



Version 3.0

**movianVPN**  
**Deployment Guide for**  
**Secure PIX Firewall VPN**  
**Gateway**

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Other applications and corresponding foreign protection pending.

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# Table of Contents

---

<b>Introduction</b> .....	1
Overview: movianVPN .....	1
Purpose of this document .....	2
Creating a basic policy and using advanced features .....	2
Using Appendix C: Client configuration worksheet .....	2
Licensing and Support for movianVPN .....	3
Installing movianVPN .....	3
Licensing movianVPN .....	3
Reaching movianVPN support .....	3
VPN infrastructures and handheld devices .....	4
VPNs .....	4
Gateway servers .....	4
IPSec .....	5
Handheld devices .....	6
movianVPN .....	7
movianVPN .....	7
ECC and movianVPN .....	7
Gateway access .....	7
<b>Getting Started</b> .....	9
Software Requirements .....	9
Gateway software .....	9
Connections .....	9
Supported devices .....	9
<b>Configuring your gateway to support movianVPN</b> .....	11
Introduction .....	11
Adding movianVPN users .....	13
IKE (Internet Key Exchange) Settings .....	14
IPSec Settings .....	14
External Authentication .....	15
DNS Support .....	16
Split Tunneling .....	17
<b>Creating a movianVPN policy for your gateway</b> .....	19
Before you begin .....	19
Creating the policy .....	20
Creating a basic WinCE policy .....	21
Creating a basic Palm OS policy .....	24
Testing the policy .....	28
If the connection fails .....	28
Logging out of the gateway .....	29
Configuring features on movianVPN .....	30
IPSec .....	30

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IPSec Crypto Suite .....	32
IKE Crypto Suite .....	32
DNS Support .....	34
Enabling DNS on the movianVPN client .....	34
<b>Appendix A: Using the Diagnostic Tools .....</b>	<b>37</b>
Accessing diagnostic tools .....	37
Ping .....	38
Using Ping with a WinCE client .....	38
Using Ping with a Palm OS client .....	39
IPSec Status Log .....	40
Viewing IPSec Status for a WinCE client .....	40
Viewing IPSec Status for a Palm OS client .....	41
IP Packet Statistics Log .....	42
Viewing IP Packet Statistics for a WinCE client .....	42
Viewing IP Packet Statistics for a Palm OS client .....	43
<b>Appendix B: Glossary of Terms .....</b>	<b>45</b>
<b>Appendix C:</b>	
<b>Client configuration worksheet .....</b>	<b>49</b>
Information required for client configuration .....	49
Information required for creating a policy .....	50

# 1

## Introduction

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### Overview: movianVPN

For mobile professionals, a handheld personal computer such as a Personal Digital Assistant (PDA) or Palm device means that downloading e-mail and accessing the Internet can occur anyplace, anytime. More difficult, however, is ensuring security when using a handheld device to remotely access confidential information on the corporate intranet.

**movianVPN** is a software application that allows mobile professionals to use their handheld devices to connect securely to their corporate intranet, whether remotely or on-site at their company. The corporate intranet or VPN (Virtual Private Network) is accessed through a gateway server the user connects to by wireline dial-up or wireless access.

Once a user is logged in to the VPN gateway, information sent in each direction is encrypted and verified. The communicating parties are authenticated, ensuring confidentiality and integrity of the data. Authorized users have secure, real-time access to critical data and application servers behind the gateway, such as e-mail servers.

The application is simple to use, with only a few steps to follow.

# Purpose of this document

This document contains the information necessary to configure **movianVPN** on your VPN gateway.

It is aimed at the administrators responsible for deploying, configuring and testing the **movianVPN** server and client software.

The chapters include information on:

- Licensing and support (this chapter)
- Getting Started
- Configuring your gateway to support movianVPN
- Creating a movianVPN policy for your gateway, and
- Enhancing your movianVPN policy.

The final chapter of this document contain a discussion of issues related to deploying a pilot system with a number of handheld devices. This may not be present if there are no additional issues related to your gateway.

## Creating a basic policy and using advanced features

The creation of a policy as described in this document refers to a basic policy , intended for testing the handheld device's connection to the gateway. The basic policy does not include advanced features such as split tunneling or DNS support which may be supported on your gateway. Advanced features which may be enabled on the gateway and on users' handheld devices are described in the chapter on "Enhancing your **movianVPN** policy." For more information see also the *movianVPN User Guide for WinCE Pocket PC and Handheld PC* or *movianVPN User Guide for Palm OS*.

## Using Appendix C: Client configuration worksheet

"Appendix C: Client configuration worksheet" contains a worksheet for the information required by users to configure their handheld devices for using **movianVPN** with your gateway. The sheet can be printed, the information entered as appropriate, and forwarded to users.

Some entries in the table may not be applicable for your gateway.

The *movianVPN User Guide for WinCE Pocket PC and Handheld PC* and the *movianVPN User Guide for Palm OS* include the same table, both as an appendix and as part of the chapter on creating a policy. In a limited deployment, printing and entering the information in individual user's guides may be appropriate.

# Licensing and Support for movianVPN

## Installing movianVPN

To find out how to install or upgrade movianVPN, please see the *movianVPN User Guide for WinCE Pocket PC and Handheld PC* or *movianVPN User Guide for Palm OS*.

## Licensing movianVPN

The **movianVPN** evaluation license expires after a period of 30 days. In the final seven days of the evaluation period, you will be informed of the number of days remaining each time you start the application.

To activate **movianVPN** for a longer period, you must license the application with Certicom and may purchase a support contract.

To find out which kind of license you have, open the movianVPN application and select the **About License** option.

To obtain a licensed version of **movianVPN**, please contact our sales team at 510-780-5100 or [contactsales@certicom.com](mailto:contactsales@certicom.com), or visit our website at [www.moviansecurity.com](http://www.moviansecurity.com).

Once you purchase a license, you will receive another installer which will activate your device for the duration of your subscription.

## Reaching movianVPN support

You can reach the **movianVPN** support team through the following:

Phone:

1-866-266-8426 (North America)

1-510-780-5151 (Outside North America)

Fax: 1-800-474-3877

E-mail: [techsupport@moviansecurity.com](mailto:techsupport@moviansecurity.com)

Website: [moviansecurity.com](http://moviansecurity.com)

# VPN infrastructures and handheld devices

This section contains a description of VPN gateways and IPSec protocols, and how handheld devices can be securely integrated into a VPN.

## VPNs

Virtual Private Networks (VPNs) are secure private networks operating either within a public network like the Internet or within an insecure private network.

A VPN links together particular computers within the wider network and provides authorized users with secure, confidential transmission of data. Security is maintained by encrypting communications and by creating secure "tunnels" to direct network traffic from one computer to another specific computer.

