# VPN L2TP Application Installation Guide

#### **Configuring a Remote Access L2TP VPN Dial-in Connection**

A remote worker establishes a L2TP VPN connection with the head office using Microsoft's VPN Adapter (included with Windows XP/2000/ME, etc.). The router is installed in the head office, connected to a couple of PCs and Servers.



## Configuring L2TP VPN in the Office

The input IP address 192.168.1.200 will be assigned to the remote worker. Please make sure this IP is not used in the Office LAN.

| Remote Access Conne    | ion   |
|------------------------|---|
| Connection Name        | VPN_L2TP (1)  |
| _                      | O Dial out, Server IP Address (or Hostname)                       |
| Туре                   | Dial in, Private IP Address Assigned to Dialin User 192.168.1.200 |
| Username               | username  |
| Password               | •••••   |
| Auth. Type             | Chap(Auto) 🔽 👍  |
| Idle Timeout           | 0 minutes 5   |
| IPSec                  | ✓ Enable  |
| Authentication         | MD5 💌   |
| Encryption             | 3DES 🔽  |
| Perfect Forward Secrec | None 🖌  |
| Pro-charad Kay         | 12345678  |

| Item | Function  |               | Description  |
|------|---|---------------|--|
| 1    | Connection Name                                   | VPN_L2TP      | Given a name of L2TP connection  |
|      | Dial in   |               | Check Dial in  |
| 2    | Private IP Address<br>Assigned to<br>Dialing User | 192.168.1.200 | An assigned IP address for the remote worker   |
| 2    | Username  | username      | Input username & password to authenticate  |
| 3    | Password  | 123456        | remote worker  |
| 4    | Auth.Type   | Chap(Auto)    | Keep as default value in most of the cases.  |
| 5    | Idle Timeout                                      | 0             | The connection will be disconnected when there<br>Is no traffic in a predefined period of time. Idle<br>time <b>0</b> means the connection is always-on. |
|      | IPSec   |               | Enable for enhancing your L2TP VPN security.   |
|      | Authentication                                    | MD5           |  |
| 6    | Encryption  | 3DES          |  |
| Ŭ    | Perfect Forward<br>Secrecy                        | None          | Both sites should use the same value.  |
|      | Pre-shared Key                                    | 12345678      |  |

# Configuring Remote Worker for Dial-out to the Router

| Step 1<br>Select "New Connection Wizard" to<br>create a VPN-L2TP dial out service.                                    | Programs   •     Documents   •     Settings   •     Settings   •     Printers and Faxes   •     Image: Programs   •     Printers and Faxes   •     Image: Programs   •     Printers and Faxes   •     Printers and Start Menu   •     Isade real Connection   •     Printers and Start Menu   •     Isade real Connection   •     Wireless Network Connection   •     Wireless Network Connection   •     Image: Printers   |
|---|---|
| Step 2<br>Click <u>Next</u> > to the next step.   | New Connection Wizard     Image: Second |
| Step 3<br>Check "Connect to the network at my<br>workplace" radio button.<br>Click <u>Next &gt;</u> to the next step. | New Connection Wizard     Network Connection Type<br>What do you want to do?     © Connect to the Internet<br>Connect to the Internet<br>Connect to the Internet so you can browse the Web and read email.     © Connect to the network at my workplace<br>Connect to a business network (using dial-up or VPN) so you can work from home,<br>a field office, or another location.     © Set up a home or small office network<br>Connect to an existing home or small office network or set up a new one.     © Set up an advanced connection<br>Connect directly to another computer using your serial, parallel, or infrared port, or<br>set up this computer so that other computers can connect to it. <a href="#"></a>  |

