# 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.

	VPN and Remote	Access >> Remote Di	al-in User		
Quick Start Wizard Online Status	Remote Access U	lser Accounts:			
	Index	User	Status	Index	
WAN	1.	userA	V	<u>17.</u>	
	<u> </u>	abc	V>	18.	
Firewall	3.	777	×	<u>19.</u>	
Objects Setting	4.	???	×	20.	
Bandwidth Management	5.	???	×	21.	
Applications	6.	???	×	22.	
VPN and Remote Access	7.	???	×	23.	
Certificate Management	8.	777	×	24.	
SSL VPN	9.	777	×	25.	
SSL Web Proxy	10.	777	×	26.	
User Account	> 11	222	×	27	
Online User Status	12	222	×	28	
System Maintenance	13	222	Ŷ	20.	
Diagnostics	14	222	v v	30	
All Rights Reserved	14.	111	<u></u>	24	
An Rights Reserved.	<u>15.</u>	111	×	<u>31.</u> 22	
Cardina Cardina Carda	<u>16.</u>	333	×	<u>32.</u>	
Status: Settings Saved	<< <u>1-32</u>   <u>33-64</u>	<u>65-96   97-128   129-</u>	<u>160   161-192   1</u>	93-200 >>	



- 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

h	hr	ex	N	0	2
	1.4	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 O 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 ✓ 3DES ✓ AES Local ID (optional) Callback Function Check to enable Callback function
□ OTRS (SSL) ☑ WebMail (SSL)	Specify the callback number     Callback Number     Check to enable Callback Budget Control     Callback Budget     30 minute(s)

### 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 Acc	ess Control	Management Port Setu	p	
Allow manag	ement from the Internet	User Define Ports	O Defa 23	ult Ports (Default: 23)
FTP Server	er ver	HTTP Port	80	(Default: 80)
HTTPS Se	erver	FTP Port	21	(Default: 21)
SSH Serv	er from the Internet	SSH Port	22	_ (Default: 22)
Access List		Enable SNMP Ager	nt	
List IP	Subnet Mask	Get Community	publi	c
1		Set Community	priva	te
2		Manager Host IP		
3		Trap Community	publi	c
		Notification Host IP		

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	Alert		×
ß	Information changed by security cer	n you exchange with this site cannot be viewed o by others. However, there is a problem with the sit ertificate.	r e's
	1 The s not cl you w	security certificate was issued by a company you shosen to trust. View the certificate to determine v want to trust the certifying authority.	have vhether
	🕑 The s	security certificate date is valid.	
	1 The r match	name on the security certificate is invalid or does h the name of the site	not
	Do you wa	ant to proceed?	
	<u> </u>	<u>No</u> ⊻iew 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://	✓ ++ ×
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			
Login to the Router Web Configurator			ALS.
User Home, and	~	outer Web C	Login to the Rou User name:
Password:			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	📌 Favorites 🚱 🔗 🎍 📄 💭 🌾 🎇 ዿ 🔏	
Address 🛃 https://218.242.130.26:4443/0004562a/		💽 🔂 Go 🛛 🔄 SnagIt 😭
Index (1210-222-130-26-44-5)0045024	Home SSL Tunnel Main Page: You have successfully logged in! You are granted the following privileges: SSL Tunnel	[ logout ]
🖉 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.

El indestite	Dress Tak		Snagit
	Provide SSL VPN	Home SSL Tunnel	[locout]
	INFO	Use SSL Tunnel:	
	- Click the button to establish an SSL Tunnel to the remote network!	Warning: 1. Vigor SSL Tunnel need your browser suppi 2. Vigor SSL Tunnel need you turn off protect 3. Keep your browser open to maintain the off your browser, Vigor SSL Tunnel will be disc Change default route to the remote Install	ort ActiveX. ted mode in Vista IE7. connected. e gateway

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		VARIAN AND AND A
🚱 Back 🔹 🐑 🔹 🛃 🏠 🔎 Search	Favorites 🚱 🔗 🎍 📄 🦲 🌾 🏭 ዿ	-33
Address Address //218.242,130.26/000052b4/		💌 🋃 Go
Totsette workt treature the following Netwex control: Dra Install ActiveX Control What's the Risk? Information Bar Help Provide SSL VPN INFO SSL Tunnel - Click the button to ortablick one OCI	YTunnel.CAB' from 'DrayTek corporation'. Click here to install Home SSL Tunnel Use SSL Tunnel: Warning: 1. Vigor SSL Tunnel need your browser sup	[ locout ] port ActiveX.
establish an SSL Tunnel to the remote network!	<ol> <li>Vigor SSL Tunnel need you turn off prote</li> <li>Keep your browser open to maintain the your browser, Vigor SSL Tunnel will be d</li> <li>Change default route to the remo</li> <li>Loading SSL Tunnel</li> </ol>	ected mode in Vista IE7. econnection. If you reload isconnected. te gateway

Figure 12

It will go to the Home page again.

