Mobile Access

R75.40

Administration Guide

13 August 2012

Check Point
SOFTWARE TECHNOLOGIES LTD.
We Secure the Internet.

Classification: [Protected]

Important Information

Latest Software

We recommend that you install the most recent software release to stay up-to-date with the latest functional improvements, stability fixes, security enhancements and protection against new and evolving attacks.

Latest Documentation

The latest version of this document is at:
http://supportcontent.checkpoint.com/documentation_download?ID=13949

For additional technical information, visit the Check Point Support Center (http://supportcenter.checkpoint.com).

For more about this release, see the home page at the Check Point Support Center (http://supportcontent.checkpoint.com/solutions?id=sk76540).

Revision History

Date	Description
13 August 2012	Updated Initializing Client Certificates (on page 84) Updated $CVPNDIR/var/ssl/ca-bundle/ path
23 July 2012	• The Mobile Access Software Blade supports the Gaia operating system. Multiple changes. • Updated Android Exchange Server configuration information.
16 April 2012	First release of this document

Feedback

Check Point is engaged in a continuous effort to improve its documentation.

Please help us by sending your comments (mailto:cp_techpub_feedback@checkpoint.com?subject=Feedback on Mobile Access R75.40 Administration Guide).

Contents

Chapter 1

Introduction to Mobile Access

In This Chapter

Check Point Mobile Access blade is a simple and comprehensive remote access solution that delivers exceptional operational efficiency. It allows mobile and remote workers to connect easily and securely from any location, with any Internet device to critical resources while protecting networks and endpoint computers from threats. Combining the best of remote access technologies in a software blade provides flexible access for endpoint users and simple, streamlined deployment for IT.

This software blade option simply integrates into your existing Check Point gateway, enabling more secure and operationally efficient remote access for your endpoint users. The data transmitted by remote access is decrypted and then filtered and inspected in real time by Check Point's award-winning gateway security services such as antivirus, intrusion prevention and web security. The Mobile Access blade also includes in-depth authentications, and the ability to check the security posture of the remote device. This further strengthens the security for remote access.

Mobile Access Applications

Mobile Access provides the remote user with access to the various corporate applications, including, Web applications, file shares, Citrix services, Web mail, and native applications.

- A Web application can be defined as a set of URLs that are used in the same context and that is accessed via a Web browser, for example inventory management, or HR management.
- A file share defines a collection of files, made available across the network by means of a protocol, such as SMB for Windows, that enables actions on files, such as opening, reading, writing and deleting files across the network.
- Mobile Access supports Citrix client connectivity to internal XenApp servers.
- Mobile Access supports Web mail services including:
  - Built-in Web mail: Web mail services give users access to corporate mail servers via the browser. Mobile Access provides a front end for any email server that supports the IMAP and SMTP protocols.
  - Other Web-based mail services, such as Outlook Web Access (OWA) and IBM Lotus Domino Web Access (iNotes). Mobile Access relays the session between the client and the OWA server.
- iPhone and iPad support
  - Access to Web applications
  - Access to email, calendar, and contacts
  - Two-factor authentication with client certificate and user name/password
- SSL Network Extender support for MacOS 10.6 (Snow Leopard) as part of Check Point Mobile Access
- Mobile Access supports any native application, via SSL Network Extender. A native application is any IP-based application that is hosted on servers within the organization. When a user is allowed to use a

native application, Mobile Access launches SSL Network Extender and allows users to employ native clients to connect to native applications, while ensuring that all traffic is encrypted.

Remote users initiate a standard HTTPS request to the Mobile Access gateway, authenticating via user name/password, certificates, or some other method such as SecurID. Users are placed in groups and these groups are given access to a number of applications.

For information about Web applications, file shares, Citrix services, Web mail see Applications for Clientless Access.

For information about native applications, see Native Applications for Client-Based Access (on page 61).

Mobile Access Management

- Mobile Access enabled gateways are managed by the Security Management Server that manages all Check Point gateways.
- All Mobile Access related configuration can be performed from the Mobile Access tab of SmartDashboard.
- Mobile Access users are shown in SmartConsole, along with real-time counters, and history counters for monitoring purposes.
- Mobile Access supports SNMP. Status information regarding Check Point products can be obtained using a regular SNMP Network Management Station (NMS) that communicates with SNMP agents on Mobile Access gateways. See "Working with SNMP Management Tools" in the *R75.40 Security Management Administration Guide* (http://supportcontent.checkpoint.com/solutions?id=sk76540).

SSL Network Extender

The SSL Network Extender client makes it possible to access native applications via Mobile Access.

SSL Network Extender is downloaded automatically from the Mobile Access portal to the endpoint machines, so that client software does not have to be pre-installed and configured on users' PCs and laptops. SSL Network Extender tunnels application traffic using a secure, encrypted and authenticated SSL tunnel to the Mobile Access gateway.

SSL Network Extender Network Mode

The SSL Network Extender Network Mode client provides secure remote access for all application types (both Native-IP-based and Web-based) in the internal network via SSL tunneling. To install the Network Mode client, users must have administrator privileges on the client computer.

After installing the client, an authenticated user can access any authorized internal resource that is defined on Mobile Access as a native application. The user can access the resource by launching the client application, either directly from the desktop or from the Mobile Access portal.

SSL Network Extender Application Mode

The SSL Network Extender Application Mode client provides secure remote access for most application types (both Native (IP-based) and Web-based) in the internal network via SSL tunneling. Most TCP applications can be accessed in Application Mode. The user does not require administrator privileges on the endpoint machine.

After the client is installed the user can access any internal resource that is defined on Mobile Access as a native application. The application must be launched from the Mobile Access portal and not from the user's desktop.

Commonly Used Concepts

This section briefly describes commonly used concepts that you will encounter when dealing with Mobile Access.

Authentication

All remote users accessing the Mobile Access portal must be authenticated by one of the supported authentication methods. As well as being authenticated through the internal database, remote users may also be authenticated via LDAP, RADIUS, ACE (SecurID), or certificates. You can also configure two factor authentication with a DynamicID one time password.

Authorization

Authorization determines how remote users access internal applications on the corporate LAN. If the remote user is not authorized, access to the services provided by the Mobile Access gateway is not granted.

After being authenticated, the user can open an application:

- If the user belongs to a group with access granted to that application.
- If the user satisfies the security requirements of the application (such as authentication method and endpoint health compliance).

Endpoint Compliance Scanner

The Check Point Endpoint Security On Demand scanner enforces endpoint compliance by scanning the endpoint to see if it complies with a pre-defined endpoint compliance policy. For example, an endpoint compliance policy would make sure that the endpoint clients have updated Anti-Virus signatures and an active firewall. If the endpoint is compliant with the endpoint compliance policy, the user is allowed to access the portal.

When end users access the Mobile Access Portal for the first time, an ActiveX component scans the client computer. If the client computer successfully passes the scan, the user is granted access to the Mobile Access portal. The scan results are presented to the Mobile Access gateway and to the end user.

When Endpoint Security on Demand detects a lack of security, it either rejects the connection or allows the user to choose whether or not to proceed, according to the Endpoint Compliance policies. The system administrator defines policies that determine which types of threats to detect and what action to take upon their detection.