VPNs can create secure connections between an internal corporate network and external users in any combination of the following three forms:

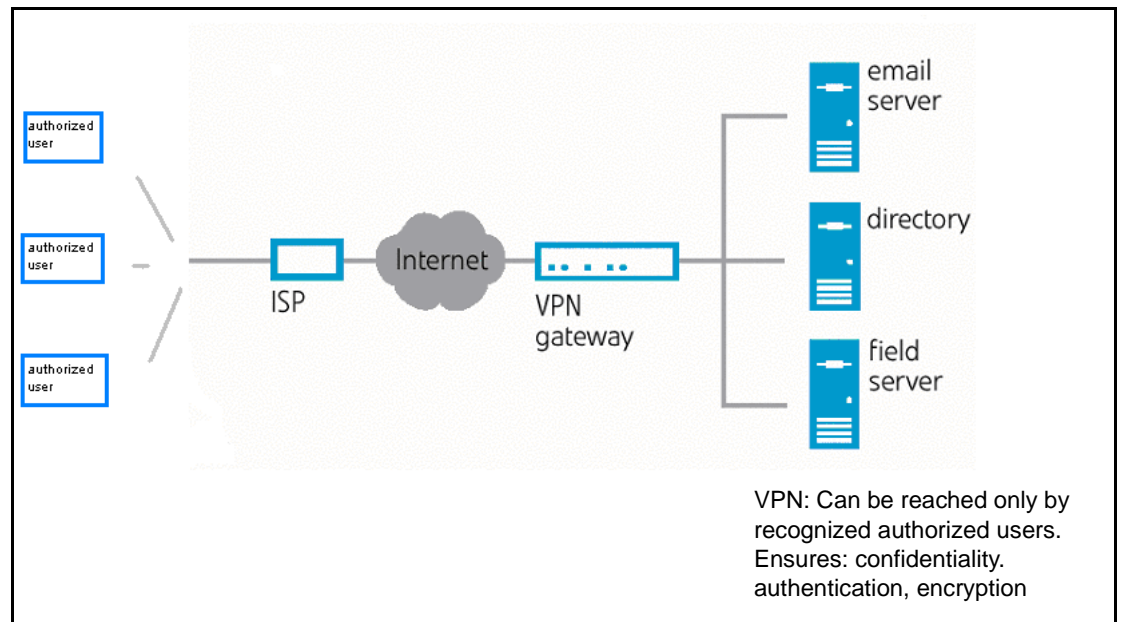
- **Intranet VPN:** Between a central corporate site and branch offices
- **Remote access VPN:** Between a central corporate site and individual remote users (the **movianVPN** model)
- **Extranet VPN:** Between an enterprise and its business partners, suppliers, and customers

VPNs provide a cost-effective means for secure e-mail access and functions such as sharing confidential information, updating databases for remote offices, and disseminating business applications.

Once you are logged in to a VPN, you can access the servers within the VPN, while other Internet or intranet users outside the VPN are unable to access the VPN and its subnets or enclosed networks.

## Gateway servers

The VPN is accessed through a "VPN gateway server," a computer which recognizes authorized users and their passwords. The gateway server gives users access to the application servers for e-mail and other confidential information "behind" the gateway (that is, to servers within the corporate intranet that have been designated as part of the VPN).



Secure access is provided through a combination of:

- Tunneling (directing encrypted communication and routing instructions from one computer to another specific computer using TCP/IP protocols)
- Encrypting data, and
- Using authentication technologies that verify the identity of the sender, the identity of the receiver, and the security of the information transmitted

A VPN must provide a reliable, secure communication between all hardware and software points of the VPN: IPSec protocol makes this possible.

## IPSec

IPSec protocol is a framework of standards for network security, aimed at providing confidentiality, data integrity, and data source verification for any application using the network.

IPSec protocol ensures that:

- Communicating parties can authenticate both the source and the integrity of the data
- The data is encrypted for secure exchange
- The method of authentication and encryption can be negotiated by the communicating parties

Using IPSec therefore ensures that you know who the data came from; that it is securely encrypted; and that the communication has not been tampered with.

Handheld devices

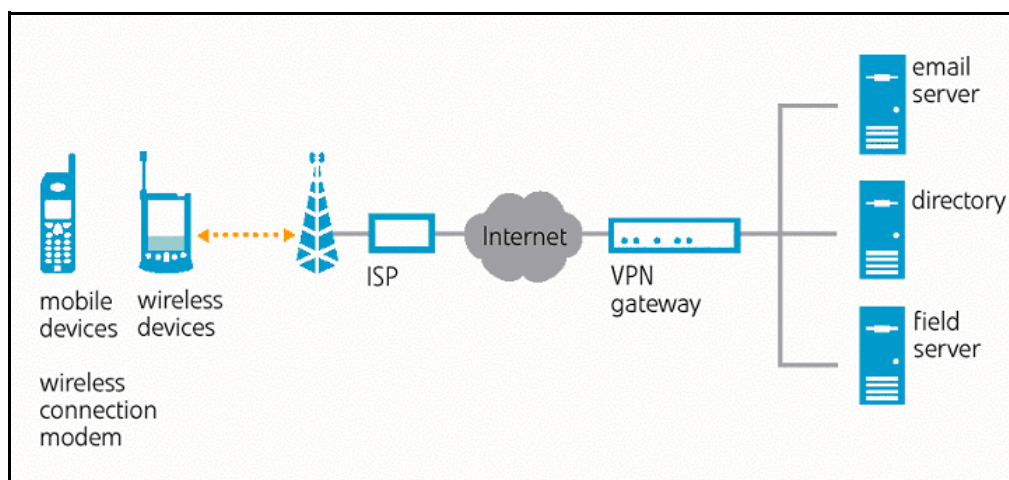
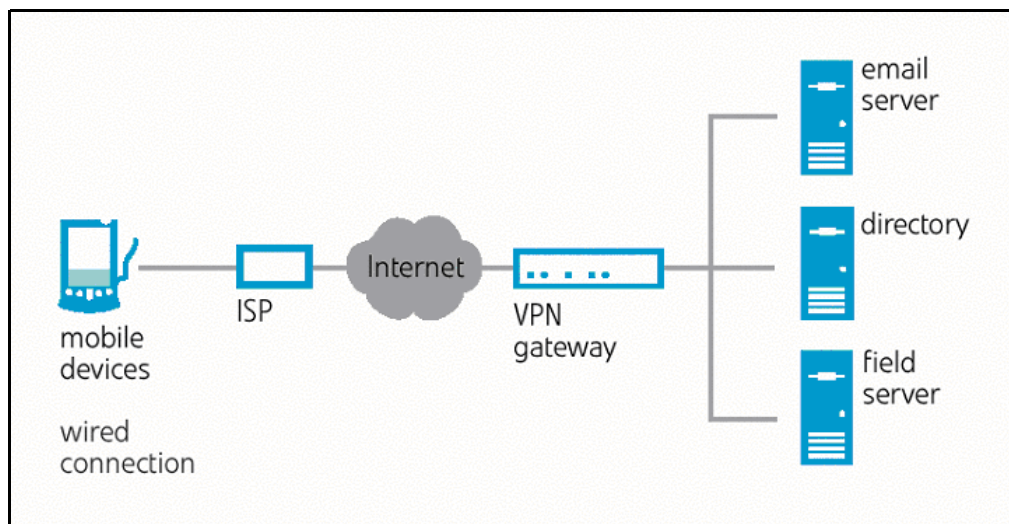
Using **movianVPN**, a traditional VPN can also have handheld devices added to the configuration without compromising network security.

Handheld devices can connect to the VPN by several options:

- Dedicated dial-up modem to access an ISP through the telephone network
- Wireless modem to access a local LAN
- Wireline access to a local LAN
- Modem with data-capable mobile phone to access the ISP

To access the VPN, the handheld device must support the standard IP or Internet Protocol, which addresses and sends information packets over the network.

Handheld devices can connect to the VPN by a wired connection or by a wireless connection, depending on the devices' hardware/software configurations.



For information on the handheld devices and operating systems that can use **movianVPN**, see the following chapter.

# movianVPN

This section contains a description of the advantages of using movianVPN, particularly with ECC.

