

**Lucent Technologies**  
Bell Labs Innovations



# IPSec Client User's Guide

Document Number: 260-100-026R9.0  
Software Release: 9.0.0  
August 2006

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## **IPSec Client User's Guide**

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In rare instances, unauthorized individuals make connections to the telecommunications network through the use of access features.

### **Additional Product information and Training**

You can order the most up-to-date product information and computer-based training online at <http://www.lucent8.com/>.

### **IPSec Client User's Guide**

Document Number: 260-110-004

Software Release 9.0.0

August 2006

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# Introducing Lucent IPsec Client



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## Welcome to Lucent IPsec Client Release 9.0.0

Lucent Technologies IPsec Client enables secure communications between your computer and a remote network. IPsec Client can authenticate you to the remote network and encrypt the information you send to and decrypt the information you receive from the remote network, which enables you to use the Internet for secure communications. The encrypted pathway is called a tunnel and the end-to-end connection is called a virtual private network (VPN).

For information about new features and known issues in this software release, refer to the release notes provided with the software.

## VPNs, Tunnels, and Secure Networking

A VPN is simply a path through a network, for example, between a laptop computer in your home, across the Internet, to a VPN gateway at your corporate home office. Behind the VPN gateway (also called the tunnel endpoint) are the enterprise servers and other computers that you access to transact business. Although the packets of information travel through the unsecured pathways of the Internet, the two tunnel endpoints employ data encryption, which makes the communications secure.

### What is IPsec?

IPsec (Internet Protocol Security) is a set of extensions to the IP protocol family. It provides cryptographic security services. These services allow for authentication, integrity, access control, and confidentiality.

IPsec is a developing standard for security at the network or packet processing layer of network communication. It defines how to create secure communications over a publicly accessible network. IPsec provides two types of security:

- Authentication — A method that allows the two endpoints of a tunnel to verify their identity to each other.
- Encryption — A method of changing the data portion of a packet so that its contents are unintelligible unless you have the correct key to decrypt the data.



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# Installing IPsec Client

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## Before You Begin

Before you begin the installation, make sure your computer is equipped with the necessary hardware components and software programs to run IPsec Client properly.



**Note:** Version 5.0.0 and above do not support upgrading from previous releases. You must uninstall all previous versions and reboot your PC prior to installing IPsec Client 9.0.0.

## Requirements

You can install *IPsec Client* on a computer that meets any of the following installation environments:

- Windows 98 SE and Windows ME
  - Processor: Pentium class or higher
  - Memory (RAM): 32 MB (minimum); 64 MB (recommended)
  - Free disk space: 16 MB
- Windows NT Workstation 4.0 with Service Pack 6a
  - Processor: Pentium II 133 MHz or higher
  - Memory (RAM): 32 MB (minimum); 64 MB (recommended)
  - Free disk space: 16 MB
- Windows 2000 Professional with Service Pack 2
  - Processor: Pentium II 133 MHz or higher
  - Memory (RAM): 64 MB (minimum); 128 MB (recommended)
  - Free disk space: 16 MB
- Windows XP Professional and Home Edition
  - Processor: Pentium II 300 MHz or higher
  - Memory (RAM): 64 MB (minimum); 128 MB (recommended)
  - Free disk space: 16 MB

## Installing IPsec Client

### Installing IPsec Client

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Check the documentation that comes with your computer if you are not sure if it is properly equipped. You can also double-click on the System icon in the Windows Control Panel.

To see if you have enough disk space available, select the appropriate disk drive in the Windows Explorer. The amount of free disk space appears at the bottom of the window.



**Note:** IPsec Client is no longer supported on Windows 95, Windows 98 versions 4.10.1998 or earlier, and any server type operating system.

## Installing IPsec Client

The procedure below explains how to install Release 9.0.0 of IPsec Client on your computer.



**Note:** IPsec Client version 9.0.0 supports the Mobile IP Client from ipUnplugged. In order to make IPsec Client work with the Mobile IP Client, a specific installation procedure is required. For detailed information, refer to the Release Notes provided with the software.

- 1 To install IPsec Client from the CD-ROM, insert the CD-ROM into the computer's CD-ROM drive and close the door. Installation begins automatically.

To install IPsec Client from a network drive, locate the file **ipsec-9.0.0.exe** and then double-click it.

If you are installing IPsec Client from an intranet web interface, click the link and then respond to the prompts on the screen.

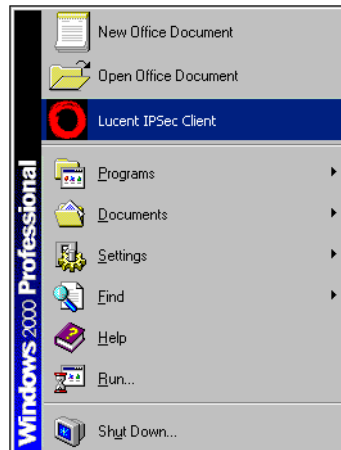
- 2 The first window to appear is the **Choose Destination Location** window, which allows you to select the directory in which the IPsec Client files will be installed. We recommend you accept the default directory.

Once the installation is complete and your computer restarted, you are ready to begin using the IPsec Client. Reboot is not required for Windows 2000 and Windows XP.



## Starting IPsec Client

The installation program adds an entry to your Windows Start menu. Launch IPsec Client from the Start menu to configure a new tunnel or connect through an existing tunnel.



The installation program also puts an icon in the area of the task bar known as the tray, which can appear along the bottom or vertically along the right side of your Windows desktop.

The icon that appears depends on several factors:

- Off-line Non-Block All. If a tunnel is not currently enabled and you have not enabled the IPsec Client internal firewall policy to Block All Clear Text Traffic, the icon appears with a white background.



- Off-line Block All. If a tunnel is currently enabled and IPsec Client internal firewall policy is not set to Block All Clear Text Traffic the icon appears with a black background.



- On-line Block All. If a tunnel is currently enabled and your IPsec Client internal firewall policy set to Block All Clear Text Traffic a lock icon with a black center appears.



- On-line Non-Block All. If a tunnel is currently enabled and you have not enabled the IPsec Client internal firewall to Block All Clear Text Traffic a lock icon with a yellow center appears.



## Uninstall IPsec Client

To uninstall IPsec Client:

- 1 On the Windows task bar, click **Start > Settings > Control Panel** to open the Windows Control Panel.
- 2 To open the Add/Remove Programs window, double-click **Add/Remove Program**.
- 3 Locate IPsec Client in the program list and click it to select it.
- 4 Click **Add/Remove**, and then click **OK** in the pop-up confirmation box to remove IPsec Client.
- 5 Reboot your machine.

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# Using IPsec Client



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Once you have installed the required software and restarted your computer you are ready to begin using IPsec Client to enable a VPN tunnel. The following information explains how to set up and enable tunnels and how to configure IPsec Client for your operating environment.