Secure Workspace

End-users can utilize Check Point's proprietary virtual desktop that enables data protection during user-sessions, and enables cache wiping, after the sessions have ended. Secure Workspace protects all session-specific data accumulated on the client side. It uses protected disk space and file encryption to secure files created during the access session. Afterwards, it cleans the protected session cache, eliminating any exposure of proprietary data that would have been inadvertently left on public PCs.

Protection Levels

Protection Levels balance between connectivity and security. The Protection Level represents a security criterion that must be satisfied by the remote user before access is given. For example, an application may have a Protection Level, which requires users to satisfy a specific authentication method. Out of the box, Mobile Access has three pre-defined Protection Levels — Permissive, Normal, and Restrictive. It is possible to edit Protection Level settings, and define new Protection Levels.

Session

After being authenticated, remote users are assigned a Mobile Access *session*. The session provides the context in which Mobile Access processes all subsequent requests until the user logs out, or the session ends due to a time-out.

Mobile Access Security Features

Greater access and connectivity demands a higher level of security. The Mobile Access security features may be grouped as server side security and client side security.

Server Side Security Highlights

Mobile Access enabled gateways are fully integrated with and benefit from the same security features as other Security Gateways. In addition, Mobile Access gateways have numerous security features to enable secure remote access. The following list outlines the security highlights and enhancements available on Mobile Access gateways:

1. **IPS:** Protects organizations from all known, and most unknown network attacks using intelligent security technology.

   The Web Intelligence component of IPS enables protection against malicious code transferred in Web-related applications: worms, various attacks such as Cross Site Scripting, buffer overflows, SQL injections, Command injections, Directory traversal, and HTTP code inspection.

   See the *R75.40 IPS Administration Guide* (http://supportcontent.checkpoint.com/solutions?id=sk76540).
2. **IPS Service:** Downloads new defense mechanisms to the IPS console, and brings existing defense mechanisms up-to-date.
3. **Anti-Virus:** Many Anti-Virus settings enabled on the Security Gateway also apply to Mobile Access traffic, preventing viruses from reaching end users and the enterprise.
4. **Granular authorization policy:** Limits which users are granted access to which applications by enforcing authentication, encryption, and client security requirements.
5. **Web Application support over HTTPS:** All traffic to Web-based applications is encrypted using HTTPS. Access is allowed for a specific application set rather than full network-level access.
6. **Encryption:** SSL Network Extender, used by Mobile Access, encrypts traffic using the 3DES or the RC4 encryption algorithm.

Client Side Security Highlights

The following list outlines the security highlights and enhancements available on the client side:

1. **Endpoint Compliance for Mobile Access on the endpoint machine:** Prevents threats posed by endpoint clients that do not have updated protection , for example, updated anti- virus and firewall applications (see "Endpoint Compliance Enforcement" on page 107).
2. **Secure Workspace protects all session-specific data, accumulated on the client side.** End-users can utilize Check Point's proprietary virtual desktop that prevents data leakage, by encrypting all files and wiping it at the end of the user session. The administrator can configure Mobile Access (via Protection Levels) to force end users to use Secure Workspace when accessing the user portal or sensitive applications.
3. **Controls browser caching:** You can decide what Web content may be cached by browsers, when accessing Web applications. Disabling browser caching can help prevent unauthorized access to sensitive information, thus contributing to overall information security ("Web Application — Protection Level Page" on page 31).
4. **Captures cookies sent to the remote client by the internal Web server:** In most configurations, Mobile Access captures cookies and maintains them on the gateway. Mobile Access simulates user/Web server cookie transmission by appending the cookie information, stored on Mobile Access, to the request that Mobile Access makes to the internal Web server, in the name of the remote user.
5. **Supports strong authentication methods:** For example, using SecurID tokens, SSL client certificates, and two factor authentication utilizing DynamicID.

User Workflow

The user workflow comprises the following steps:

1. Sign in and select the portal language.
2. On first-time use, install ActiveX and Java Components.
3. Initial setup.
4. Access applications.

Signing In

In a browser, the user types in the URL assigned by the system administrator for the Mobile Access gateway.

Note - Some popup blockers can interfere with aspects of portal functionality. You should recommend to users that they configure popup blockers to allow pop-ups from Mobile Access.

If the Administrator has configured Secure Workspace to be optional, users can choose to select it on the sign in page.

Users enter their authentication credentials and click **Sign In.** Before Mobile Access gives access to the applications on the LAN, the credentials of remote users are first validated. Mobile Access authenticates the users either through its own internal database, LDAP, RADIUS or RSA ACE/Servers. Once the remote users have been authenticated, and associated with Mobile Access groups, access is given to corporate applications.

Note - If the Endpoint Compliance Scanner is enabled, the user may be required to pass a verification scan on his/her computer, before being granted access to the Mobile Access **Sign In** page, which ensures that his/her credentials are not compromised by 3rd party malicious software.

First time Installation of ActiveX and Java Components

Some Mobile Access components such as the endpoint Compliance Scanner, Secure Workspace and SSL Network Extender require either an ActiveX component (for Windows with Internet Explorer machines) or a Java component to be installed on the endpoint machine.

When using one of these components for the first time on an endpoint machine using Windows and Internet Explorer, Mobile Access tries to install it using ActiveX. However, Internet Explorer may prevent the ActiveX installation because the user does not have Power User privileges, or display a yellow bar at the top of the page asking the user to explicitly allow the installation. The user is then instructed to click the yellow bar, or if having problems doing so, to follow a dedicated link. This link is used to install the required component using Java.

After the first of these components is installed, any other components are installed in the same way. For example, if the Endpoint compliance Scanner was installed using Java on Internet Explorer, Secure Workspace and SSL Network Extender are also installed using Java.

Note - To install using ActiveX after a component was installed using Java, delete the browser cookies.

Language Selection

The user portal can be viewed in several languages. The default language is English. Supported languages include:

- Bulgarian
- Chinese — Simplified
- Chinese — Traditional
- English
- Finnish

- French
- German
- Italian
- Japanese
- Polish
- Romanian
- Russian
- Spanish

You can turn on automatic detection of the local language or let users select a language ("Localization Features" on page 140).

Initial Setup

The user may be required to configure certain settings, such as application credentials. In addition, the user can define additional favorites for commonly used applications.

Accessing Applications

After the remote users have logged onto the Mobile Access gateway, they are presented with a portal. The user portal enables access to the internal applications that the administrator has configured as available from within the organization, and that the user is authorized to use.

Chapter 2

Check Point Remote Access Solutions

In This Chapter

Providing Secure Remote Access

In today's business environment, it is clear that workers require remote access to sensitive information from a variety of locations and a variety of devices. Organizations must also make sure that their corporate network remains safe and that remote access does not become a weak point in their IT security.

This chapter:

- Gives you information about Check Point's secure remote access options.
- Helps you decide which remote access client or clients best match your organization's requirements.
- Shows you where to get more information.

Types of Solutions

All of Check Point's Remote Access solutions provide:

- Enterprise-grade, secure connectivity to corporate resources.
- Strong user authentication.
- Granular access control.