## movianVPN

**movianVPN** allows mobile professionals to use their handheld devices to connect securely and easily to a corporate VPN gateway. The handheld can then be used to access the corporate intranet, providing you with secure, real-time access to confidential data and application servers behind the gateway, such as e-mail servers.

**movianVPN** uses IPSec standards to establish a secure end-to-end connection. The process for an IPSec-based communication works as follows:

- When your handheld device contacts the VPN gateway server to establish a connection, the "client" (that is, the part of the software resident on your handheld device) and the server identify themselves to each other. There are several possible authentication methods, including passwords for the username you login with, tokens for two-factor authentication, and the use of digital signatures.
- Once the authentication is complete, the client generates a "key" and shares it with the VPN gateway server to use for the length of that session.
- When the client accesses data from the VPN, the gateway server encrypts the data, using the session key. The encrypted data travels securely across the Internet to the client, where it is decrypted with the same key.

## ECC and movianVPN

movianVPN is specifically designed for the constrained environments of wireless and mobile devices. It uses ECC (Elliptic Curve Cryptography), which provides strong security with much smaller key sizes than legacy public-key encryption algorithms. In addition, ECC requires less processing power, which results in faster IKE (Internet Key Exchange) negotiation with ECDH (one of the algorithms in the ECC suite).

movianVPN also supports 768-bit and 1024-bit Diffie-Hellman algorithms for the case where the gateway does not support Certicom's patented ECC implementation.

## Gateway access

Gateways are accessed using a "policy" set up within **movianVPN**. The policy contains the information required to connect to a specific gateway and to successfully negotiate the exchange of keys that will be used for encrypting the transmitted data, verifying identities, and confirming data integrity.

The network you use to access the VPN gateway server does not have to be secure. For example, you may use dial-up access to an Internet Service Provider to reach the gateway server, or access it through a wider corporate LAN.

Once you are recognized by the VPN gateway through providing your user name and password, **movianVPN** establishes a secure, encrypted "tunnel" for you to the VPN. While accessing the servers that comprise the VPN, you are provided with confidentiality, data integrity verification, and data source authentication for your communications.

A policy requires specific information from your VPN administrator regarding connection and encryption protocols, user names and passwords for authentication, and configuration modes for the particular type of gateway.

# 2

## Getting Started

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### Software Requirements

#### Gateway software

The following table details the Secure PIX Firewall VPN gateway configuration software supported for movianVPN.

*Note:* If you have an older version of the software, you should upgrade. Please see the documentation for your gateway for the procedure.

Gateway	Product	Supported software versions
Cisco PIX	Secure Firewall VPN	6.0

#### Connections

The following specific connections have been tested for interoperability:

- CDMA
- CDPD
- Ethernet
- GSM
- IDEN
- Richochet
- TDMA
- 802.11

#### Supported devices

The following devices are supported:.

Palm OS	Win CE OS
3.5 and up	Handheld PC 2000 Pocket PC v3.0 Pocket PC 2002



# 3

## Configuring your gateway to support movianVPN

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### Introduction

If you are setting up your gateway for the first time, you should refer to your gateway configuration manual.

To configure the Cisco PIX Secure Firewall VPN gateway to support **movianVPN**, you must run the following set of commands.

**Note:** You must supply the information shown in bold.

```
access-list 80 permit ip 192.168.1.0 255.255.255.0
192.168.1.0 255.255.255.0

ip local pool movianpool 192.168.1.118-192.168.1.121

aaa-server RADIUS protocol radius
aaa-server partnerauth protocol radius
aaa-server partnerauth (inside) host 192.168.1.100
SERVER_PW timeout 5

crypto ipsec transform-set myset esp-3des esp-md5-hmac
crypto dynamic-map dynmap 10 set transform-set myset
crypto map mymap 10 ipsec-isakmp dynamic dynmap
crypto map mymap client authentication partnerauth
crypto map mymap interface outside

isakmp enable outside

isakmp identity address

isakmp client configuration address-pool local
movianpool outside

isakmp policy 10 authentication pre-share
isakmp policy 10 encryption 3des
isakmp policy 10 hash md5
```

```
isakmp policy 10 group 1
isakmp policy 10 lifetime 3600
vpngroup movian address-pool movianpool
vpngroup movian dns-server 192.168.1.1
vpngroup movian wins-server 192.168.1.1
vpngroup movian default-domain yourdomain.com
vpngroup movian split-tunnel 80
vpngroup movian idle-time 1800
vpngroup movian password *****
```

The following sections describe these commands in greater detail.

## Adding movianVPN users

To add **movianVPN** users to your gateway configuration, you must define an address range for the **movianVPN** handheld devices.

The first pair of addresses represents the address and subnet mask of the IP address range. The second pair represents the address and subnet mask of the private network you are trying to reach.

```
access-list 80 permit ip 192.168.1.0 255.255.255.0
192.168.1.0 255.255.255.0

ip local pool movianpool 192.168.1.118-192.168.1.121

vpngroup movian address-pool movianpool
```

The group password is set with the following command.

```
vpngroup movian password *****
```

## IKE (Internet Key Exchange) Settings

The IKE protocols are used when exchanging keys.

The following commands set the IKE protocols.

```
isakmp enable outside
isakmp identity address
isakmp client configuration address-pool local movianpool
outside
isakmp policy 10 authentication pre-share
isakmp policy 10 encryption 3des
isakmp policy 10 hash md5
isakmp policy 10 group 1
isakmp policy 10 lifetime 3600
```

These are also the default settings on the **movianVPN** handheld device. To view or change the settings on the client, see “IKE Crypto Suite” on page 32.

## IPSec Settings

The IPSec settings indicate how the data is to be encrypted.

```
crypto ipsec transform-set myset esp-3des esp-md5-hmac
crypto dynamic-map dynmap 10 set transform-set myset
crypto map mymap 10 ipsec-isakmp dynamic dynmap
crypto map mymap client authentication partnerauth
crypto map mymap interface outside
```

These are also the default settings on the **movianVPN** handheld device. To view or change the settings on the client, see “IPSec Crypto Suite” on page 32.

# External Authentication

Each **movianVPN** user must be authenticated on an external server when they attempt to log on to the gateway. The authentication server contains a list of usernames and passwords. When a user attempts to log on to the gateway, he/she is prompted for a password.

The following commands set up a RADIUS authentication server. You must supply the IP address of the server and the password to access it.

```
aaa-server RADIUS protocol radius
aaa-server partnerauth protocol radius
aaa-server partnerauth (inside) host 192.168.1.100
SERVER_PW timeout 5
```

# DNS Support

The Domain Name System (DNS) is used to identify particular computers or parts of the network. Some gateways supply this information to the handheld device during key negotiation.

If the user sets the Query DNS option in the **movianVPN** application, the device downloads the DNS information from the gateway. Alternatively, the user can set the DNS information directly on the device.

The following commands set the IP address of the DNS server and the WINS server.

```
vpngroup movian dns-server 192.168.1.1  
vpngroup movian wins-server 192.168.1.1
```

To find out how to set the DNS information in the movianVPN application, see “Enabling DNS on the movianVPN client” on page 34.

# Split Tunneling

*Note:* Your network configuration is more secure without split tunneling.

Split tunneling allows your movianVPN users to use both the internet and the corporate intranet at the same time. Split tunneling is used by the VPN server to decide which traffic to send through an encrypted tunnel, depending on where the packets (the data being sent or received) originate or are directed.