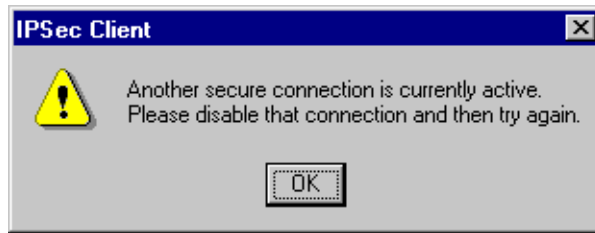
## Tunnels

A tunnel establishes secure communications between two points to form a Virtual Private Network (VPN). Your tunnel or network administrator must provide the information that you enter the first time you enable a tunnel. After you have enabled a tunnel for the first time, you can reuse it.

Before you can enable a new tunnel, you need connection information about the network you are connecting to. The information your VPN network administrator must provide depends on whether or not you will be using a digital certificate. For security reasons, you cannot enable a tunnel until your identity has been authenticated. A user ID and a digital certificate is one way to establish your credentials. A digital certificate is an electronic “ticket” issued by a trusted Certificate Authority that establishes that you are who you say you are. If you do not use a Digital Certificate, you must specify a user ID, a password, and a group key to establish your identity.

## Multiple Tunnels

IPsec Client does not allow you to enable two tunnels at the same time, even to different endpoints because your system would have no way to determine which data to send through each tunnel. If you attempt to enable a second tunnel while a first tunnel is still enabled you see the following error message:



## Enabling a New Tunnel

To enable a new tunnel, you need the following:

- The IP address of the tunnel endpoint (the network you want to connect to)
- A valid user name and password on the destination network
- A Group Key (an alphanumeric value provided by your network administrator)



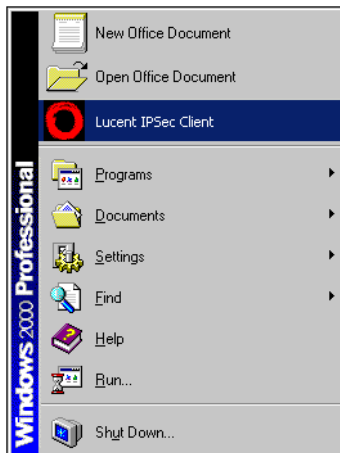
**Note:** The Password and Group Key are case sensitive.

- Optionally, a digital certificate

If your network policies require a digital certificate (a file that verifies your identity), you must have already obtained the certificate files from your network administrator and installed them on your computer. (See "[Obtaining an Entrust Digital Certificate](#)" on page 17.)

### To enable a new tunnel:

- 1 On the Windows **Start** menu, click the IPsec Client icon.



- 2 On the IPsec Client menu bar, click **Secure Connection > Enable New**, or right-click the client window and then click on **Enable New** to open the Enable Secure Connection dialog.
- 3 Enter the following information:

**Tunnel Name** — A name to identify this tunnel, up to 20 characters.

**Primary Tunnel End Point** — The tunnel endpoint IP address given to you by your VPN network administrator. If your VPN network administrator gave you a backup address, enter that in the **Secondary Tunnel End Point** field.

**User Identity** — The user ID your VPN network administrator gave you. If you are using a Digital Certificate, enable the **Digital Certificate** check box to display a **Find** button next to the User Identity box. Click the Find button to select your digital certificate instead of typing a User Identity:

User Identity:

**Password** — The password your VPN network administrator gave you. If you are using a SecureID token, enter your PIN followed by the current token number.

**Group Key** — The group key your VPN network administrator provided. The Group Key box is not used if you are using a Digital Certificate.

- 4 If the **Save Password** check box is available, you can save your password by enabling the check box.

When enabled, the Save Password feature enables you to activate this tunnel without entering your password each time. If the check box is dimmed, your VPN network administrator has disabled this feature.



**Note:** If you are using a SecureID token, *do not* enable the Save Password box. Because a SecureID token number changes, you must enter the tunnel password manually each time you enable the tunnel.

- 5 If your VPN network administrator indicated that this tunnel uses UDP encapsulation, do the following:
  - a Click **Advanced...** button to open the Advanced Connection Options dialog.
  - b In the **Connect via** box, select **UDP-Encapsulate**.
  - c Change the UDP Port if your VPN network administrator has given you a port other than 501. All ports from 1 - 65535 (except 500) are valid.
  - d Click **OK**.
- 6 Click **Enable** to enable the tunnel.

When the tunnel has been successfully enabled, a window appears to verify that the tunnel has been enabled. The entry in the IPsec Client window shows the name of the tunnel, the user ID you entered when enabling the tunnel, and the primary and secondary tunnel endpoints. An asterisk indicates the active endpoint.

The Status column shows that the tunnel is Enabled. If you disable the tunnel, no entry appears in the Status column.

In addition, the logo in the task bar changes depending on the firewall policy.

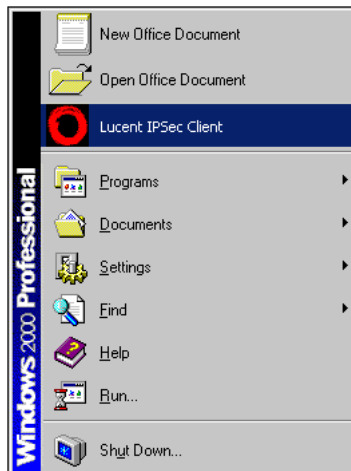
You can leave the IPsec Client window open, minimize it, or close it completely — you do not need to keep the window open to keep the tunnel enabled. If you minimize the IPsec Client window, an icon representing IPsec Client appears in the Windows task bar.

Once the tunnel is enabled, you can log into your company's network and transact business securely. You can access network resources through a browser, or by using a non-browser based network utility such as FTP or TELNET.

## Enabling an Existing Tunnel

To enable an existing tunnel:

- 1 Start IPsec Client. On the Windows **Start** menu, click the IPsec Client icon.



- 2 Double-click the name of the tunnel you want to enable.  
or  
Click the tunnel to highlight it. On the menu bar, click **Secure Connection > Enable**, or right-click the highlighted tunnel and then click **Enable** to open the Enable Secure Connection dialog.
- 3 If you clicked the Save Password check box when initially enabling this tunnel, your password appears in the Password field, and you do not have to enter it. If you did not activate the Save Password feature, enter your password in the Password field.
- 4 Click **Enable**.
- 5 Click **OK** to dismiss the verification window. The tunnel appears in the IPsec Client window with **Enabled** in the Status column.

## Re-enabling a Tunnel

Your VPN network administrator can limit the amount of time that a tunnel can remain enabled. A message appears on your screen five minutes before a tunnel is scheduled to expire. You can re-enable the tunnel during this five-minute period.