Factors to consider when choosing remote access solutions for your organization:

- **Client-Based vs. Clientless** - Does the solution require a Check Point client to be installed on the endpoint computer or is it clientless, for which only a web browser is required. You might need multiple solutions within your organization to meet different needs.
- **Secure Connectivity and Endpoint Security** - Which capabilities does the solution include?
  - **Secure Connectivity** - Traffic is encrypted between the client and VPN gateway. After users authenticate, they can access the corporate resources that are permitted to them in the access policy. All Check Point solutions supply this.
  - **Endpoint Security** - Endpoint computers are protected at all times, even when there is no connectivity to the corporate network. Some Check Point solutions supply this.

Client-Based vs. Clientless

Check Point remote access solutions have different types of installation:

- **Client-based** - Must be installed on endpoint computers and devices before they can establish remote connections. Clients are usually installed on managed device, such as a company-owned computer. Clients supply access to all types of corporate resources.

- **Clientless** - Users connect through a web browser. Clientless solutions can be used on most computers, such as company-owned, personal, or public computers. No additional client is required on the endpoint computer. Clientless solutions usually supply access to web-based corporate resources.
- **On demand client** - Users connect through a web browser. When necessary, a client is automatically installed on the endpoint computer through the browser. On demand clients can be used on most computers, such as company-owned, personal, or public computers. Clients supply access to all types of corporate resources.

All of these installation types use two encryption protocols, IPsec and SSL, to create secure remote access connections.

To meet the most requirements, a secure remote access solution can include IPsec and SSL VPN capabilities. The IPsec VPN Software Blade and Mobile Access Software Blade for SSL VPN can be enabled from one Check Point gateway.

All Check Point clients can work through NAT devices, hotspots, and proxies in situations with complex topologies, such as airports or hotels.

Secure Connectivity and Endpoint Security

You can combine secure connectivity with additional features to protect the network or endpoint computers.

- **Secure Connectivity** - Traffic is encrypted between the client and VPN gateway and strong user authentication is supported. All Check Point solutions supply this.

  These solutions require licenses based on the number of users connected at the same time.
- **Security Verification for Endpoint computers** - Makes sure that devices connecting to the gateway meet security requirements. Endpoint machines that are not compliant with the security policy have limited or no connectivity to corporate resources. Some Check Point solutions supply this.
- **Endpoint Security**:
  - **Desktop Firewall** - Protects endpoint computers at all times with a centrally managed security policy. This is important because remote clients are not in the protected network and traffic to clients is only inspected if you have a Desktop Firewall. Some Check Point solutions supply this
  - **More Endpoint Security Capabilities** - Check Point solutions can include more Endpoint Security capabilities, such as anti-malware, disk encryption and more.

  These solutions require licenses based on the number of clients installed.

Remote Access Solution Comparison

Details of the newest version for each client and a link for more information are in sk67820 (http://supportcontent.checkpoint.com/solutions?id=sk67820).

Name	Supported Operating Systems	Client or Clientless	Encryption Protocol	Security Verification for Endpoint Devices	Desktop Firewall on Endpoint Devices
Mobile Access Web Portal	Windows, Linux, Mac	Clientless	SSL	✓	
SSL Network Extender for Mobile Access Blade	Windows, Linux, Mac OS	On-demand Client through Mobile Access Portal)	SSL	✓	
Check Point Mobile for iPhone and iPad	iOS	Client	SSL		
Check Point Mobile VPN for iOS	iOS	Client	IPsec / SSL		
Check Point Mobile for Android	Android	Client	SSL		
SecuRemote	Windows	Client	IPsec		
Check Point Mobile for Windows	Windows	Client	IPsec	✓	
Endpoint Security VPN for Windows	Windows	Client	IPsec	✓	✓
Endpoint Security VPN for Mac	Mac OS	Client	IPsec		✓
Endpoint Security Suite Remote Access VPN Blade	Windows	Client	IPsec	✓	✓
Check Point GO VPN	Windows	Clientless - Requires a Check Point GO device	SSL	✓	

Summary of Remote Access Options

Below is a summary of each Remote Access option that Check Point offers. All supply secure remote access to corporate resources, but each has different features and meets different organizational requirements.

Details of the newest version for each client and a link for more information are in sk67820 (http://supportcontent.checkpoint.com/solutions?id=sk67820).

Mobile Access Web Portal

The Mobile Access Portal is a clientless SSL VPN solution. It is recommended for users who require access to corporate resources from home, an internet kiosk, or another unmanaged computer. The Mobile Access Portal can also be used with managed devices.

It provides:

- Secure Connectivity
- Security Verification

The Mobile Access Portal supplies access to web-based corporate resources. You can use the on-demand client, SSL Network Extender, through the Portal to access all types of corporate resources.

Required Licenses: Mobile Access Software Blade on the gateway.

Supported Platforms: Windows, Mac OS X, Linux

Where to Get the Client: Included with the Security Gateway (sk67820)

SSL Network Extender

SSL Network Extender is a thin SSL VPN on-demand client installed automatically on the user's machine through a web browser. It supplies access to all types of corporate resources.

SSL Network Extender has two modes:

- **Network Mode** - Users can access all application types (Native-IP-based and Web-based) in the internal network. To install the Network Mode client, users must have administrator privileges on the client computer.

  Supported Platforms: Windows, Mac OS X, Linux
- **Application Mode** - Users can access most application types (Native-IP-based and Web-based) in the internal network, including most TCP applications. The user does not require administrator privileges on the endpoint machine.

  Supported Platforms: Windows

Required Licenses:

Mobile Access Software Blade on the gateway

Where to Get the Client: Included with the Security Gateway (sk67820)

SecuRemote

SecuRemote is a secure, but limited-function IPsec VPN client. It provides secure connectivity.

Required Licenses: IPsec VPN Software Blade on the gateway. It is a **free** client and does not require additional licenses.

Supported Platforms: Windows

Where to Get the Client: Check Point Support Center (sk67820)

Check Point Mobile for Windows

Check Point Mobile for Windows is an IPsec VPN client. It is best for medium to large enterprises that do not require an Endpoint Security policy.

It provides:

- Secure Connectivity
- Security Verification

Required Licenses: IPsec VPN and Mobile Access Software Blades on the gateway.

Supported Platforms: Windows

Where to Get the Client: Check Point Support Center (sk67820)

Endpoint Security VPN

Endpoint Security VPN is an IPsec VPN client that replaces SecureClient. It is best for medium to large enterprises.

It provides:

- Secure Connectivity
- Security Verification
- Endpoint Security that includes an integrated Desktop Firewall, centrally managed from the Security Management Server.

Required Licenses: The IPsec VPN Software Blade on the gateway, an Endpoint Container license, and an Endpoint VPN Software Blade license on the Security Management Server.

Supported Platforms: Windows

Where to Get the Client: Check Point Support Center (sk67820)

Note - Endpoint Security VPN on Mac OS X includes a Desktop Firewall but not Security Verification.

Endpoint Security Suite

The Endpoint Security Suite simplifies endpoint security management by unifying all endpoint security capabilities in a single console. Optional Endpoint Security Software Blades include: Firewall, Compliance Full Disk Encryption, Media Encryption & Port Protection, and Anti- Malware & Program Control. As part of this solution, the Remote Access VPN Software Blade provides full, secure IPsec VPN connectivity.

