Version 6.01

Part No. 311644-J Rev 00
August 2005

600 Technology Park Drive
Billerica, MA  01821-4130

# Configuring the Contivity VPN Client

NORTEL

# Copyright © Nortel Networks Limited 2005. All rights reserved.

The information in this document is subject to change without notice. The statements, configurations, technical data, and recommendations in this document are believed to be accurate and reliable, but are presented without express or implied warranty. Users must take full responsibility for their applications of any products specified in this document. The information in this document is proprietary to Nortel Networks Inc.

The software described in this document is furnished under a license agreement and may be used only in accordance with the terms of that license. The software license agreement is included in this document.

## Trademarks

Nortel Networks, the Nortel Networks logo, the Globemark, Unified Networks, and Contivity are trademarks of Nortel Networks.

ActivCard is a trademark of ActivCard Incorporated.

Adobe and Acrobat Reader are trademarks of Adobe Systems Incorporated.

America Online is a trademark of America Online, Inc.

Datakey is a trademark of Datakey, Inc.

Entrust is a trademark of Entrust Technologies Inc.

iPass is a trademark of iPass Inc.

Java and Sun Microsystems are trademarks of Sun Microsystems, Inc.

Microsoft and Windows are trademarks of Microsoft Corporation.

Netscape and Netscape Navigator are trademarks of Netscape Communications Corporation.

SecurID is a trademark of RSA Security Inc.

VeriSign is a trademark of VeriSign Incorporated.

The asterisk after a name denotes a trademarked item.

## Restricted rights legend

Use, duplication, or disclosure by the United States Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013.

Notwithstanding any other license agreement that may pertain to, or accompany the delivery of, this computer software, the rights of the United States Government regarding its use, reproduction, and disclosure are as set forth in the Commercial Computer Software-Restricted Rights clause at FAR 52.227-19.

## Statement of conditions

In the interest of improving internal design, operational function, and/or reliability, Nortel Networks Inc. reserves the right to make changes to the products described in this document without notice.

Nortel Networks Inc. does not assume any liability that may occur due to the use or application of the product(s) or circuit layout(s) described herein.

Portions of the code in this software product may be Copyright © 1988, Regents of the University of California. All rights reserved. Redistribution and use in source and binary forms of such portions are permitted, provided that the above copyright notice and this paragraph are duplicated in all such forms and that any documentation, advertising materials, and other materials related to such distribution and use acknowledge that such portions of the software were developed by the University of California, Berkeley. The name of the University may not be used to endorse or promote products derived from such portions of the software without specific prior written permission.

SUCH PORTIONS OF THE SOFTWARE ARE PROVIDED “AS IS” AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

In addition, the program and information contained herein are licensed only pursuant to a license agreement that contains restrictions on use and disclosure (that may incorporate by reference certain limitations and notices imposed by third parties).

## Nortel Networks Inc. software license agreement

This Software License Agreement (“License Agreement”) is between you, the end-user (“Customer”) and Nortel Networks Corporation and its subsidiaries and affiliates (“Nortel Networks”). PLEASE READ THE FOLLOWING CAREFULLY. YOU MUST ACCEPT THESE LICENSE TERMS IN ORDER TO DOWNLOAD AND/OR USE THE SOFTWARE. USE OF THE SOFTWARE CONSTITUTES YOUR ACCEPTANCE OF THIS LICENSE AGREEMENT. If you do not accept these terms and conditions, return the Software, unused and in the original shipping container, within 30 days of purchase to obtain a credit for the full purchase price.

“Software” is owned or licensed by Nortel Networks, its parent or one of its subsidiaries or affiliates, and is copyrighted and licensed, not sold. Software consists of machine-readable instructions, its components, data, audio-visual content (such as images, text, recordings or pictures) and related licensed materials including all whole or partial copies. Nortel Networks grants you a license to use the Software only in the country where you acquired the Software. You obtain no rights other than those granted to you under this License Agreement. You are responsible for the selection of the Software and for the installation of, use of, and results obtained from the Software.

**1. Licensed Use of Software.** Nortel Networks grants Customer a nonexclusive license to use a copy of the Software on only one machine at any one time or to the extent of the activation or authorized usage level, whichever is applicable. To the extent Software is furnished for use with designated hardware or Customer furnished equipment (“CFE”), Customer is granted a nonexclusive license to use Software only on such hardware or CFE, as applicable. Software contains trade secrets and Customer agrees to treat Software as confidential information using the same care and discretion Customer uses with its own similar information that it does not wish to disclose, publish or disseminate. Customer will ensure that anyone who uses the Software does so only in compliance with the terms of this Agreement. Customer shall not a) use, copy, modify, transfer or distribute the Software except as expressly authorized; b) reverse assemble, reverse compile, reverse engineer or otherwise translate the Software; c) create derivative works or modifications unless expressly authorized; or d) sublicense, rent or lease the Software. Licensors of intellectual property to Nortel Networks are beneficiaries of this provision. Upon termination or breach of the license by Customer or in the event designated hardware or CFE is no longer in use, Customer will promptly return the Software to Nortel Networks or certify its destruction. Nortel Networks may audit by remote polling or other reasonable means to determine Customer’s Software activation or usage levels. If suppliers of third party software included in Software require Nortel Networks to include additional or different terms, Customer agrees to abide by such terms provided by Nortel Networks with respect to such third party software.

**2. Warranty.** Except as may be otherwise expressly agreed to in writing between Nortel Networks and Customer, Software is provided “AS IS” without any warranties (conditions) of any kind. NORTEL NETWORKS DISCLAIMS ALL WARRANTIES (CONDITIONS) FOR THE SOFTWARE, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OF NON-INFRINGEMENT. Nortel Networks is not obligated to provide support of any kind for the Software. Some jurisdictions do not allow exclusion of implied warranties, and, in such event, the above exclusions may not apply.

3. **Limitation of Remedies.** IN NO EVENT SHALL NORTEL NETWORKS OR ITS AGENTS OR SUPPLIERS BE LIABLE FOR ANY OF THE FOLLOWING: a) DAMAGES BASED ON ANY THIRD PARTY CLAIM; b) LOSS OF, OR DAMAGE TO, CUSTOMER'S RECORDS, FILES OR DATA; OR c) DIRECT, INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR SAVINGS), WHETHER IN CONTRACT, TORT OR OTHERWISE (INCLUDING NEGLIGENCE) ARISING OUT OF YOUR USE OF THE SOFTWARE, EVEN IF NORTEL NETWORKS, ITS AGENTS OR SUPPLIERS HAVE BEEN ADVISED OF THEIR POSSIBILITY. The forgoing limitations of remedies also apply to any developer and/or supplier of the Software. Such developer and/or supplier is an intended beneficiary of this Section. Some jurisdictions do not allow these limitations or exclusions and, in such event, they may not apply.

4. **General**

   a. If Customer is the United States Government, the following paragraph shall apply: All Nortel Networks Software available under this License Agreement is commercial computer software and commercial computer software documentation and, in the event Software is licensed for or on behalf of the United States Government, the respective rights to the software and software documentation are governed by Nortel Networks standard commercial license in accordance with U.S. Federal Regulations at 48 C.F.R. Sections 12.212 (for non-DoD entities) and 48 C.F.R. 227.7202 (for DoD entities).

   b. Customer may terminate the license at any time. Nortel Networks may terminate the license if Customer fails to comply with the terms and conditions of this license. In either event, upon termination, Customer must either return the Software to Nortel Networks or certify its destruction.

   c. Customer is responsible for payment of any taxes, including personal property taxes, resulting from Customer's use of the Software. Customer agrees to comply with all applicable laws including all applicable export and import laws and regulations.

   d. Neither party may bring an action, regardless of form, more than two years after the cause of the action arose.

   e. The terms and conditions of this License Agreement form the complete and exclusive agreement between Customer and Nortel Networks.

   f. This License Agreement is governed by the laws of the country in which Customer acquires the Software. If the Software is acquired in the United States, then this License Agreement is governed by the laws of the state of New York.

# Contents

# Figures

# Tables

# Preface

This guide helps you install the Nortel* Contivity VPN Client. Topics include:

- Installing the client
- Creating custom icons
- Installing a custom client
- Using certificates on a client

This guide is intended for network managers who are responsible for setting up client software for the Contivity gateway. This guide assumes that you have the following background:

- Experience with windowing systems or graphical user interfaces (GUI)
- Familiarity with network management

Complete details for configuring and monitoring the Contivity* Secure IP Services Gateway are in *Configuring Basic Features for the Contivity Secure IP Services Gateway.*

## Before you begin

The minimum PC requirements for running the Contivity VPN Client are:

- Windows 2000, Windows XP or better
- 200 MHz Pentium
- 64 MB memory
- 10 MB free hard disk space

# Text conventions

This guide uses the following text conventions:

angle brackets (< >)

Indicate that you choose the text to enter based on the description inside the brackets. Do not type the brackets when entering the command.

Example: If the command syntax is **ping** *<ip_address>*, you enter **ping 192.32.10.12**

**bold Courier text**

Indicates command names and options and text that you need to enter.

Example: Use the **show health** command.

Example: Enter **terminal paging** {**off** | **on**}.

braces ({})

Indicate required elements in syntax descriptions where there is more than one option. You must choose only one of the options. Do not type the braces when entering the command.

Example: If the command syntax is **ldap-server source {external | internal}**, you must enter either **ldap-server source external** or **ldap-server source internal**, but not both.

brackets ([ ])

Indicate optional elements in syntax descriptions. Do not type the brackets when entering the command.

Example: If the command syntax is **show ntp [associations]**, you can enter either **show ntp** or **show ntp associations**.

Example: If the command syntax is **default rsvp** [**token-bucket** {**depth** | **rate**}], you can enter **default rsvp**, **default rsvp token-bucket depth**, or **default rsvp token-bucket rate**.

ellipsis points (. . . )

Indicate that you repeat the last element of the command as needed.

Example: If the command syntax is **more disk***n***:***<directory>***/...***<file_name>*, you enter **more** and the fully qualified name of the file.

| | |
|---|---|
| *italic text* | Indicates new terms, book titles, and variables in command syntax descriptions. Where a variable is two or more words, the words are connected by an underscore.<br>Example: If the command syntax is **`ping`** *`<ip_address>`*, *`ip_address`* is one variable and you substitute one value for it. |
| `plain Courier text` | Indicates system output, for example, prompts and system messages.<br>Example: `File not found.` |
| separator ( > ) | Shows menu paths.<br>Example: Choose Status > Health Check. |
| vertical line ( \| ) | Separates choices for command keywords and arguments. Enter only one of the choices. Do not type the vertical line when entering the command.<br>Example: If the command syntax is **`terminal paging`** `{`**`off`** `|` **`on`**`}`, you enter either **`terminal paging off`** or **`terminal paging on`**, but not both. |

# Acronyms and terms

This guide uses the following acronyms and terms Table 1.

**Table 1** Acronyms and terms

| | |
|---|---|
| Certification path | Ordered sequence of certificates, leading from a certificate whose public key is known by a client to a certificate whose public key is to be validated by the client. |
| Certificate revocation list (CRL) | List of revoked but unexpired certificates issued by a CA. |
| Digital certificate | Digitally signed data structure defined in the X.509 standard that binds the identity of a certificate holder (or subject) to a public key. |
| Public Key Cryptography Standards (PKCS) | Collection of de facto standards produced by RSA covering the use and manipulation of public-private keys and certificates. |

**Table 1** Acronyms and terms

| | |
|---|---|
| PKCS #7 | Cryptographic Message Standard. (Reply with digital certificate.) |
| PKCS #10 | Certification Request Syntax Standard. |
| PKCS #12 | Personal Information Exchange Syntax. |
| X.509 | Standard certificate format. |

## Related publications

For more information about the Contivity Secure IP Services Gateway, refer to the following publications:

- Release notes provide the latest information, including brief descriptions of the new features, problems fixed in this release, and known problems and workarounds.
- *Configuring Basic Features for the Contivity Secure IP Services Gateway* introduces the product and provides information about initial setup and configuration.
- *Configuring Servers, Authentication, and Certificates for the Contivity Secure IP Services Gateway* provides instructions for configuring authentication services and digital certificates.
- *Configuring Firewalls, Filters, NAT, and QoS for the Contivity Secure IP Services Gateway* provides instructions for configuring the Contivity Stateful Firewall and Contivity interface and tunnel filters.
- *Configuring Advanced Features for the Contivity Secure IP Services Gateway* provides instructions for configuring advanced LAN and WAN settings, PPP, frame relay, PPPoE, ADSL and ATM, T1CSU/DSU, dial services and demand services, DLSw, IPX, and SSL VPN.
- *Configuring Tunneling Protocols for the Contivity Secure IP Services Gateway* configuration information for the tunneling protocols IPsec, L2TP, PPTP, and L2F.
- *Configuring Routing for the Contivity Secure IP Services Gateway* provides instructions for configuring BGP, RIP, OSPF, and VRRP, as well as instructions for configuring ECMP, routing policy services, and client address redistribution (CAR).

- *Managing and Troubleshooting the Contivity Secure IP Services Gateway* provides information about system administrator tasks such as backup and recovery, file management, and upgrading software, and instructions for monitoring gateway status and performance. Also, provides troubleshooting information and inter-operability considerations.
- *Reference for the Contivity Secure IP Services Gateway Command Line Interface* provides syntax, descriptions, and examples for the commands that you can use from the command line interface.
- *Configuring TunnelGuard for the Contivity Secure IP Services Gateway* provides information about configuring and using the TunnelGuard feature.

## Hard-copy technical manuals

To print selected technical manuals and release notes free, directly from the Internet, go to www.nortel.com/documentation. Find the product for which you need documentation, then locate the specific category and model or version for your hardware or software product. Use Adobe* Acrobat Reader* to open the manuals and release notes, search for the sections you need, and print them on most standard printers. Go to the Adobe Systems website at www.adobe.com to download a free copy of the Adobe Acrobat Reader.

# How to get Help

This section explains how to get help for Nortel products and services.

### Getting Help from the Nortel Web site

The best source of support for Nortel products is the Nortel Support Web site:

http://www.nortel.com/support

This site enables customers to:

- download software and related tools
- download technical documents, release notes, and product bulletins
- sign up for automatic notification of new software and documentation
- search the Support Web site and Nortel Knowledge Base

- open and manage technical support cases

## Getting Help over the phone from a Nortel Solutions Center

If you have a Nortel support contract and cannot find the information you require on the Nortel Support Web site, you can get help over the phone from a Nortel Solutions Center.