To re-enable a tunnel prior to timeout:

- 1 On the Lucent IPsec Client window, click the name of the tunnel once to highlight it.
- 2 On the menu bar, click **Secure Connection > Enable**, or right-click the highlighted tunnel and then click **Enable**.
- 3 If you enabled the **Save Password** check box when you initially enabled this tunnel, your password appears in the Password box, and you do not have to enter it. If you did not activate the Save Password feature, enter your password in the **Password** box.
- 4 Click **Enable**.

A window message appears to indicate that the tunnel has been successfully enabled. Note that the tunnel has a new expiration date and time.

## Disabling a Tunnel

To disable an active tunnel:

- 1 On the Lucent IPsec Client window, double-click the name of the active tunnel you want to disable to open the Disable Secure Connection window. Alternatively, single-click the active tunnel you want to disable and select **Secure Connection > Disable** on the menu bar or right-click the highlighted tunnel you want to disable.
- 2 Click **Disable**. A window appears indicating the tunnel has been disabled.
- 3 Click **OK** to dismiss the pop-up window and complete the disable process.

## Deleting a Tunnel

Once a tunnel is enabled, it remains in the IPsec Client window, even if it is inactive. If a particular tunnel is no longer used, you might want to remove it from the IPsec Client window.

To delete a tunnel:

- 1 On the Lucent IPsec Client window, click the name of the tunnel once to highlight it
- 2 On the menu bar, click **File > Delete**.

## Save and Restore Tunnel Configurations

To save or restore tunnel configurations:

- 1 Click **File > Tunnel Configuration > Save** to save a tunnel configuration.
- 2 Click **File > Tunnel Configuration > Restore** to restore a tunnel configuration.

## Setting Up a Manual Tunnel

The device that serves as the other tunnel endpoint can be a Lucent VPN Gateway or another Lucent router product . If it is one of the Lucent router products , your VPN network administrator must provide configuration files that you import into IPsec Client. The configuration file import must be performed once for each tunnel.

To manually configure a tunnel:

- 1 Copy the file(s) that your VPN network administrator gave you into the following directory:  
c:\Program Files\IPsec Client\Data
- 2 On the IPsec Client window, click **File > Import Files** to open the Import Files dialog.
- 3 To import the tunnel configuration files, provide the following information:  
**Tunnel Name** — Every tunnel must have a unique name to identify it. The name can contain up to 20 characters.

**SecureConnect FW** — One of the files your VPN network administrator gave you had a .fw extension. Click the **Browse** button, locate the file, and enter it in the SecureConnectFW box.

**Config File** — If you were given a file with a .cfg extension by your VPN administrator, click the Browse button, locate the file, and enter it in this field. If you were not given a .cfg file, ignore this field.

4 Click **OK**.

After you click **OK** to dismiss the confirmation window, an entry for the tunnel appears in the IPsec Client window with a user ID of (*Manual*). The Status column is blank, which indicates that this tunnel has not yet been enabled. You must enable the tunnel before you can use it. See “[Enabling an Existing Tunnel](#)” on page 14.

## Digital Certificates

A digital certificate provides identification in the electronic world. Issued by trusted third parties called Certification Authorities (CA), digital certificates cannot be forged or tampered with. The Certificate Authorities keep track of the digital certificates to enable people to access network resources in a secure confidential manner. You install the digital certificate on your computer. The digital certificate verifies your identity when you enable a VPN tunnel.

Digital certificate authentication is optional in Lucent IPsec Client. If you do not receive a digital certificate from your VPN network administrator, you must use a Group Key instead.

Lucent IPsec Client supports digital certificates issued by Entrust CA/RA and VeriSign CA/RA.

- Entrust digital certificate — When you enable a tunnel for the first time, you can use the Browse button on the Enable Secure Connection dialog to browse to the directory where you put the .epf and .ini files. The .epf file is a Entrust digital certificate file.
- VeriSign digital certificate — There are two ways to specify a VeriSign digital certificate. The digital certificate can be saved in the Microsoft CAPI Store, either in the Current User Store or Local Machine Store. The preference is the Local Machine Store. The digital certificate can be also saved as a file. The file can be either a PCKCS# 12 format file (.p12) or a .Pfx file.



**Note** Lucent IPsec Client supports VeriSign digital certificate in the Windows 2000 and above.

## Entrust Secure USB Tokens

Entrust Secure USB Tokens provide a strong two-factor-authentication for VPN connections. Entrust USB Tokens are SafeNet iKey 2032 Tokens. In Lucent IPsec Client, an Entrust digital certificate can be saved in an Entrust USB Token during digital certificate enrollment. A digital certificate can also be retrieved from an Entrust USB Token device during VPN tunnel creation.



**Note** Lucent IPsec Client supports Entrust USB Tokens in the Windows 2000 and above.



## Certificates Store (CAPI Store)

In Lucent IPsec Client, a VeriSign digital certificate can be saved to and retrieved from Microsoft Certificate Store. The digital certificate store is also called CAPI Store. There are two ways to save your digital certificate into the CAPI Store:

- Web based VeriSign digital certificate enrollment. We will talk about the details later.
- Import a PKCS# 12 (.pfx) certificate file into CAPI Store.

## Obtaining an Entrust Digital Certificate

There are two ways to obtain an Entrust Digital Certificate:

- The digital certificate can be given to you by your VPN network administrator. You will be given, along with tunnel endpoint addresses and a password, two files that you copy into a directory on your hard drive, a .epf file and a .ini file.

If your VPN network administrator gives you the certificate, you get two files that have the same name but different file extensions, one will have the .epf extension and the other the .ini extension. Copy these two files into a directory on the hard disk of your computer.

You can use any directory you like, but both files must be located in that directory. We recommend that you use the installation Data directory:

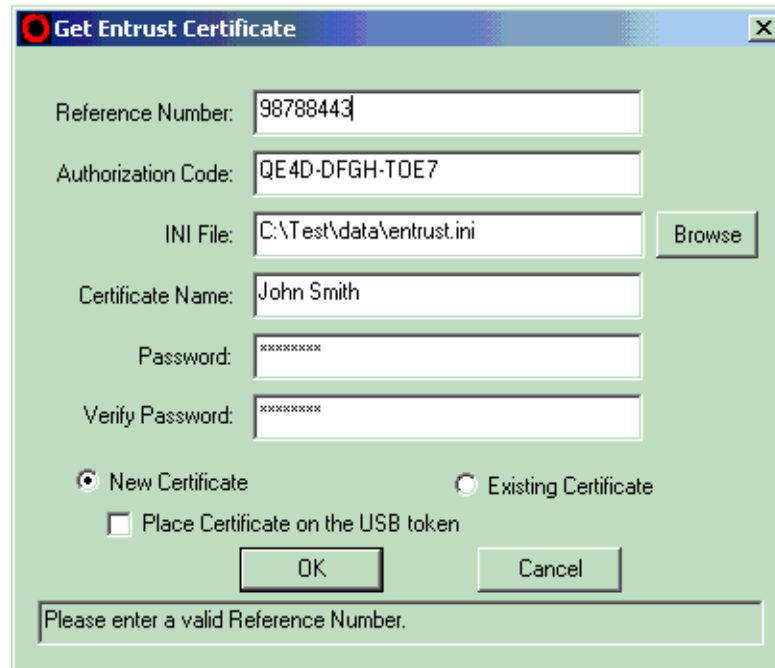
c: \Program Files\ IPsec Client\Data

- You can obtain the Digital Certificate electronically. If your VPN network administrator gives you the information to obtain the certificate electronically, you will get:
  - Primary tunnel endpoint address
  - Secondary tunnel endpoint address (optional)
  - Authorization code
  - Reference number
  - One .ini file

To obtain a Digital Certificate electronically:

- 1 Open the IPsec Client Window.