The Endpoint Security suite is best for medium to large enterprises that want to manage the endpoint security of all of their endpoint computers in one unified console.

Required Licenses: Endpoint Security Container and Management licenses and an Endpoint VPN Software Blade on the Security Management Server.

Supported Platforms: Windows

Where to Get the Client: Check Point Support Center (sk67820)

Check Point Mobile for iPhone and iPad

Check Point Mobile for iPhone and iPad is an SSL VPN client. It supplies secure connectivity and access to web-based corporate resources and Exchange ActiveSync.

Check Point Mobile for iPhone and iPad is ideal for mobile workers who have iPhone or iPad devices.

Required Licenses: Mobile Access Software Blade on the gateway

Supported Platforms: iOS

Where to Get the Client: Apple App Store

Check Point Mobile for Android

Check Point Mobile for Android is an SSL VPN client. It supplies secure connectivity and access to web-based corporate resources and Exchange ActiveSync.

Check Point Mobile for Android is ideal for mobile workers who have Android devices.

Required Licenses: Mobile Access Software Blade on the gateway

Supported Platforms: Android

Where to Get the Client: Android Market

Check Point GO

Check Point GO is a portable workspace with virtualized Windows applications, on a secure and encrypted USB Flash Drive. Users insert the USB device into a host PC and securely access their workspace and corporate resources through SSL VPN technology.

Check Point GO is ideal for mobile workers, contractors, and disaster recovery. The virtual workspace is segregated from the host PC and controls the applications and data that can run in Check Point GO.

It provides:

- Secure Connectivity
- Security Verification

Required Licenses: IPsec VPN Software Blade on the gateway and Check Point GO devices.

Supported Platforms: Windows

Where to Get the Client: Check Point Support Center (sk67820)

Chapter 3

Getting Started with Mobile Access

In This Chapter

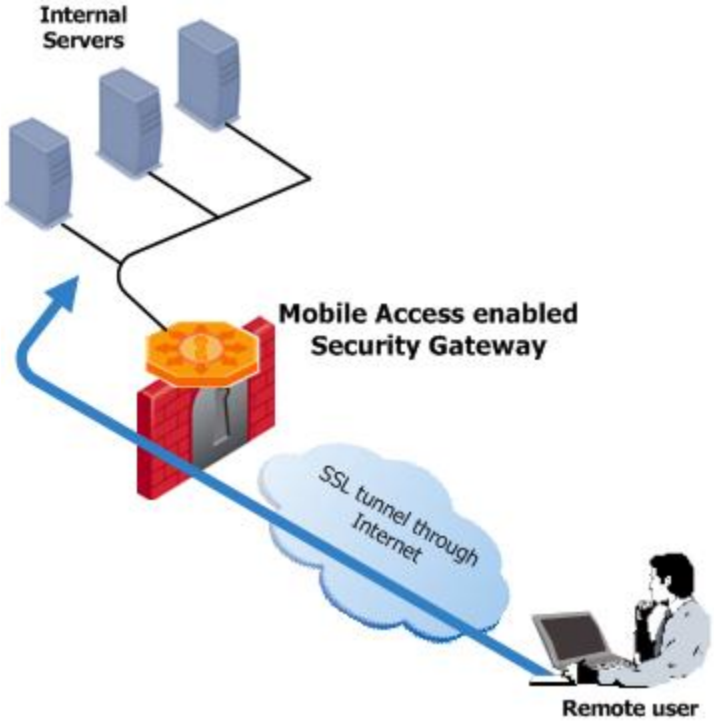
Recommended Deployments

Mobile Access can be deployed in a variety of ways depending on an organization's system architecture and preferences.

Simple Deployment

In the simplest Mobile Access deployment, one Mobile Access enabled Security Gateway inspects all traffic, including all Mobile Access traffic. IPS and Anti-Virus can be active on all traffic as well. The Security Gateway can be on the network perimeter.

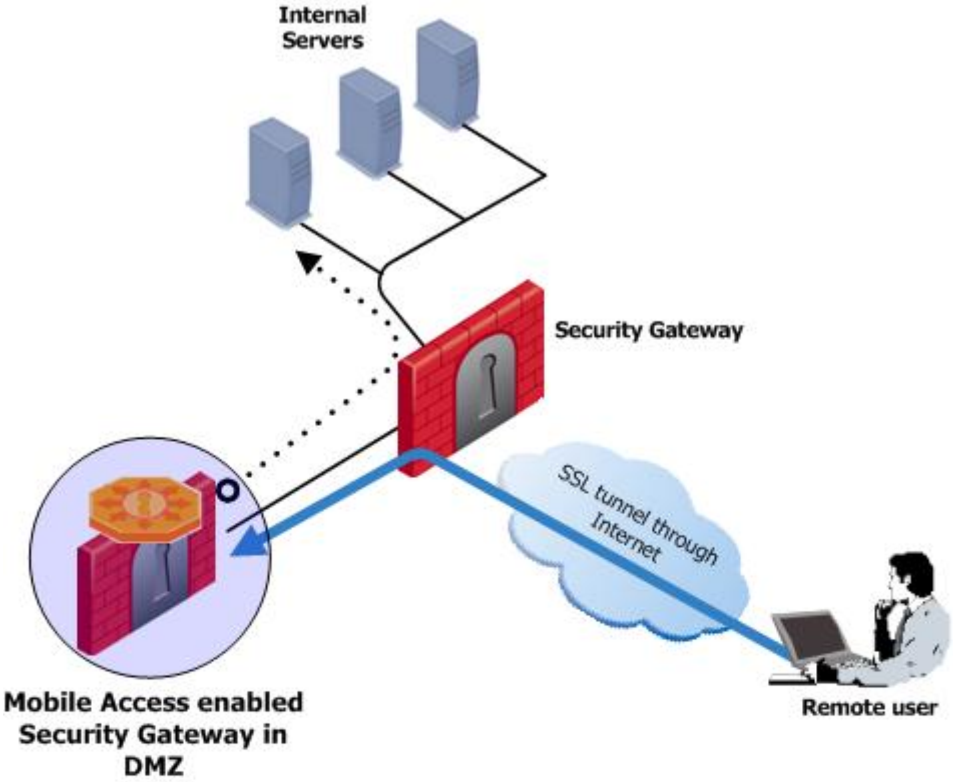
This is the recommended deployment. It is also the least expensive and easiest to configure as it only requires one gateway machine for easy and secure remote access.