In North America, call 1-800-4NORTEL (1-800-466-7835).

Outside North America, go to the Web site below and look up the phone number that applies in your region:

http://www.nortel.com/callus

When you speak to the phone agent, you can reference an Express Routing Code (ERC) to more quickly route your call to the appropriate support specialist. To locate the ERC for your product or service, go to:

http://www.nortel.com/erc

## Getting Help through a Nortel distributor or reseller

If you purchased a service contract for your Nortel product from a distributor or authorized reseller, you can contact the technical support staff for that distributor or reseller.

# Chapter 1
# Installing the client

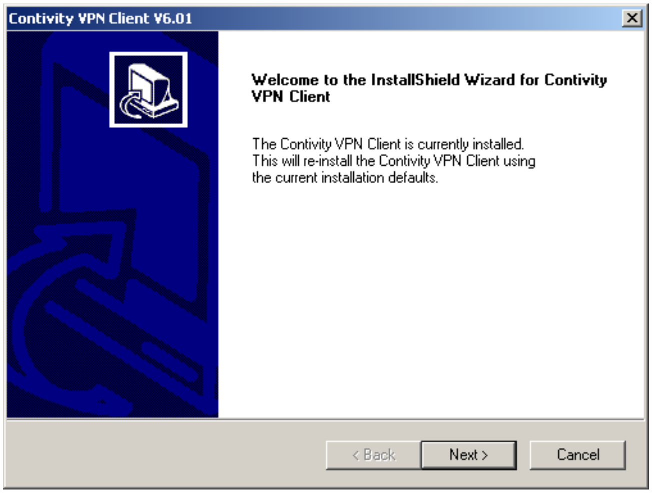
This chapter provides information on how to install the client on Microsoft* Windows XP and Windows 2000 systems. It also includes information on Windows Domain Login and Nortel graphical identification and authentication (NNGINA).

## Windows installations

To install the client, copy the Contivity VPN Client (EAC601D.exe) that is on the Contivity Secure IP Services Gateway CD into the Client folder onto your hard drive.

1 Double-click EAC601D.exe. The Welcome screen appears. (Figure 1)

**Figure 1** Welcome screen



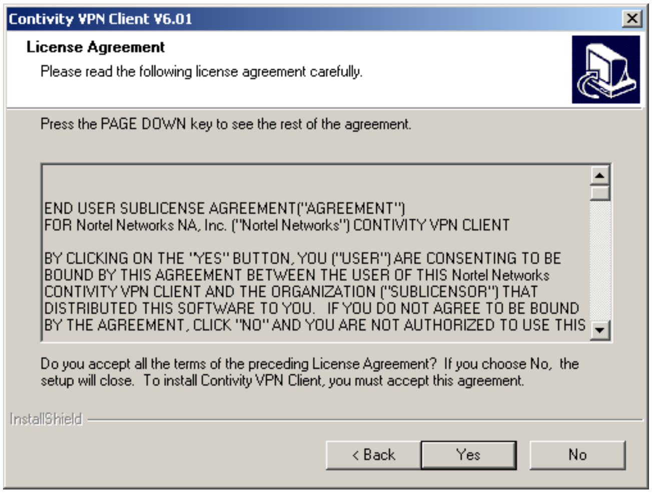
Contivity VPN Client V6.01

**Welcome to the InstallShield Wizard for Contivity VPN Client**

The Contivity VPN Client is currently installed. This will re-install the Contivity VPN Client using the current installation defaults.

2 Click Next. The License Agreement screen appears. (Figure 2)

**Figure 2** License Agreement screen



Contivity VPN Client V6.01

License Agreement

Please read the following license agreement carefully.

Press the PAGE DOWN key to see the rest of the agreement.

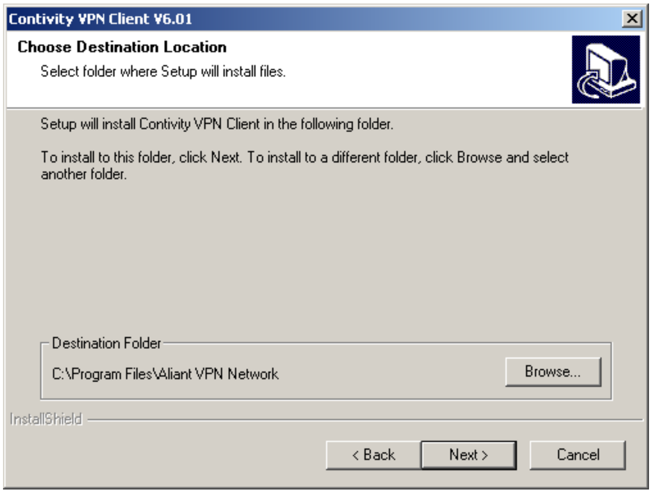
END USER SUBLICENSE AGREEMENT("AGREEMENT")
FOR Nortel Networks NA, Inc. ("Nortel Networks") CONTIVITY VPN CLIENT

BY CLICKING ON THE "YES" BUTTON, YOU ("USER") ARE CONSENTING TO BE BOUND BY THIS AGREEMENT BETWEEN THE USER OF THIS Nortel Networks CONTIVITY VPN CLIENT AND THE ORGANIZATION ("SUBLICENSOR") THAT DISTRIBUTED THIS SOFTWARE TO YOU. IF YOU DO NOT AGREE TO BE BOUND BY THE AGREEMENT, CLICK "NO" AND YOU ARE NOT AUTHORIZED TO USE THIS

Do you accept all the terms of the preceding License Agreement? If you choose No, the setup will close. To install Contivity VPN Client, you must accept this agreement.

3 Click Yes to accept the license. The Destination screen appears. (Figure 3)

**Figure 3** Destination screen



Contivity VPN Client V6.01

Choose Destination Location

Select folder where Setup will install files.

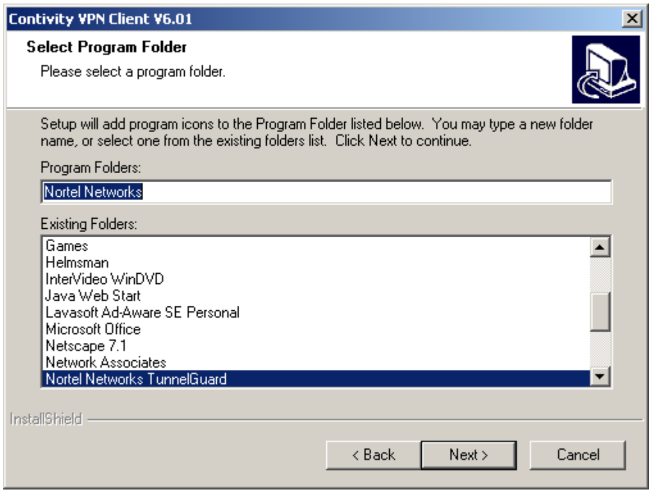
Setup will install Contivity VPN Client in the following folder.

To install to this folder, click Next. To install to a different folder, click Browse and select another folder.

Destination Folder
C:\Program Files\Aliant VPN Network

**4** Click Next to accept the default installation location or click Browse to install in another directory. The Select Program Folder screen appears. (Figure 4)

**Figure 4** Program folder screen



Contivity VPN Client V6.01

**Select Program Folder**

Please select a program folder.

Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the existing folders list. Click Next to continue.

Program Folders:

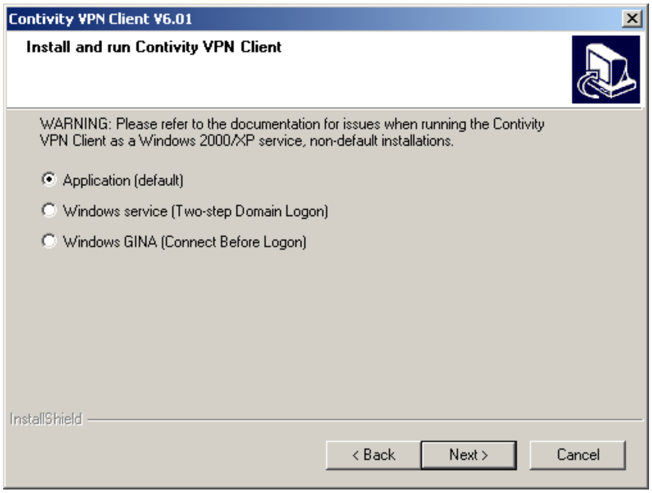
Nortel Networks

Existing Folders:

Games
Helmsman
InterVideo WinDVD
Java Web Start
Lavasoft Ad-Aware SE Personal
Microsoft Office
Netscape 7.1
Network Associates
Nortel Networks TunnelGuard

**5** Click Next to select the default program folder or choose one of the listed program folders. The Install and run Contivity VPN Client screen appears. (Figure 5)

**Figure 5** Install and run screen



Contivity VPN Client V6.01

**Install and run Contivity VPN Client**

WARNING: Please refer to the documentation for issues when running the Contivity VPN Client as a Windows 2000/XP service, non-default installations.

● Application (default)

○ Windows service (Two-step Domain Logon)

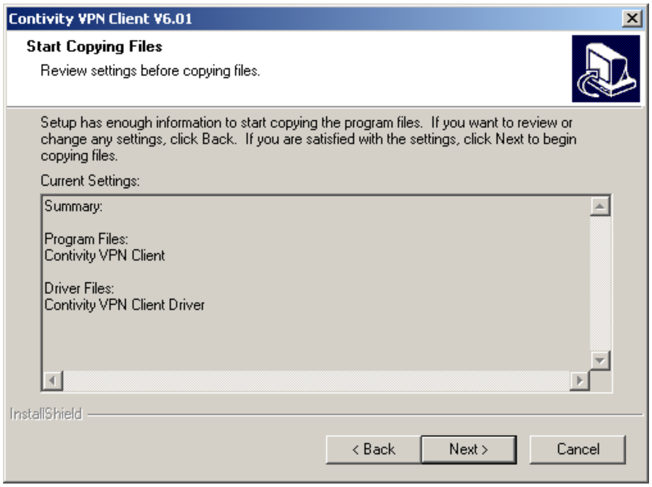
○ Windows GINA (Connect Before Logon)

6 Select the method that you want to use to install and run the client:

- Application (default)
- Windows service (Two step Domain Logon); see "Two step domain logon" on page 23
- Windows GINA (Connect Before Logon); see "Graphical Identification and Authentication (GINA)" on page 24

7 Click Next. The Start Copying Files screen appears. (Figure 6)

**Figure 6** Start Copying Files screen



Contivity VPN Client V6.01

Start Copying Files

Review settings before copying files.

Setup has enough information to start copying the program files. If you want to review or change any settings, click Back. If you are satisfied with the settings, click Next to begin copying files.

Current Settings:

Summary:

Program Files:
Contivity VPN Client

Driver Files:
Contivity VPN Client Driver

8 Click Next to continue the installation.

9 When prompted at the end of the installation, reboot your system.

10 Double-click the Contivity VPN Client icon.

a Enter a new Connection name.

b Optionally, enter a description for the connection.

c Create a new Dial-up Connection. Click on Tool (next to the Dial-up Connection list box), select New, and follow the wizard.

d If you have made any changes in the Network Control Panel, click OK, and then reboot the system.

➡ **Note:** In Windows 2000 and Windows XP, the Contivity VPN Client adapter is not displayed in the Network Control Panel. However, if you run a utility such as IPCONFIG, it will respond.

If you are using the client over a dial-up connection, be sure to check the following for your system:

- **Windows 2000**: Install the Remote Access Service under the Network Control Panel (from the Start menu, select Settings > Control Pane, then double-click the Network icon to open the Network Control Panel). Select the Services tab and click Add. Scroll down to select Remote Access Service and click OK.
- **Windows XP**: Install the Remote Access Service under the Network Control Panel (from the Start menu, select Settings > Control Pane, then double-click the Network icon to open the Network Control Panel). Select the Network Connection icon and click Create a New Connection to bring up the New Connection Wizard.
- Under the Network Control Panel for Windows XP and Windows 2000, verify that NetBEUI is not installed. If NetBEUI is listed, click it, then click Remove. This forces the Network Neighborhood to use NetBIOS over TCP/IP, which is compatible with the switch. Click OK and reboot your system.

# Windows Domain Logon

There are two ways to logon to the Windows domain:

- Windows service (Two-step Domain Logon)
- Windows GINA (Connect Before Logon)

## Two step domain logon

You can log on to an existing Windows domain that exists on the private side of the switch. You must have a valid Windows domain account that is accessible from the private side of the switch.

To log on to the Windows domain:

1 Launch the Contivity VPN Client.

2 Make a connection to the switch that has the Windows NT domain.

3 Press Ctrl + Alt + Delete to log on to the Windows NT domain from the already established connection to the switch.

## Graphical Identification and Authentication (GINA)

A Graphical Identification and Authentication (GINA) Dynamic Link Library (DLL) provides an automated process to complete a Windows domain logon through a VPN tunnel. GINA implements the authentication policy of the interactive logon and performs all identification and authentication user interactions for the Windows system. You do not need to log on locally to launch the client, then log off the local system to authenticate to the Windows domain.

The Nortel GINA (nngina.dll) launches and synchronizes a successful tunnel creation with the Contivity VPN Client and disconnects the Contivity tunnel when you log off. After making a successful Contivity VPN connection, the Windows domain logon is continued through the established Contivity VPN tunnel connection. GINA chaining detects the presence of a previously installed third-party GINA and passes all pass-through calls to that particular GINA (see Chapter 2, “Customizing the client,” on page 58).

This feature is supported on:

- Windows 2000
- Windows XP Professional

➡ **Note:** When you install GINA, Windows disables fast user switching.

To install GINA, select the Windows GINA (Connect Before Logon) option on the Install and run Contivity VPN Client screen. When prompted at the end of the installation, reboot your system.