| Step 4  | New Connection Wizard       Network Connection       How do you want to connect to the network at your workplace?   |
|---|---|
| Check "Virtual Private Network<br>connection" radio button.   | Create the following connection:<br>Dial-up connection<br>Connect using a modem and a regular phone line or an Integrated Services Digital<br>Network (ISDN) phone line.                              |
| Click <b>Next &gt;</b> to the next step.  | Wirtual Private Network connection<br>Connect to the network using a virtual private network (VPN) connection over the<br>Internet.   |
|   | < <u>Back</u> <u>N</u> ext> Cancel  |
| Step 5  | New Connection Wizard       Connection Name       Specify a name for this connection to your workplace.   |
| Give a name to the L2TP connection.   | Type a name for this connection in the following box.<br>Company Name   |
| Click <u><b>Next &gt;</b></u> to the next step.   | VPN L2TP<br>For example, you could type the name of your workplace or the name of a server you<br>will connect to.  |
|   | < <u>B</u> ack <u>N</u> ext> Cancel   |
| Step 6  | Vew Connection Wizard       VPN Server Selection       What is the name or address of the VPN server?   |
| Input VPN-L2TP Server's IP address. You can use Host name, only if the DDNS function is enabled in the Router. Refer to the user manual for more detail. Click <u>Next &gt;</u> to the next step. | Type the host name or Internet Protocol (IP) address of the computer to which you are<br>connecting.<br><u>H</u> ost name or IP address (for example, microsoft.com or 157.54.0.1 ):<br>61.56.158.112 |
|   | < <u>Back</u> Cancel  |

| Step 7<br>Click Finish to the next step.                                  | New Connection Wizard     Image: Completing the New Connection Wizard     You have successfully completed the steps needed to create the following connection:     VPN L2TP     • Share with all users of this computer     The connection will be saved in the Network.     Connections folder.     Image: |
|---|--|
| Step 8  | Network Connections     Eile Edit View Favorites Iools Advanced Help     Address S Network Connections   |
| Open Network Connections and double click on the VPN L2TP icon.           | LAN or High-Speed Internet   |
| Step 9  | VPN L2TP Properties Reneral Options Security Networking Advanced   |
| Select "Networking" tab, and change<br>"Type of VPN" to "L2TP IPSec VPN". | Type of VPN:     Automatic     PPTP VPN     L2TP IPSec VPN     This connection uses the following items:     Image: Internet Protocol (TCP/IP)     Image: QoS Packet Scheduler     Image: QoS Pac  |

|  | 🗢 VPN L2TP Properties 🛛 🛜 🔀  |
|--|--|
| Step 10  | General Options Security Networking Advanced   |
| Select "Security" tab.<br>Click IPSec Settings to the next<br>step.  | Security options<br>Typical (recommended settings)<br>Validate my identity as follows:<br>Require secured password<br>Automatically use my Windows logon name and<br>password (and domain if any)<br>Require data encryption (disconnect if none)<br>Require data encryption (disconnect if none)<br>Advanced (custom settings)<br>Using these settings requires a knowledge Settings<br>IPSec Settings  |
|  | OK Cancel  |
| Step 11  | IPSec Settings   |
| Input pre-shared key.<br>Note: This pre-shared key must be identical as<br>set up in the Router.<br>Click OK to the next step. | ✓ Lise pre-shared key for authentication<br>Key: 12345678<br>OK Cancel   |
| Step 12  | BILLION Properties Repeated  |
| Click OK to continue.  | General uppions   Security options     Image: Security options   Image: Security option     Image: Security option option   Image: Security option (disconnect if none)     Image: Security protocols   Image: Security option (disconnect if none)     Image: Security protocols   Image: Security option (Security protocols)     Image: Security protocols   Settings     Image: Description (Security protocols)   Image: Security protocols     Image: Description (Security protocols)   Image: Security protocols |

| Step 13  |  | Connect VPN I                     | L2TP ? 🔀  |
|--|--|-----------------------------------|---|
| User name and Password should be identical as set up in Router. (See Item 3) |  |                                   |   |
| Click <b>Connect</b> to establish a connection to your VPN-L2TP Server.      |  |                                   |   |
| Completed!   |  | <u>U</u> ser name:                | username  |
|  |  | Password:                         | •••••   |
|  |  | Save this us<br>Me only<br>Anyone | er name and password for the following users:<br>who uses this computer<br>Cancel Properties <u>H</u> elp |

## **Configuring a Remote Access L2TP VPN Dial-out Connection**

A company's office establishes a L2TP VPN connection with a file server located at a separate location. The router is installed in the office, connected to a couple of PCs and Servers.