Internal Servers
Mobile Access enabled Security Gateway
SSL tunnel through Internet
Remote user

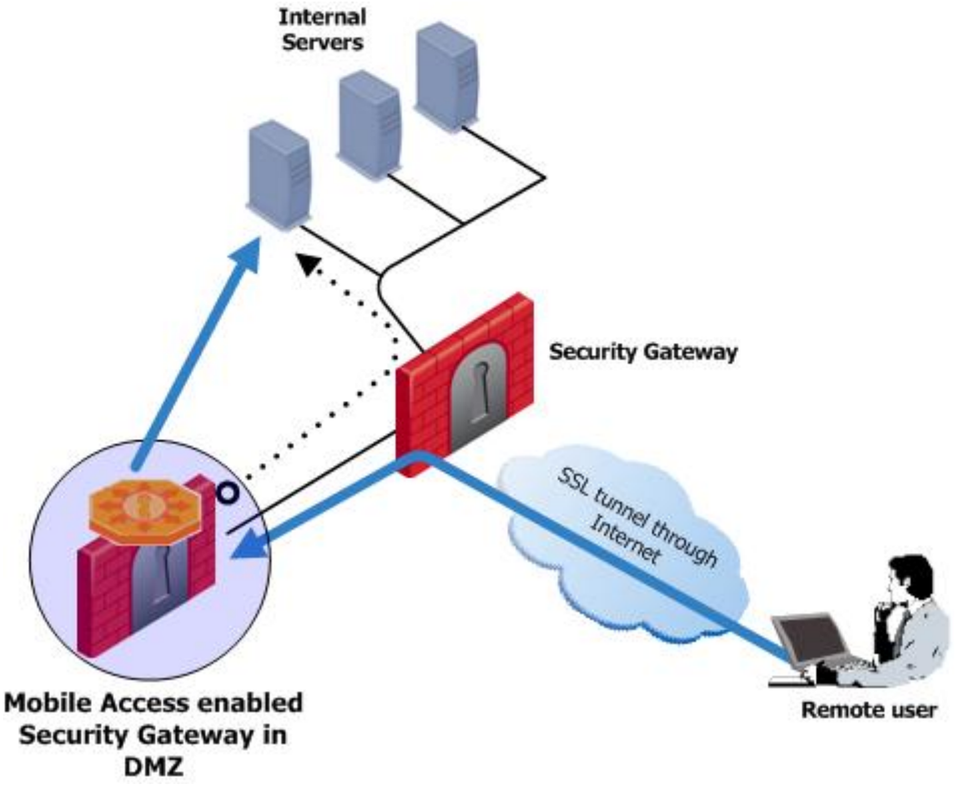
Deployment in the DMZ

When a Mobile Access enabled Security Gateway is placed in the DMZ, traffic initiated both from the Internet and from the LAN to Mobile Access is subject to firewall restrictions. By deploying Mobile Access in the DMZ, the need to enable direct access from the Internet to the LAN is avoided. Remote users initiate an SSL connection to the Mobile Access Gateway. The firewall must be configured to allow traffic from the user to the Mobile Access server, where SSL termination, IPS and Anti-Virus inspection, authentication, and authorization take place. Requests are then forwarded to the internal servers via the firewall.


Internal Servers
Security Gateway
SSL tunnel through Internet
Mobile Access enabled Security Gateway in DMZ
Remote user

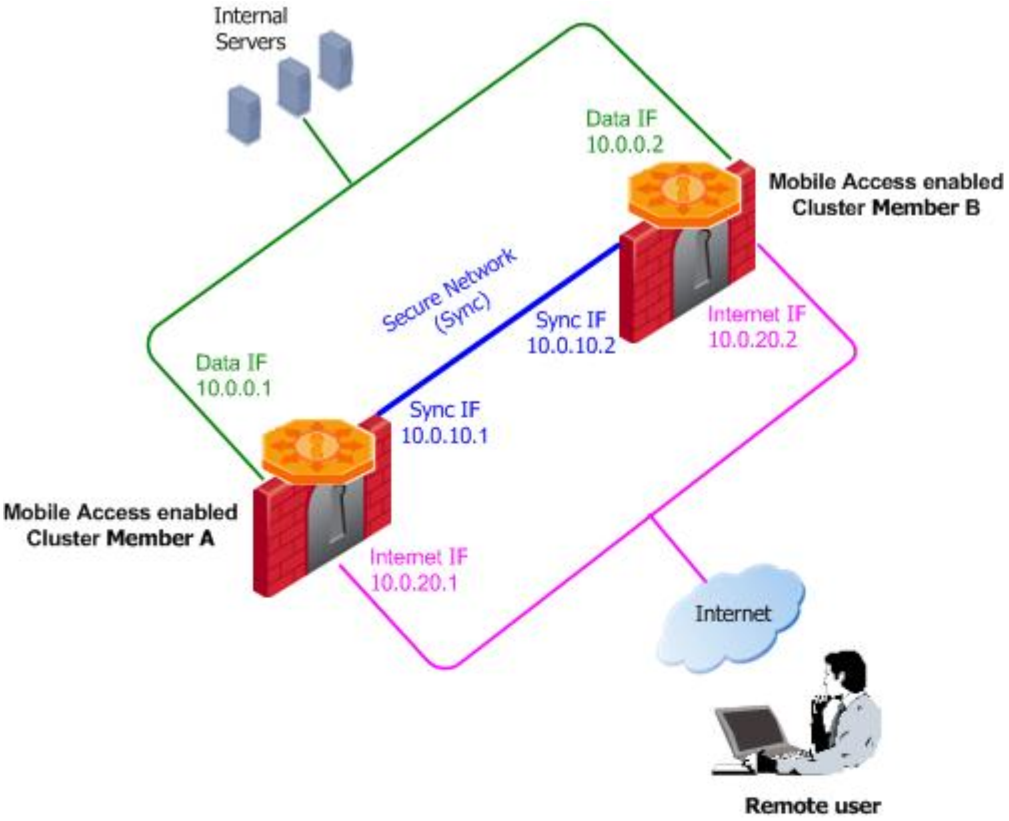
Traffic is encrypted as it goes through the first gateway and is decrypted when it reaches the Mobile Access gateway.

Another leg of the Mobile Access gateway can lead directly to the LAN. In this setup, traffic does not have to go back through the firewall before reaching the LAN.


Internal Servers
Security Gateway
SSL tunnel through Internet
Mobile Access enabled Security Gateway in DMZ
Remote user

Cluster Deployment

If you have large numbers of concurrent remote access users and continuous, uninterrupted remote access is crucial to your organization, you may choose to have Mobile Access active on a   cluster. A cluster can be deployed in any of the deployments described above.



Each cluster member has three interfaces: one data interface leading to the organization, a second interface leading to the internet, and a third for synchronization. Each interface is on a different subnet.

In a simple deployment with the Mobile Access cluster in the DMZ, two interfaces suffice; a data interface leading to the organization and the internet, and a second interface for synchronization.

Basic SmartDashboard Configuration

The steps required in SmartDashboard before working with Mobile Access are:

1. **Enable the Mobile Access blade on a Security Gateway or Security Gateway cluster:** In the **General Properties** page of a Security Gateway, in the **Network Security** tab, select **Mobile Access**.

   Note - The Mobile Access blade can only be enabled on Security Gateways running on the SecurePlatform and Gaia operating systems.

2. When you enable the Mobile Access blade:
   - You are automatically given a 30 day trial license for 10 users.
   - The Mobile Access Wizard opens. Follow the instructions to configure remote access to your network.
3. Configure your firewall access rules to permit Mobile Access traffic. The actual rules needed depend on your configuration.
   - A rule allowing HTTPS (TCP/443) traffic is automatically added to the rule base as an Implied Rule.
   - For easier end user access, it is recommended that the Security Gateway accept HTTP (TCP/80) traffic.
   - Mobile Access requires access to DNS servers in most scenarios.
   - The Security Gateway may need access to: WINS servers, LDAP, RADIUS, or ACE servers for authentication, an NTP server for clock synchronization.
4. Configure the authentication scheme that the Mobile Access gateway will accept from remote users. Do this in **Gateway Properties > Mobile Access > Authentication**.