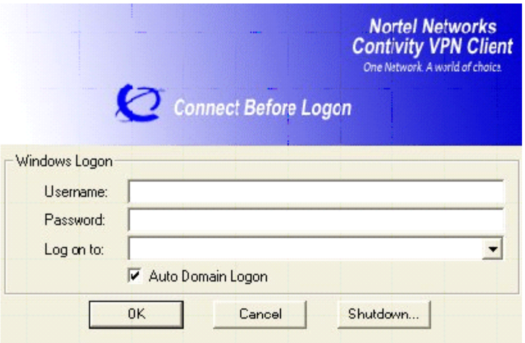
## Logging on through client connection

After the client installation is complete, use the following procedure to log on through a Contivity VPN Client connection.

**Note:** Auto domain logon is the default.

**1** Press Control + Alt + Delete. The Contivity VPN Client GINA interface appears. This is a Contivity GINA dialog (not the Windows GINA dialog). (Figure 7)

**Figure 7** Connect Before Logon screen

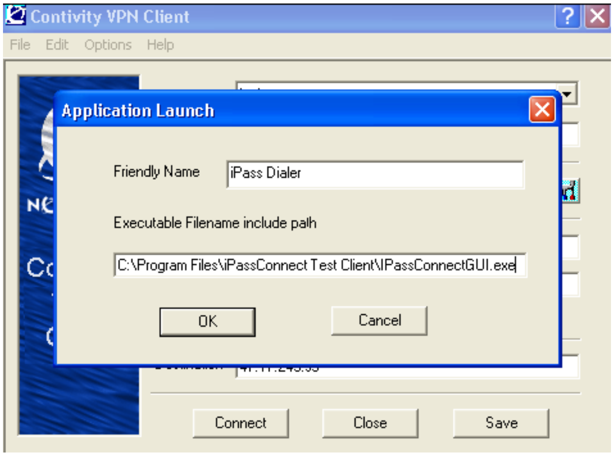


☑ Auto Domain Logon

**Note:** If you do not want to use the Connect Before Logon feature after it is installed, click on Cancel and the Windows domain logon screen will appear.

**2** Enter your Windows credentials, which are used to perform a local system logon. The Contivity VPN client is launched. (Figure 8 on page 26)

**Figure 8** Contivity VPN Client logon screen



Friendly Name: iPass Dialer

Executable Filename include palh: C:\Program Files\iPassConnect Test Client\IPassConnectGUI.exe

3 Enter the Contivity VPN tunnel credentials. A successful VPN tunnel connection is completed from the Contivity VPN client. The Windows domain logon is automatically executed using the authentication credentials provided in the Contivity Client GINA dialog. The Domain logon is established using the existing Contivity VPN tunnel connection.

**Note:** When the Contivity VPN Client is running as a service under Windows 2000 or Windows XP, you may not be able to log off after you log in and log off several times. This is a known Windows issue when an NT Service is involved with an active GUI interface. To work around the problem, you must first disconnect the Contivity VPN Client service and then log off.

## First domain logon

You can also log on to the system using an existing local account to establish the Contivity VPN Tunnel. You are then logged into the local system with the credentials provided.

To enable a completely automated Windows domain logon, you are authenticated locally and require a previous successful user logon to the target Windows domain. The first time you attempt a domain logon directly through the Contivity GINA, without a prior successful Windows domain logon from the local system, the initial user logon attempt fails.

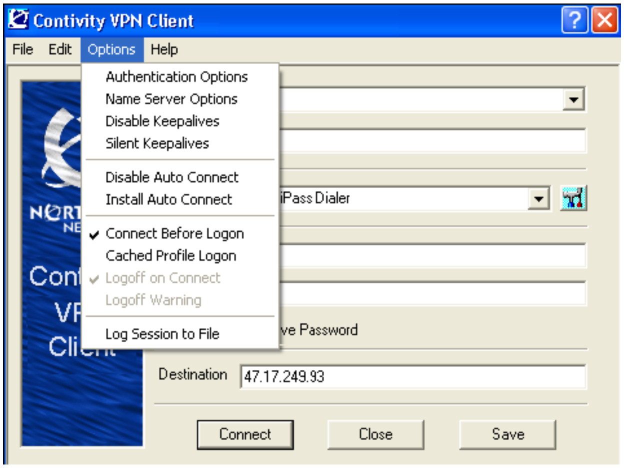
**Note:** The client system must have been previously configured to allow access to the desired Windows domain. This configuration can be set up by the Windows domain administrator.

You can either execute the current Contivity VPN Client Windows domain logon or use the Contivity Client GINA by deselecting the “Auto Domain Logon” option and logging on using an existing local user account. The Windows GINA screen appears to complete the domain logon.

## Enabling and disabling Connect Before Logon

To enable or disable Connect Before Logon, go to the Options menu (Figure 9) and either select or deselect the Connect Before Logon option. The Contivity VPN Client GINA dialog provides simultaneous Windows NT domain logon when logging on to the workstation. The Contivity VPN Client must be installed with the GINA option to be available.

**Figure 9** Options menu



iPass Dialer

Destination 47.17.249.93

## Uninstalling the client

You cannot uninstall NNGINA unless it is at the top of the GINA chain. If it is not on top of the GINA list, uninstalling it could break the GINA chain. The software notifies you that you must uninstall NNGINA before GINA can be uninstalled. This could occur multiple times until GINA is at the top of the chain.

# Chapter 2 Customizing the client

This chapter provides information to help you customize your client, including configuring client profiles, creating custom icons and bitmaps, and distributing the custom client installation. You can also reconfigure client behavior and control the client from a third-party application.

The Contivity VPN Client supports dynamic DNS registration, which you can configure at the group level on the Contivity gateway. The Contivity VPN Client also provides support for IP Security (IPsec) mobility and persistent tunneling.

Table 2 shows the versions of the client that are available in limited (56-bit) or full (128-bit) form, as well as the available encryptions, Diffie Hellman groups, and hashes.

**Table 2** VPN Client support

| Version | 56-bit | 128-bit | 256-bit | Deffie Hellman groups | HASH |
|---|---|---|---|---|---|
| 4.65 and below | DES(40 & 56) | DES (40, 56), 3DES | NA | 1, 2 | MD5, SHA-1 |
| 4.86 | NA | DES (40, 56), 3DES | NA | 1, 2 | MD5, SHA-1 |
| 4.87 (translated) | NA | DES (40, 56), 3DES | NA | 1, 2 | MD5, SHA-1 |
| 4.91 | NA | DES (40, 56), 3DES, AES-128 | AES-256 | 1, 2, 5, 8 | MD5, SHA-1 |
| 5.01 | NA | DES (40, 56), 3DES, AES-128 | AES-256 | 1, 2, 5, 8 | MD5, SHA-1 |
| 5.11 (FIPS) | NA | 3DES, AES-128 | AES-256 | 2, 5, 8 | SHA-1 |
| 6.01 | NA | DES (40, 56), 3DES, AES-128 | AES-256 | 1, 2, 5, 8 | MD5, SHA-1 |

Advanced Encryption Standard (AES) support is intended to be transparent to the end user. However, there are setup.ini settings that allow you to produce custom clients with modified AES support.

Contivity VPN Client AES support is enabled by default. To disable it, use a setup.ini setting that has a corresponding registry setting. This setting appears under the [Options] portion of the setup.ini file:

[Options]

AesDisabled=1

The setup.ini variable maps directly to a new registry key:

[HKEY_LOCAL_MACHINE\SOFTWARE\Nortel Networks\Extranet Access Client] “AesDisabled”= dword:00000001

The Contivity VPN Client uses the registry settings for its runtime decisions. If the key is not present, the default (AES enabled) is assumed.

The AES settings cannot be modified through the GUI. AES is visible to the end user only in the Status window, where the Security and IKE fields display the appropriate AES information when an AES connection is established.

# Configuring client profiles

To preconfigure the client with profiles, including information such as the authentication type and destination, you must distribute a baynet.tbk file that contains the custom installation files. If you use the client to create user profiles, a baynet.tbk file is automatically created in your installation directory and you can distribute it to your users. Simply edit the file to remove the user name reference so that a user can enter his own user name before adding it to the custom install.

➡ **Note:** You must save a new baynet.tbk file in text document format. If the file is saved in RTF or in Word document format, the client will not recognize some of the formatting and as a result, the users will not be defined in the client.

As long as the file resides in the installation directory (where setup.exe is located), the installation procedure copies the file to the appropriate directory and overwrites the existing baynet.tbk file.

Each connection profile is defined between square brackets [ ], for example [MyVPNConnection]. The following entries represent the baynet.tbk file that resides in each Profile section:

- Description—user interface description field.
- Dialup—dial-up profile. The value (None) indicates there is no dial-up profile.
- Username—user interface user name, or when using Entrust* authentication this is the user's .epf file.
- TokenType—used in combination with UseTokens to indicate the type of authentication being used.

The following combined settings are supported (Table 3):

**Table 3** Supported UseTokens and TokenType settings

| UseTokens | TokenType |
|---|---|
| 0 | 0. Username/password authentication type |
| 1 | 1. AXENT* hardware token |
| 1 | 2. Security Dynamics hardware token |
| 0 | 3. RADIUS authentication |
| 1 | 4. AXENT software token |
| 1 | 5. Security Dynamics SoftID software token |
| 0 | 6. Entrust certificate |
| 0 | 7. (Reserved) |
| 0 | 8. Microsoft CAPI stored Certificate |

- UsePAPGroup—0 indicates no RADIUS authentication; 1 indicates RADIUS authentication.
- GroupName—Options > Authentication Options dialog box Group Name field.
- SavePassword—0 indicates that the user did not save the PIN/Password; 1 indicates that the user saved the PIN/Password.

- Server—IP address or host name of the Extranet server with which to establish a connection.

### *Sample baynet.tbk file*

```
[VPN Your City]
Description=Company Name
Dialup=(None)
Username=smith
UseTokens=0
TokenType=3
GroupName=Contivity_VPN
SavePassword=0
Server=130.130.130.13
```

## Setup.ini file

The setup.ini file resides in the CD's Client\Custom directory along with the other custom installation files. For example:

```
Client\Custom\Domestic
```

This file and its settings are created by InstallShield when the distribution media is made.

The EnableLangDlg=Y parameter is set when the installation is a localized version. A Language dialog appears during installation, from which a user selects the language to install.

The [Languages] section is the list of supported languages in the kit. This is the list presented in the Language dialog mentioned above when EnableLangDlg is enabled (EnableLangDlg=Y).

The [ISUPDATE] is an InstallShield update URL. It is not used by the Contivity VPN Client.

The AesDisabled setting disables AES support. If set to 1, AES is disabled. The default is enabled. The setup.ini variable maps directly to a new registry key value:

[HKEY_LOCAL_MACHINE\SOFTWARE\NortelNetworks\Extranet Access Client] “AesDisabled”=dword:00000001

The Contivity VPN Client uses the registry settings for its run-time decisions. If the key is not present, the default (AES enabled) is assumed.

The AES settings cannot be modified through the GUI. AES is visible to the end user only in the Status window where the Security and IKE fields display the appropriate AES information when an AES connection is established.

Following is an example of the setup.ini file.

```
[Startup]
AppName=Nortel Networks Contivity VPN Client
FreeDiskSpace=970
EnableLangDlg=Y
[ISUPDATE]
UpdateURL=http://
[Languages]
Default=0x0009
count=1
key0=0x0009
```

## Customizing the setup.ini file

You customize the default behavior of the client by modifying the setup.ini file. To customize your client, add to the setup.ini file the [Options] section and the listed keywords described in Table 4.

The default settings are noted in the right-hand column, as well as details on the significance and manner of handling each keyword.

**Table 4** [Options] section and keyword settings for setup.ini file

| **Field** | **Description** |
|---|---|
| [Options] | The name of the section that the installation looks for in the setup.ini file. You must use this field as the heading for the keywords described in this table. |
| AesDisabled=1 | Disables AES support. If its set to 1, AES is disabled. The default is enabled. |

**Table 4** [Options] section and keyword settings for setup.ini file (continued)

| **Field** | **Description** |
|---|---|
| AddDesktopShortcut=1 | If set to 1, a shortcut is added to the Desktop for the client. The default is 0 and the shortcut is not created. |
| CustomReadme | If set to 1, the switch will overwrite the existing readme.txt file with a customized readme.txt file. The readme.txt file must be in the installation directory where the setup.exe file was placed. The default is 0 and the existing readme.txt file remains. |
| DisableAutoConnectOverRide=1 | If set to 1, a user cannot disable this feature from their clients. This feature can be overridden from the client. If the server has the AutoConnect feature enabled and a user does not want to use it, they can choose to disable AutoConnect from the client Options menu. The default is 0 and the user can override it. |
| DisableKeepAlives | If set to 1, the menu item will initially be checked. The default is 0 (False) and the item is not checked. |
| DisableLoggingConfig=1 | If set to 1, you cannot configure logging from client UI. The default is 0 and allows you to configure logging. |
| DisplayPasscode=1 | If set to 1, the Passcode screen for tokens is used instead of the standard token and PIN screen. The default is 0 and the standard token and PIN screens are used. |
| DisplayReboot=0 | If SkipScreens=1 and DisplayReboot=0, the Reboot dialog box is skipped. The default is 0 and it skips the screens and the reboot screens warns you to reboot after the client installs.<br>If SkipScreens=1 and DisplayReboot=0, and ForcedReboot=1, the Reboot dialog box appears and then reboots.<br>If SkipScreens=1 and DisplayReboot=0, and ForcedReboot=0, the Dialog box appears and recommends that you reboot. |
| EnableLogging=1 | If set to 1, client is installed with the logging option turned on. The default is 0 and logging is turned off. |
| FolderName=Folder Name | Creates named folder in the Start Menu. Default is Nortel Networks. |

**Table 4** [Options] section and keyword settings for setup.ini file (continued)

| **Field** | **Description** |
|---|---|
| ForcedReboot | If set to 1, this switch will reboot the system immediately after the installation completes.<br>The forced reboot will only be activated when running in Skip Screens Mode or in Silent Mode. The SkipScreens installation switch *must* be asserted. The SkipLicenseAgreement switch can be used with the ForcedReboot switch and has no effect on the reboot switch. The default is 0 and the reboot will not occur. |
| GroupIniFile=group.ini | Indicates the name of the .ini file that has been added to the installation, which should be used to preconfigure group passwords in the registry. The format of the file is described in the next section. |
| HiddenInstall=1 | If set to 1, prevents the client from appearing in the Add/Remove window of the Control Panel and the Start Menu programs. The default is 0 and the client appears in the Start Menu. |
| InstallAsService=1 | If set to 1, installs the client as a service on Windows 2000 and Windows XP.<br>If not set to1, the user will see a dialog to select how to install the client.<br>This does not affect the Installation Type Selection screen and the user's selection always overrides the setup.ini setting.<br>You can also use InstallAsService as a command line switch when you start the installation from the DOS prompt:<br>c:\ >eac410.exe InstallAsService<br>This overrides the setup.ini file setting. |
| InstallGina | If set to 1, NNGINA is installed and the Contivity VPN client is installed as a Windows service. If set to 0, it will not be installed or uninstalled if previously installed. |
| InstallationPath=Drive letter:\folder name | Client installs in this directory\folder if specified. Default C:\Program Files\Nortel Networks. |
| KeepMSIPsecServiceOsSet=1 | To keep the Microsoft Operating System default setting on MS IPsec Service. |

