Overview

This document describes the steps needed to configure a VPN (Virtual Private Network) connection on a Windows 11 computer. Separate documents describe this process for Windows 10 and Apple Mac computers. This document was written to support the Flex radio for Sunset Empire Amateur Radio Club members.

You will only need to perform this step one time on a computer. After following these steps your computer will have a new network interface that can be used to connect to the Flex radio.

Before undertaking this process, you must have been given a username, password, and "shared key" (sometimes called "shared secret"). This information will be used during the VPN configuration process. If you are unsure of some of these steps, you can request a remote session with a SEARC Flex administrator for assistance.

Do not share the username, password, and "shared key" with anyone else.

Configuration Steps

The first step is to add a VPN connection. This involves entering the Internet address for the connection and the type of connection along with a username and password needed to authorize the connection. The second step involves editing the connection "adapter" settings to force encryption and optimize data transmission.

Place the mouse cursor on the Windows icon on the bottom task bar and right-click to bring up the context menu.

The resulting pop-up window will have several options, with "Settings" near the bottom:



From the Settings menu, click on "Network & Internet".



From the right-hand side of the "Network & internet" menu, **click on VPN**.



Then click on Add VPN in the upper-right corner of the window.

VPN connections

Note: In the next step you will be entering a password and pre-shared key. Windows will obscure these with black dots so you will not be able to read them once entered. Type these very carefully. When all data entry has been completed, if the connection fails try entering the information again. You will not be able to verify that the information is correct by looking at the screen once the data has been entered. SEARC administrators will not be able to verify the correct password but can reset the password if needed.

In the "Add a VPN connection" window, you will fill in the following information:

VPN provider	Select "Windows (built-in)" from the drop-down.
Connection name	Enter "SEARC Flex Radio"
Server name or address	You will be given an IP address or name for this field.
VPN type	Select "L2TP/IPsec with pre-shared key" from the drop-down.
Pre-shared key	You will be given a pre-shared key.
Type of sign-in info	Select "User name and password" from the drop-down.
User name	This will normally be your callsign in lower case.
Password	You will be given a password unique to your user name.
Remember my sign-in info	Check this box. You should NOT be using a public computer.

>

Add VPN

vi i piovidei	
Windows (built-in)	~
Connection name	
Server name or address	
vPN type	

Depending on screen size you may need to scroll down to see all the fields.

Type of sign-in info	
Username and password	~
Username (optional)	
Password (optional)	
Remember my sign-in info	
Save	Cancel

Click Save after entering the requested information.

When done, the new VPN connection will appear on the VPN page.

1	SEARC Flex Radio	Connect	~
	Not connected		

That completes creating the VPN connection. Now some of the properties of the newly created VPN connection must be configured.

By default, the VPN connection would route all Internet traffic through the VPN connection when it is active. This will slow down your Internet throughput, hurting performance. You must now make a configuration change to the newly created VPN connection so that only traffic to the Flex radio makes use of the VPN connection.

On the VPN page, click on the pull-down arrow next to the Connect button for the new VPN to get to the Advanced options.

(1)	SEARC Flex Radio Not connected		Connect	^
		Advanced options	Remove	

Click on the Advanced options button...

then on the More VPN properties option, click on the Edit button to get to the VPN properties:

Connection properties		Edit	^
Connection name	SEARC Flex Radio		
Server name or address flex.w7buhams.cl		dı	
Type of sign-in info Username and passwor			
Username (optional)			
Password (optional)	*******		
Clear sign-in info		Clear	
Proxy settings for this VPN connection		Edit	
More VPN properties		Edit	

The VPN adapter property box lists several tabs along the top.



Click the "Networking" tab.

This will display the networking properties for the VPN connection.

LWOIK CONNECTIONS
SEARC Flex Radio Properties X
General Options Security Networking Sharing
This connection uses the following items:
Internet Protocol Version 6 (TCP/IPv6) Internet Protocol Version 4 (TCP/IPv4)
 File and Printer Sharing for Microsoft Networks Eigent for Microsoft Networks
Transmission Control Protocol/Internet Protocol. The default
wide area network protocol that provides communication across diverse interconnected networks.
OK Const
OK Cancel

You will be making the same setting change for the top two entries, IPv4 and IPv6.