When Split Tunneling is selected, all packets sent to or from the VPN and its identified subnets are encrypted; packets sent to outside the VPN are not encrypted and go directly through the ISP to the internet.

When Split Tunneling is deselected, all packets are encrypted. If the packet is not to or from an identified address on the VPN, it is dropped from communication.

The following commands set split tunneling on the gateway. Set the IP address range as appropriate.

```
access-list 80 permit ip 192.168.1.0 255.255.255.0
192.168.1.0 255.255.255.0
vpngroup movian split-tunnel 80
```

Users do not need to configure the **movianVPN** handheld device to support split tunneling.



# 4

## Creating a movianVPN policy for your gateway

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### Before you begin

This chapter shows you how to create a basic policy with movianVPN on a handheld device.

The procedures do assume that you have started **movianVPN** on the device and have an active Internet connection.

***Note:** This chapter contains information on creating a basic policy only. For more information on using **movianVPN** client software, please refer to the **movianVPN User Guide for WinCE Pocket PC and Handheld PC** or **movianVPN User Guide for Palm OS**.*

***Note:** **movianVPN** version 3.0 comes equipped with a **Deployment Tool**. This tool allows you to quickly create a security policy file that can be read by the client software. The **Deployment Tool** is useful if you are configuring a security policy for a large number of clients. For instructions on how to use the **Deployment Tool** please see the **movianVPN Deployment Tool User's Guide**.*

## Creating the policy

The following information is required when creating a policy for the Cisco Secure PIX Firewall VPN gateway:

- Gateway IP address
- Group name, group password, user name and user password
  - Note:* You will be asked for the user password when you log in to the gateway.
- IKE Suite, DNS and IPSec Suite settings
- SA life setting

When creating a policy to test the gateway, a basic policy is recommended. To simplify the connection, advanced features such as DNS support should not be used.

For more information on creating a policy with advanced features please refer to the *movianVPN User Guide for WinCE Pocket PC and Handheld PC* or *movianVPN User Guide for Palm OS*.

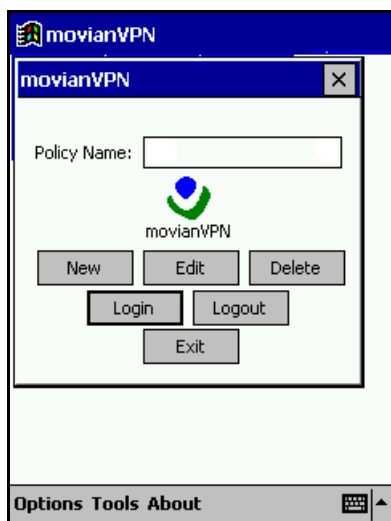
A worksheet is provided in “Appendix C: Client configuration worksheet” on page 49 that can be used to enter the required information and be given to users. The same table appears in the *User’s Guides*.

## Creating a basic WinCE policy

To create a WinCE policy for a Cisco Unified Client gateway:

1. To open the **movianVPN** application, either tap **Start** and select **movianVPN** from the pull-down list, or tap **Start**, select **Programs**, and tap the **movianVPN** icon.

The **movianVPN** application window appears.



2. Tap **New**.

The **movianVPN** Policy window appears.



3. Enter a policy name in the **Policy Name** field.
4. Tap **Please select one** to open the pull-down menu.



5. Tap the **Cisco Unified Client** entry.

The **Cisco Unified Client** address field and the gateway policy security option checkboxes appear.

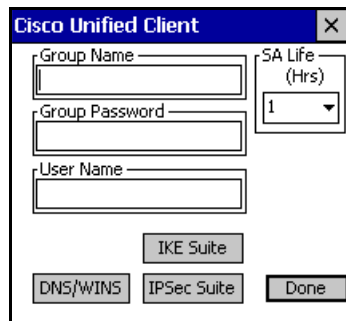


6. Enter the **Gateway IP Address**.

*Note:* When creating a policy to test the gateway, a basic policy is recommended. To simplify the connection, advanced feature Perfect Forward Security should not be used. These settings can be configured by users for general deployment.

7. Tap **Continue**.

The **Cisco Unified Client** window appears.



8. Enter the **Group Name**, **Group Password**, and **User Name** for the gateway.

*Note:* These entries should match those set in “Adding movianVPN users” on page 13.

*Note:* When creating a policy to test the gateway, a basic policy is recommended. To simplify the connection, advanced features such as DNS support should not be used. These settings can be configured by users for general deployment.

9. Tap the **IKE Suite** button in the **Cisco Unified Client** window.

The IKE Crypto Suite window appears..



10. Select the appropriate settings from each of the pull-down lists for **Group**, **Cipher**, and **Hash** fields.

**Note:** These settings should match the selections made in “IKE (Internet Key Exchange) Settings” on page 14.

11. Tap **Continue**.
12. Tap the **IPSec Suite** button in the **Cisco Unified Client** window.

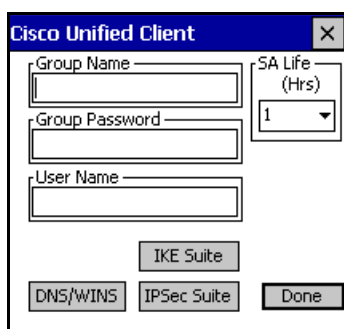
The IPSec Crypto Suite window appears.



13. Select the appropriate entry from the pull-down list in the **Suite** field.

**Note:** These settings should match the selections made in of “IPSec Settings” on page 14.

14. Tap **Continue**.
15. In the **Cisco Unified Client** window, adjust the **SA Life** sidebar to time-out of the gateway as desired.



16. Tap **Done**.  
The **movianVPN** application window appears.
17. To connect to the gateway, tap the **Login** button.

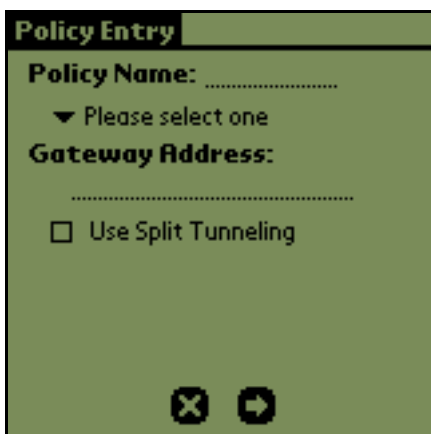
Creating a basic Palm OS policy

To create a Palm OS policy for a Cisco Unified Client gateway:

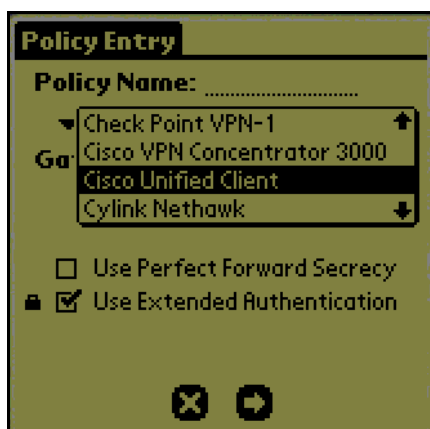
1. To open the **movianVPN** application, tap the arrow in the right corner of the top toolbar and select **movian** or **All**.
2. Tap the **movianVPN** icon.  
The **movianVPN** application window appears.



