Introduction

SSL Tunnel vs Traditional VPN

Traditional VPN:

PPTP: TCP 1723, GRE (IP Protocol 47)

L2TP: UDP 1701.

IPSec: UDP 500, ESP (IP Protocol 50), AH (IP Protocol 51).

SSL Tunnel:

TCP 443, uses HTTPS to establish a secure connection.

Common Problems of Traditional VPN

- 1. Firewall Problem: There are many blocking issues involving connections in relation to GRE port blocking or ESP/AH port blocking.
- 2. NAT Problem: There are many IPSec NAT incompatibility problems. (RFC 3715)
- 3. User clients are a must have. Each time when you use a new computer, you have to install the VPN tool and enter the settings.

Advantages of SSL Tunnel

- 1. Typical port blocking is decreased. Generally no firewall will block TCP 443.
- 2. No NAT incompatibility problem.
- 3. No static IPs are required, and a client is unnecessary in most cases.

Note:

SSL VPN is not designed for site to site VPN connections but is intended to be used for client to site VPN connections.

How to connect SSL tunnel



Figure 1

User A connects a SSL Tunnel VPN to Vigor2950. After the connection is established, he is able to access the whole network behind Vigor2950.

Configurations on the Router :

1. Go to SSL VPN >> User Account page and an account for User A.

Online Status	Remote Access U	lser Accounts:		
WAN	Index	User	Status	Index
AN	<u>1.</u>	userA	V	<u>17.</u>
AT	<2.	abc	V >>	<u>18.</u>
irewall	<u>3.</u>	???	×	<u>19.</u>
bjects Setting	<u>4.</u>	???	×	<u>20.</u>
andwidth Management	<u>5.</u>	???	×	<u>21.</u>
pplications	<u>6.</u>	???	×	22.
PN and Remote Access	<u>7.</u>	???	×	<u>23.</u>
ertificate Management	<u>8.</u>	???	×	24.
SL VPN	<u>9.</u>	???	×	<u>25.</u>
SSL Web Proxy	10.	777	×	26.
User Account Online User Status	<u><u>11.</u></u>	???	×	<u>27.</u>
vstem Maintenance	12.	???	×	28.
liagnostics	<u>13.</u>	???	×	<u>29.</u>
	<u>14.</u>	???	×	<u>30.</u>
All Rights Reserved.	<u>15.</u>	???	×	<u>31.</u>
	16.	???	×	32.



- 2. Enter the following:
 - Enable the account.
 - Setup the username/password for User A.
 - Enable SSL Tunnel.

VPN and Remote Access >> Remote Dial-in User

In	h	ex	N	0	2
		cл		υ.	-

User account and Authentication Image: Construct of the second	Username abc Password ***
Allowed Dial-In Type ISDN PPTP IPSec Tunnel L2TP with IPSec Policy None SSL Tunnel Specify Remote Node Remote Client IP or Peer ISDN Number or Peer ID Netbios Naming Packet Pass Block SSL VPN SSL Web Proxy	IKE Authentication Method Pre-Shared Key IKE Pre-Shared Key Digital Signature (X.509) None IPSec Security Method Medium (AH) High (ESP) DES Ø 3DES Ø AES Local ID Callback Function Check to enable Callback function
OTRS (SSL)	Specify the callback number Callback Number Check to enable Callback Budget Control Callback Budget Cancel

Figure 3

 Go to System Maintenance >> Management page and make sure HTTPS Server is enabled. If you don't want to use the standard TCP 443 port, change the port as follows.

System Maintenance >> Management

Management Ac	cess Control	Management Port Setur	0	
□ FTP Serv ☑ HTTP Ser	ver	O User Define Ports Telnet Port HTTP Port HTTPS Port	80 ([Ports Default: 23) Default: 80) Default: 443
 HTTPS Si Telnet Sa SSH Serv Disable PING 	erver	FTP Port SSH Port SNMP Setup		Default: 21) Default: 22)
Access List List IP 1	Subnet Mask	Enable SNMP Ager Get Community Set Community Manager Host IP	nt public private	
3		Trap Community Notification Host IP Trap Timeout	public	conds

Figure 4

Steps for User A to connect SSL Tunnel (First Time)

1. Open a web browser(I.E or Firefox), and go to the following URL :

https://218.242.130.26

2. Internet Explorer 6 will display the below security alert stating that the security certificate is valid but is not from a known source. Please accept the certificate with confidence by pressing the **Yes** button.

Security	/ Aler	t X	1
₽	char	rmation you exchange with this site cannot be viewed or nged by others. However, there is a problem with the site's urity certificate.	
	⚠	The security certificate was issued by a company you have not chosen to trust. View the certificate to determine whether you want to trust the certifying authority.	
	0	The security certificate date is valid.	
		The name on the security certificate is invalid or does not match the name of the site	
	Doy	you want to proceed?	
		Yes View Certificate	21631

Figure 5

Internet Explorer 7 will display the below security alert stating that the security certificate is valid but is not from a known source. Please select the *Continue to this website (not recommended)* choice.