- 2 On the menu bar, click **File > Get Entrust Certificate** to open the Get Entrust Certificate.



- 3 Enter the reference number and authorization code that your VPN network administrator gave you in the appropriate boxes.
- 4 Enter the full pathname of the **ini** file your VPN network administrator gave you in the **INI File** box, or click **Browse**, locate the file, and select it.
- 5 Enter the name of the certificate in the **Certificate Name** box. You can enter any name you choose.
- 6 Enter a password in the **Password** box and in the **Verify Password** box. The password must meet these requirements:
  - At least eight characters. At least one of the characters must be an upper case letter or a digit, and at least one other character must be a lower case letter.
  - It must not be the same as the certificate name.
  - It must not contain repetitive instances of the same character or group of characters.



**Note:** Keep a record of your password. You use it when you use this certificate to enable a tunnel.



**Note:** By default, the **New Certificate** button is selected. The only time you should select the other option, **Existing Certificate**, is if you have a certificate and are encountering problems using it. In this case, your VPN network administrator might ask you to re-enter some of the certificate information, which would require that you select Existing Certificate.

- 7 Click **OK**. In a few seconds, a digital certificate is downloaded to the installation directory, typically, C:\Program Files\IPsec Client\Data.

You can now use this certificate to enable a tunnel.

## Entrust USB Tokens Digital Certificate Enrollment

In order to obtain an Entrust digital certificate and place it in an Entrust USB Tokens you need do the followings:

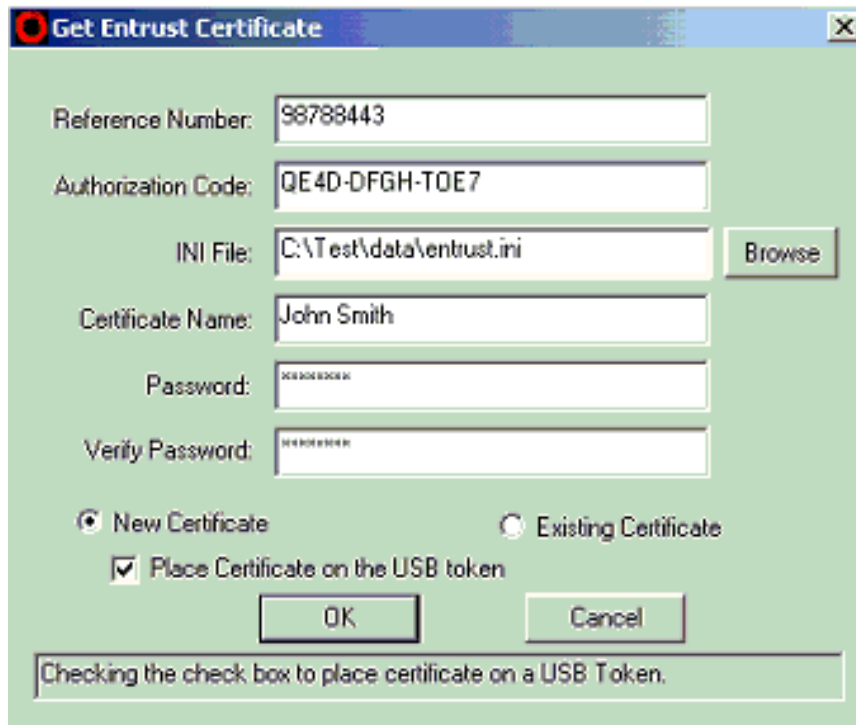
- Entrust USB Tokens and software installation.
  - Obtain a physical Entrust USB Tokens device.
  - Install Entrust USB Tokens software (iKey 2000 Software). Please refer to the Entrust USB Tokens User Guide for details.
  - Initialize your USB Tokens. After the USB Token software is installed, your USB Token must be initialized using the CIP Utilities program. Please refer to the Entrust USB Tokens User Guide for details.
  - Personalize your USB Token. You need to personalize your USB Token by setting your private passphrase. The passphrase will allow you, and only you, to get access to the data on your USB Token.

Now you are ready to do your USB Token digital certificate enrollment.



**Note:** In order to get Entrust Digital Certificate into your USB Token and to use it later, the .ini file your VPN network administrator gives to you must contain the following two lines, otherwise you must modify it by adding the following two lines in the “Entrust Settings” section of the .ini file:

- CryptokiLibrary95=dkck132e.dll
  - CryptokiLibraryNT=dkck132e.dll.
- Obtain an Entrust digital certificate and place it in your USB Token. Repeat the steps discussed in the Obtain a Digital Certificate electronically, above, and make sure the Place Certificate in USB Token Check box is checked.



If the Place Certificate in USB Token Check box is checked, Lucent IPsec Client will place the enrolled digital certificate in your USB Token.



**Note** If your VPN network administrator gives you a USB Token device which has the Entrust Digital Certificate already enrolled, your VPN network administrator will also give you:

- A password
- An .ini file

You must rename this .ini file "LuToken.ini". Lucent IPsec Client uses the LuToken.ini for browsing the USB Tokens and for using the USB Tokens digital certificate in the IKE negotiation.

## Obtaining a VeriSign Digital Certificate

There are two ways to obtain a VeriSign Digital Certificate:

- The digital certificate can be given to you by your VPN network administrator. You will be given, along with tunnel endpoint addresses and a password, a file that you copy into a directory on your hard drive. It is recommended that you Import the certificate by double-clicking the file. You can also use your Internet browser (Microsoft IE) or other tools to import it to CAPI Store. Launch IE Browser, click menu **Tools->Internet Options->Content**, and then click the **Certificate** button to open the Certificates utility to Import the certificate.
- Web-based enrollment. If your VPN network administrator gives you the certificate enrollment web site URL, you can get your digital certificate as follows:



## **ENROLL**

Choose this option to enroll for a client Digital ID.

- [Click this link to enroll for an IPSec Digital ID for a VPN device](#)



## **PICK UP ID** (Client certificates)

Choose this option if you enrolled for a Digital ID but did not pick it up.

