

# NGX R65

## CC Evaluated Configuration User Guide



**Check Point**  
SOFTWARE TECHNOLOGIES LTD.

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# **The Common Criteria Evaluated Configuration**





# Overview

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## The Certification Challenge

"Common Criteria for Information Technology Security Evaluation" (CCITSE) usually referred to as the "Common Criteria" (CC) is an evaluation standard for a multi-national marketplace. The uses of Common Criteria include:

- For consumers:
  - To find requirements for security features that match their own risk assessment.
  - To shop for products that have ratings with those features.
  - To publish their security requirements so that vendors can design products that meet them.
- For developers:
  - To select security requirements that they wish to include in their products.
  - To design and build a product in a way that can prove to evaluators that the product meets requirements.
  - To determine their responsibilities in supporting and evaluating their product.

Check Point VPN-1 Power/UTM NGX R65 provides a broad range of services, features and capabilities. The Security Target (ST) makes a set of claims regarding the product's security functionality, in the context of an evaluated configuration. The claimed security functionality is a subset of the product's full functionality. The evaluated configuration is a subset of the possible configurations of the product, established according to the evaluated configuration guidance.

This document describes the security functions and interfaces available to the non-administrative users of NGX R65. The security functions and interfaces that are visible at the user interfaces are authentication for FTP and Telnet, as well as the download and use of the SSL Network Extender client.

## Reference Material

The evaluated configuration is described in:

- *Check Point VPN-1 Power/UTM NGX R65 Security Target*

The user interfaces and security functions relating to the SSL Network Extender client are described in detail in:

- *Virtual Private Networks – Administration Guide – Version NGX R65*, Check Point Part Number 701675, February 2007, Chapter 28

# Evaluated Configuration

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## In This Chapter

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## Administrator-defined User Parameters

The Administrator defines the different terms under which users can operate, such as:

- The services users are allowed to use
- How users are authenticated

## User Authentication Schemes

Users sending or receiving information through the evaluated configuration can be authenticated by either:

- Setting up a VPN rule that requires a remote access VPN tunnel to be used by the user for sending information through the evaluated configuration  
*or*
- Configuring a Security Server to require single-use password authentication using an authentication server in the IT environment.

User Authentication is available for the services Telnet and FTP. Using SSL Network Extender and SecureClient Mobile, users can use an authenticated secure channel for all IP-based protocols.

## Single-Use Password Authentication

The evaluated configuration supports the use of authentication servers in the IT environment for user authentication via single-use passwords. The RADIUS and SecurID protocols are supported for this purpose.

The Telnet, FTP, and SSL Network Extender interfaces support the use of the RADIUS and SecurID protocols for sending the user-supplied single-use password to an external authentication server.

## Remote Access Virtual Private Networks (VPNs)

The evaluated configuration allows users to establish Virtual Private Network tunnels with Check Point VPN-1 Power/UTM gateways. The user connects to the gateway, authenticates using a certificate or single-user password, verifies the gateway's fingerprint, and a secure session is established, automatically tunneling all network traffic between the user's workstation and the gateway's encryption domain.

Check Point remote access VPN solutions include SecureClient: an IPSec VPN client application, SSL Network Extender: a downloadable thin client invoked from a standard Web browser that provides a SSL VPN, and SecureClient Mobile: a SSL VPN implementation for mobile phones. All of these solutions are supported by the evaluated configuration.

## Security Guidelines

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This section lists some basic security guidelines:

- **Logging In from a Secure Device:** You should not attempt to log in from an insecure device, such as a public terminal or a computer belonging to a friend. Even if the person owning the computer is trustworthy, the computer may not be, due to having been infected with malicious code.
- **Follow Client Operating System Security Guidance:** Remote access VPN client software is dependent on the underlying operating system to provide a protected domain of execution and cryptographic support for the establishment of VPN tunnels. Read and follow your operating system's security guidance documentation, to ensure that your VPN client software is running in a protected environment.
- **Authentication Credential Handling:** Protect your authentication credentials, and do not allow others to use them. Your credentials authenticate you to the system, and if others gain access to these credentials, they may impersonate you in order to gain unauthorized access to computer resources.
- **Logging Out:** When you log out of the system and leave the device that you used for access (such as a terminal or a workstation with terminal emulation), you must ensure that you have not left information on the screen, or within an internal buffer that can be accessed by another user. Safe options include completely shutting down the client software used for access, powering down a hardware terminal, or clearing the scrollbar buffer by switching among virtual terminals, in addition to clearing the visible screen area.