**Table 4** [Options] section and keyword settings for setup.ini file (continued)

| Field | Description |
|---|---|
| LockKeepAlives | If set to 1 (True), the menu item Options > DisableKeepAlives will be grayed out and the user cannot make changes to it after installation.<br>DisableKeepAlives is used to set the initial state of this menu item. If DisableKeepAlives is not specified or set to 0, the menu item Options > DisableKeepAlives will not be checked initially. If set to 1, the menu item will initially be checked. Users are able to switch DisableKeepAlives on/off by selecting the menu item Options > DisableKeepAlives, unless it is locked by specifying LockKeepAlives=1.<br>The default value is 0 (False) and the menu item will appear. |
| LogoffOnConnect | The flag only affects cases when Client is installed as a Service.<br>If set to 1, the menu item Options > Logoff on Connect will be checked after installation.<br>This menu item is used to log off the domain when the tunnel is up.<br>If CVC is installed as GINA and this option is checked, the tunnel will remain up and NNGINA will not show up after you logoff the domain.<br>User can switch this option on/off by selecting the menu item Options > Logoff on Connect.<br>The default value is 0. The menu item will not be checked. |
| LogoffWarning | This flag only affects cases when Client is installed as a Service.<br>If set to 1 (True), the menu item Options > LogoffWarning will initially be checked after installation. In this case, if a user logs off an NT domain while the tunnel is still up (that is, the Contivity VPN Client, run as a service, is still running), a warning dialog will pop up and give 5 seconds to let the user disconnect.<br>Users can switch this option on/off by selecting the menu item Options > LogoffWarning.<br>The default value is 0 (False) and the menu item will not be checked. |
| MSCAPIServerCRLCheck | If MSCAPI server CRL checking is set to 1, server CRL checking is performed for MSCAPI certificate. If set to 0 or missing, server CRL checking is not done. |

**Table 4** [Options] section and keyword settings for setup.ini file (continued)

| **Field** | **Description** |
|---|---|
| MSDUN13PATH=Path | The path to the directory where MSDUN13.exe is located on the CD; the path specified for this variable is searched. |
| NoChangeProfiles=1 | Restricts modifications to client profiles from the client, and no new profiles can be added or users can change only the dial-up numbers (if appropriate), their user name and password (tokencode/pin fields, if appropriate), certificate and password, and nothing else.<br>If set to 1, only the prepackaged baynet.tbk file is used, and no new profiles can be added.<br>Without any changes to the setup.ini file, the remote user can change profiles by default. |
| PreserveTBKFile=1 | During custom installation, if a baynet.tbk file is in the installation directory, the file will be copied to the user during installation.<br>By default, if PreserveTBKFile is not present in the setup.ini file, or if it is set to 0, the baynet.tbk file in the installation directory will always overwrite the one in the user's directory (compatible with previous versions' default behavior).<br>If set to 1, the baynet.tbk file will only be copied if there is not an existing one in the user's directory. Otherwise, the original file will be preserved. |
| ProductName=New Product Name | Client, if nothing is set. |
| RemovePPTP=1 | If set to 1, this always removes PPTP on Windows 98, if detected during installation. A user can verify that PPTP has been removed by opening the Network Control Panel and verifying that Dial-up Adapter #2 and the Microsoft Virtual Private Network Adapter have been removed. The default is 0 and does not remove PPTP. |
| ReceiveBuffers=200 | Allows receive buffers to be set to an integer greater than or equal to 8 and less than or equal to 500. If not set, the default value is 20. **Note:** Due to characteristics of various networks, satellite networks in particular, a larger number of buffers may be required to achieve optimum results. |
| SendBuffers=200 | Allows send buffers to be set to an integer greater than or equal to 8 and less than or equal to 500. If not set, the default value is 20. **Note:** Due to characteristics of various networks, satellite networks in particular, a larger number of buffers may be required to achieve optimum results. |

**Table 4** [Options] section and keyword settings for setup.ini file (continued)

| **Field** | **Description** |
|---|---|
| SkipAutoDial=1 | If set to 1, the autodial application is not added to the Run key in the Registry so autodial must be started manually by launching autoext.exe. The default is 0 and the application is added. |
| SkipAutoDialPrompt = 1 | If set to 1, the AutoConnect process closes the Dialup and Extranet Connections that were launched automatically through the AutoConnect process. The user is not asked, and the connection closes automatically. If set to 0, a prompt appears by default asking whether the Extranet and Dialup connection should be closed. |
| SkipBindCheck=1 | If set to 1, the binding check is skipped. The binding check verifies that fewer than four adapters are bound to TCP/IP when adding the Extranet Adapter. The default is 0 and the binding check occurs. |
| SkipLicenseAgreement | If set to 1, the License Agreement screen is skipped. This option is used with other commands described in the section "Installation modes and options" on page 39. This screen can only be hidden in Silent mode if the switch is set. It will be ignored in GUI mode.<br>**IMPORTANT:** By suppressing presentation of the Nortel Software License Agreement you agree to accept the terms of the agreement on behalf of the users receiving the client software from you. The Nortel Software License agreement can be found on<br>Page 3 of this document or the package containing the client software and documentation CD.<br>If you do not wish to accept the license terms on behalf of the users, then do not suppress presentation of the agreement.<br>**Note:** SkipLicenseAgreement is not available from the command line. |
| SkipScreens=1 | If set to 1, all installation screens, except the License Agreement, are skipped and the client is installed with default settings. If set to 0, installation screens are not skipped, and you can customize the installation. The default is 0 and the screens appear. |

*Sample setup.ini file [Options] section:*

```
[Options]
AddDesktopShortcut=1
DisplayPasscode=1
GroupIniFile=group.ini
```

## Installation modes and options

### Verbose mode

Verbose mode is the default installation mode. All dialog boxes are displayed. The user must respond to each dialog during the installation.

### Skip Screens mode

In this mode, the dialog boxes do not appear. The license agreement dialog appears, and the message `Setup Complete...Restart the System before using the Contivity VPN Client` is shown for 4 seconds. No reboot is performed.

In setup.ini set the following:

```
[Options]
SkipScreens=1
```

### Silent mode

In this mode, no license agreement appears, and the message `Setup Complete...Restart the System before using the Contivity VPN Client` is shown for 4 seconds. No reboot is performed.

In setup.ini set the following:

```
[Options]
SkipLicenseAgreement=1
SkipScreens=1
```

## Quiet mode

In this mode, the user must dismiss the license agreement and then the reboot/finish dialog. The user can reboot now or at a later time.

In setup.ini set the following:

```
[Options]
SkipScreens=1
DisplayReboot=1
```

## Reboot Only mode

No license agreement appears, and the reboot/finish dialog appears and must be dismissed by the user. The user can reboot now or at a later time.

In setup.ini set the following:

```
[Options]
SkipScreens=1
DisplayReboot=1
SkipLicenseAgreement=1
```

## Silent with Forced Reboot mode

This switch reboots the system immediately after the installation completes. The forced reboot is only activated when you are running in Skip Screens mode or in Silent mode. The SkipScreens installation switch *must* be asserted. You can use the SkipLicenseAgreement switch with the ForcedReboot switch. It has no effect on the reboot switch.

In the following case, no license agreement is displayed, and the Contivity VPN Client setup is completed. The system reboots and the message disappears after 4 seconds.

In setup.ini set the following:

```
[Options]
SkipScreens=1
ForcedReboot=1
SkipLicenseAgreement=1
```

# Setting up the group.ini file

The group.ini file format distributes preconfigured group passwords in conjunction with preconfigured Profiles (Table 5). You create this file and include it with the custom files (just like the custom icons), along with your preconfigured baynet.tbk file.

➡ **Note:** The corresponding profile entry must have an authtype that uses group authentication. If it does not, the client will not look for the group ID and group password when displaying the authentication options.

The installation configures the registry with the temporary text group passwords. The text group passwords are encrypted and deleted the first time the client is run after the installation. By distributing the group passwords this way, users never need to enter the information. Instead, they can rely on their token cards and PINs, or RADIUS passwords for connection protection. You cannot preconfigure PINs or user-level passwords, only group-level passwords.

**Table 5** Settings for group.ini file

| **Field** | **Description** |
|---|---|
| [ProfileNames] | Name of the section that the installation looks for to send the names that are configured within this file. You must use this field as the heading. |
| 1=MyExtranetConnection | Profile name that exists in baynet.tbk. |
| 2=OtherExtranetConnection | Profile name that exists in baynet.tbk. |
| 3=AnotherExtranetConnection | Profile name that exists in baynet.tbk. |
| GroupPW=mygrouppassword | Text group password taken from the switch under Groups > Edit: IPsec Configure settings. |
| NoSavePassword=1 | Prevents the user from trying to save the user password or PIN; this is also done from Groups > Edit: IPsec Configure settings. |
| [MyExtranetConnection] | Profile name of your connection. |

Sample group.ini:

```
[ProfileNames]
1=VPN Your City
[VPN Your City]
GroupPW=password
NoSavePassword=1
```

The following list describes the changes you can make:

- Change the product name that is displayed during the installation process. This also changes the product name that is added to the program folder. It does not change the name that is displayed on the boxes of the application itself, only the names displayed in the Start > Programs folder. The product name is Contivity VPN Client by default.
- Change the program folder name to which the product shortcuts are added. The folder name is Nortel Networks by default.
- Skip the check that is made for the number of existing TCP/IP bindings. You can also do this from the command line using the switch:

  ```
  -SKIPBINDCHECK
  ```

  If both the setup.ini switch and command line switch are used, the command line switch takes priority.
- Skip all the installation screens (except for the license screen). This is the same as using -AUTO on the command line. If used in conjunction with -AUTO, the command line switch takes priority.

You can skip adding the password change icon in the program folder. You can change the password from the menu of the task bar icon that is created when the tunnel is established. The password change application is unnecessary but is maintained for backward compatibility.

# Custom icons

You use the custom client icon facility to insert your corporate icons in place of the existing icons for the client. There are four Nortel Networks icon groups that you can replicate, and within each of the four, you should create different indicators that imply activities such as sending or receiving data or establishing a connection.

The customizable installation files are in the \client\custom directory on the Nortel Networks CD. Select all of the files and paste them into an empty directory on your PC called, for example, Custom Install.

## Create your icons

There are three steps involved in creating a custom icon:

1. Create the icon.
2. Rename the icon according to the Nortel Networks custom icon conventions.
3. Copy the renamed icon to the custom installation directory.

You must follow these steps for each of the following icon groups:

- Contivity VPN Client application icon
- Contivity VPN Client task bar icons
- Contivity VPN Client connecting icons

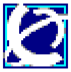
There are from two to four different representations of the group icon within each group. You can create icon bitmaps in whatever style you prefer; however, the Nortel Networks icons are intended to convey a message for the given action, such as data transfer activity or establishing a connection.

The following sections describe the icon type that you should create, and also show you where the icon appears in the client application.

## Client application icon (eacapp.ico)

The client application icon eacapp.ico (Figure 10) is used in place of the corporate icon, in the upper-left corner of the main application window, while the connection is being established and during disconnection.

**Figure 10** Client application icon



This icon is also used as the Desktop Shortcut icon when you create an Auto-Connect shortcut from the Create Shortcut selection under the Contivity VPN Client file menu. Additionally, it appears in the program folder that is created during the installation process:

Start > Program Files > Nortel Networks > Contivity VPN Client

To replace the Contivity VPN Client application icon, create an icon called eacapp.ico. Next, copy the icon to your custom installation directory with all of the custom installation files.

## Contivity VPN Client task bar icons

These icons appear in the task bar to indicate data activity through the tunnel. To replace task bar icons, create four icons (blinknone.ico, blinkright.ico, blinkleft.ico, blinkboth.ico), and copy them into your custom installation directory with all of the custom installation files. Figure 11 is a sample icon with four icons created.

**Figure 11** Sample icon

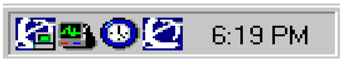


Figure 12 is a task bar icon that indicates that the client is running, but that no data is currently being transferred.

**Figure 12** Blink none (blinknone.ico)

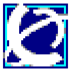


Figure 13 is a task bar icon that indicates that the client is transmitting data through the tunnel.

**Figure 13** Blink right (blinkright.ico)

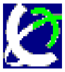


Figure 14 is a task bar icon that indicates that the client is receiving data into the tunnel.

**Figure 14** Blink left (blinkleft.ico)

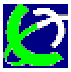


Figure 15 is a task bar icon that indicates that data is being both transmitted and received through the tunnel.

**Figure 15** Both (blinkboth.ico)

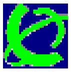
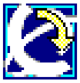


Figure 16 is an icon group that shows activity during the client connection process. Activity is shown through a cycle of four different icons with an arrow pointing clockwise through each of the four quadrants of the circular icon.

**Figure 16** Client connecting icons



To replace the client connection icons, create a series of icons and rename them (connect1.ico, connect2.ico, connect3.ico, connect4.ico), then copy them into your custom installation directory with all of the custom installation files.

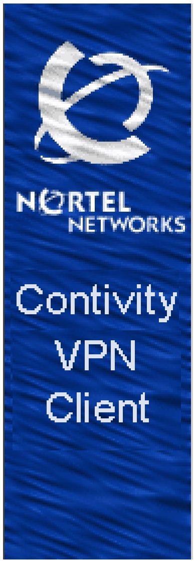
# Custom bitmaps

This section describes how to insert custom bitmaps in the main client dialog box message, the client status message, and the Extranet Connection Manager dialog box.