Mobile Access Wizard

The Mobile Access Wizard lets you quickly allow selected remote users access to internal web applications, through a web browser or mobile phone application.

Going through the wizard:

1. **Mobile Access Methods** - Select whether users can access the Mobile Access portal with a browser on any computer or device or from smartphones, or both.
2. **Web Portal** - Enter the primary URL for the Mobile Access portal. The default is the <IP address of the gateway>/sslvpn. You can use the same IP address for all portals on the gateway with a variation in the path. You can import a p12 certificate for the portal to use for authentication. All portals on the same IP address use the same certificate.
3. **Web Application** - Select the web applications to show on the Mobile Access portal.
4. **Active Directory Integration** - Select the AD domain, enter your credentials and test connectivity. If you do not use AD, you can create a test user or add existing SmartDashboard user accounts.
5. **Authorized Users** -Select users and groups from Active Directory or create a test user that will get access to the Web Applications.

Setting up the Mobile Access Portal

Each Mobile Access enabled Security Gateway leads to its own Mobile Access user portal. Remote users log in to the portal using an authentication scheme configured for that Security Gateway.

Remote users access the portal from a Web browser by entering https://<Gateway_IP>/sslvpn, where <Gateway_IP> is one of these:

- FQDN that resolves to the IP address of the Security Gateway
- IP address of the Security Gateway

If remote users enter http://<Gateway_IP>/sslvpn, they will automatically be redirected to the portal using HTTPS.

Note - If you use Hostname Translation as your method for link translation, you must enter an FQDN as the portal URL and not an IP address.

You set up the URL for the first time in the Mobile Access First Time Wizard.

At a later time you can change the URL of the portal and the look and feel:

- To change the IP address used for the user portal: From the properties of the Gateway object, select **Mobile Access > Portal Settings**.
- To configure the look and feel of the portal in the **Portal Customization** page: Go to **Mobile Access tab > Portal Settings > Portal Customization**.

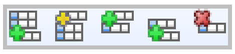
Configuring Mobile Access Policy

Users can access applications remotely as defined by the policy rules. Configure Mobile Access policy in the **Policy** page of the **Mobile Access** tab. Create rules that include:

- Users and User Groups.
- Applications that the users can access.
- The gateways that the rule applies to.

Users and applications have multiple properties that you can choose to configure. However, you can add objects to a rule quickly and configure more detailed properties at a different time.

To create rules in the Mobile Access Rule Base:

1. In the **Policy** page of the Mobile Access tab, click one of the add rule buttons. 
2. In the **Users** column, click the **+** sign, or right-click and select **Add Users**.
3. In the User Viewer that opens, you can:
   - Select a user directory, either internal or an Active Directory domain.
   - Search for and select individual users, groups, or branches.
4. In the **Applications** column, click the **+** sign, or right-click and select **Add Applications**.
5. In the Application Viewer that opens, you can:
   - Select an application from the list.
   - Click **New** to define a new application.
6. If you create a New application:
   a) Select the type of application.
   b) In the window that opens enter a **Display Name** that end-users will see, for example, Corporate Intranet.
   c) Enter the URL or path to access the application according to the example shown.
7. In the **Install On** column, click the **+** sign, or right-click and select **Add Objects** and select the gateways that the rule applies to.
8. Install the Policy (**Policy** > **Install**).

Preparing for Handheld Devices

To enable handheld devices to connect to the gateway, do these steps:

1. Enable and configure Mobile Access on the gateway.
2. In the Mobile Access wizard, select the Smartphone option or in **Gateway Properties** > **Mobile Access**, select **Smartphone application**.
3. Download the Check Point Mobile app from the AppStore or Android Market.
4. Get certificates for authentication between the devices and the gateway.

5. To use email with ActiveSync, such as Microsoft Exchange, configure ActiveSync applications in SmartDashboard ("ActiveSync Applications" on page 85).
6. Optional: Configure ESOD Bypass for Mobile Apps (on page 86).
7. Give users instructions to connect including the:
   - Site Name
   - Registration key

Chapter 4

Applications for Clientless Access

In This Chapter

Giving remote users access to the internal network exposes the network to external threats. A balance needs to be struck between connectivity and security. In all cases, strict authentication and authorization is needed to ensure that only the right people gain access to the corporate network. Defining an application requires deciding which internal LAN applications to expose to what kind of remote user.

Mobile Access provides the remote user with access to the various corporate applications, including, Web applications, file shares, Citrix services, Web mail, and native applications.

Protection Levels

Protection Levels are predefined sets of security settings that offer a balance between connectivity and security. Protection Levels allow Mobile Access administrators to define application protections for groups of applications with similar requirements.

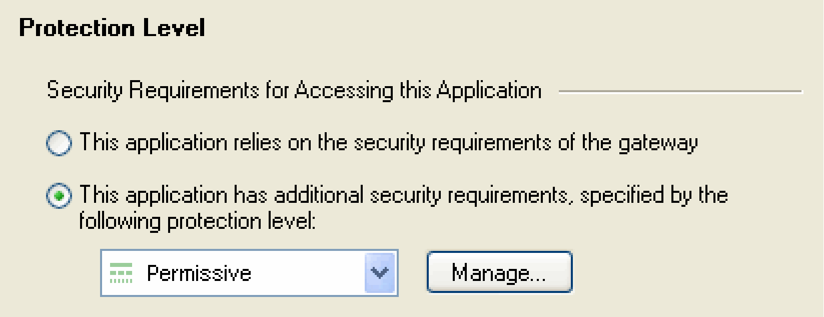
Mobile Access comes with three default Protection Levels — Normal, Restrictive, and Permissive. You can create additional Protection Levels and change the protections for existing Protection Levels.

Using Protection Levels

Protection Levels can be used in the definition of Mobile Access Web applications, file shares, Citrix applications, or Web mail service. On Mobile Access gateways of version R71 and higher, protection level s can also be set for each native application. Every application of one of these types can have a Protection Level associated with it. A single Protection Level can be assigned for all native applications.

When defining an application, in the **Protection Level** page of the application object, you can choose:

- **Security Requirements for Accessing this Application:**
  - **This application relies on the security requirements of the gateway**
    Rely on the gateway security requirement. Users who have been authorized to the portal, are authorized to this application. This is the default option.
  - **This application has additional security requirements specific to the following protection level**
    Associate the Protection Level with the application. Users are required to be compliant with the security requirement for this application in addition to the requirements of the portal.



Protection Level

Security Requirements for Accessing this Application

○ This application relies on the security requirements of the gateway

● This application has additional security requirements, specified by the following protection level:

Defining Protection Levels

To access the Protection Level page from the Mobile Access tab:

1. From the Mobile Access tab in SmartDashboard, select the **Additional Settings > Protection Levels** page from the navigation tree.
2. Click **New** to create a new Protection Level or double-click an existing Protection Level to modify it.

   The **Protection Levels** window opens, displaying the **General Properties** page.