# User Authentication





# Telnet Authentication

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## Welcome Message

When the TCP session is established, the Telnet security server sends a welcome message, as configured by the administrator.

## User Identification and Authentication

1. After the welcome message(s) is sent to the client, the Telnet security server prompts you for a username. (The Telnet security server does not accept a username longer than 256 characters.)
2. Then, once the username has been entered, you are prompted for a password.

3. When authentication succeeds, the Telnet security server sends you the following message: "User *user* authenticated by mechanism", where *user* is the username, and mechanism is either "SecurID" or "RADIUS authentication".
4. After successful authentication, if no information flow control rules match *user* or any of his group memberships, an error message will be displayed and the connection will be terminated.

## Authentication Failure Handling

When a password authentication failure occurs, the Telnet security server prompts you for a username and password, again. This is allowed to occur within the same connection a preset number of times,  $x$ . After  $x$  failures, the connection is terminated by the security server.

## Connection to Destination Server

Upon successful connection to the destination server, the Telnet security server sends you a "Connected to *host*" message (where *host* is replaced by the destination server's hostname, or IP address).

## Inactive Session Termination

An inactive Telnet session will be terminated after 15 minutes.

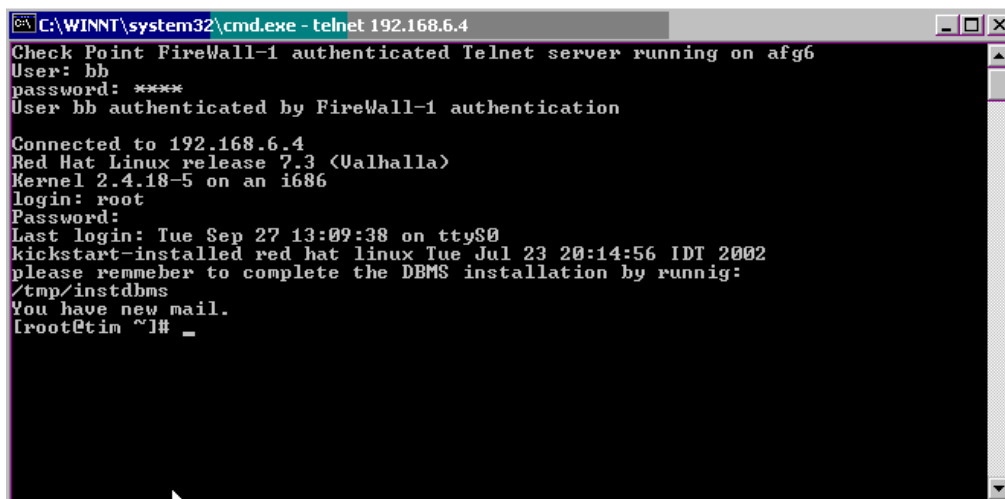
## Error Messages

Condition	Message	Side Effects
Communication failure with SecurID server	Access denied – wrong user name or password	Authentication failure
Communication failure with RADIUS server	Access denied – wrong user name or password	Authentication failure
Unsuccessful SecurID or RADIUS authentication	Access denied – wrong user name or password	Authentication failure
Unknown username	Access denied – wrong user name or password	Authentication failure
Username greater than 256 characters is specified		Connection is closed
Invalid RADIUS user	Invalid username in RADIUS authentication	Authentication failure
User database entry restricts the authenticated user from operating at the current time	Your login is restricted to <i>from to</i>	Connection is closed
User database entry restricts the authenticated user from operating on the current day of the week	Your login is not allowed for day <i>day</i>	Connection is closed
No User Auth rules match the user or any of his group memberships (after successful I&A)	Access denied by FW-1	Connection is closed
Unable to connect to the destination server	Connection to <i>host</i> failed	Connection is closed

## Examples

### Telnet Authentication

In the example below, the user is prompted to enter his User Name and Password and is successfully authenticated:

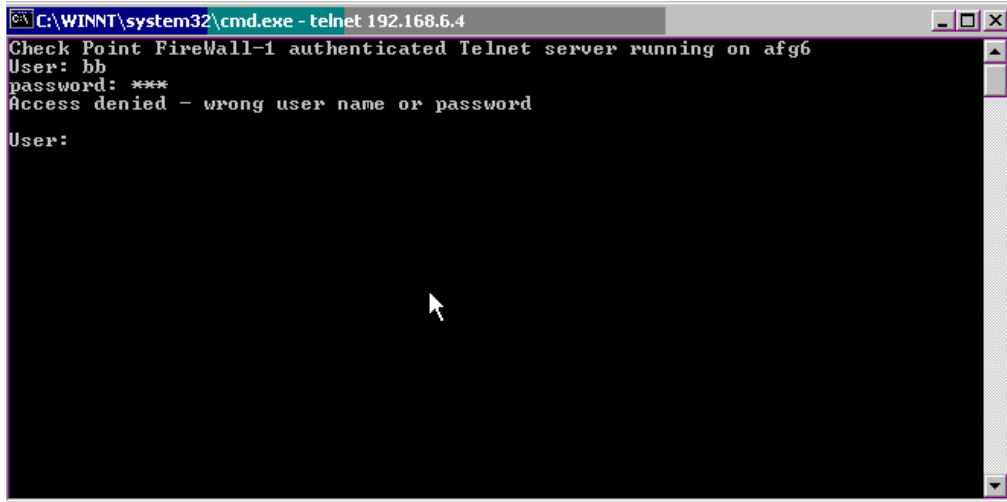


```
C:\WINNT\system32\cmd.exe - telnet 192.168.6.4
Check Point FireWall-1 authenticated Telnet server running on afg6
User: bb
password: ****
User bb authenticated by FireWall-1 authentication

Connected to 192.168.6.4
Red Hat Linux release 7.3 (Valhalla)
Kernel 2.4.18-5 on an i686
login: root
Password:
Last login: Tue Sep 27 13:09:38 on ttyS0
kickstart-installed red hat linux Tue Jul 23 20:14:56 IDT 2002
please remember to complete the DBMS installation by running:
/tmp/instdbms
You have new mail.
[root@tim ~]# _
```

## Wrong User Name

In the example below, access is denied because of wrong User Name and Password:

A screenshot of a Windows command prompt window titled "C:\WINNT\system32\cmd.exe - telnet 192.168.6.4". The window shows the output of a telnet connection to a Check Point Firewall. The text displayed is: "Check Point FireWall-1 authenticated Telnet server running on afg6", "User: bb", "password: \*\*\*", "Access denied - wrong user name or password", and "User:". A mouse cursor is visible in the center of the black terminal area.

```
C:\WINNT\system32\cmd.exe - telnet 192.168.6.4
Check Point FireWall-1 authenticated Telnet server running on afg6
User: bb
password: ***
Access denied - wrong user name or password
User:
```

# FTP Authentication

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## Welcome Message

1. When a control connection is established from the client to the FTP security server, the FTP security server will send you the following greeting message: "Check Point FireWall-1 Secure FTP server running on **host**", where **host** is replaced by the Check Point VPN-1 Power/UTM NGX R65 appliance host name, or IP address.
2. If no message is specified, the FTP security server sends you a new line.

## User Identification and Authentication

After the welcome message, the FTP security server will prompt you for a username.

When the User Authentication mode is active, the FTP security server will expect one of the following inputs on the control channel:

- USER user@fw\_user@host
- USER fw\_user@host
- USER fw\_user

**fw\_user** is the user identifier in the evaluated configuration user database, **user** is the user name on the destination server, and **host** is the destination server host. **host** is ignored. (When using the first format, **fw\_user** may contain the '@' separator character.)

If user is omitted, the FTP security server attempts to use **fw\_user** for both the destination server and the evaluated configuration user database.

1. Once the user has been identified, this additional user security attribute (the **fw\_user** user identity) is associated with the connection.
2. The FTP security server will expect you to enter a password.  
Supported formats are:
  - PASS password@fw\_password
  - PASS password

Where **fw\_password** is used for authentication to the evaluated configuration, and **password** is the destination server's password. (When using the first format, **password** may contain the '@' separator character.)