## Client dialog bitmap (eacdlg.bmp)

Figure 17 on page 46 is the bitmap on the main dialog box of the client.

**Figure 17** Contivity VPN Client bitmap



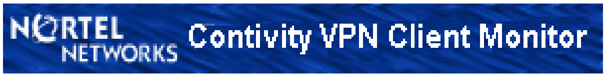
To replace it with a custom bitmap:

1. Create a 16-color bitmap that is 93 x 279 pixels.
2. Name the bitmap eacdlg.bmp.
3. Copy it into the custom installation directory with the other custom icons and installation files.

## Client status bitmap (eacstats.bmp)

Figure 18 shows the bitmap on the status dialog box of the client. It is accessible only when a tunnel has been established.

**Figure 18** Client status bitmap



To replace the status bitmap with a custom bitmap:

1. Create a 16-color bitmap that is 303 x 32 pixels.
2. Name the bitmap eacstats.bmp.

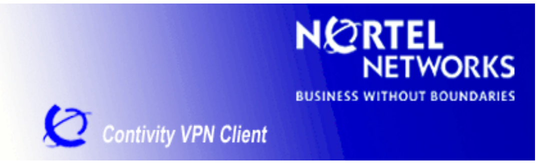
**3** Copy it into the custom installation directory with the other custom icons and installation files.

You can copy all of the files from your custom installation directory onto diskettes, or you can put them into a network directory for corporate clients to retrieve.

## Client GINA bitmap (nnginadlg.bmp)

You can brand or customize the Contivity VPN Client NNGINA dialog. You can customize and replace the bitmap that is displayed on the GINA dialog (Figure 19).

**Figure 19** GINA bitmap



The client checks for a new customized bitmap each time the dialog is initialized. The NNGINA looks for a custom bitmap named nnginadlg.bmp in the installation directory under the icons folder. If the Contivity VPN Client was installed into the D:\Program Files\Nortel Networks directory, the NNGINA will look for the custom bitmap as D:\Program Files\Nortel Networks\icons\ nnginadlg.bmp. The Contivity VPN Client NNGINA bitmap is 417 X 113; any custom bitmaps of a varying size will be scaled to fit.

The Contivity VPN Client must be installed as a service and the NNGINA checks that this is the case.

# Banners

## Security banners

A Security banner displays a message that is pushed from the server when a VPN tunnel is established, if the banner has been configured on the server. All traffic to the server is blocked until the user acknowledges the banner. The user has three options:

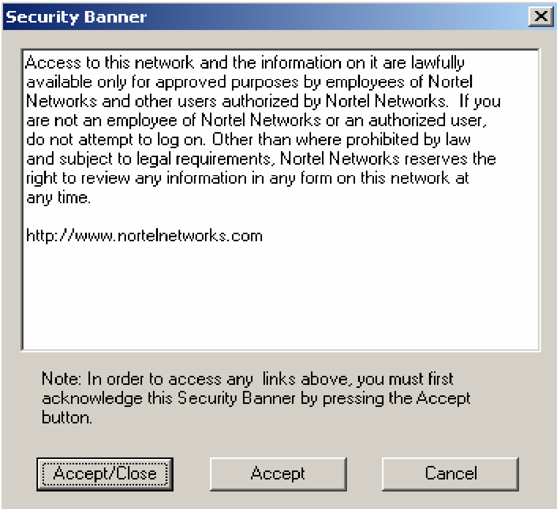
Accept/Close — allows traffic to flow and the dialog box closes

Accept — allows traffic to flow, the Security banner remains visible, and all links are clickable

Cancel — terminates the tunnel immediately

Figure 20 shows the Security banner screen.

**Figure 20** Security banner



Access to this network and the information on it are lawfully available only for approved purposes by employees of Nortel Networks and other users authorized by Nortel Networks. If you are not an employee of Nortel Networks or an authorized user, do not attempt to log on. Other than where prohibited by law and subject to legal requirements, Nortel Networks reserves the right to review any information in any form on this network at any time.

http://www.nortelnetworks.com

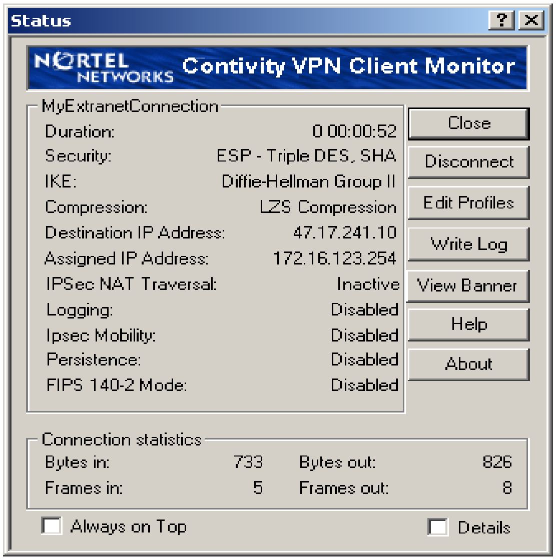
Note: In order to access any links above, you must first acknowledge this Security Banner by pressing the Accept button.

The Security banner has a time-out. If the user does nothing for two minutes, the connection is terminated. A log entry is made when the Cancel button is pressed or a time-out occurs.

There is also a View Banner button on the status dialog box. This allows the user to view the banner at any time. When View Banner is pressed, the banner is displayed with the links enabled.

Figure 21 shows the screen with View Banner.

**Figure 21** Screen with View Banner option


Status

NORTEL NETWORKS Contivity VPN Client Monitor

MyExtranetConnection

Duration: 0 00:00:52

Security: ESP - Triple DES, SHA

IKE: Diffie-Hellman Group II

Compression: LZS Compression

Destination IP Address: 47.17.241.10

Assigned IP Address: 172.16.123.254

IPSec NAT Traversal: Inactive

Logging: Disabled

Ipsec Mobility: Disabled

Persistence: Disabled

FIPS 140-2 Mode: Disabled

Connection statistics

Bytes in: 733 Bytes out: 826

Frames in: 5 Frames out: 8

□ Always on Top □ Details

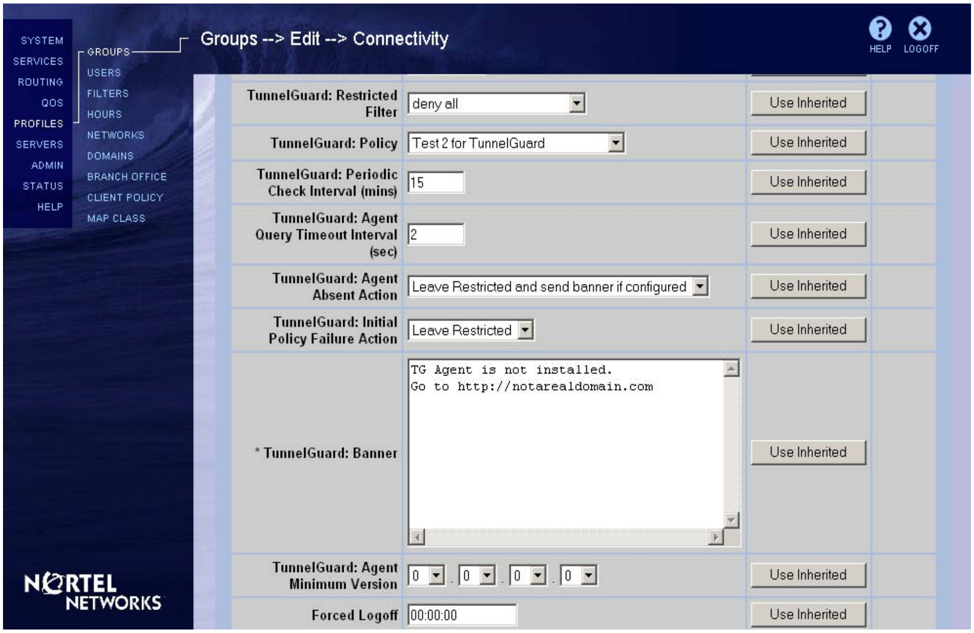
## Dynamic Domain Name System (DNS)

The DNS registration and deregistration were separated to lessen the 25 second delay it took for a Security banner to open. The deregistration operation stops if it cannot finish in three seconds. Also, if a DNS operation starts before another DNS operation is finished, it asks the latter to terminate. If the latter is still alive after 0.5 seconds, the former quits; otherwise, it continues.

## TunnelGuard Notify banner

If TunnelGuard checking is enabled on the server, the server periodically checks for the existence of TunnelGuard Agent. If this check fails, the server sends a message to Contivity VPN Client. The contents of the message are displayed in a message box (Figure 22 on page 50). To read more about this banner, see *Configuring TunnelGuard for the Contivity Secure IP Services Gateway.*

**Figure 22** TunnelGuard Notify banner



Groups --> Edit --> Connectivity

| | | |
|---|---|---|
| TunnelGuard: Restricted Filter | deny all | Use Inherited |
| TunnelGuard: Policy | Test 2 for TunnelGuard | Use Inherited |
| TunnelGuard: Periodic Check Interval (mins) | 15 | Use Inherited |
| TunnelGuard: Agent Query Timeout Interval (sec) | 2 | Use Inherited |
| TunnelGuard: Agent Absent Action | Leave Restricted and send banner if configured | Use Inherited |
| TunnelGuard: Initial Policy Failure Action | Leave Restricted | Use Inherited |
| * TunnelGuard: Banner | TG Agent is not installed.<br>Go to http://notarealdomain.com | Use Inherited |
| TunnelGuard: Agent Minimum Version | 0 . 0 . 0 . 0 | Use Inherited |
| Forced Logoff | 00:00:00 | Use Inherited |

# Installing a custom client

To automatically install the extranet applications as well as the custom icons, double-click on the setup.exe file. The installation program detects the presence of the custom icons and bitmaps and copies the custom files into a subdirectory of the target installation directory called Icons. By default, this directory is:

C:\Program Files\Nortel Networks\Icons

To repackage your custom installation with the new icons and bitmaps into a self-extracting executable file, and to make it simpler to distribute the custom installation to users (as one file instead of many), use PackageForTheWeb, available from InstallShield:

http://support.installshield.com

To automate the Contivity VPN Client installation, use the command line option AUTO when running the installation. This causes the Contivity VPN Client installation to install with all default options selected. To run the automatic installation, enter the following under Start > Run:

```
eac601d.exe AUTO
```

If you are running a custom installation that is not packaged as a self-extracting executable (such as eac260d.exe), run the setup as follows from the Start > Run menu item:

```
setup.exe AUTO
```

You must respond to the license screen. Other interaction is required only if the installation requires files from the Windows installation CD.

Use the command line switch PreserveTBKFile to specify whether to overwrite an existing baynet.tbk file during the installation. If PreserveTBKFile is set to 1, the baynet.tbk file will only be copied if there is not an existing one in the users directory. Otherwise, the original file will be preserved.

To create and use your own README.TXT file for your custom installation:

1. Create the README.TXT with a text editor and save it in ASCII text format.
2. Set CustomReadme=1 in the setup.ini file under the [Options] section.
3. Copy the file into the setup directory. This will override the README.TXT CAB file that is included in the client software.

## Controlling the client from a third-party application

**Note:** Application Program Interface (API) is a programming interface that enables applications to create a VPN connection, terminate the connection, and query the status of the connection. To learn more about this feature, contact Nortel Support at 1 800 4Nortel.

You can write an application and then have it establish a tunnel with command-line switches. For example, you can collect a user name, password, and destination address in your application, and with that information launch the client (extranet.exe) to establish a tunnel.

To launch the client from your application, use the call:

```
ShellExecute() or CreateProcess()
```

To pass the user name and password that the user supplied to the application in the command line (the destination is the remote server), use one of the following commands.

- If you are using an LDAP user name and password for authentication:

  ```
  Extranet.exe -U username,password,destination
  ```

- If you are using a RADIUS user name and password for authentication:

  ```
  Extranet.exe -R
  username,password,destination,groupid,grouppassword
  ```

If the application also supplies a Windows message and Windows handle for the application, the Contivity VPN Client notifies the application when the connection is established. Table 6 lists all of the command line parameters that the client recognizes.

**Table 6** Command line parameters

| **Switch** | **User entry** | **Description** |
|---|---|---|
| -h | <*Windows handle*> | The Windows handle of the application launching the client. |
| -m | <*message handle*> | The Windows message to post to the handle, passed in -h, when the connection is established or fails to be established. |
| -a | <*profile*> | Activates the connection profile to use. |
| -o | <*profile*> | Opens the profile (allows the user to edit a profile). |
| -d | <*profile*> | Indicates the connection profile to delete. |
| -n | n/a | Creates a new connection profile using the Connection Wizard. |
| -u | <*username,password,destination*> | Activates a connection with the supplied LDAP user information. |
| -r | <*username,password,destination, groupid,grouppassword*> | Activates a connection with the supplied RADIUS user information. |
| -e | <*Entrust.epf, password, destination*> | Activates the connection to the server. |
| -t / -T | n/a | Shuts down the VPN tunnel connection and terminates the VPN client application. |
| -l / - log | n/a | Enables logging. |
| -s / -S | -a, -e, -r, or -u | Runs in silent success mode, which hides the dialog boxes that display during the connection. |

There are two new command line switches:

- altname <subj-alt-name>
- alttype <number>

For the alttype command line switch, use one of the following:

- CN_RFC822_NAME 1
- CN_DNS_NAME 2
- CN_DIRECTORY_NAME 4
- CN_RESOURCE_LOCATOR 6
- CN_IP_ADDRESS 7
- CN_REGISTERED_ID 8

A sample command line string to launch the client *and* get a message posted back to the launching application is:

```
Extranet.exe -h 1234 -m 1225 -a MyExtraNetConnection
```

Following the example above, when the tunnel either connects or fails to connect, the IPsec client responds:

```
PostMessage(1234, 1225, (IPsec Hwnd), True/False).
```

When the message is posted back to the Windows handle of your application, lParam indicates success or failure.

When the tunnel is established, lParam is True; when tunnel establishment fails, lParam is False. The server does not report additional error handling, because the IPsec client tells the user why the connection failed.

To programmatically disconnect the extranet connection, post a WM_USER Message (PostMessage) to the Windows handle of the IPsec client (call FindWindow for the title of the Contivity VPN Client window). Set lParam to True to disconnect the tunnel. If you set lParam to False and issue a SendMessage instead of a PostMessage, then the IPsec client tells you if it is connected (True) or not (False).