To access the Protection Level page from a Mobile Access application:

1. From the **Properties** window of a Mobile Access application, select **Additional Setting > Protection Level**.
2. To create a new Protection Level, select **Manage > New**.
3. To edit the settings of a Protection Level, select the Protection Level from the drop down list and then select **Manage > Details**.

   The **Protection Levels** window opens, displaying the **General Properties** page.

To define a Protection Level:

1. In the **General Properties** page, enter a unique name for the Protection Level (for a new Protection Level only), select a display color and optionally add a comment in the appropriate fields.
2. Click on **Authentication** in the navigation tree and select one or more authentication methods from the available choices. Users accessing an application with this Protection Level must use one of the selected authentication schemes.
3. If required, select **User must successfully authenticate via SMS.**
4. Click **Endpoint Security** in the navigation tree and select one or both of the following options:
   - **Applications using this Protection Level can only be accessed if the endpoint machine complies with the following Endpoint compliance policy**. Also, select a policy. This option allows access to the associated application only if the scanned client computer complies with the selected policy.
   - **Applications using this Protection Level can only be accesses from within Secure Workspace**. This option requires Secure Workspace to be running on the client computer.
5. Click **OK** to close the **Protection Level** window
6. Install the Security Policy.

Web Applications

A Web application can be defined as a set of URLs that are used in the same context and are accessed via a Web browser, for example, inventory management or human resource management.

Mobile Access supports browsing to websites that use HTML and JavaScript.

Browsing to websites with VBScript, Java, or Flash elements that contain embedded links is supported using SSL Network Extender, by defining the application as a native application.

Additionally, some sites will only work via a default browser, and so cannot be defined as a Web application. If that is the case, use a native application.

Web Applications of a Specific Type

It is possible to configure a Web Application with a specific type as a Domino Web Access (iNotes) application or as an Outlook Web Access application.

Domino Web Access

IBM Lotus Domino Web Access (previously called iNotes Web Access) is a Web application that provides access to a number of services including mail, contacts, calendar, scheduling, and collaboration services.

Domino Web Access requires its files to be temporarily cached by the client-side browser. As a result, the endpoint machine browser caching settings of the Mobile Access Protection Level do not apply to these files. To allow connectivity, the cross site scripting, command injection and SQL injection Web Intelligence protections are disabled for Domino Web Access.

Note - To make Domino Web Access work through the Mobile Access portal, you must work with Hostname Translation (see "Configuring HT" on page 35).

These Domino Web Access features are not supported:

- Working offline
- Notebooks with attachments.
- Color button in the Mail Composition window.
- Text-alignment buttons in the Mail Composition window.
- Decline, Propose new time and Delegate options in meeting notices.
- Online help- partial support is available.

Outlook Web Access

Outlook Web Access (OWA) is a Web-based mail service, with the look, feel and functionality of Microsoft Outlook. Mobile Access supports Outlook Web Access versions 2000, 2003 SP1, 2007, and 2010.

Configuring Web Applications

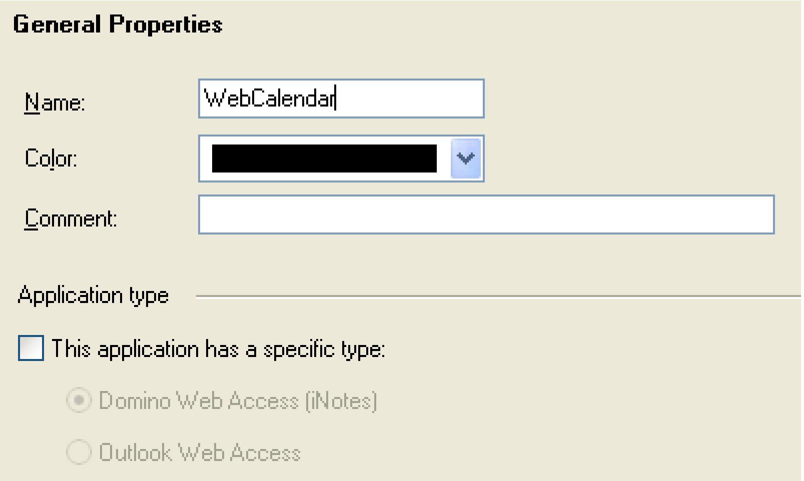
To configure a Web Application:

1. In the Mobile Access tab navigation tree, select **Applications > Web Applications**.
2. Click **New**. The **Web Application** window opens.

   The following sections explain the fields in each page.

Web Application — General Properties Page

1. Go to the **General Properties** page.



General Properties

Name: WebCalendar

Color: ■

Comment:

Application type

□ This application has a specific type:

● Domino Web Access (iNotes)

○ Outlook Web Access

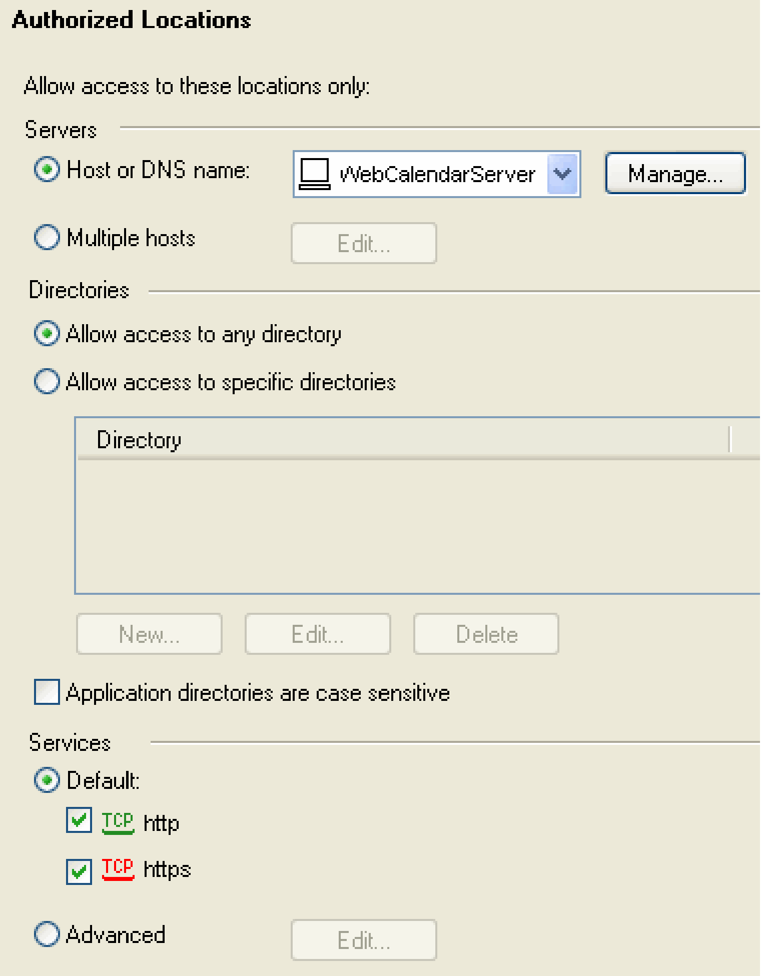
2. Fill in the fields on the page:
   - **Name** is the name of the application. Note that the name of the application that appears in the user portal is defined in the **Link in Portal** page.
   - **This application has a specific type:** Select this option if the Web application is of one of the following types:
     - **Domino Web Access** is a Web application that provides access to a number of services including mail, contacts, calendar, scheduling, and collaboration services.