**Step 1:** Click the **ENROLL** link to open the VeriSign Enrollment web page, then fill and submit the form.

After you submit the form, you may get a E-mail response from your VPN network administrator confirming your request. Your administrator eventually either approves or rejects your request based on the information you provided in your request form and the policy configured in your organization.

Following approval, your administrator will send you a E-mail containing a PIN number and a URL from where to Pick up your digital certificate.

**Step 2:** In the PICK UP ID web page, type in the PIN number and submit form. The digital certificate will then be automatically installed into your CAPI Store.

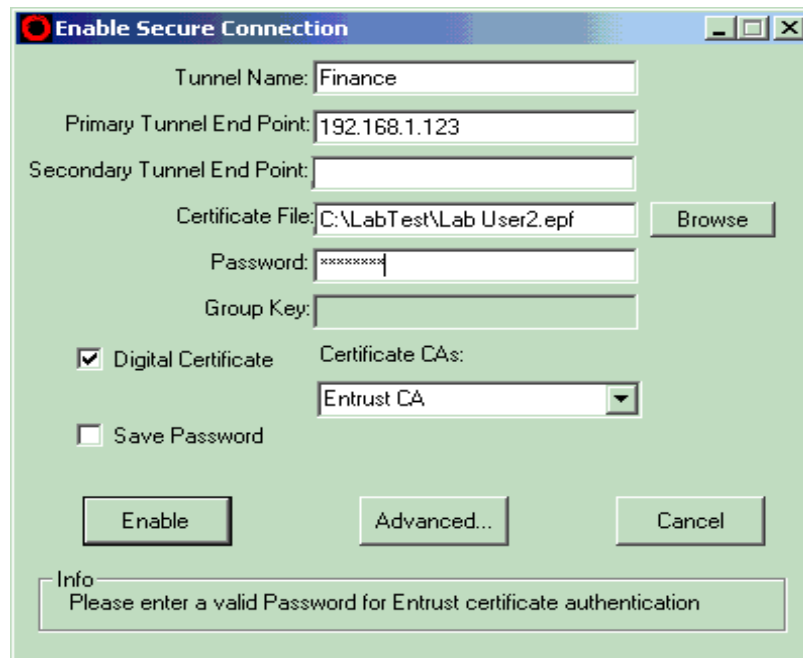
**Note:** Your VeriSign digital certificate must be exportable and must be installed on your machine (CAPI Store).



## Using an Entrust Digital Certificate

If you have not already done so, see your VPN network administrator about obtaining a digital certificate. (See “[Obtaining an Entrust Digital Certificate](#)” on page 17.)

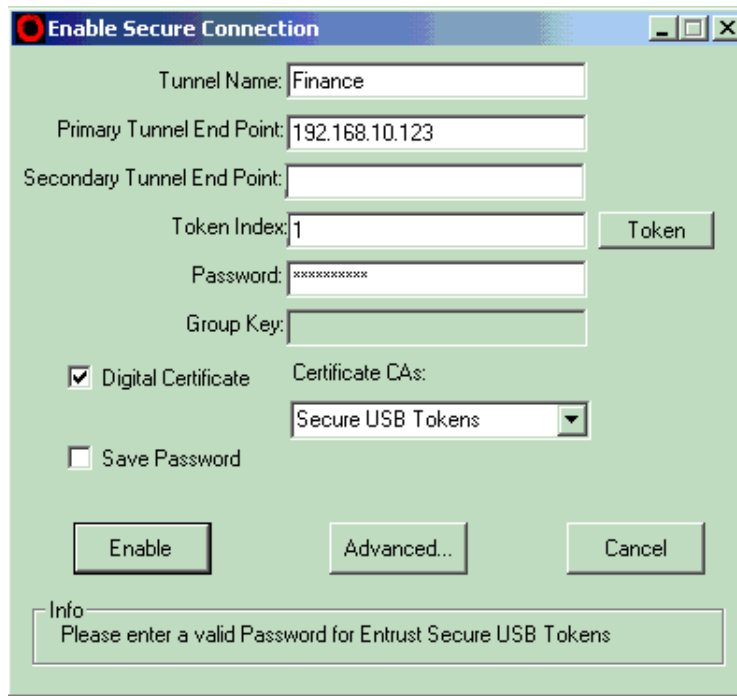
You specify the digital certificate when you enable a tunnel. You must enable the Digital Certificate check box, then select **Entrust CA** in the Authentication Types drop down list, which causes the **Find** button to appear to next to the Certificate File box and to disable the Group Key field.



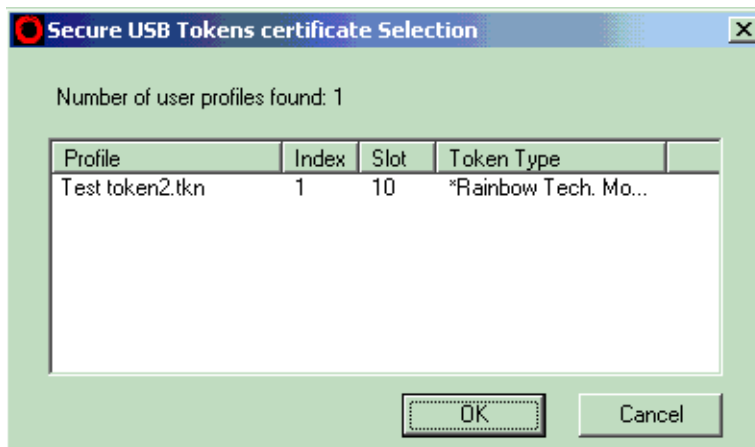
When you enable a tunnel, you can use the **Find** button on the Enable Secure Connection dialog to select a digital certificate.

## Using a Entrust USB Token Digital Certificate

You specify the digital certificate when you enable a tunnel. You must enable the Digital Certificate check box, then select **Secure USB Tokens** in the Authentication Types drop down list, which causes the **Token** button to appear next to the Token Index field and to disable the Group Key field.

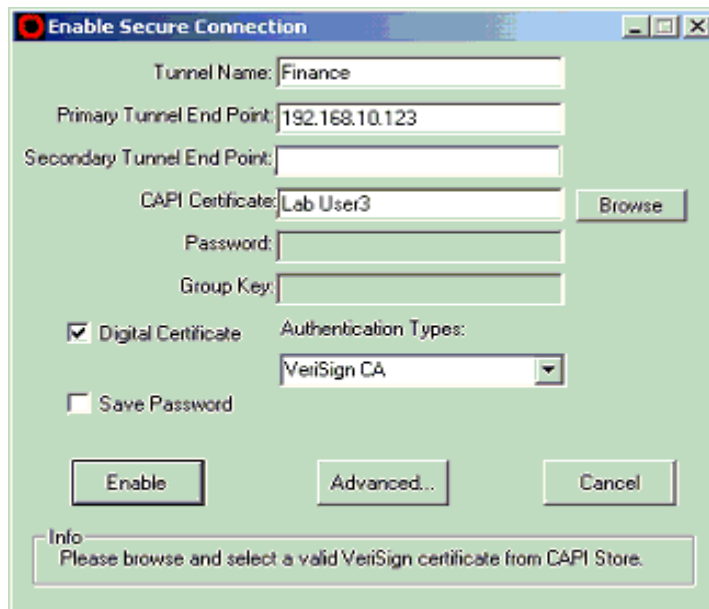


When you enable a tunnel, you can use the **Token** button on the Enable Secure Connection dialog to select a digital certificate in the USB Token.