Double click on "Internet Protocol Version 4 (TCP/IPv4)".



This will bring up a properties box for the IPv4 protocol. **Click on the box "Advanced".**

You can get IP settings assigne supports this capability. Otherwi administrator for the appropriate	ed automatically if your network ise, you need to ask your network e IP settings.
Obtain an IP address auto	omatically
 Use the following IP address 	ess:
IP address:	
Obtain DNS server address Use the following DNS server: Preferred DNS server:	rver addresses:
Alternate DNS server:	
	Advanced

In the "Advanced TCP/IP Properties" the default is to have "Use default gateway on remote network" checked.

Click the box next to this setting so that the setting is CLEAR as shown below.

EL.	w Local Dropartier V Local Dropartier V
ŀ	Advanced TCP/IP Settings ×
ľ	IP Settings DNS WINS
	This checkbox only applies when you are connected to a local network and a dial-up network simultaneously. When checked, data that cannot be sent on the local network is forwarded to the dial-up network.
l	Use default gateway on remote network
L	Disable class based route addition
	Automatic metric
L	
l	
l	
l	
l	
Γ	OK Cancel

Click on the box "OK" after clearing the check box. Click on the box "OK" in the IPv4 properties box.

Now the same change will be made for the IPv6 settings.

Double click on the line "Internet Protocol Version 6 (TCP/IPv6)".



Click on the box "Advanced".

Clear the box next to the text "Use default gateway on remote network".



Now click the box "OK" on each on the open windows until the set of all property tabs is displayed.

SEARC Flex Radio Properties					×	
General	Options	Security	Networking	Sharing		

Click on the "Security" tab.

Flex Local Prop	perties				×
General Options	Security	Networking	Sharing		
Type of VPN:					
Layer 2 Tunneling	g Protocol v	vith IPsec (L2	2TP/IPsec)	~	
Data encryption:			Advan	ced settings	
Optional encryption	on (connec	t even if no e	ncryption)	~	
Authentication					
O Use Extensib	le Authentie	cation Protoc	ol (EAP)		
				\sim	
			P	roperties	
Allow these p	rotocols				
Unencrypt	ted passwo	rd (PAP)			
Challenge	Handshak	e Authenticat	tion Protocol	(CHAP)	
Microsoft	CHAP Vers	ion 2 (MS-CH	IAP v2)		
Autom passw	atically use ord (and do	my Windows main, if any)	s logon name	and	

Select the drop-down under "Data encryption" and **choose "Maximum strength encryption** (disconnect if server declines)".

Data encryption:		
Optional encryption (connect even if no encr	yption)	~
No encryption allowed (server will disconnect Optional encryption (connect even if no encr Require encryption (disconnect if server decl	t if it requires yption) ines)	encryptior
Maximum strength encryption (disconnect if s	erver decline	es)

When done the security properties should look like this:

Flex Local Properties ×				
General Options Security Networking Sharing				
Type of VPN:				
Layer 2 Tunneling Protocol with IPsec (L2TP/IPsec) ~				
Advanced settings				
Maximum strength encryption (disconnect if server declines) \sim				
Authentication				
O Use Extensible Authentication Protocol (EAP)				
\sim				
Properties				
Allow these protocols				
Unencrypted password (PAP)				
Challenge Handshake Authentication Protocol (CHAP)				
Microsoft CHAP Version 2 (MS-CHAP v2)				
Automatically use my Windows logon name and password (and domain, if any)				
OK Cancel				

That completes the VPN configuration.

After clicking "OK" on all the open boxes **close the "Network Connections" window by clicking the "X" in the upper right-hand corner of the box.**

To open a VPN connection, select Start->Settings->Network & internet->VPN. Then in the SEARC Flex Radio VPN, click the "Connect" box.

Net	work & internet > VPN		
VPN connections		Add VF	N
1	SEARC Flex Radio Not connected	Connect	~

When done using the radio, close the VPN connection by selecting the VPN connection and click on the "Disconnect" box.

Network & internet > VPN			
VPN connections	Add VPN		
SEARC Flex Radio Connected	Disconnect ~		

NOTE! When the VPN is connected, the Flex radio is powered up. Please do not leave the VPN connected unless you are going to use the Flex radio, and remember to disconnect when finished.

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