3. Tap **New**.  
The **movianVPN** Policy window appears.

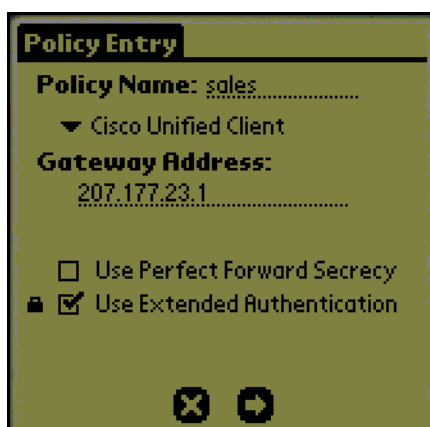


4. Enter a policy name in the **Policy Name** field.
5. Tap the pull-down menu at **Please select one**.



6. Scroll down to **Cisco Unified Client** and tap the entry.

The Cisco Unified Client Gateway Address field and the gateway policy security option checkboxes appear.

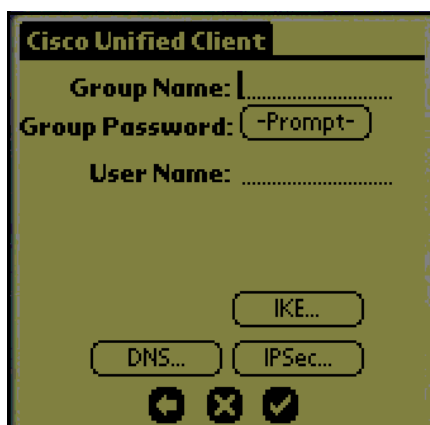


7. Enter the **Gateway Address**.

*Note:* When creating a policy to test the gateway, a basic policy is recommended. To simplify the connection, advanced features such as Perfect Forward Secrecy should not be used. These settings can be configured by users for general deployment.

8. Tap the arrow icon.

The Cisco Unified Client window appears.



9. Enter the **Group Name** and **User Name** for the gateway.  
*Note: These entries should match those set in “Adding movianVPN users” on page 13.*
10. If you want to save the password, tap **Prompt** at the Group Password field.  
The User password window appears.



11. Enter the password and tap **OK**.  
In the Cisco Unified Client window, the Group Password now appears as **Assigned**. To delete or edit the password, tap **Assigned**, either leave the field blank to delete or enter a new password, and tap **OK**.



12. Enter the **User Name** for the gateway.  
*Note: When you log in to the gateway you will be asked for your User password.*
13. Tap the **IKE...** button in the Cisco Unified Client window.  
The IKE Crypto Suite window appears..



14. Select the appropriate settings from each of the pull-down lists for **Group**, **Cipher**, and **Hash** fields.  
*Note: These settings should match the selections made in of “Adding movianVPN users” on page 13.*

15. Tap the checkmark icon.

*Note:* When creating a policy to test the gateway, a basic policy is recommended. To simplify the connection, advanced feature such as DNS support should not be used. These settings can be configured by users for general deployment.

16. Tap the **IPSec...** button in the Cisco Unified Client window.

The IPSec Crypto Suite window appears.



17. Select the appropriate entry from the pull-down list in the **Suite** field.

*Note:* These settings should match the selections made in of “Adding movianVPN users” on page 13.

18. Tap the checkmark icon.
19. In the Cisco Unified Client window, tap the **movianVPN tab** at the top of the window.

The Options pull-down list appears.



20. Tap **SA Lifetime** in the pull-down.
21. Adjust the **SA Lifetime** setting using the arrows, to time-out of the gateway as desired.



22. Tap the checkmark icon.  
The Cisco Unified Client window appears.
23. Tap **Done**.  
The **movianVPN** application window appears.
24. To connect to the gateway, tap the **Login** button.

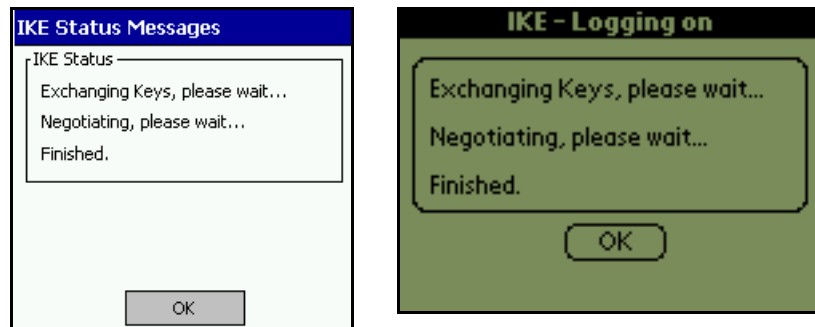
## Testing the policy

For more information on verifying your policy, please refer to the *movianVPN User Guide for WinCE Pocket PC and Handheld PC* or *movianVPN User Guide for Palm OS*.

To test the policy:

1. In the **movianVPN** window, ensure the policy is selected.
2. Tap **Login**.

The IKE Messages display connection progress in generating and exchanging keys. If the connection is successful, the following screens will appear..



3. Tap **OK**.

### If the connection fails

If the connection fails, complete the following:

- Check that the settings match on both the **movianVPN** client and the gateway
- Refer to the *movianVPN User Guide for WinCE Pocket PC and Handheld PC* or *movianVPN User Guide for Palm OS* for information on verifying your policy and troubleshooting logging in to the gateway

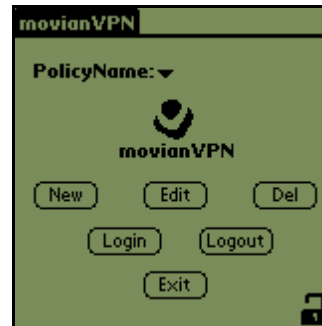
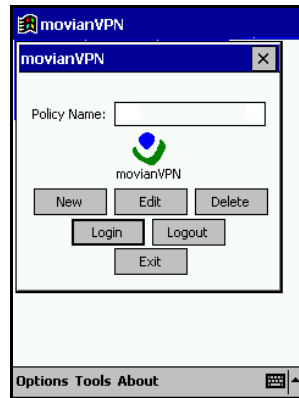
If the settings are correct and the connection is not successful:

- Refer to Appendix A for diagnostic tools
- Refer to the gateway configuration manual for information on how to view the connection log.

# Logging out of the gateway

To close a session with the gateway server:

1. Access the **movianVPN** window,



2. Tap **Logout**.



3. Tap **OK**.
4. Tap **Exit** to close the **movianVPN** application.

# Configuring features on movianVPN

Depending on the type of gateway, users can configure the following features on the client:

- “IPSec”
- “IPSec Crypto Suite”
- “IKE Crypto Suite”
- “DNS Support”

## IPSec

IPSec protocol allows **movianVPN** to negotiate methods of secure communication for authentication of identity, confirming data integrity, verifying data sources, and selecting encryption functions.

While using **movianVPN**, users can select and deselect IPSec during a session with the gateway. While IPSec is deselected, sent data will not be encrypted. This will allow users to access servers and websites outside the Virtual Private Network, on the Internet, but they will not be able to reach computers inside the VPN.