# Configuring the L2TP VPN in the Office

| L2TP                         |                |  |             |        |
|------------------------------|----------------|--|-------------|--------|
| <b>Remote Access Connect</b> | ion            |  |             |        |
| Connection Name              | VPN_L2TP       |  |             | $\sim$ |
| Tuno                         | ⊙ Dial out,    | Server IP Address (or Hostname)  | 69.121.1.33 | 2      |
| туре                         | ◯ Dialin,      | Private IP Address Assigned to Dialin User   |             |        |
| Username                     | username       |  |             |        |
| Password                     | •••••          |  |             |        |
| Auth. Type                   | Chap(Auto) 🗸 4 | _  |             |        |
| Idle Timeout                 | <u> </u>       | 5  |             |        |
| IPSec                        | 🗹 Enable       | the second s |             |        |
| Authentication               | MD5 💌          | ·····  |             |        |
| Encryption                   | 3DES 🔽         | 6  |             |        |
| Perfect Forward Secrecy      | None           | ▼  |             |        |
| Pre-shared Key               | 12345678       |  |             |        |
| Apply                        | •••••••••      |  |             |        |

| Item | Function                           |             | Description  |
|------|------------------------------------|-------------|--|
| 1    | Connection Name                    | VPN_L2TP    | Given name of L2TP connection  |
|      | Dial out                           |             | Check Dial out   |
| 2    | Server IP Address<br>(or Hostname) | 69.121.1.33 | An Dialed server IP  |
| 2    | Username                           | username    | A given upername & papeword  |
| 3    | Password                           | 123456      | A given usemanie & password  |
| 4    | Auth.Type                          | Chap(Auto)  | Keep as default value in most of the cases.  |
| 5    | Idle Timeout                       | 0           | The connection will be disconnected when there Is no traffic in a predefined period of time. Idle time <b>0</b> means the connection is always-on. |
|      | IPSec                              |             | Enable for enhancing your L2TP VPN security.   |
|      | Authentication                     | MD5         |  |
| 6    | Encryption                         | 3DES        |  |
|      | Perfect Forward<br>Secrecy         | None        | Both sites should use the same value.  |
|      | Pre-shared Key                     | 12345678    | 1  |

#### Configuring the your Router to Dial-in to the Server

Currently, Microsoft Windows operation system does not support L2TP incoming service. Additional software may be required to set up your L2TP incoming service.

## Configuring a LAN-to-LAN L2TP VPN Connection

The branch office establishes a L2TP VPN tunnel with head office to connect two private networks over the Internet. The routers are installed in the head office and branch office accordingly.





## Configuring L2TP VPN in the Head Office

The IP address 192.168.1.200 will be assigned to the router located in the branch office. Please make sure this IP is not used in the head office LAN.

| L2TP                    |                |  |                 |
|-------------------------|----------------|--|-----------------|
| LAN to LAN              |                |  |                 |
| Connection Name         | HeadOffice     |  |                 |
| Тиро                    | ◯ Dial out,    | Server IP Address (or Hostname)  |                 |
| Type                    | ⊙ Dial in,     | Private IP Address Assigned to Dialin User   | 192.168.1.200   |
| Peer Network IP         | 192.168.0.0    | Netmask  | 255.255.255.0 3 |
| Username                | username 📿     | +)   |                 |
| Password                | •••••          |  |                 |
| Auth. Type              | Chap(Auto) 🔽 🤙 |  |                 |
| Idle Timeout            | 0 minutes e    |  |                 |
| IPSec                   | 🗹 Enable       | ····   |                 |
| Authentication          | MD5 💌          | and the second |                 |
| Encryption              | 3DES 🔽         | 7  |                 |
| Perfect Forward Secrecy | None           | ▼ ,  |                 |
| Pre-shared Key          | 12345678       |  |                 |
| Apply                   | ••••••••••     |  |                 |