Vigor SSL VPN - Microsoft Internet Explore		
File Edit View Favorites Tools Help		AU .
🕝 Back 🔹 🕥 👻 🛃 🏠 🔎 Sear	ch 🤺 Favorites 🚱 🎯 👹 🔜 🗾 🌾 🏭 💊 🛛 🕉	
Address 🙆 https://218.242.130.26:4443/0004562a/		Go Snaglt 😭
<b>Dray</b> Tek		
Provide SSL VPN	Home SSL Tunnel	[logout]
INFO	Main Page:	
<pre></pre>	You have successfully logged int You are granted the following privileges: • SSL Tunnel	
<b>12</b> (27)		
E Done		📋 🌍 Internet

Figure 13

Press the **Install** button again.

a) http	n://218.242.130.26:4443/0004562a/		Snagit (
	Provide SSL VPN	Home SSL Tunnel	[logout]
	INFO	Use SSL Tunnel:	
	SSL Tunnel		
	establish an SSL Tunnel to the remote network!	<ol> <li>Vigor SSL Tunnel need you turn off prot</li> <li>Keep your browser open to maintain th your browser, Vigor SSL Tunnel will be Change default route to the rem</li> </ol>	tected mode in Vista IE7. ie connection. If you reload disconnected. ote gateway
		Copyright @ 20	DB, 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		
More options	Install	Don't Install
While files from the Internet can be usef your computer. Only install software from	ul, this file type c n publishers you	an potentially harm trust, <u>What's the risk?</u>

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:	Dre	Tek
Duration:		y ICA
Activity	- Andrews	Product
		Received
Bytes:		
Packets:		
Detail		
Client IP:		
Server IP:		
Using re	mote network as default gat	eway.
Remove 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 <b>ay</b> 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 SA A A A A A A A A A A A A A A A A A
🕞 Back 🔹 🐑 🔹 🛃 🌈 Search	👷 Favorites 🚱 🎯 🍓 🔜 🦲 🧲 🏭 🥵 🚳
Address 🕘 https://218.242.130.26:4443/0004562a/	
DrayTek 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	oaded Program File	is	
File Edit View Favorit	tes Tools Help		State State
🕝 Back 🔹 🕥 🐇 💋	🔊 🔎 Search 🔞	Folders	
Address 🙆 C:\WINDOWS\[	Downloaded Program Fik		
Folder Tasks Move this item Copy this item Copy this item		DraySSLTunnelCtrl Class Java Runtime Environment	IGDTester Class t 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."

Profile: Duration:	DraySSLTunnel D1	r <b>ay</b> Tek
letivity	Sent	Received
Bytes:	4,201	807
Packets:	58	35
etail		
Client IP:	192.168.1.202	
Server IP:	192.168.1.1	
Using rei	mote network as default	gateway.
Demove Virtu:	al Driver on disconnection	Disconnect
Server IP:	192.168.1.1 note network as default	gateway.

### 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".

C:\WINDOWS\Download	ed Program Files
File Edit View Favorites	Tools Help
🕝 Back 🔹 🕥 🕤 🏂	Search 陵 Folders
Address 🙆 C:\WINDOWS\Down	loaded Program Files
Folder Tasks Move this item Copy this item Copy this item	Image: Second state of the second s
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.

here a second se	irelox	
Edit View History Bookmarks	<u>T</u> ools <u>H</u> elp	
• 🔿 • 🥑 🛞 🏠 🗟 http:	//ietab.mozdev.org/	<u>a</u>
mozdev.org - ietab: index 🔯		
nozdev.org		
ietab <b>Westerne</b>   Installation   <b>Westerne</b>   Installation	Source Code   Members   Bugs   Screensh	ots
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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...

🥹 IE Tab ::	Firefox Add-ons - Mozill	a Firefox			
<u>F</u> ile <u>E</u> dit	<u>View</u> Hi <u>s</u> tory <u>B</u> ookmark	is <u>T</u> ools <u>H</u> elp			
🦛 • 🔿	Toolbars	✓ <u>N</u> avigation Toolbar	org/en-US/firefox/addor	ז/1419	
📄 Vigor S	Sidebar		Add-ons 🔯		
m	Stop Esc Reload Ctrl+R			Products	A
Hor	Text Size	l-ons			
н	Page Source Ctrl+U Full Screen F11	JE Tab 15	20080310 🏠		
Re	ecommended Add-ons	by <u>PCMan (Hong J</u>	en Yee), yuoo2k		

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

You can add or remove items by dragging to r from the toolbars.         Downloads       Downloads         History       Bookmarks         New Tab         Cut       Copy	Customize Toolbar				
Downloads History Bookmarks New Tab New Window Cut Copy Paste	You can add or remo	ove items by draggir	ng to or from the	e toolbars.	
Image: New Window     Image: Cut     Image: Copy     Paste	Downloads	History	<b>Bookmarks</b>	New Tab	<b>^</b>
	New Window	Cut	Сору	Paste	
IE Tab Report Site	IE Tab	) Report Site	i		~
Show: Icons 🔽 Use Small Icons Add New Toolbar Restore Default Set	Show: Icons	Use Small Icons	Add New Toolbar	Restore Default Set	

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

onto the Toolbar.