**Warning:** While IPSec is deselected, the connection is not secure. Transmitted data is not encrypted.

### Enabling/Disabling IPSec in WinCE

To enable or disable IPSec in WinCE:

1. In the **movianVPN** window, while connected to the gateway, tap **Options**.



2. Select **IPSec** from the list.



3. Tap **OK**. When the checkmark is present, IPSec is enabled.

**Warning:** When IPsec is disabled your connection is not secure. Data is not encrypted.

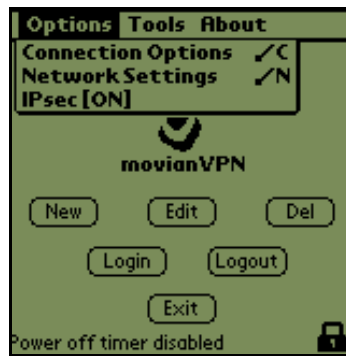
### Enabling/Disabling IPsec on Palm OS

To disable or enable IPsec on the Palm OS:

1. While you are connected to the VPN, in the **movianVPN** window, tap the **movianVPN tab**.

The Options pull-down list appears. When you are connected to the VPN, the IPsec entry appears on the list.

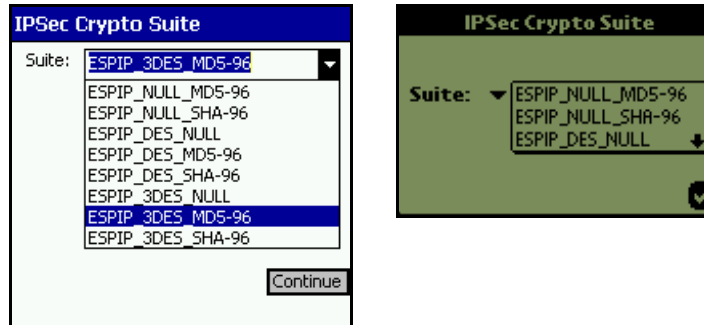
**Note:** While IPsec is enabled, a lock appears in the bottom right hand corner of the window.



2. Select **IPsec** from the list.  
You will receive a warning that IPsec is about to be disabled.
3. Tap **OK**.

**IPSec Crypto Suite** IPSec settings are used to encrypt the data. The various settings represent the strengths of security, 3DES being the strongest while Null represents no encryption.

*Note: These settings should match the selections made in of “IPSec Settings” on page 14.*

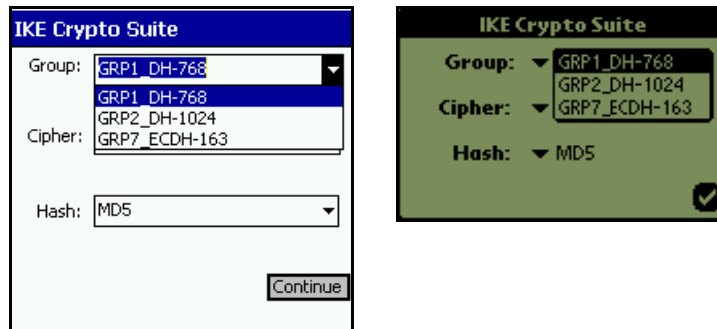


**IKE Crypto Suite** IKE (Internet Key Exchange) Crypto Suite configures the preferred protocols for exchanging keys.

*Note: These settings should match the selections made in of “IKE (Internet Key Exchange) Settings” on page 14.*

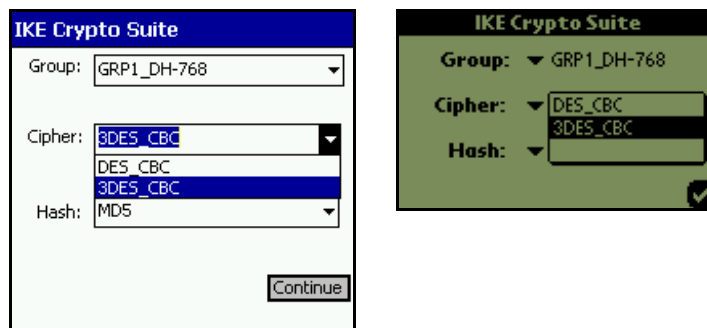
**Group**

*Note: Group refers to the cryptographic algorithm that will be used and also the key size in the Diffie-Hellman key exchange.*



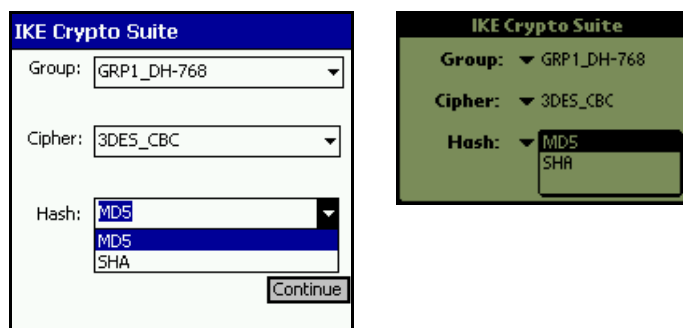
### Cipher

Ciphers are used to encrypt the data using Digital Encryption Standard (DES) or 3DES, where the encryption is performed three times.



### Hash

Hash numbers confirm that communicated data has not been changed during transmission. A hash number is generated for a particular set of data's characteristics, and sent along with the communication. When the communication is received, the hash number is generated again in the same way, and compared to the first..



# DNS Support

The Domain Name System (DNS) is used to identify particular computers or parts of the network. Some gateways supply this information to the handheld device during key negotiation.

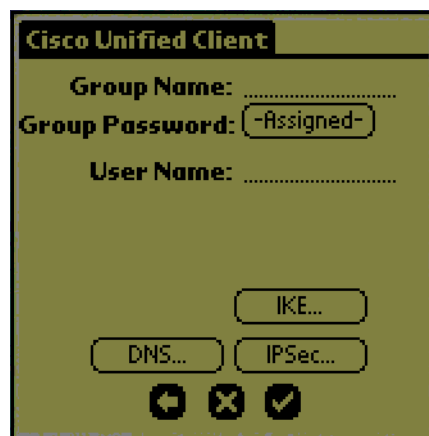
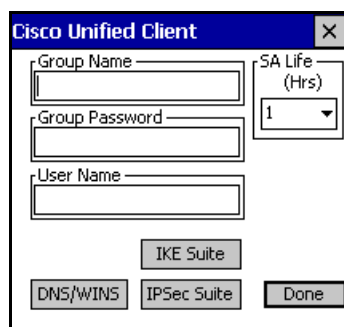
If the user sets the Query DNS option in the **movianVPN** application, the device downloads the DNS information from the gateway. Alternatively, the user can set the DNS information directly on the device.

## Enabling DNS on the movianVPN client

If the user is supplying DNS settings, they must be set on the client software.

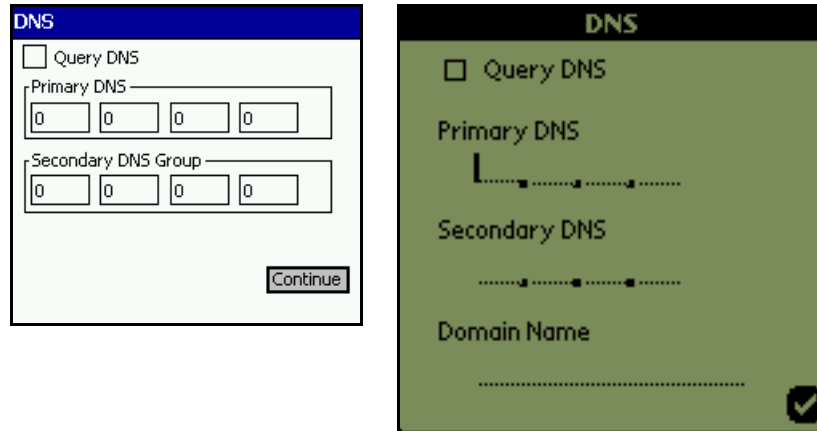
To enable and set DNS support:

1. On the **movianVPN** client, enter or select the Policy Name.
2. Tap **Edit**.
3. Tap **Continue** for WinCE OS or tap the arrow icon for Palm OS.
4. The gateway window will appear:



5. Select **DNS ...**

6. Uncheck the **Query DNS** box. The DNS entry fields appear.



7. Enter the **Primary** and **Secondary DNS** addresses. In Palm OS, enter the **Domain Name**.
8. Tap **Continue** in WinCE OS or tap the check icon in Palm OS.
9. Tap **Done**.