| Item | Function  |               | Description  |
|------|---|---------------|--|
| 1    | Connection Name                                   | HeadOffice    | Given a name of L2TP connection  |
|      | Dial in   |               | Check Dial in  |
| 2    | Private IP Address<br>Assigned to<br>Dialing User | 192.168.1.200 | IP address assigned to branch office network   |
| 2    | Peer Network IP                                   | 192.168.0.0   | Branch office network  |
| 3    | Netmask   | 255.255.255.0 |  |
| 1    | Username  | username      | Input username & password to authenticate branch   |
| -    | Password  | 123456        | office network   |
| 5    | Auth.Type   | Chap(Auto)    | Keep as default value in most of the cases.  |
| 6    | Idle Timeout                                      | 0             | The connection will be disconnected when there Is no traffic in a predefined period of time. Idle time <b>0</b> means the connection is always-on. |
|      | IPSec   |               | Enable for enhancing your L2TP VPN security.   |
|      | Authentication                                    | MD5           |  |
| 7    | Encryption  | 3DES          |  |
|      | Perfect Forward<br>Secrecy                        | None          | Both sites should use the same value.  |
|      | Pre-shared Key                                    | 12345678      |  |

## Configuring L2TP VPN in the Branch Office

The IP address 69.1.121.30 is the **Public IP** address of the router located in head office. If you registered the DDNS (please refer to the **DDNS** section of this manual), you can also use the domain name instead of the IP address to reach the router.

|     | L2TP                    |                  |  |               |     |  |  |
|-----|-------------------------|------------------|--|---------------|-----|--|--|
|     | LAN to LAN              |                  |  |               |     |  |  |
|     | Connection Name         | BranchOffice 🛛 🚺 |  |               |     |  |  |
|     | Tuno                    | 💿 Dial out,      | Server IP Address (or Hostname)  | 69.121.1.33   | (2) |  |  |
|     | Type                    | ◯ Dial in,       | Private IP Address Assigned to Dialin User   |               |     |  |  |
|     | Peer Network IP         | 192.168.1.0      | Netmask  | 255.255.255.0 | 3   |  |  |
|     | Username                | username 4       |  |               | Ŭ   |  |  |
|     | Password                | •••••            |  |               |     |  |  |
|     | Auth. Type              | Chap(Auto) 🔽 😏   |  |               |     |  |  |
|     | Idle Timeout            | 0 minutes 6      |  |               |     |  |  |
|     | IPSec                   | Enable           | ···  |               |     |  |  |
|     | Authentication          | MD5 💌            | a second and a second |               |     |  |  |
|     | Encryption              | 3DES 🔽           | 7  |               |     |  |  |
|     | Perfect Forward Secrecy | None             |  |               |     |  |  |
| ••• | Pre-shared Key          | 12345678         |  |               |     |  |  |
|     | Apply                   | ••••••••         |  |               |     |  |  |

| Item | Function                           |               | Description  |
|------|------------------------------------|---------------|--|
| 1    | Connection Name                    | BranchOffice  | Given a name of L2TP connection  |
| 2    | Dial out                           |               | Check Dial out   |
|      | Server IP Address<br>(or Hostname) | 69.121.1.33   | IP address of the head office router (in WAN side)   |
| 3    | Peer Network IP                    | 192.168.1.0   | Head office network  |
|      | Netmask                            | 255.255.255.0 |  |
| 4    | Username                           | username      | Input username & password to authenticate branch office network  |
|      | Password                           | 123456        |  |
| 5    | Auth.Type                          | Chap(Auto)    | Keep as default value in most of the cases.  |
| 6    | Idle Timeout                       | 0             | The connection will be disconnected when there Is no traffic in a predefined period of time. Idle time <b>0</b> means the connection is always-on. |
| 7    | IPSec                              |               | Enable for enhancing your L2TP VPN security.   |
|      | Authentication                     | MD5           | Both sites should use the same value.  |
|      | Encryption                         | 3DES          |  |
|      | Perfect Forward<br>Secrecy         | None          |  |
|      | Pre-shared Key                     | 12345678      |  |