1. If **fw\_password** is omitted, the FTP security server will prompt for it. The evaluated configuration sends **fw\_user** and **fw\_password** to the RADIUS or SecurID server for validation.
2. As an alternative, the FTP security server may be configured to first prompt for a user and password to be sent to the destination server, and then for a user and password for authenticating to the evaluated configuration.
3. In the Remote Access VPN mode, the FTP security server does not require the user to perform additional identification and authentication. The client's USER and PASS commands will be forwarded to the destination server.

4. Once the user has been authenticated via the initial identification and authentication exchange, the FTP security server will allow the user to send additional USER and PASS commands to the destination server.

## Connection to Destination Server

Upon successful connection to the destination server, the evaluated configuration will send you the following message: “Connected to host. Logging in...” (**host** is the destination server’s hostname, or IP address). The actual code will be determined later according to the server’s return code from the login process. The original message accepted from the server is then sent to you.



## Error Messages

Condition	Code	Message	Side Effects
Client does not send a 'USER' command on the control connection within 60 seconds of connection establishment	202	'USER' command expected	Connection is closed
Client sends command other than 'USER' after connection establishment	202	'USER' command expected	Connection is closed
Username longer than 256 characters		User name too long	Connection is closed
Client sends a USER command not followed by a username		no arg to 'USER' command	User may retry entering a user name
Prompt for user password in Remote Access VPN mode	331	(not authenticated): Enter server password	None
No User Auth rules match the user or any of his group memberships (after identification)		connection not allowed by rule base	Connection is closed
User enters newline as password		you can use 'quote password' or Account command ('ACCT')	User may retry entering a password
Authentication failure	421	aborted	Connection is closed
User database entry has expired		Login expired on <i>fix_date</i> .	Connection is closed
User database entry restricts the authenticated user from operating at the current time		Your login is restricted to <i>from to</i>	Connection is closed
User database entry		Your login is not allowed	Connection is

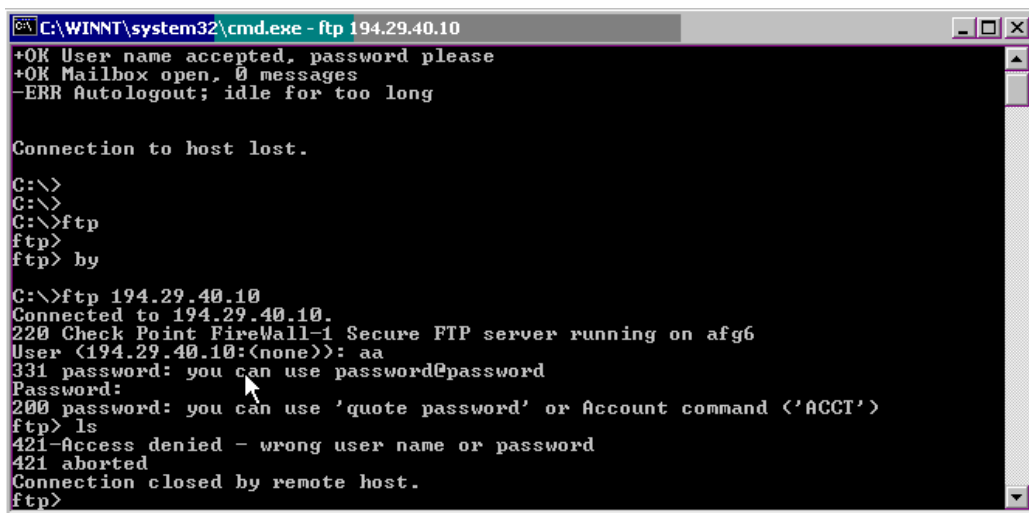
Condition	Code	Message	Side Effects
restricts the authenticated user from operating on the current day of the week		for day <i>day</i>	closed
Intersection with user database restricts authenticated user from accessing the destination server or from doing so from the presumed source address	421	You are not allowed to perform ftp to this destination	Connection is closed
FTP security server timeout ( <i>au_connect_timeout</i> , default 10 seconds) in connecting to destination server	413	Connection to <i>host</i> failed	Connection is closed
Invalid FTP server reply	413	Unsupported server reply. Aborted	Connection is closed
Authentication to the destination server fails	421	aborted	Connection is closed
Unauthorized command	505	Command was blocked. Contact admin.	Command blocked
Unknown command	505	Security Server forbids unknown commands. Contact admin.	Command blocked
Command denied by resource rule	550	Security server forbids that action on this file	Command blocked
Command exceeds maximum command length (2047 bytes)	505	Command too long. Contact admin.	Command blocked
Unable to establish the data connection to the evaluated configuration	550	data connection establishment failed	None
Unable to connect data connection to the	550	data connection failure	None