# A

## Appendix A: Using the Diagnostic Tools

The following diagnostic tools are available for **movianVPN** clients:

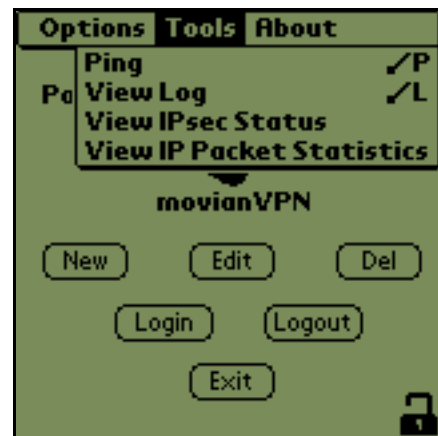
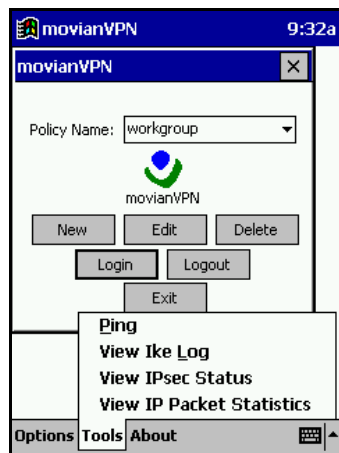
- Ping
- View IPsec Status
- View IP Packet Status

*Note:* For further diagnostic procedures, refer to the gateway configuration manual for information on how to view the connection log.

### Accessing diagnostic tools

To access the diagnostic tools:

1. In the **movianVPN** window
  - For WinCE, tap **Tools** in the lower tool bar
  - For Palm OS tap the **movianVPN** tab in the top of the window and tap **Tools**.



2. Tap the diagnostic tool you want to open

# Ping

Use Ping to determine whether you have established a connection with or have access to a particular server.

*Note: If the first attempt fails, ping the server twice.*

## Using Ping with a WinCE client

To ping a server with a WinCE device:

1. Tap **Tools** and select **Ping** from the list.

The Ping window appears.



2. Enter the IP address of the server you wish to ping.

3. Tap **Ping**.

The Ping window will display the results.



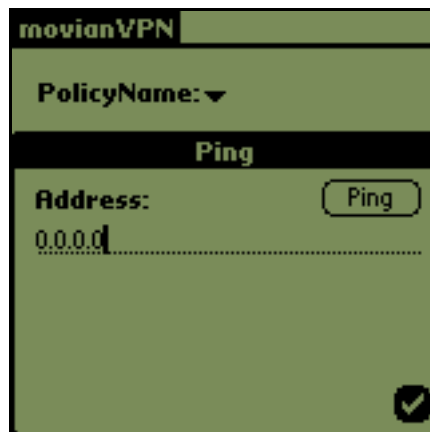
4. To close the window, tap **OK** or the **X** in the top right corner of the Ping window.

## Using Ping with a Palm OS client

To ping a server using a Palm OS device:

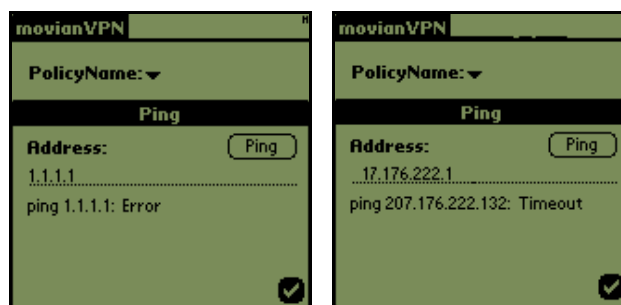
1. Tap the **movianVPN** tab.
2. Tap **Tools** and select **Ping** from the list.

The Ping window appears.



3. Enter the IP address of the server you wish to ping.
4. Tap **Ping**.

The Ping window will display the results.



5. Tap the checkmark icon when finished.

# IPSec Status Log

IPSec Status can be used to confirm that a tunnel is working and provide information about it.

*Note:* View IPSec Status is only available while the VPN tunnel is up.

## Viewing IPSec Status for a WinCE client

To view IPsec status with a WinCE device:

1. Tap **Tools** and select **View IPSec Status** from the list.

The IPsec Status window appears.



The fields provide status information on the handheld device and gateway.

2. Tap **OK** when finished.

The fields provide the following information:

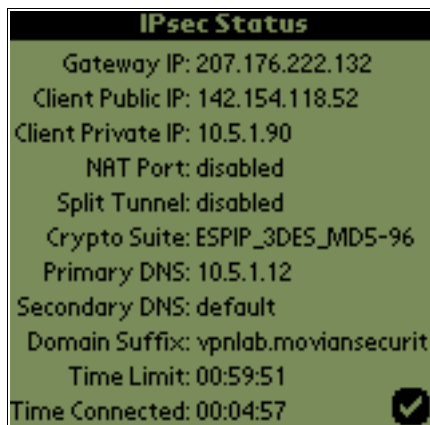
Field	Information
Gateway IP	VPN gateway server IP address
Client Public IP	IP address supplied by ISP
Client Private IP	IP address within the VPN
NAT Port	If NAT is enabled
Split Tunnel	If Split Tunnel is enabled
Crypto Suite	Crypto Suite setting
Primary DNS	DNS setting from VPN gateway or supplied by client
Secondary DNS	DNS setting from VPN gateway or supplied by client
Domain Suffix	In Palm OS, setting from VPN gateway or supplied by client
Time Limit	SA proposal
Time Connected	Since tunnel established

## Viewing IPSec Status for a Palm OS client

To view IPSec status with a Palm OS device:

1. Tap the **movian VPN tab**.
2. Tap **Tools** and select **View IPSec Status** from the list.

The IPSec Status window appears.



The fields provide status information on the handheld device and gateway.

3. Tap the checkmark icon when finished.

The fields provide the following information:

Field	Information
Gateway IP	VPN gateway server IP address
Client Public IP	IP address supplied by ISP
Client Private IP	IP address within the VPN
NAT Port	If NAT is enabled
Split Tunnel	If Split Tunnel is enabled
Crypto Suite	Crypto Suite setting
Primary DNS	DNS setting from VPN gateway or supplied by client
Secondary DNS	DNS setting from VPN gateway or supplied by client
Domain Suffix	In Palm OS, setting from VPN gateway or supplied by client
Time Limit	SA proposal
Time Connected	Since tunnel established

# IP Packet Statistics Log

IP Packet Statistics are used primarily for diagnostic purposes. The window provides information on the amount of traffic passing through the tunnel, and its reliability. Your VPN administrator may ask you to clear the statistics while debugging; this will clear the statistics from previous communications, for example from a previous VPN session or if you have been using the Internet before starting the VPN tunnel.