➡ **Note:** To successfully terminate the client by command line with a relative path argument (as required by DOS), the Contivity VPN Client path must be included in the DOS PATH environment variable. Alternatively, you can pass the absolute path to the client by command line if it is within quotation marks. For example, from Windows Start > Run > Open, c:\program files\nortel networks\extranet.exe -t will fail unless the path to the client is contained in the PATH environment variable. However, “C:\Program Files\Nortel Networks\Extranet.exe” -t will successfully terminate the Contivity VPN Client application.

## Running in silent success mode

You can launch the client application with -s or -S option from the command line for running in silent success mode. This mode hides the common dialogs which are displayed during the connection, providing less user interaction with the client.

Use `-s -a <profile>` to use connection profile.

Use `-s -u <username,password,destination>` to activate a connection with the LDAP authentication.

Use `-s -r <username,password,destination,groupid, grouppassword>` to activate a connection with the RADIUS authentication.

Use `-s-e <entrust.epf, password>` to activate a connection with Entrust authentication.

## Remotely changing the group password

To provide a method to overwrite the group password information, the Contivity VPN Client has a set of command line options for the different authentication methods.

The syntax is:

```
extranet.exe -auth <authentication type> -user <username> -pwd
<password> -gid <gid> -gpwd <group password> -serverip <server ip>
-pin <PIN> -code <tokenCode>
-profile <profile name> -axentPath <axentpath>
altname <subj-alt-name> -alttype <number>
```

The <authentication type> can be:

```
0: User name, password login
1: Axent hardware token
2: SecureId hardware token
3: Simple GroupId, Password
4: Axent software token
5: SecureId software token
6: Entrust
9: MSCAPI
10: From profile
```

For example, if -auth=10, the authentication type is decided by profile. The commandline switch always overwrites the ones in profile.

Some switches may be optional when using a profile as an authentication method. If you provide the switches, the one specified in profile is overwritten. Some switches, such as password and group password, are required. If the password or group password is saved in the registry, they are optional. If you provide the switches, the one saved in registry is overwritten.

Previous command line options did not cover all of the authentication methods (using commas to separate authentication information), but they will continue to work.

The following examples describe the different authentication methods.

If you are using user name, password logon:

```
extranet.exe -auth 0 -user <username> -pwd <password> -serverip
<server ip>

extranet.exe -auth 10 -profile <profilename> -user <username> -pwd
<password> -serverip <server ip>
```

If you are using the Axent hardware token:

```
extranet.exe -auth 1 -user <username> -serverip <serverip> -gid
<gid> -gpwd <group password>

extranet.exe -auth 10 -profile <profilename> -user <username>
-serverip <serverip> -gid <gid> -gpwd <group password>
```

If you are using SecurID hardware token:

```
extranet.exe -auth 2 -user <username> -pin <PIN> -code <tokenCode>
-serverip <server ip> -gid <group id> -gpwd <group password>

extranet.exe -auth 10 -profile <profilename> -user <username> -pin
<PIN> -code <tokenCode> -serverip <server ip> -gid <group id> -gpwd
<group password>
```

If you are using a simple group Id and password:

```
extranet.exe -auth 3 -user <username> -pwd <password> -serverip
<server ip> -gid <group id> -gpwd <group password>

extranet.exe -auth 10 -profile <profilename> -user <username> -pwd
<password> -serverip <server ip> -gid <group id> -gpwd <group
password>
```

If you are using an Axent software token:

```
extranet.exe -auth 4 -axentPath <axentpath> -serverip <server ip>
-gid <group id> -gpwd <group password>

extranet.exe -auth 10 -profile <profilename> -axentPath <axentpath>
-serverip <server ip> -gid <group id> -gpwd <group password>
```

If you are using a SecurID software token:

```
extranet.exe -auth 5 -user <username> -pin <PIN> -serverip <server
ip> -gid <group id> -gpwd <group password>

extranet.exe -auth 10 -profile <profilename> -user <username> -pin
<PIN> -serverip <server ip> -gid <group id> -gpwd <group password>
```

If you are using Entrust:

```
extranet.exe -auth 6 -user <entrust profile path> -pwd <entrust
profile password> -serverip <server ip>

extranet.exe -auth 10 -profile <profilename> -user <entrust profile
path> -pwd <entrust profile password> -serverip <server ip>

extranet.exe -auth 6 -user <profilename> -pwd <entrust profile
password> -altname <subj-alt-name> -alttype <number> -serverip
<server ip>
```

If you are using MSCAPI:

```
extranet.exe -auth 9 -user <MACAPI certificate string> -serverip
<server ip>

extranet.exe -auth 10 -profile <profilename> -user <MACAPI
certificate string> -serverip <server ip>
```

# GINA chaining

GINA chaining detects the presence of a previously installed third-party GINA and passes all pass-through calls to that particular GINA. Because it is possible that some third-party GINAs could conflict with NNGINA, a list of conflicting third-party GINAs is available to determine if the installation should proceed. The GinaList.ini file is located in the custom installation directory so that you can add additional conflicting third-party GINAs.

Format of GinaList.ini:

```
#Following Ginas conflict with Nortel Networks' NNGINA.

#The comment line right above the Gina DLL will be shown to users if
it's detected.

#Cisco Gina DLL

CSGina.dll

#X Gina DLL

X.dll
```

The comment preceding the identified conflicting GINA is displayed to the installing user if the specified GINA is detected during installation.

## IPsec mobility and persistent tunneling

IPsec mobility maintains IPsec connections for mobile users, allowing them to roam from subnet to subnet without terminating applications. It maintains a connection between the Contivity VPN Client and the Contivity Secure IP Services Gateway with minimum data loss when the IP address changes. After the client has been notified by the operating system that the IP address has changed, it notifies the Contivity gateway. These messages are encrypted and authenticated based on the IKE SA to ensure security.

The Contivity VPN Client logs events to the logfile. This includes events such as Contivity VPN Client sending messages that the IP address changed, and receiving acknowledgement that these messages were received by the Contivity gateway.

The Contivity VPN Client status monitor reports if roaming is enabled for the session. The event log on the Contivity gateway reports on IPsec mobility actions.

When operating in split tunneling mode, the Contivity VPN Client periodically checks the routing table on the client's machine to determine if the table has been altered in any way. This checking is done for security reasons to detect intrusions and unauthorized access to the private network. When a routing table change is detected, the tunnel is brought down.

When operating in IPsec mobility mode with split tunneling enabled, the Contivity VPN Client does not consider the routing table to be maliciously altered and will not bring down the tunnel in the following cases:

- IP address change for any adapter
- Adapter has been removed
- Adapter is plugged in and connects

## Inverse split tunneling

### Using the 0.0.0.0/0 subnet wildcard

To configure auto-detection on directly connected local subnets, add a subnet of 0.0.0.0 with a 0.0.0.0 mask to the inverse split tunnel networks list on the CES. The 0.0.0.0/0 is simply a wildcard to be expanded. When the Contivity VPN Client receives the list of inverse split networks, it expands the 0.0.0.0 to include all of the directly connected local subnets detected on the host. Any additional subnets in a list are processed as before.

After expansion, traffic destined for these subnets is allowed to flow outside of the tunnel. This option is valid for both the Inverse Split and Inverse Split (Locally Connected) modes, but it is really only useful for the first variant. The subnets generated by the 0.0.0.0/0 expansion always pass the Locally Connected test since, by definition, they must be locally connected. Any additional subnets listed are either duplicates of the wildcard expansion or would not pass the test.

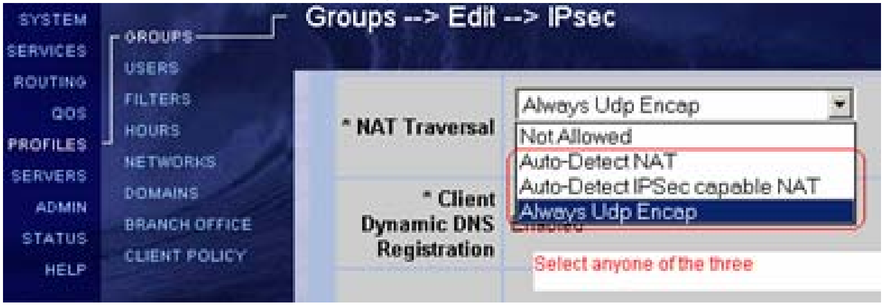
### Configuring the subnet wildcard

To configure the subnet wildcard:

**1** Select Profiles > Groups > Edit > IPsec.

Figure 23 on page 61 shows the Edit > IPsec page with Inverse split tunneling.

**Figure 23** Edit > IPsec page for wildcard



Groups --> Edit --> IPsec

* NAT Traversal: Always Udp Encap

- Not Allowed
- Auto-Detect NAT
- Auto-Detect IPSec capable NAT
- Always Udp Encap

* Client Dynamic DNS Registration: Enabled

Select anyone of the three

**2** Select Enabled - Inverse or Enabled Locally Connected from the Split Tunneling drop-down menu.

The Split Tunneling drop-down menu is used to select the tunneling mode that will be used by the selected group. Table 7 shows the options.

**Table 7** Tunneling mode options

| Split Tunneling Selection | Network Selection sent to Contivity VPN Client |
|---|---|
| Disabled | None |
| Enabled | Split Tunnel networks |
| Enabled-Inverse | Inverse Split Tunnel Networks |
| Enabled-Inverse (locally connected) | Inverse Split Tunnel Networks |

**3** Select None from Split Tunnel Networks drop-down menu.

**4** Select a network from the Inverse Split Tunnel Networks drop-down menu.

**5** Click OK.

## Configuring tunneling modes using the CLI

The tunneling mode is selected in the CLI using the following commands after entering group ipsec configuration mode.

```
split tunneling <enable|inverse|inverse-local>
```

If you are using a split tunnel, the split tunnel networks are defined using the following command:

```
split tunnel-network <defined network name>
```

For inverse-split and inverse-local options, the inverse-split tunnel networks are defined using this command:

```
split inverse-tunnel-network <defined network name>
```

Example (split tunnel)

```
group ipsec "/Base/Mike/Split Tunneling"
split tunneling enable
split tunnel-network "17 Net"
Example (inverse-split tunnel)
group ipsec "/Base/Mike/Inverse Split Tunneling"
split tunneling inverse
split inverse-tunnel-network "16 Net"
```

Persistent tunneling provides a continuous connection. After successfully establishing a tunnel session to the Contivity gateway, the Contivity VPN Client makes every attempt to maintain a viable VPN connection without additional user intervention.

For further configuration information on IPsec mobility and persistence, see *Configuring Basic Features for the Contivity Secure IP Services Gateway.*

## Co-existence with MS IPsec service

The Contivity VPN Client can co-exist with Microsoft IPsec Policy Service. Contivity VPN Client uses NAT Traversal (UDP wrapping) to avoid conflicts if the MS IPsec policy service is enabled or started.

**Note:** The server must be NAT Traversal enabled to support this feature.

### Configuring co-existence with MS IPsec service

To configure co-existence with MS IPsec service:

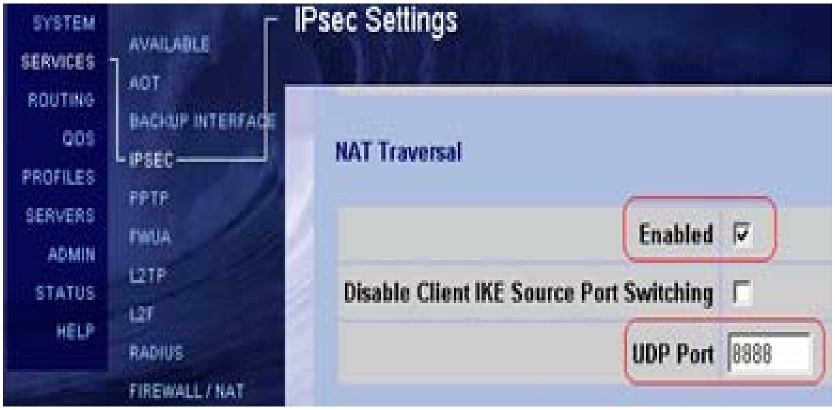
1 Select Services > IPsec from the Contivity Secure IP Services Gateway. The IPsec Settings page opens.

2 Enable NAT Traversal.

3 Set the UDP port to an unused port.

Figure 24 shows the IPsec Settings page with NAT Traversal enabled. and the UDP port set to an unused port.

**Figure 24** IPsec Settings page



IPsec Settings

NAT Traversal

Enabled ☑

Disable Client IKE Source Port Switching □

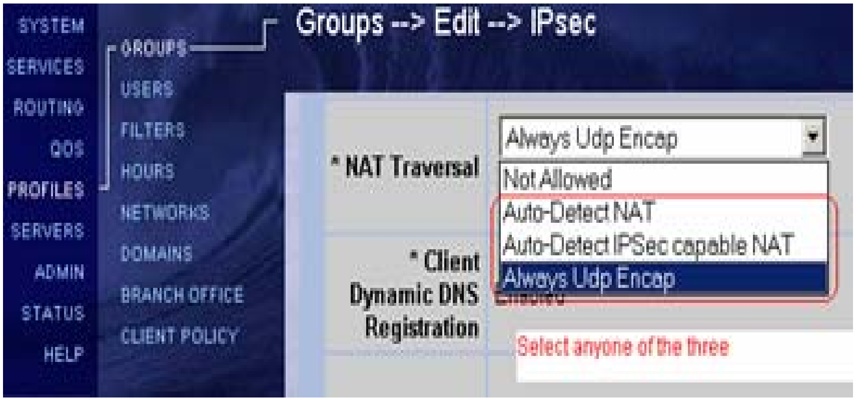
UDP Port 8888

4 Select Profiles > Groups > Edit > IPsec. The Groups > Edit > IPsec page opens.

5 Select one NAT Traversal type.

Figure 25 shows the Group > Edit > IPsec page with one NAT Traversal type selected.

**Figure 25** Groups > Edit > IPsec page



Groups --> Edit --> IPsec

* NAT Traversal: Always Udp Encap

- Not Allowed
- Auto-Detect NAT
- Auto-Detect IPSec capable NAT
- Always Udp Encap

* Client Dynamic DNS Registration

Select anyone of the three

6 Click OK.

# Chapter 3 Using certificates

This chapter provides information to help you customize your client to use certificates.