0	▼ 🖉 https://	v ++ ×
4	Certificate Error: Navgation Diocked	
3	There is a problem with this website's security certificate.	
	The security certificate presented by this website was not issued by a trusted certificate authority.	
	The security certificate presented by this website was issued for a different website's address.	
	Security certificate problems may indicate an attempt to fool you or intercept any data you send to the server.	
	We recommend that you close this webpage and do not continue to this website,	
	Ø Click here to dose this webpage.	
	Continue to this website (not recommended).	
	More information	

Figure 6

3. A login window pops up. Input the username and password for User A.

Login to the Router Web Configurator User name:
T and
Password:

Figure 7

4. If login successfully, you will see a window like the one shown below.

Press SSL Tunnel .

Vigor SSL VPN - Microsoft Internet Explorer		
File Edit View Favorites Tools Help		A.
🔇 Back 🔹 🔘 🔹 🛃 💋 Search	Arrites 🚱 🔗 - 🌺 📄 🦲 🌾 🎇 🗞 🦓	
Address 🕘 https://218.242.130.26:4443/0004562a/		🔽 🔁 Go 😂 SnagIt 🖭
Address (Integs:))/210.242.130.26(444)(00045624)	Home SSL Tunnel Main Page: You have successfully logged in! You are granted the following privileges: SSL Tunnel SSL Tunnel	
🗑 Done		🔒 🎯 Internet

Figure 8

5. In this page if the button is "Install", it means you haven't installed relevant components on that PC. Press the button Install to download the components from the router. Note: Verify your browser's security settings allow ActiveX controls. And you must turn off the protected mode in Vista IE7.





6. Wait for some minutes. Your browser is downloading the components.

Alter	s://218.242.130.26:4443/0004562a/		🔽 🔂 Go 🥌 Shagit
	Dray Tek Provide SSL VPN	Home SSL Tunnel	[logout]
	INFO	Use SSL Tunnel:	
	SSL Tunnel Click the button to establish an SSL Tunnel to the remote network!	Warning: 1. Vigor SSL Tunnel need your browser s 2. Vigor SSL Tunnel need you turn off pro 3. Keep your browser open to maintain to your browser, Vigor SSL Tunnel will be Change default route to the rem Instal	otected mode in Vista IE7. the connection. If you reload disconnected.
		Copyright @ 2	008, DrayTek Corp. All Rights Reserved.

Figure 10

7. After the components are downloaded on your PC, you will get the following message.

"Vigor SSL Tunnel could not be installed. Verify your browser security settings allow ActiveX controls. And you must have administrative rights." Please press **OK**.



Figure 11

Then right click the mouse and select "Install ActiveX Control..."

Vigor SSL VPN - Microsoft Internet Explorer		
File Edit View Favorites Tools Help		Western Strength
🚱 Back 🝷 🐑 🔹 🛃 🏠 🔎 Search	🛧 Favorites 🚱 🔗 头 📄 🧾 🌾 🎎 ዿ	
Address Address //218.242,130.26/000052b4/		💌 🋃 Go
Install ActiveX Control What's the Risk? Information Bar Help Provide SSL VPN	yTunnel.CAB' from 'DrayTek corporation'. Click here to install Home SSL Tunnel	[logout]
INFO	Use SSL Tunnel:	
SSL Tunnel Click the button to establish an SSL Tunnel to the remote network!	Warning: 1. Vigor SSL Tunnel need your browser su 2. Vigor SSL Tunnel need you turn off prot 3. Keep your browser open to maintain th your browser, Vigor SSL Tunnel will be o Change default route to the remo	ected mode in Vista IE7. e connection. If you reload lisconnected.
	Loading SSL Tunnel	

Figure 12

It will go to the Home page again.

Vigor SSL VPN - Microsoft Internet Explore		
File Edit View Favorites Tools Help		AP.
🕝 Back 🔹 🕥 👻 🛃 🏠 🔎 Sear	ch 🤺 Favorites 🤣 🍃 🤤 🧾 🌾 🇱 象 🛛 🚳	
Address 🙆 https://218.242.130.26:4443/0004562a/		Go Snaglt 😭
Dray Tek		
Provide SSL VPN	Home SSL Tunnel	[logout]
INFO	Main Page:	
	You have successfully logged int You are granted the following privileges: • SSL Tunnel	
		Tek Corp. All Rights Reserved.
12 (27)		
One		🔒 🌚 Internet

Figure 13

Press the **Install** button again.

https://doi.org/10.1000/2004	1/218.242.130.26:4443/0004562a/		Snagit
	Provide SSL VPN	Home SSL Tunnel	[lonout]
	INFO	I Use SSL Tunnel:	
	 SSL Tunnel 		
	establish an SSL Turnel to the remote network!	Warning: 1. Vigor SSL Tunnel need your browser su 2. Vigor SSL Tunnel need you turn off prot 3. Keep your browser open to maintain th your browser, Vigor SSL Tunnel will be o Change default route to the remu Install	tected mode in Vista IE7. le connection. If you reload disconnected.
		Copyright @ 201	05, DrayTek Corp. All Rights Reserved.