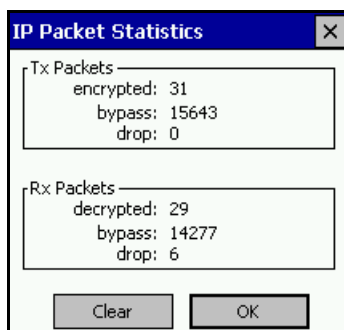
*Note:* View IP Packet Statistics is only available while the VPN tunnel is up.

## Viewing IP Packet Statistics for a WinCE client

To view IP Packet Statistics with a WinCE device:

1. Tap **Tools** and select **View IP Packet Statistics** from the list.

The IP Packet Statistics window appears.



2. Tap **Clear** to clear information, if desired.
3. Tap **OK** when finished.

The fields indicate the following information:

Field	Information
Tx Packets	Transmitted encrypted packets
Rx Packets	Received packets

Packets may be:

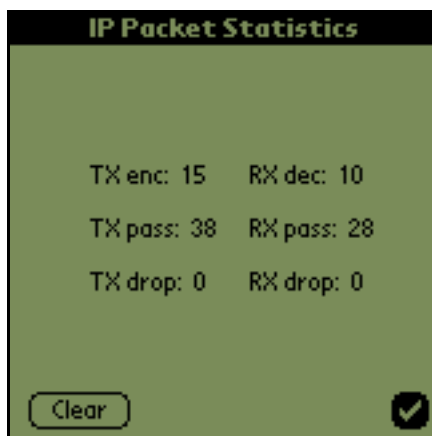
- Encrypted/decrypted
- Bypass: Sent without encryption
- Drop: Dropped from communication

### Viewing IP Packet Statistics for a Palm OS client

To view IP Packet Statistics with a Palm OS device:

1. In the **movianVPN** window, tap the **movianVPN tab**.
2. Tap **Tools** and select **View IP Packet Statistics** from the list.

The IP Packet Statistics window appears.



3. Tap **Clear** to clear information, if desired.
4. Tap the checkmark icon when finished.

The fields indicate the following information on transmitted encrypted packets:

- Encrypted/decrypted
- Bypass: Sent without encryption
- Drop: Dropped from communication



# B

## Appendix B: Glossary of Terms

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Authentication	Authentication refers to the verification of the identity of communicating parties.
AH Authentication Header	Part of the IPSec protocol, the Authentication Header allows communicating parties to verify both the source and integrity of the data.
Cipher	Ciphers are algorithms or mathematical functions used to encrypt data. <b>movianVPN</b> uses Digital Encryption Standard (DES) or 3DES, where the encryption is performed three times.
Client software	Client software is the software installed on your handheld device. It communicates with the software installed on your gateway server.
Confidentiality	Confidentiality is the need to restrict access to information to people with the appropriate authorization. This need is typically addressed by encryption, which restricts access to information to people possessing the correct key.
Digital signatures	Digital signatures provide a form of authentication, confirming the identity of communicating parties and acting as a legally binding signature.
DNS Domain Name Server	Domain Name Server (DNS) settings are used to identify particular computers or parts of the network.
Encryption	Encryption is the process of converting a text or other communication into a coded format which cannot be read by other parties unless decrypted. Encryption and decryption relies on shared keys.
Extended Authentication	Extended Authentication (XAUTH) inserts a new level of security in the middle of the IKE (Internet Key Exchange), after the device authentication. A prompt asking for the User Name and Password or another form of additional authentication appears when you log onto the gateway.

If you answer the prompt correctly, the second security set-up phase continues. Extended Authentication can be used to require an additional password or code, depending on the type of gateway.

**ESP  
Encapsulation  
Security Payload**

Part of the IPSec protocol, provides encryption for data exchange security.

**Gateway**

A gateway is the server which recognizes and authenticates a user attempting to access a VPN.

**Hash Numbers**

Hash numbers confirm that communicated data has not been changed during transmission. A hash number is generated for a particular set of data's characteristics, and sent along with the communication. When the communication is received, the hash number is generated again in the same way, and the results compared to the original hash number.

**IKE  
Internet Key  
Exchange protocol**

Part of the IPSec protocol, allows communicating parties to negotiate methods of secure communication—such as how the parties will authenticate themselves initially, which hash functions will be used to confirm data integrity, or which forms of encryption will be used.

**IPSec**

Developed by the Internet Engineering Task Force (IETF), IPSec protocol is a framework of open standards that provides flexible network security, providing confidentiality, data integrity, and data source verification for any application using the network. A protocol is a series of clearly-defined, agreed upon steps that are followed by all parties in an interaction.

**ISP  
Internet Service  
Provider**

A company providing dial-up connections to access the Internet.

**Key**

A key is used to encrypt and decrypt a communication so that it cannot be read by any parties except the sender and intended receiver.

**Perfect Forward  
Secrecy**

Perfect Forward Secrecy is designed to keep previous traffic locked in the past. This is accomplished by executing the key exchange twice, using the same key material. Using Perfect Forward Secrecy prevents the compromise of the secret keys.

Perfect Forward Secrecy creates new keys for each step of the Internet Key Exchange (IKE). Negotiation of the connection will take longer.

**PDA**  
**Personal Digital**  
**Assistant**

Personal Digital Assistants (PDAs) are handheld personal computing devices.

**Policy**

A policy contains the settings used by **movianVPN** to contact and negotiate access to a VPN. The policy includes information on making a connection; negotiating authentication and key exchange; and encryption protocols.

**SA**  
**Security**  
**Association**

A limited-lifetime statement of the negotiated security policies between the communicating devices, such as session keys and agreed encryption algorithms. SA Lifetime provides an automatic time-out from a session with a gateway.

**Split Tunnelling**

Split tunneling is a method used by the VPN server to decide which traffic to send through an encrypted tunnel. Traffic sent to or from the VPN is encrypted, while other traffic goes directly through the ISP to or from the internet. Split tunneling secures sensitive VPN traffic, while allowing less sensitive material to flow normally.

When you select Split Tunneling, packets of data headed to inside the VPN will still be encrypted and forwarded. Packets that are not directed to inside the VPN will not be encrypted, nor is the reply.

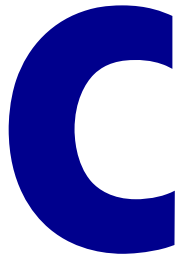
**Tunnel**

A tunnel is created to securely send encrypted information directly from one computer to another.

**VPN**  
**Virtual Private**  
**Network**

A Virtual Private Network or VPN is used to provide secure, encrypted communication between specific computers on a wider network.





## **Appendix C: Client configuration worksheet**

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### **Information required for client configuration**

The following information will be required by your users to create a policy for the gateway. The information must be entered in a field, selected from a pull-down list, or selected/deselected using checkboxes.

Not all fields will apply for the configuration you have selected for your gateway and for the users of the gateway.

# Information required for creating a policy

Field, Checkbox or Button	Required	Information/Action
Policy Name		
Gateway Type (Please select one)		
Gateway IP Address		
Split Tunnelling		
Perfect Forward Secrecy		
Extended Authentication		
DNS checkbox		Primary DNS:
		Secondary DNS Group:
IKE Suite		Group:
		Cipher:
		Hash:
Group Name		
Group Password		
User Name		
User Password		
User Passcode (SecurID)		
Network Properties		Primary Subnet IP Address:
		Primary Subnet Subnet Mask:
		Secondary Subnet IP Addresses:
		Secondary Subnet Subnet Masks:
IPSec Suite		
SA Lifetime		
Options > Connection Type		
Options > Dial-up RAS entry		