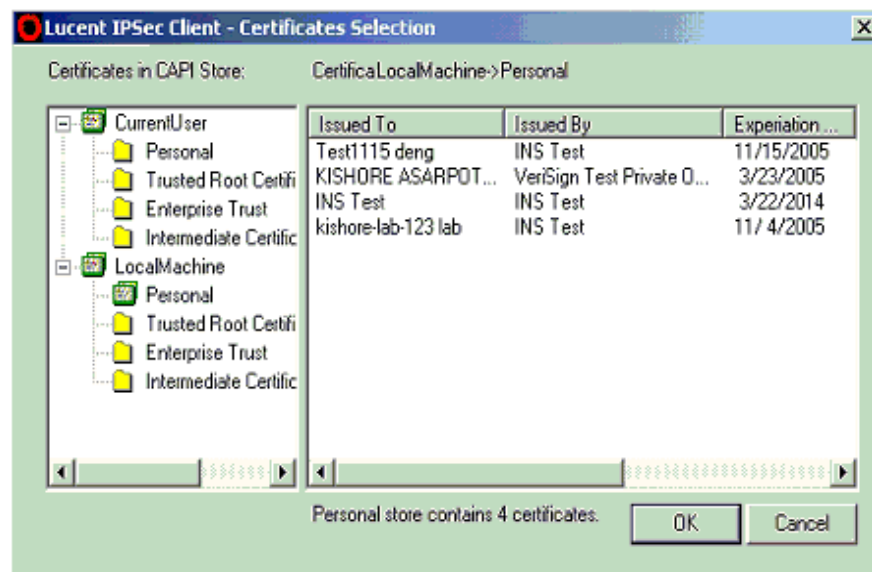


## Using a VeriSign Digital Certificate from CAPI Store

In order to use CAPI certificate, you must enable the Digital Certificate check box, then select VeriSign CA in the Certification Types drop down list, which causes the **Browse** button to appear to next to the CAPI Certificate box, and to disable the Group Key and Password fields.



When you enable a tunnel, you can use the **Browse** button on the Enable Secure Connection dialog to select a VeriSign digital certificate from CAPI Store:



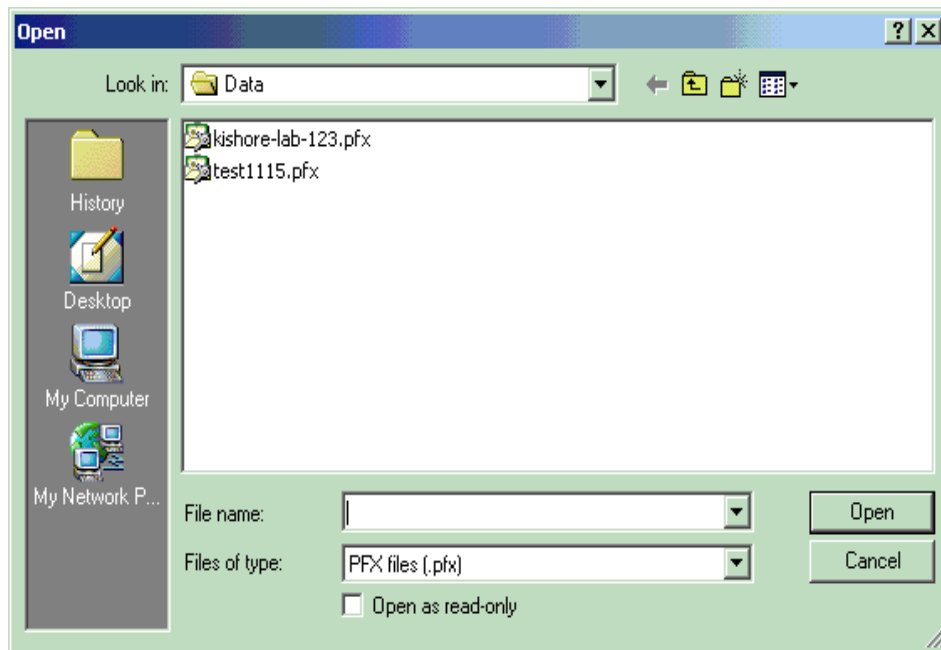


## Using a VeriSign Digital Certificate File

You can use the certificate file .p12 (.pfx), like using digital certificate in CAPI Store, by selecting *VeriSign P12 (PFX) File* in the Certification Types drop down list, which causes the file **Browse** button to appear next to the Certificate File box and to disable the Group Key field.

The screenshot shows the 'Enable Secure Connection' dialog box. The 'Certificate File' field is populated with 'abTest\data\Lab User8.p12' and has a 'Browse' button next to it. The 'Certificate CAs' dropdown menu is set to 'VeriSign P12 (PFX) File'. The 'Digital Certificate' checkbox is checked, and the 'Save Password' checkbox is unchecked. The 'Group Key' field is disabled. The 'Info' box at the bottom contains the text: 'Please browse a valid Password for VeriSign P12 certificate'.

When you enable a tunnel, you can use the **Browse** button on the Enable Secure Connection dialog to select a VeriSign PKCS# 12 format file (.p12 and .pfx).



## IPSec Client Personal Firewall

IPSec Client includes an internally built-in firewall. A firewall can help protect your computer from unwanted intrusion when it is sending and receiving traffic **outside** a tunnel. If you enable the firewall when no tunnel is enabled, the firewall filters all traffic to and from your computer. When no tunnel is enabled, all traffic to and from your computer is in clear text form, that is, unencrypted, and susceptible to interception or attack.

If you enable the firewall when a tunnel is enabled, the firewall filters only the traffic that does not go through the tunnel. There is, of course, no need to filter traffic through the tunnel, since the tunnel traffic is encrypted, and therefore secure.

You can set the type of filtering for the IPSec Client firewall:

- **Block All Clear Text Traffic** — The firewall drops all traffic to and from your computer that does not go through a tunnel. Traffic within the tunnel is allowed. This means that if no tunnel is enabled, your computer cannot communicate with any other device.