## MS CryptoAPI

The Contivity VPN Client supports retrieval of X.509v3 certificates from Microsoft Certificate storage through the Microsoft CryptoAPI (MS CAPI). Microsoft provides a Public Key Infrastructure (PKI) that adheres to the Public-Key Cryptography Standards (PKCS).

Using the Microsoft Certificate storage allows the Contivity VPN Client full access to the Microsoft Certificate storage and management tools. The Microsoft Certificate storage and management tools use PKCS standards-based messages and protocols to manage key pair generation and storage.

Microsoft Certificate storage also provides a mechanism to import digital certificates granted by third-party Certification Authorities through the use of standard messages (PKCS #12). This allows the Contivity VPN Client and the Contivity Secure IP Services Gateway to make use of Certification Authorities, such as Netscape, that have not been tightly integrated with the Contivity VPN Client and the Contivity gateway.

Digital certificates are currently supported by the Contivity ISAKMP key management protocol. Both the Contivity VPN Client and the Contivity VPN Secure IP Services Gateway can be configured to mutually authenticate using digital certificates during the IKE negotiation.

**Note:** You can use any tools provided by a Certification Authority (CA) that support and have been integrated with MS CAPI to create certificate requests.

## MS-CAPI feature dependencies and backward compatibility

The Contivity VPN Client has dependencies on the Microsoft Crypto-API. Due to the varying availability of these required features on the different Windows platforms, there may be some restrictions. When using a Microsoft Enterprise CA, the Contivity VPN Client Version 4.10 installed on Windows XP, Windows 2000 or later, and using certificates in MS-CAPI store, it is backwards compatible with the Contivity gateway Version 3.65 or later due to the required certificate extension processing feature on the gateway.

## MSCAPI server CRL checking

MSCAPI server Certificate Revocation List (CRL) checking is disabled by default. MSCAPI server CRL checking is governed by the HKLM\Software\Nortel Networks\Extranet Access Client\MSCAPIServerCRLCheck registry key. If the parameter MSCAPIServerCRLCheck is set to 1, server CRL checking is performed. If it is set to 0 or missing, server CRL checking is not performed.

For a custom client installation, you can use the setup.ini file to create and initialize the MSCAPIServerCRLCheck registry key. To do this, set MSCAPIServerCRLCheck to 0 or 1 in the setup.ini options section:

```
[Options]
MSCAPIServerCRLCheck=1
```

The Entrust functionality remains unchanged.

## Microsoft CA digital certificate generation

There are two methods for requesting and retrieving a digital certificate from the Microsoft CA:

- A digital certificate can be created on the trusted CA system and distributed through PKCS #12 BER encoded messages or files.
- A digital certificate can be requested from the client system itself, if the trusted CA is accessible from the client making the request through an MS Internet Explorer browser.

The steps needed to create the actual digital certificate request (PKCS #10) are always the same no matter how you make the request. The difference is where the private key material is created and, more importantly, stored.

When you make the digital certificate request from the client, the private key material is generated and stored locally. The PKCS #10 message does not contain private key material. Generally a user wants to keep all private key information and key material private and protected. The digital certificate is then retrieved as a PKCS #7 message and imported into the MS-CAPI store through the Internet Explorer browser, or the Internet options CertMgr tool.

When you request a digital certificate from the system housing the Microsoft CA, the private key material is generated and stored locally, on the CA system. Therefore the CA can generate a PKCS #12 message that is a password-protected BER-encoded message. The resulting PKCS #12 message contains public/private key material as well as the associated digital certificate. The PKCS #12 message can then be distributed to certificate holders in a secure manner and can then be imported into the MS-CAPI store on the local client system.

It is easier to make requests and import the resulting certificates from the client.

### Steps from browser running on client system or CA system

1. Attach to your CA through your browser.
2. Select Request a certificate.
3. Select Advanced request.
4. Select Submit a certificate request to this CA using a form.

5. Fill out Identifying Information: (Subject DN).
6. Fill out Intended Purpose: (Client Authentication Certificate and IPsec Certificate). The CSP is the Crypto Provider that will generate the key pair.
7. Click on Submit. Be sure to remember the request ID.

## Netscape digital certificate generation

1. Connect to Netscape CA.
2. Select Manual Object Signing Enrollment or Object Signing (Browser).
3. Fill out User's Identity.
4. Specify Contact Information.
5. Select the key size (512,1024).
6. Click on Submit. Be sure to remember the request ID.

## Importing a digital certificate into MS-CAPI store

There are two scenarios when you are importing a digital certificate into the MS-CAPI store:

- When you are using the Microsoft CA, the import process can be done directly from Internet Explorer when retrieving the digital certificate from the CA.
- When using other CA certificates, the client user or CA administrator additionally needs to produce a PKCS #12 message that contains the private/ public key pair as well as the digital certificate. This can then be imported into the MS-CAPI store through the Internet options tools or the Internet Explorer browser.

**Note:** When importing a certificate into the MS-CAPI store, you will also need to import the issuing CA certificate.

## Microsoft CA digital certificate retrieval

After the Microsoft CA administrator has approved the certificate, it can be retrieved through the Internet Explorer browser and imported directly into the MS-CAPI store.

**Note:** You cannot use the Netscape browser, because it fails to see the certificates approved.

1. Attach to your CA from your browser.
2. Select Check on a pending certificate (next ->).
3. Select the desired certificate request (PKCS #7). Please select the certificate request you want to check.

   To import the PKCS #7 request into the MS-CAPI store, select Certificate Issued - install this certificate?

   You will see the message Certificate Installed and your new certificate has been successfully installed.

## Netscape digital certificate retrieval

After the Netscape CA administrator has approved the certificate, it can be retrieved through the Netscape browser and imported directly into the MS-CAPI store.

1. Attach to the Netscape CA from your browser.
2. Select the Retrieval tab.
3. Type in the Request ID from the digital certificate request and click on submit.
4. Click on Issued certificate: #
5. To import the certificate into your Netscape client certificate store, go to the bottom of the page and click on Import Your Certificate.

   Your public/private key material as well as your digital certificate are now stored in the Netscape certificate store.

## Configuring Contivity VPN Client for MS stored certificates

You can use the Connection Wizard from the Contivity VPN Client to configure the client connection to use Microsoft stored certificates. You can also configure MS stored certificates by selecting Options > Authentication.

1. Double-click on the Contivity VPN Client icon.

   The Contivity VPN Client screen appears.

2. Select File > Connection Wizard.

   The New Connection Profile screen appears.

3. Enter a name and description, then click on Next.

   The Authentication Type screen appears.

4. Select Digital Certificate; then click on Next.

   The Digital Certificate Type screen appears.

5. Select Microsoft Stored Certificate; then click on Next.

   The Microsoft Certificate Store screen appears. By default, this screen lists all of the certificates available, including the key usage field for the certificate. If you check the “Display Only Signature Certificate” box, only the digital signature is displayed.

## Server certificate CRL checking

MS CAPI support on the Contivity VPN client provides checking the revocation status of the server certificate. The client always checks for a CRL upon connection.

If you receive a message indicating that the server certificate used for mutual authentication has been revoked or cannot be validated, it indicates that the server certificate has actually been revoked or the CRL distribution point is inaccessible, as defined in the CRL distribution point extension of the server’s X.509 certificate.

The actual message is "The Server's Certificate has been revoked, or could not be validated. Please check with your remote access administrator. The Connection has been terminated." Be sure that the CRL distribution point is accessible to the PC after the client tunnel connection is complete. The CRL distribution point must be reachable by the client. An example CRL distribution point, as defined from the issuing CA, is http://sf1.certificates.com/CertEnroll/SF1.crl.

# Entrust certificate-based authentication

The following sections describe Entrust certificate activities related to the client.

The Contivity VPN Client supports Entrust Version 6.0 for Entrust single login. The single login feature allows you to automatically authenticate to all certificate-enabled applications with a single access to your certificate (either an .epf or .tkn file) during a login session. If you have already presented your certificate to authenticate one application, you are not prompted to present the certificate for other applications during the login session.

To use single sign-on:

1. Install the Contivity VPN Client as application.
2. Configure the Contivity Secure IP Services Gateway for an Entrust user.
3. Install the Entrust Entelligent Client.
4. Double-click on the Entrust icon.
5. Log in to the Entrust Entelligent Client.
6. Create an Entrust profile on the Contivity VPN Client. The password field is grayed out on the Contivity VPN Client because the user is already logged in.
7. Click on Connect to establish VPN connection.

## Custom installation

You do not need to perform the following steps if users have installed the Entrust Entelligence* software version 4.0 or later.

You can customize the IPsec client to allow remote users to generate new certificates through the client. To create an IPsec client installation that also installs the necessary Entrust components to do Entrust certificate-based authentication, you must include the following two files in the Client\Custom directory as you would for custom icon files:

- The Entrust DLLs, which are on the Contivity VPN Client CD in the Client\Entrust directory. The Entrust DLLs are kmpapi32.dll and enterr.dll.
- The Entrust .ini file (entrust.ini), which was created when you set up the Entrust PKI* server.

The Entrust error messages DLL file, enterr.dll allows you to see more detailed Entrust error messages and information. Solutions to many of these error situations can be obtained through the Entrust knowledge base at http://www.entrust.com/support/index.htm. A valid support contract is required to register and access the knowledge base. Utilizing the Entrust error messages DLL, enterr.dll, and the Entrust knowledge base can help you solve many Entrust error situations.

Entrust passwords must conform to the following rules:

- Must be at least 8 characters long
- Must contain an uppercase character
- Must contain a lowercase character
- Must contain a numeric character
- Must not contain a portion of the profile name longer than half its length
- Must not repeat a character more than half the length of the password

## Entrust certificate enrollment procedure

There are three possible situations in which remote users can access an Entrust PKI server to obtain a certificate for tunnel authentication:

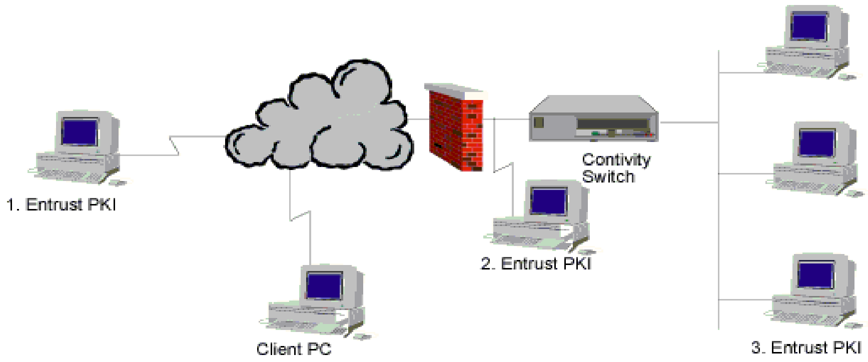
- An external PKI server accessible from the Internet (directly accessible).
- A PKI server located behind the firewall, but in front of the Contivity gateway. The firewall must be set to allow ports 389 and 709 to access the PKI (directly accessible).
- A PKI server located behind the firewall and the Contivity gateway (*not* directly accessible).

The first two situations are similar because the PKI server is located in front of the Contivity gateway and it is directly accessible from the Internet. When you provide access to the PKI through the firewall from ports 389 and 709, the second situation is the same as the first. The third situation requires remote users to also have an LDAP user name and password so that a temporary tunnel can be established to get access to the PKI.

**Note:** The Entrust tool kit settings determine the protocol and port number used for certificate enrollment. See your Entrust documentation for information about the ports that need to be open on your firewall.

Figure 26 shows the Entrust PKI server placed in each of these three places.

**Figure 26** An Entrust PKI server can be located in three places



## Entrust certificate enrollment tunnel

To facilitate Entrust certificate enrollment from an IPsec client that does not have direct connectivity to the Entrust PKI, it is necessary to create a special group. This group is used only to access the Entrust PKI to generate a new certificate. This group should have a filter applied to it that restricts access through the tunnel to the PKI only. You could name this group, for example, Certificate Enrollment. Add a user with a “common” user ID and password; for example:

```
User ID: enrollee
Password: certificate
```

The Contivity gateway must be set up with the correct filters to allow only PKI access through the tunnel filter set and the firewall to the PKI server. The TCP firewall filter ports are 389 and 709. Nortel has preconfigured a filter rule called Entrust PKI that allows access to the Entrust PKI server. You can choose this filter for any group from the Profiles > Groups > Edit > Connectivity: Configure screen. Set this filter along with a “deny all” filter on the “semi-public” account that is set up. The Entrust PKI filter is made up of the following rules and should be customized by the administrator if the default Entrust port values are not used:

- TCP, src port > 1023, dest port 389, in
- TCP, src port 389, dest port > 1023, out
- TCP, src port > 1023, dest port 709, in
- TCP, src port 709, dest port > 1023, out

## Direct access enrollment process

The following steps describe what remote users must do to obtain an authentication certificate when the PKI server is directly accessible from the Internet.

1. Choose a directory in which to store the .epf file.
2. Name the .epf file.
3. Select a password.
4. Enter the Entrust Reference Number and Authorization Code (provided to the remote user by the network administrator).

5 If you have a PKI server located behind the firewall and the Contivity gateway, enter the LDAP user name and password and the IP address or host name of the Contivity gateway.

6 Choose whether to dial in automatically.

7 Click on Finish.

## Entrust certificate enrollment process

The following procedures describe getting a certificate when the Entrust PKI server is located either behind the firewall in front of the Contivity gateway, or behind both the firewall and the Contivity gateway.

1 Double-click on the Contivity VPN Client icon.

The Contivity VPN Client screen appears.

2 Select File > Connection Wizard.

The New Connection Profile screen appears.

3 Enter a name and description; then click on Next.

The Authentication Type screen appears.

4 Select Digital Certificate; then click on Next.

The Digital Certificate Type screen appears.

5 Select Entrust Digital Certificate; then click on Next.

The Entrust Certificate Profile Selection screen appears.

6 Click on Create a new Profile; then click on Next.

The Create Entrust Profile screen appears.

7 Follow the screen prompts indicating where you want to store the Entrust Profile; then click on Next.

The Entrust Profile Name screen appears.

8 Enter a profile name (this is the name of the local .epf file — do not include the .epf extension) and password; then click on Next.

