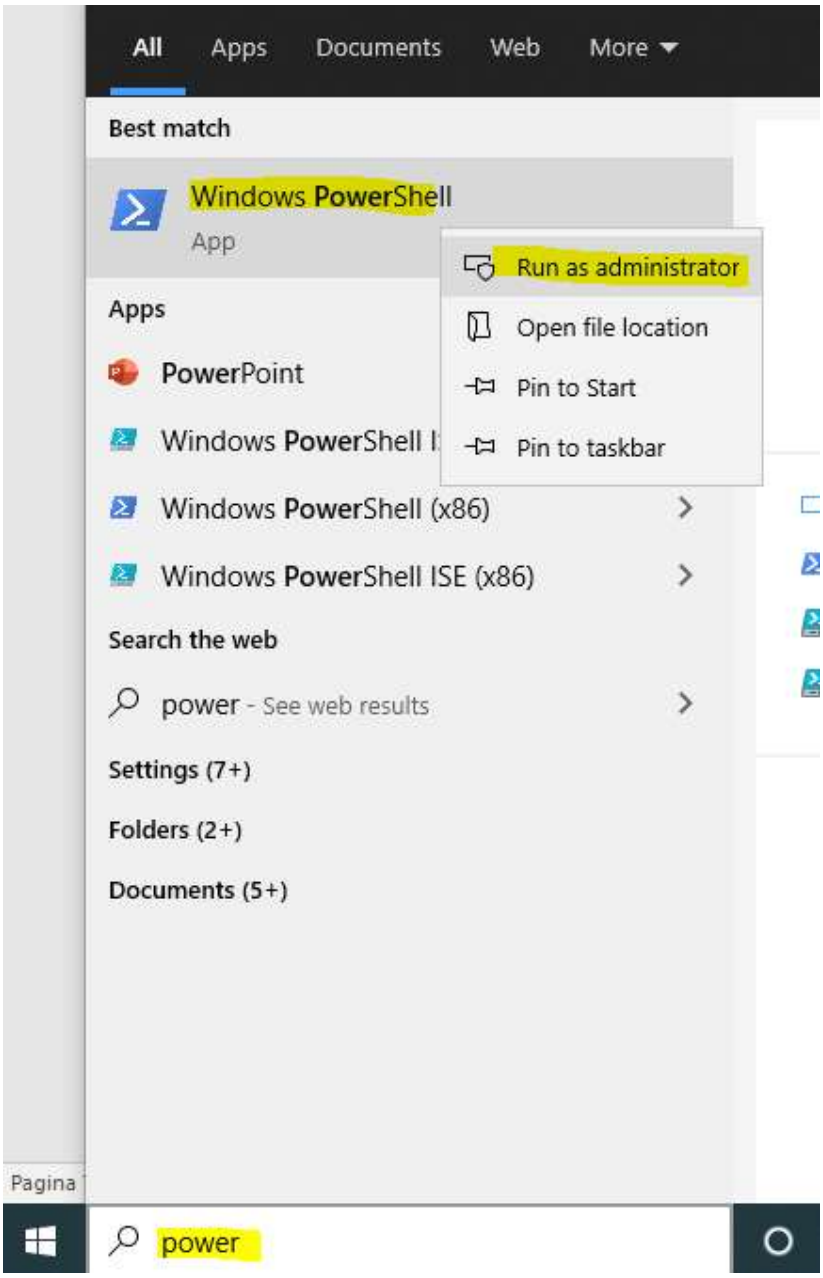
11. Select the Connection you just created, and click ‘Change settings of this connection’

12. Select TAB ‘Security’ In there, select ‘Allow these protocols’ and check PAP, uncheck anything else.



13. Now we need to configure the IPSEC config built-in Win10. We need to do this by using Powershell. Type Powershell in the searchbar, right-click on ‘Windows-Powershell’ and

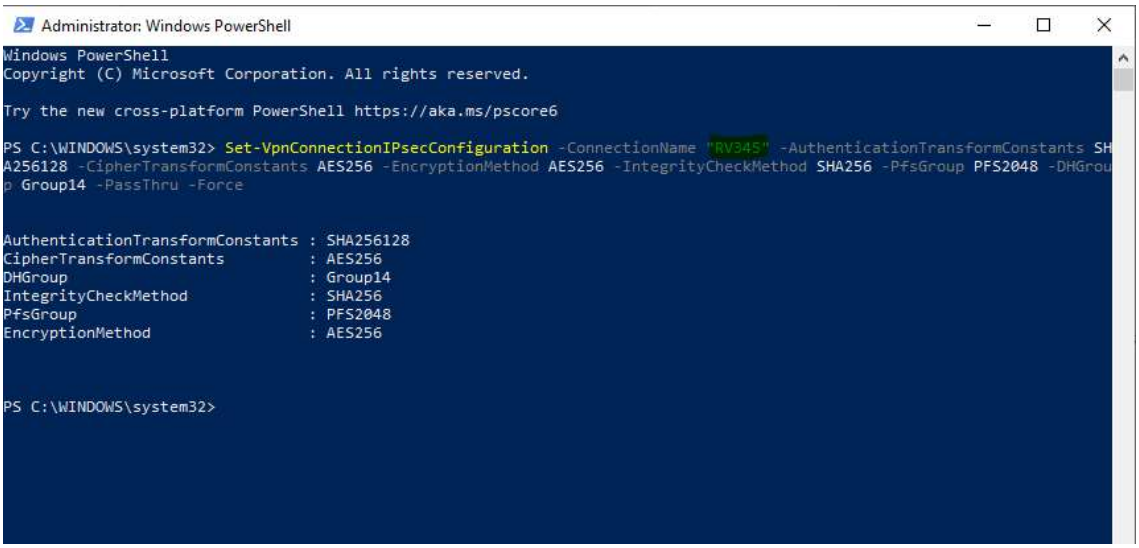
select ‘Run as administrator’.