When you select this option, the tray icon becomes:



- **Allow All Traffic** — The firewall allows all inbound and outbound sessions to reach your computer, and, therefore, offers no protection.

When you select this option, the tray icon becomes:



- **Allow Client Initiated Traffic** — The firewall allows all outgoing sessions and any return sessions that are generated, but it blocks all unsolicited inbound

sessions. This means you could, for example, surf the Web and still be protected from external attack.

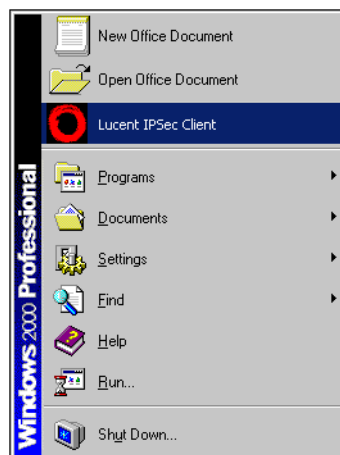


**Note:** Your VPN network administrator can specify different settings which take effect when you enable the tunnel. The Firewall policy setting in your tunnel policy override your local Firewall settings.

## Setting Built-in Firewall Filtering

The IPSec Client includes a built-in firewall with basic features. To set IPSec Client firewall filtering:

- 1 Start IPSec Client. On the Windows **Start** menu, click the IPSec Client icon to open the IPSec Client window:



- 2 On the menu bar, click **Firewall**, and then click one of the following menu items:
  - **Block All Clear Text Traffic** — The firewall drops all traffic to and from your computer that does not go through a tunnel. Traffic within the tunnel is allowed. When you select this option, the tray icon becomes:



- **Allow All Traffic** — The firewall allows all inbound and outbound sessions to reach your computer, and, therefore, offers no protection.

When you select this option, the tray icon becomes:



- **Allow Client Initiated Traffic** — The firewall allows all outgoing sessions and any return sessions that are generated, but it blocks all unsolicited inbound sessions. This means you could, for example, surf the Web and still be protected from external attack.

## IPSec Client Logging

IPSec Client logs tunnel activity to a file on the local drive. You can customize the type of information that is logged to the file and view, search, and save the contents

of the log file. You can also activate a firewall log file to track the activity monitored by the firewall.

The IPsec Client log viewer window can act as a stand-alone application, that is, you do not need to have the IPsec Client window open to display the log file.

The log file, logipsec.log, is allowed to reach a defined size or age (1 Mb or seven days) before it is saved to a backup file (replacing the previous backup file) and a new empty file is created.

## Saving, Printing Log Files

The log file viewer enables you to save log information to a new file and to print the log.

To access log file functions:

- 1 Open the log viewer.  
On the IPsec Client menu, click **File > IPsec Client Log > IPsec Log File**.
- 2 On the log viewer menu bar, click the **File** menu, and then click the appropriate item.

## Setting the Logging Level

To set the log file logging level:

- 1 Open the log viewer.  
On the IPsec Client menu, click **File > IPsec Client Log > IPsec Log File**.
- 2 Click **Options > Configure** to open the **Log Event Level** dialog.
- 3 Choose a new logging level:
  - Low:** Reports fatal and critical error conditions
  - Medium:** Reports fatal and critical error conditions, warnings and information messages, and enables firewall logging
  - High:** Reports fatal and critical error conditions, warnings and information messages, enables firewall logging, and trace and debug messages



**Note:** Logging level changes are dynamic. They take effect immediately.

## Viewing a Log File

To view the log file, on the IPsec Client menu, click **File > IPsec Client Log > IPsec Log File**.

To view the most recent logging information, **IPsec Log Viewer** provides two menu items within the **File** menu; **Clear** and **Refresh**. The **Clear** command clears the **Log Viewer** window, and the **Refresh** command reads the **IPsec Log** file again and displays the logging information. The **Highlight Error Messages** command highlights all error logging messages in the view window.

## Searching a Log File

To search the log file:

- 1 Open the log viewer.  
On the IPsec Client menu, click **File > IPsec Client Log > IPsec Log File**.
- 2 On the on the menu bar, click **Search**.

## Activating and Viewing the Firewall Log

The Firewall log contains information about individual sessions — both secured sessions transmitted through the tunnel, and non-secured sessions transmitted outside the tunnel.

To enable firewall logging, you must set the log event level to MED or HIGH. When the log event level is set to LOW, firewall logging is disabled.

To activate the firewall log:

- 1 Open the log viewer.  
On the IPsec Client menu, click **File > IPsec Client Log > IPsec Log File**.
- 2 Click **Options > Configure** to open the **Log Event Level** dialog.
- 3 Choose either **Medium** or **High**.

## IPsec Client Advanced Configuration

Your networking environment might require some special configuration. Before using any of the following IPsec Client features, see your VPN network administrator.

## Maintaining WINS Configuration

Your computer may use a network WINS server to manage its network address. WINS (Windows Internet Naming Service) maintains the association between your computer's network name and address, so that it can communicate with other computers. If you are not certain whether your computer has its own WINS configuration, contact your VPN network administrator.

The act of enabling a tunnel can cause your WINS configuration to change. When this happens, a window appears after the tunnel has been enabled prompting you to update your WINS configuration.

If you want to update your WINS configuration, click **Ok** to close this window, and then restart your computer and enable the tunnel again.

If you do not want to update your WINS configuration, click **Cancel**. The tunnel will be enabled, but you might not be able to access certain network resources.

## Restoring the WINS Configuration

If you updated your WINS configuration after enabling a tunnel, you can restore your WINS configuration to its original state after the tunnel has been disabled.

To restore the WINS configuration:

- 1 On the menu bar, click **File > Restore WINS**.

When the configuration has been restored, a message appears to indicate that the original configuration has been restored. (If the WINS configuration was not changed originally, the message “No WINS entries to be cleared” appears.)

- 2 Click **Ok** to close this window.
- 3 Restart your computer to make the restored settings effective.

## Logging onto a Windows Domain

If your computer is running Windows NT or Windows 2000, and your environment makes use of Windows network domains, you must follow a special procedure to log onto your Windows domain.



**Note:** IPsec Client does not support Windows Domain logon using Windows XP Home Edition.

To logon to a Windows domain:

- 1 Start your computer and log in locally. Enter your local User ID and password, and then select your machine name in the **Domain** box.
- 2 Enable a tunnel, using the standard procedure.
- 3 Do one of the following:
  - a If your computer is running Windows NT or Windows 2000, log off the local computer and logon to the domain without disabling the tunnel or restarting Windows. A domain authentication window appears with your User ID and the domain name already entered. Enter your password and click the **Ok**.
  - b If your computer is running Windows 98, click **Options > Domain Login**, and then, enable a tunnel. When the tunnel is successfully enabled, you are prompted to enter your Domain ID and password.