<b>Condition</b>	<b>Code</b>	<b>Message</b>	<b>Side Effects</b>
destination			
Unable to send data	550	failed to write data	None
Data received in the wrong direction (i.e. when the evaluated configuration does not expect the client to send data)	550	Data on wrong direction	Connection is closed
Failure to listen on the data port	550	accept data connection failed	
Error reading from sending side	550	data read error	Connection is closed
Unexpected termination of data connection	550	io error	
Receiving side unexpectedly terminated	550	dst_dataconn ended unexpectedly	
Memory allocation failure	425	Security server is out of memory	Connection is closed
Tracking failure	550	Security server failure(track)	Connection is closed

## Examples

### Wrong User Name

In the example below, authentication to the destination server fails, and the return code is **421**:



```
C:\WINNT\system32\cmd.exe - ftp 194.29.40.10
+OK User name accepted, password please
+OK Mailbox open, 0 messages
-ERR Autologout; idle for too long

Connection to host lost.

C:\>
C:\>
C:\>ftp
ftp>
ftp> by

C:\>ftp 194.29.40.10
Connected to 194.29.40.10.
220 Check Point FireWall-1 Secure FTP server running on afg6
User (194.29.40.10:(none)): aa
331 password: you can use password@password
Password:
200 password: you can use 'quote password' or Account command (<'ACCT'>)
ftp> ls
421-Access denied - wrong user name or password
421 aborted
Connection closed by remote host.
ftp>
```

# Remote Access VPN



# SSL Network Extender

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## SSL Network Extender Download

The SSL Network Extender client software must be installed on the user workstation for the user to be able to establish SSL VPN tunnels with a VPN-1 Power/UTM gateway. The software may be preinstalled by the workstation administrator, or it may be downloaded by the user from the gateway, using a standard Web browser. If the software has already been installed on your workstation, you may skip this section and continue to the *Establishing the SSL VPN Session* section.

Check Point VPN-1 Power/UTM gateways that have been configured to support SSL Network Extender provide a SSL Network Extender portal, accessed using the https protocol. For example, if your gateway's name is "gateway.mycompany.com", you can access the portal using your Web browser by entering "https://gateway.mycompany.com/" in the browser's address bar.

The precise user experience will depend on your choice of browser and its configuration. The SSL Network Extender portal pages use Javascript to identify the browser platform and automatically download the client software packaged either as an ActiveX control or a trusted Java applet.

Depending on your security settings, the browser may request user confirmation for accessing the portal and for installing the client software. If automatic installation does not complete successfully, you may also download the SSL Network Extender client software package and install it manually on your workstation.

In order to prevent another Web server from impersonating your gateway portal and fooling you into downloading malicious software, it is imperative that you verify that the https session was indeed established with the intended gateway before acknowledging any security-related prompts. Most browsers will do this verification automatically, and provide appropriate feedback (e.g. Microsoft Internet Explorer will display a closed lock icon).

## Establishing the SSL VPN Session

After the SSL Network Extender client software is installed on the user's workstation, access to the gateway's SSL Network Extender portal will automatically pop up a login window in the browser.

If certificate-based authentication has been configured on the gateway, the browser will look for an applicable certificate in the user's browser's certificate store, and use it to establish the SSL VPN session. Depending on browser configuration, the user may be prompted to select a certificate to be used to authenticate to the gateway, and may be prompted to provide a password to approve use of the certificate for authentication.

If password-based authentication has been configured, the browser will prompt the user to enter a user name and password. If you are using a SecurID token for authentication, click the **Click for using SecurID** button and enter user name, password, and the SecurID-generated one-time code.





If the login fails, a “Wrong user name or password” or “Authentication failed” message will be displayed.

If this is the first time the user is connecting to this gateway from this user workstation, or if the gateway’s certificate has been updated, the SSL Network Extender client will pop up a gateway verification window, displaying the gateway’s identification and a certificate fingerprint. Compare the two displayed values to secure values that must be provided by the gateway administrator (e.g. in an email). If there is a mismatch, you must cancel the session and contact the administrator for assistance.