Figure 14

8. A window pops up. Press the button **Install**.

Internet Explorer - Security Warning		
Do you want to install this software? Name: DrayTunnel.CAB Publisher: DrayTek corporation		
S More options	Install	Don't Install
While files from the Internet can be usef your computer. Only install software from		

Figure 15

9. Wait for some minutes. The driver is installed first, then the DraySSL Tunnel Client tool

will pop up and dial the connection automatically.

Connection		
Profile:	Dra	y Tek
Duration:		y ICA
Activity	Sent	Received
	Sen	Received
Bytes:		
Packets:		
Detail		
Client IP:		
Server IP:		
Using re	mote network as default gat	eway.
Demove Virtu	al Driver on disconnecting.	Connect

Figure 16

10. If the tunnel is connected successfully, the status will show **Connected**.

Connection Profile: E Duration:	00 : 00 : 18	r ay Tek
Activity	Sent	Received
Bytes:	3,777	383
Packets:	42	19
Detail		
Client IP:	192.168.1.202	
Server IP:	192.168.1.1	
Using rem	ote network as default	gateway.
Remove Virtual	Driver on disconnecting	Disconnect

Figure 17

You may use ping to check the connection.

```
C: \Documents and Settings \Administrator>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time=4ms TTL=255

Reply from 192.168.1.1: bytes=32 time=4ms TTL=255
```

Figure 18

11. If you want to drop the SSL tunnel, please press the **Disconnect** button (Figure 17).

The DraySSL Tunnel Client will be turned off automatically. And you may find the button in SSL Tunnel page changes to **Connect**.





Note:

- If you don't tick "Remove Virtual Driver on disconnecting" (Figure 17) when pressing the Disconnect button, next time when you connect the SSL Tunnel from the same PC, you needn't install the driver again. Press the Connect button in SSL Tunnel page (Figure 19), the DraySSL Tunnel Client will be loaded directly to connect the VPN.
- 2. If you tick "Remove Virtual Driver on disconnecting" (Figure 17) when pressing the Disconnect button, next time when you connect the SSL Tunnel from the same PC, you still need install the driver again. Press the Connect button in SSL Tunnel page (Figure 19). During installing the driver, you may get the following warning message. Please press Continue Anyway.



Figure 20

- 3. Do not close the SSL Tunnel page before you drop the VPN connection.
- 4. If you don't enable ActiveX controls, you will get the following error message:

"Your security settings do not allow Web sites to use ActiveX controls installed on your

computer ... "



Q&A

1. If the button in the SSL Tunnel page shows Update, what does it mean?

🗿 Vigor SSL VPN - Microsoft Internet Explorer	
File Edit View Favorites Tools Help	A SAC AREA AND A SACARA AND A S
🕞 Back - 🐑 - 🖹 🗟 🏠 🔎 Search	👷 Favorites 🚱 🎯 - 🌺 🔜 🦲 🧲 🇱 🕵 🛛 🚳
Address 🕘 https://218.242.130.26:4443/0004562a/	
DroyTek Provide SSL VPN INFO • SSL Tunnel • Click the button to establish an SSL Tunnel to the remote network!	Home SSL Tunnel Use SSL Tunnel: Warning: 1. Vigor SSL Tunnel need your browser support ActiveX. 2. Vigor SSL Tunnel need you turn off protected mode in Vista IE7. 3. Keep your browser open to maintain the connection. If you reload your browser, Vigor SSL Tunnel will be disconnected. Change default route to the remote gateway Update



We may update the version of the components in new firmware. So if you see the button Update, it means the components installed on your PC is old. Please press Update to download and install the new components.

2. What will be installed on your PC after connecting the SSL Tunnel?

- a. Draytek Virtual PPP Adapter. You may find it from *Control Panel > System > Hardware*
 - > Device Manager.





b. The file "DraySSL TunnelCtrl Class" in C:\Windows\Downloaded Program Files.