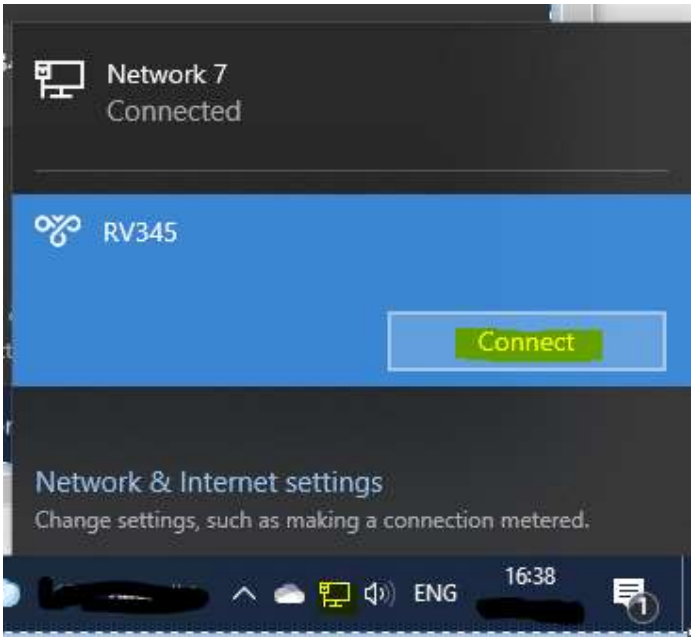
14. In the window, execute this command:

    Set-VpnConnectionIPsecConfiguration -ConnectionName "RV345" -AuthenticationTransformConstants SHA256128 -CipherTransformConstants AES256 -EncryptionMethod AES256 -IntegrityCheckMethod SHA256 -PfsGroup PFS2048 -DHGroup Group14 -PassThru -Force

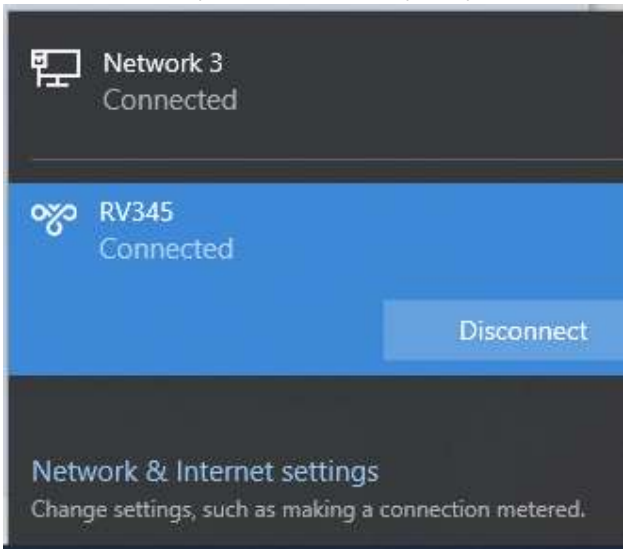
    Where RV345 is the name of your connection.



15. Now click on the network/wifi icon on the Taskbar, and select your VPN Connection, and click ‘connect’



16. Enter Username/password if/when prompted. Windows 10 should connect now.



BONUS: Command Shell parameters to RV345 IPSEC mapping table

I Made this table if you need to change the encryption parameters for some reason. You can use this to vary in the Powershell command as in step 14. Maybe it's redundant, IDK. Do/think at is as you please.

Phase I options		
Name	**Option**	**Matching Powershell parameter**
DH Group	Group 2 - 1024 bits	-DHGroup Group2
	Group 5 - 1536 bits	NA
	Group 14 - 2048 bits	-DHGroup Group14
Encryption	3DES	-EncryptionMethod DES3
	AES-128	-EncryptionMethod AES128
	AES-192	-EncryptionMethod AES192
	AES-256	-EncryptionMethod AES256
Authentication	MD5	-IntegrityCheckMethod MD5
	SHA1	-IntegrityCheckMethod SHA1
	SHA2-256	-IntegrityCheckMethod SHA256
Phase II Options		

Name	Option	Matching Powershell parameter
Protocol Selection	ESP	{Default}
	AH	NA
Encryption	3DES	-CipherTransformConstants DES3
	AES-128	-CipherTransformConstants AES128
	AES-192	-CipherTransformConstants AES192
	AES-256	-CipherTransformConstants AES256
Authentication	MD5	NA
	SHA1	-AuthenticationTransformConstants SHA196
	SHA2-256	-AuthenticationTransformConstants SHA256128
DH Group	Group 2 - 1024 bits	-PfsGroup PFS2
	Group 5 - 1536 bits	NA
	Group 14 - 2048 bits	-PfsGroup PFS2048

Some Other interesting parameters to be used in Set-VpnConnectionIPsecConfiguration:

- -RevertToDefault : Sets everything back to default, whatever that may be. You need to specify the connection name, or you will be asked for it.
- (get-vpnconnection).ipseccustompolicy (straight from the prompt) shows your current configured IPSEC settings. Does not show anything if everything is still or again 'default'.