After both user and gateway have been mutually authenticated, the SSL Network Extender client software will reconfigure the user workstation's operating system to route network traffic whose destination is inside the gateway's encryption domain through a secure SSL VPN channel. The SSL Network Extender window shows the connection status, and the time remaining until the user is required to re-authenticate. The user may also manually disconnect the connection.



# SecureClient Mobile

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## In This Chapter

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## SecureClient Mobile Installation

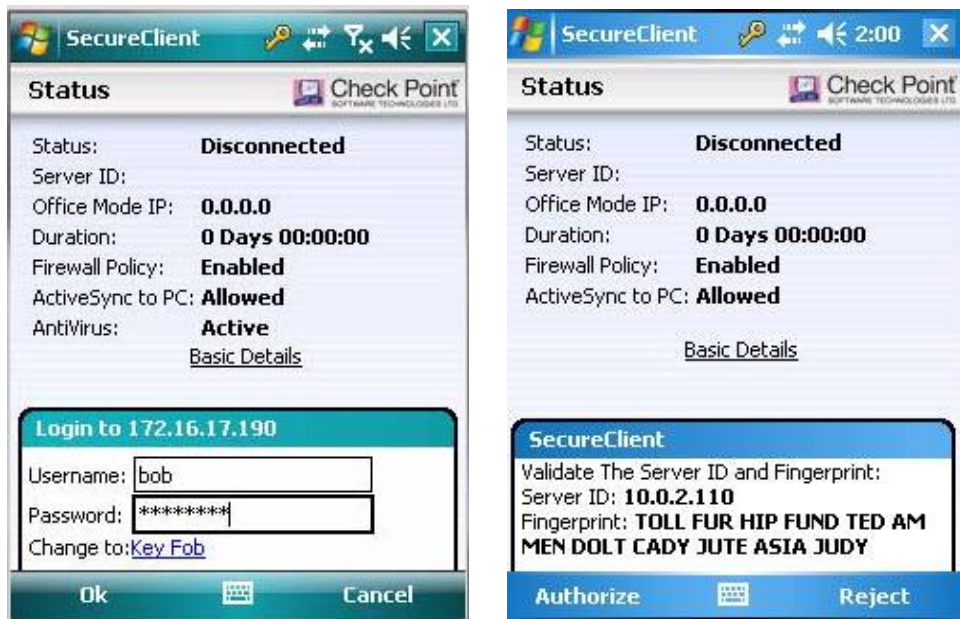
SecureClient Mobile is a Check Point SSL VPN resident client that provides SSL VPN functionality on mobile platforms such as cell phones and PDAs running Windows Pocket PC and Windows Mobile operating systems.

The SecureClient Mobile software must be installed on the user's mobile device for the user to be able to establish SSL VPN tunnels with a VPN-1 Power/UTM gateway. The software may be downloaded by the user from the gateway, using a standard Web browser. Follow the directions provided above in the *SSL Network Extender Download* section for downloading the software. Run the client software package on the mobile device to install the software.

## Establishing the SecureClient Mobile Session

Once installed on your mobile device, SecureClient Mobile provides behavior similar to that of the SSL Network Extender client, optimized for the mobile device user interface.

The precise user experience will depend on your choice of device and its configuration. Sample screen captures are depicted below.



Follow the directions given in the *Establishing the SSL VPN Session* section above for establishing and monitoring the SecureClient Mobile session.

# Other VPN Clients

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## IPSec VPN Clients

Check Point provides a range of end point security products that provide remote access VPN capabilities compatible with VPN-1 Power/UTM, including Check Point SecureClient, Check Point Integrity SecureClient, and Check Point Endpoint Security. These clients are supported by the evaluated configuration, but they are not considered part of it. In particular, a Check Point VPN-1 Power/UTM gateway does not provide these clients as downloadable packages. The user must ensure that client software is securely delivered and installed on the user's workstation or mobile phone, prior to using the client for establishing remote access VPN connections.

As described in the previous chapter, it is the user's responsibility to verify that the client is connecting to a valid gateway, by comparing the gateway's certificate's identify and fingerprint with known values received from a trusted source.



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