## Using the Command Line Interface

The command line interface (CLI) enables you to create and configure tunnels by using a script or a Command Prompt window instead of the using the IPsec Client graphical interface. The CLI includes just one command that can take a number of arguments.

Command syntax:

```
lucentipsecclient -arg1 -arg2 -arg3 ...
```

The command arguments are explained in the table below. Remember to enter a space after each argument.

*CLI Command Arguments*

<b>Argument</b>	<b>Description</b>
-name	The name of the tunnel. For example:  lucentipsecclient -name my_tunnel
-primary	The IP address of the primary tunnel endpoint. For example:  lucentipsecclient -primary 192.168.123.32  If you are using a fully qualified domain name, enter that instead. For example:  lucentipsecclient -primary tunnels.lucent.com
-secondary	The IP address of the secondary tunnel endpoint, if the tunnel has one. For example:  lucentipsecclient -secondary 192.168.123.33  If you are using a fully qualified domain name, enter that instead. For example:  lucentipsecclient -secondary tunnels2.lucent.com
-id	The User ID. For example:  lucentipsecclient -id diane_weber  If you are using a digital certificate, enter the full path to the folder containing the .ini file you used to obtain the certificate. For example:  lucentipsecclient -id c:\Program Files\IPSec Client\Data  <b>Note:</b> If you are using a digital certificate, you must also use the -cert argument (see below).
-pwd	The account password. For example:  lucentipsecclient -pwd my_password-135
-key	The group key. For example:  lucentipsecclient -key our_group_key-790

*CLI Command Arguments*

<b>Argument</b>	<b>Description</b>
-savepwd	<p>The answer to the 'Save password?' prompt. Enter y to save the password so that it does not have to be entered each time the tunnel is enabled. Enter n (or omit this option) and the password will have to be entered each time. For example:</p> <pre>lucentipsecclient -savepwd y</pre>
-cert	<p>Indicates the presence of a digital certificate. If you indicated a digital certificate when entering the -id argument, you must also use -cert. For example:</p> <pre>lucentipsecclient -cert y</pre>
-port	<p>Indicates the use of UDP encapsulation. For example:</p> <pre>lucentipsecclient -port 63123</pre> <p>All ports from 1 - 65535 (except 500) are valid.</p>
-entry	<p>Add a tunnel configuration without enabling the tunnel, or remove a (or all) tunnel configurations if the tunnel is not enabled.</p> <p>For example:</p> <p>-- Add an entry</p> <pre>lucentipsecclient -entry add -primary 192.168.123.32 -name my_tunnel</pre> <p>-- Delete an entry</p> <pre>lucentipsecclient -entry del -name my_tunnel</pre> <p>-- Delete all entries</p> <pre>lucentipsecclient -entry del -name *</pre>

## Downloading a New Release

When a new release of the IPsec Client is available, you may be notified automatically. Depending on how your VPN network administrator sets up the notification system, you receive notification either when you enable a tunnel or immediately after disabling a tunnel.

- **Inside a Tunnel** — If your VPN network administrator wants you to download the new software while you have a tunnel enabled, you receive a message immediately after you enable a tunnel. The message prompts you to download the new version immediately or download it later. If you click **Yes** to download the software immediately, a browser appears with instructions to guide you through the download process. If you click **No**, the **Download** option on the



**File** menu becomes active. When you are ready to download the new release, select that option and follow the on-screen instructions.

- **Outside a Tunnel** — If your VPN network administrator wants you to download the new software outside a tunnel, you receive a message immediately after you disable a tunnel. A message prompts you to download the new version immediately, or download it later. Click **OK** to download the software immediately. If you click **No**, the **Download** option on the **File** menu becomes active. When you are ready to download the new release, select that option and follow the on-screen instructions.

## Using IPsec Client

*IPsec Client Advanced Configuration*

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# Troubleshooting IPsec Client

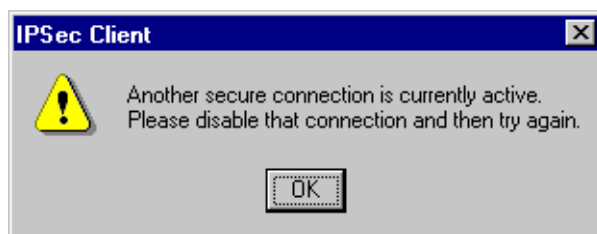
## 4

IPsec Client can generate error messages to help you troubleshoot problems. The log viewer can also help you track issues within IPsec Client. The log viewer can display messages that are received from outside of IPsec Client. For example, a RADIUS server can include a message when it rejects a login attempt.

## Error Messages

### Another secure connection is currently active

IPsec Client does not allow you to enable two tunnels at the same time, even to different endpoints. If you attempt to enable a second tunnel while a first is still enabled, the following error message appears:



### Authentication will time out in 5 minutes for tunnel <tunnel\_name>

This message appears five minutes before the tunnel expiration time. To keep the tunnel enabled, re-enable it within the five-minute period.

### Secured tunnel time elapsed for tunnel <tunnel\_name>, Please re-enable later

This message appears when the tunnel timeout period expires. If you still need the tunnel, you must re-enable it.

### Lost connectivity to tunnel <tunnel\_name>, Please re-enable later

This message appears if connectivity to the tunnel endpoint is lost. Once the problem that caused the lost connectivity is solved, you can re-enable the tunnel.

### Secured session for tunnel <tunnel\_name> ended due to inactivity

Your VPN network administrator can set a time limit on tunnel inactivity. If you do not send or receive data through the tunnel for that period of time, the tunnel expires.

This message appears after a tunnel has expired for that reason. To find out the inactivity time period, contact your VPN network administrator.

### Could not signal LucentIKE or load security policy

If this error appears when enabling a tunnel, it usually means one of the IPsec Client services is not running. Restart your computer and re-enable the tunnel. If the problem persists, contact your VPN network administrator.

### Error communicating with LucentIKE

If this error appears when enabling a tunnel, it usually means one of the IPsec Client services is not running. Restart the computer and re-enable the tunnel. If the problem persists, contact your VPN network administrator.

### Driver is not Installed. Try re-installation.

If this message is displayed, uninstall and reinstall the IPsec Client program. If the message repeats, call your VPN network administrator.

### Invalid internal IP for local presence received from Gateway

If this message appears, the internal IP address is invalid because:

It is not part of the Host Access List. Contact your VPN network administrator to correct the tunnel configuration.

or

It is on the same subnet as one of the physical adapters in your machine. You can disable the adapter in conflict either permanently or temporarily (create separate hardware profile) from the current hardware profile. If the problem persists, contact your VPN network administrator to change the local presence IP address pool.

### Unable to update local network configuration

IPsec Client could not determine the IP address configuration of your PC. For example, the combination of IP Address and subnet mask is invalid. All of the bits in the host address portion of the IP address are set to 0 or 1. Contact your VPN network administrator to correct the tunnel configuration.