C:\WINDOWS\Downlo	aded Program File	15	
File Edit View Favorit	es Tools Help		
🕝 Back 🔹 🕥 🐇 💋	🔊 🔎 Search 🔞	Folders	
Address 🙆 C:\WINDOWS\E	Downloaded Program File		
Folder Tasks Move this item Copy this item Copy this item		DraySSLTunnelCtrl Class Java Runtime Environmen	IGDTester Class nt 1.3.1 Shockwave Flash Object
Other Places	۲		
C WINDOWS			

Figure 23

3. How to uninstall the components and the files?

a. To uninstall the driver you have the following two methods:

1. When disconnecting the SSL tunnel, please tick "Remove Virtual Driver on

disconnecting."

Connection Profile: Duration:	Dray55LTunnel D	r ay Tek
Activity	Sent	Received
Bytes:	4,201	807
Packets:	58	35
Detail		
Client IP:	192.168.1.202	
Server IP:	192.168.1.1	
Using rer	note network as default	gateway.
All Deserves Line to		
Remove Virtua	l Driver on disconnecting	Disconnect

Figure 24

- 2. Go to *Control Panel* > *System* > *Hardware* > *Device Manager* and manually uninstall Draytek Virtual PPP Adapter
- b. To uninstall the file "DraySSL TunnelCtrl Class", please go to C:\Windows\Downloaded
 Program Files, right click the mouse on the file "DraySSL TunnelCtrl Class", and select
 "Remove".

e Edit View Favorite	s Tools Help	
Back + 🕥 - 💋	Search 💫 Folders 🛄 -	
ress 🙆 C:\WINDOWS\D	wnloaded Program Files	
Folder Tasks Move this item Copy this item Copy this item	Remove Properties	IGDTester Class 3.1 Shockwave Flash Object
Other Places	8	
WINDOWS		

Figure 25

If you get the following error message, please close all the IE windows you have open.

8	These program files are currently being used by one or more programs Please close some programs, and try again. You may need to restart Windows.
	ОК

4. How can I connect with the Firefox browser?

Firefox doesn't support ActiveX control, so you must install a plugin for it. For example IE

Tab, an extension which embeds Internet Explorer in a Mozilla/Firefox tab. Please

follow the steps below to install IE Tab.

1. Go to <u>http://ietab.mozdev.org</u> and open the **Installation** page.

e Edit Yiew History Bookmarks <u>T</u> o	ols <u>H</u> elp	12201	
🛚 🔹 🔿 🕘 🕑 🔛 http://i	etab.mozdev.org/		S *
a mozdev.org - ietab: index 🛛 🔯			
nozdev.org			
Do you want fries with that project?			
Believe it or not, we really ran Windows Update - Mozilla			
檔案 (E) 編輯 (E) 檢視 (V) 瀏覽 (G)	書籤 (B) 工具 (T) 說明 (H)	0	
🗇 • 🔿 - 🎯 🙆 😚 👪 🧔 http://w	indowsupdate.microsoft.com/	~	
伦 Moz I W.org: Mozilla Taiwan 正體中交化[🥭 Microsoft Windows Update	123	
	台湾微軟網站 网站導覽		
Windows	搜尋 Microsoft.com 網站的: Mozilla Firefox		

Select a compatible version, download and install it.

2. After installation, you will find a new icon like the figure shown below.

🥮 IE Tab :: Firefox Add-ons - Mozilla Firefox		
Elle Edit View History Bookmarks Tools Help		
< • 🔶 • 🥑 🔕 🅼 💀 🕐		
🕒 Vigor SSL VPN 🛛 🏀 IE Tab :: Firefox Add-ons 🔯		
mozilla	Products	A
Home » Add-ons » Extensions » IE Tab		

3. If the icon doesn't exist, please manually add it as follows:

Select View >> Toolbars >> Customize...

<u>File E</u> dit	View History Bookmark	is <u>T</u> ools <u>H</u> elp			
🧼 • 📫	Toolbars ► ✓ Status Bar	✓ Navigation Toolbar Bookmarks Toolbar	org/en-US/firefox/addo	n/1419	
🕒 Vigor S	Sid <u>e</u> bar •		Add-ons 🛛 🚨		
m	Stop Esc Reload Ctrl+R			Products	A
Hor	Text Size	Long			
н	Page Source Ctrl+U Full Screen F11		20000240		
The second se	- and the second se	🚽 🏄 IE Tab 1.5.	20080310 🌃		

Find the IE Tab icon in the pop-up window. Left click the mouse on it, hold it and pull it

Customize Toolbar				
You can add or remove	items by dragging	to or from the to	olbars.	
Downloads	History	Bookmarks	New Tab	
New Window	Cut	Copy	Paste	
IE Tab	Report Site			~
Show: Icons	Use Small Icons	dd New Toolbar R	estore Default Set	Done

4. Click the icon first. Then type the address, such as <u>https://218.242.130.26</u>

onto the Toolbar.