The Reference Number and Authorization Code screen appears.

**9** Enter the reference number and authorization code (provided to the remote user by the administrator — the administrator gets this information after entering a new user into the PKI); then click on Next.

The Entrust Certificate PKI Accessibility screen appears.

**10** Click on the appropriate button indicating where the Entrust Certificate PKI is located, or click on I Don’t Know, if that is the case. Then click on Next.

When the PKI server is located on the Internet or behind the firewall, the server is considered directly accessible. When the PKI server is behind the Contivity gateway, it is considered to be not directly accessible. The test option (I Don’t Know where the PKI server is) attempts to establish a TCP connection to ports 389 and 709 to the PKI listed in the entrust.ini file. It tries for 30 seconds before timing out. If the connection times out or is refused, the wizard moves to Step 11, assuming that the PKI is not directly accessible.

**11** Select a dial-up connection to dial from the list of Dial-Up Networking Profiles if a dial-up connection is necessary to access the Internet; then review the information on the Generate Certificate screen. This screen shows the information that is used to generate the authentication certificate and appears only if the PKI server is located behind the firewall. If everything is correct, click on Finish; a connection to the PKI is established that generates a new certificate.

This completes the required information when your PKI Entrust Certificate server is located behind a firewall.

In the situation where the PKI Entrust Certificate server is located behind the firewall and the Contivity gateway, then you must also provide an LDAP user ID and password via the User Identification screen. This is needed to establish a temporary tunnel used only to get a new certificate. When the certificate has been generated, the user no longer needs the temporary LDAP user ID and password, since the new certificate is used.

This information must have already been provided to you by the network administrator. The administrator must have created a special group for this username and password so that a filter only allows access to the PKI for this user.

**12** Enter the host name or IP address of the remote Contivity gateway; then click on Next.

The Dialup Connection screen appears.

**13** Determine whether to establish a dial-up connection to the Internet.

If you select Yes, a list appears so that you can select the Dial-up Networking Profile to use to establish a connection to the Internet.

Otherwise, click on Next and the Generate Certificate screen appears. The Generate Certificate screen shows you the key information that is used by the PKI Entrust server for the temporary VPN connection, excluding the password.

**14** Click on Finish.

The Success screen appears, or an error message indicates why the certificate was not generated.

# Entrust roaming profiles support

A roaming certificate resides on an external server. When you enroll for a certificate, the certificate is deposited on the roaming server rather than on the user PC or smartcard. You log on to Entrust Entelligence, authenticate to the roaming server, and receive your certificate, which you then use to authenticate Entrust ready applications, such as VPN.

The Contivity client supports existing clients with .epf files located on their local machine (with or without Entrust Entelligence) and supports roaming users using Entrust Entelligence.

**Note:** You must run Client V05_01.103 to use this feature.

You

## Offline and online

Offline and online has the following meanings for roaming profiles:

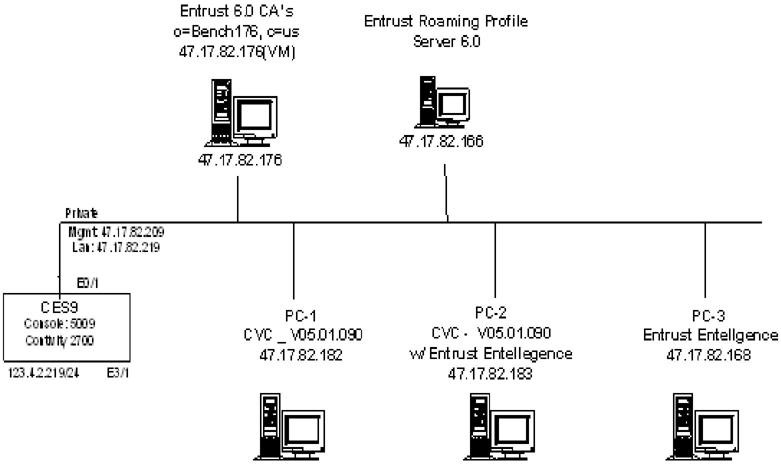
- The CVC has an online/offline configuration that pertains to where the Certificate Authority (CA) server is in relation to the client.
  - Online means the CA server is accessible to the client before the tunnel is established.

  - Offline means the tunnel must be established before the client PC has access to the CA server.
- Online/Offline as it pertains to Roaming clients:
  - Online Roaming means the client logs in with the credentials supplied by the Roaming Profile server. The Roaming Profile server must be accessible to the client PC before tunnel establishment.
  - Offline Roaming means the client will use stored cache files for its credentials. Offline roaming is used when the Roaming server is unreachable.

The roaming server and LDAP must be accessible to the client. If they are not accessible, then the firewall must be enabled and the appropriate ports opened up to the clients.

Figure 27 on page 79 shows PCs connected to a roaming server.

**Figure 27** PCs connected to roaming server



# Configuring Entrust for Roaming Profiles

Three components are configured for Roaming Profiles:

- Certificate Authority server
- Roaming Profile server
- Roaming Profile clients

## Configuring the Certificate Authority Server

From the Registration Authority (RA):

1. Export, Edit, and Import the mastercert.spec file.
2. Edit the entmgr.ini file.
3. Edit the entrust.ini file, place into the C:\WINNT directory.
4. Add a Roaming User.

### *To edit the mastercert.spec file:*

It is only necessary to edit this file if Off-line roaming is required.

These lines must be added in a specific section of the file. Please read RoamServ60Admin.pdf for the specific details.

Profile Use for Roaming Users Setting:

```
offline_prof_use=1.2.840.113533.7.77.20,BitString,<offline_prof_us
e>
```

The following must appear on one line, with no wrap or line feed:

```
offline_prof_use=Boolean,Offline Roaming allowed:,Allow use of
roaming profiles in offline mode.,Range,0,1
```

### *To edit the entmgr.ini file:*

It is only necessary to edit this file if Off-line roaming is required:

```
[Default Variable Values]
offline_prof_use=1
```

### *To edit the entrust.ini file:*

Edit the entrust.ini file based on the Roaming requirements. Once the file is edited, place it on the CA Server, Roaming Profile Server, and any client PC that will be running a Roaming Profile.

Use the following edits to enable Roaming Profiles online (4 lines):

```
ProfileServer=<IP or DNS of Profile Server>+640
ProfileServerDN=<FDN of Roaming Profile user you create on RA>
RoamingIDField=<User ID attributes>
RoamSearchBase=<Search base of your CA>
```

Use the following edits to enable Roaming Profiles offline (2 lines optional):

```
DefaultProfileLocation=<Path to store the cached files>
OfflineProfileLifetime=<# of days the cached files will be valid>
```

Use the following edits to enable Proxy Mode (1 line optional):

```
RoamGetFilesFromServer=<Enable(1) or Disable(0)) Proxy Mode>
```

**Note:** Proxy Mode requires additional overhead, so transactions take considerably longer to authenticate.

## Create a Roaming Profile Administrator from RA

Add Roaming Server in Entrust/RA to create its Entrust profile. If you plan to use multiple servers with a separate profile for each, create a profile for each instance of Roaming Server before attempting to encrypt for each one.

To add Roaming Server in Entrust/RA:

1. Log in to Entrust/RA. Entrust/RA screen appears.
2. Click Users > New User. The New User dialog box appears.
3. In the Naming property page, select Web Server or Person in the Type drop-down list. If you choose Web Server, you do not have to enter a first and last name as you do if you select Person.
4. Type a name for the server in the Name field.
5. Type a description of the server in the Description field.

   This information is not mandatory. Use this field to record important information about Roaming Server (for example, its IP address).

6. In the Add to drop-down list, select the searchbase under which to add the Roaming Server. By default, CA Domain Searchbase is listed first and is often the top level searchbase in an organization.
7. Select Create Profile.
8. Click the Certificate info property page.
9. Select Enterprise in the Category drop-down list and click Profile Server (Profileserver Certificates) in the Type list. Click OK.

**10** The Create Profile dialog box appears.

➡ **Note:** This begins the procedure to create a roaming profile administrator from RA.

➡ **Note:** If you did not select Create Profile in Step 6, the New User dialog box closes and you are returned to Entrust/RA. To open the Create Profile dialog box from Entrust/RA, right-click the Roaming Server entry in the right pane and click Create Profile in the pop-up menu.

**11** If you see two options at the top of the Create Profile dialog box, click Create Desktop Profile. Do not click Create roaming profile; you use this option to create roaming users.

**12** Type a name for the Roaming Profile in the Name field.

**13** In the Location field, specify a location for the Roaming Server profile, or accept the default.

**14** In the Password field, type a password.

**15** In the Confirm field, retype the password and click OK.

**16** Depending on your company's security policy, one or more Authorization Required dialog boxes may appear. Authorize the transactions if required, and click OK.

**17** A dialog box appears, displaying the distinguished name of the Roaming Server you have just added, along with the location of the .epf file.

### *Install and Configure the Roaming Profile Server*

Required software: Entrust Authority Roaming Server 6.0

**1** Make sure you have received the Roaming Administrators Profile files and entrust.ini files. Place them on the hard drive. Place the entrust.ini into C:\WINNT.

**2** Install Software. No license is required; if you select the configure utility, the software will go there.

**3** Configure your Roaming Server:

**a** In the General tab, enable Automatic/Unattended startup. Enter the password.

**b** In the Log tab, enable Send logs to file, and Browse to a file.

**c** In the LDAP tab, enter configuration info for the Entrust Directory server.

**4** You must start the service. You may set it up to start up automatically on reboot.

## Configuring Roaming Profile Clients

The following is the required software:

- Contivity VPN Client V05_01.103
- Entrust Entellegence 5.02 or newer

There are three Entrust Dynamic Link Libraries (DLL) that must be placed in the WINNT directory:

- kmpapi32.dll version 6.0.541.1210
- enter.dll version 6.0.520.1241
- etsesn32.dll version 6.0.531.1220

Place the edited entrust.ini into the C:\WINNT directory.

Entrust Entellegence or the CVC provides Roaming Profile support independently, or both can co-exist together on the same PC. You do not have to install Entrust Entellegence Client for the CVC to support Roaming Profiles.

# Appendix A
# Client logging

Table 8 describes client error messages.

**Table 8** Client error messages

| Message | Description |
|---|---|
| LOG_AUTH_FAILED | Authentication failed. Check user authentication parameters. |
| LOG_CLI_UNKNOWN | Command line detected unknown command. Check command line launch parameters. See *Reference for the Contivity Secure IP Services Gateway Command Line Interface* for further information. |
| LOG_CONNLOST_ERROR | Connection lost due to unknown error. See the Contivity Secure IP Services Gateway log for further information. |
| LOG_CONNLOST_KEEPALIVE | Contivity gateway did not respond to keep-alives. Connection lost. Check connection to the Contivity gateway and the dial-up connection for failure. |
| LOG_NO_PROPOSAL | Encryption mismatch.The 56-bit client is attempting to connect to the Contivity gateway configured as 3DES. |
| LOG_REMOVE | Unable to remove previous session log file. Check for DOS file protection issue. |
| LOG_RENAME | Unable to rename previous session log file. Check for DOS file protection issue. |
| IDP_SOCKETS_INIT_FAILED | Windows socket initialization failed. |
| IDS_CANTOPENDHCP | Failed to create a DHCP socket; connection will be closed. |
| IDS_CONNECTIONLOST | Secure connection has been lost; click Connect to reestablish connection. |

**Table 8** Client error messages (continued)

| Message | Description |
|---|---|
| IDS_DHCPFAILEDCONTINUE | Failed to obtain DNS and WINS configuration information; connection closed. This usually indicates that a firewall is preventing IPsecurity packets from reaching the Contivity gateway. |
| IDS_DHPCRECVERR | A receive error occurred on the DHCP connection; connection closed. |
| IDS_LOGINFAILED | Login failed; see the Contivity gateway log for further information. |
| IDS_SALOSTDURINGDHCP | The security association was lost while retrieving DNS and WINS configuration information; connection failed. |
| IDS_SESSION_MAX | Maximum number of sessions reached. |
| LOG_CAL_EXPIRED | Pre-production client has expired. Update the client to a generally available version. |
| LOG_CONNECTION_LOST | The physical network connection has been lost. Restore the dial-up connection or LAN connection before reconnecting. |
| LOG_CONNECTION_TERMINATE | This message is used with the security violation messages; the violation message appears, followed by the connection terminated message. |
| LOG_CP_VIOLATE | Connection terminated due to client policy violation. Contact the Contivity gateway administrator. |
| LOG_INSTALL_REBOOT | Reboot not performed after installation. |
| LOG_IPSEC_SVC_DISABLED | IPsec service is disabled. Restart the service and/or reboot the PC. |
| LOG_NO_RESPONSE | No response received; connection failed. Check the connection to the Contivity gateway. |
| LOG_NOKEEPALIVE | Connection lost due to no response from keep alives or no incoming packets for two minutes. Check the connection and /or the dial-up to the Contivity gateway. |
| LOG_ONEINSTANCE | Only one instance of the client can be running at a time. |
| LOG_SEC_ROUTES_CHANGED | Routing table changes violate security policy. |

**Table 8** Client error messages (continued)

| **Message** | **Description** |
|---|---|
| LOG_SEC_SS_CHANGED | Screen saver changes now violate security policy; screen saver must be enabled and the wait time must be compatible with the Contivity gateway. |
| LOG_SSP_VIOLATE | Connection terminated due to null screen saver password violation. Enter the screen saver password. |
| LOG_AUTOCONNECT_REBOOT | Change takes effect on next reboot. |
| LOG_AUTOCONNECT_UNINSTALLED | The auto connection feature has been uninstalled by the Contivity gateway. |
| LOG_CES_DISCONNECT | A disconnect message was received from the Contivity gateway. See the Contivity gateway log for further information. |
| LOG_CLEAR_DNS | Windows 9*x* Clear DNS is set. |
| LOG_FAIL_ACTIVATE | Client failover invoked. |
| LOG_FAIL_CLEAR | Failover list set to none. |
| LOG_FORCED_KEEPALIVES | NAT traversal forcing use of keep-alives. |
| LOG_LOAD_BALANCED | Server load balancing; client connection redirected. |
| LOG_REM_WINSDNS | Removing WINS/DNS servers. |
| LOG_ADD_WINSDNS | Adding WINS/DNS servers. |

# Index