       Note -

       - Domino Web Access requires its files to be temporarily cached by the client-side browser. As a result, the endpoint machine browser caching settings of the Mobile Access Endpoint Compliance Profile do not apply to these files.
       - To allow connectivity, the cross site scripting, command injection and SQL injection Web Intelligence protections are disabled for Domino Web Access.
     - **Outlook Web Access** (OWA) is a Web-based mail service, with the look, feel and functionality of Microsoft Outlook. OWA functionality encompasses basic messaging components such as email, calendaring, and contacts.

Web Application — Authorized Locations Page

1. Go to the **Authorized Locations** page.



Authorized Locations

Allow access to these locations only:

Servers

● Host or DNS name: WebCalendarServer

○ Multiple hosts

Directories

● Allow access to any directory

○ Allow access to specific directories

Directory

□ Application directories are case sensitive

Services

● Default:

☑ TCP http

☑ TCP https

○ Advanced

2. Fill in the fields on the page:
   - **Host or DNS name** on which the application is hosted.
   - **Allow access to any directory** gives the user access to all locations on the application server defined in **Servers**.
   - **Allow access to specific directories** restricts user access to specific directories. For example `/finance/data/`. The paths can include $$user, which is the name of the currently logged-in user.

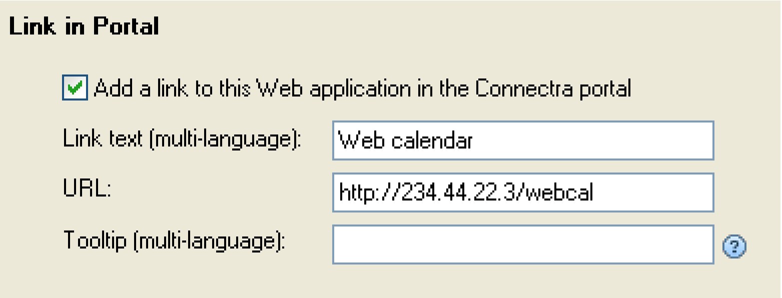
Note -

- For an application that is defined as an Outlook Web Access application, the following are set as the allowed directories:
  - Private Mailboxes: /exchange/
  - Graphics and Controls: /exchweb/
  - Client access: /owa/
  - Public Folders: /public/
- When two or more overlapping applications are configured (for example, one for any directory and one for a specific directory on the same host), it is undefined which application settings take effect. If one of the overlapping applications is OWA or iNotes, it will take precedence.

- **Application paths are case sensitive** improves security. Use this setting for UNIX-based Web servers that are case sensitive.
- **Services** that are allowed are typically `http` for cleartext access to the Web application, and `https` for SSL access.

Web Application — Link in Portal Page

1. Go to the Link in Portal page.



Link in Portal

☑ Add a link to this Web application in the Connectra portal

Link text (multi-language): Web calendar

URL: http://234.44.22.3/webcal

Tooltip (multi-language):

2. Fill in the fields on the page:
   - **Add a link to this Web application/file share in the Mobile Access portal** (*Web Application without a specific type)*. If you do not enter a link, users will be able to access the application by typing its URL in the user portal, but will not have a pre-configured link to access it.
   - **This application requires a link in the Mobile Access portal** (*Web Application with a specific type)*, otherwise it cannot be accessed.
     - **Link text (multi-language)** is shown in the Mobile Access Portal. Can include `$$user`, which represents the user name of the currently logged-in user. If more than one link is configured with the same (case insensitive) name, only one of them will be shown in the portal.
     - **URL** is the link to the location of the application. Can include `$$user`, which represents the user name of the currently logged-in user. For example, a URL that is defined as `http://host/$$user` appears for user `aa` as `http://host/aa` and for user `bb` as `http://host/bb`.
     - **Tooltip (multi-language)** for additional information about the application. Can include `$$user`, which represents the user name of the currently logged-in user. The text appears automatically when the user hovers the mouse pointer over the link and disappears when the user clicks a mouse button or moves the pointer away from the link.

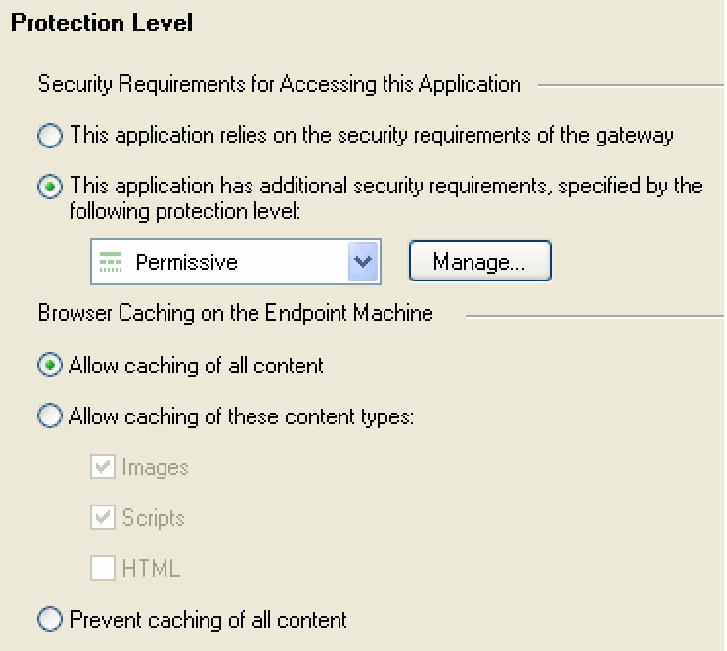
Web Application — Single Sign-On Page

- Go to the **Single Sign-On** page.

For configuration details, see Single Sign On.

Web Application — Protection Level Page

1. Go to the **Protection Level** page.



Protection Level

Security Requirements for Accessing this Application

○ This application relies on the security requirements of the gateway

● This application has additional security requirements, specified by the following protection level:

Permissive

Browser Caching on the Endpoint Machine

● Allow caching of all content

○ Allow caching of these content types:

☑ Images

☑ Scripts

□ HTML

○ Prevent caching of all content

2. Fill in the fields on the page:
   - **Security Requirements for Accessing this Application** allows you to:
     - EITHER allow access to this application to any endpoint machine that complies with the security requirements of the gateway,
     - OR make access to the application conditional on the endpoint being compliant with the selected Endpoint Compliance Profile.
   - **Browser Caching on the Endpoint Machine** allows you to control caching of web application content in the remote user's browser.
     - **Allow caching of all content** is the recommended setting when using the host name Translation method of Link Translation. This setting allows Web sites that use ActiveX and streaming media to work with Hostname Translation.
     - **Prevent caching of all content** improves security for remote users accessing a Web Application from a workstation that is not under their full control, by making sure that no personal information is stored on the endpoint machine. On the other hand, this setting prevents users opening files that require an external viewer application (for example, a Word or a PDF file), and may cause some applications relying on caching of files to malfunction.

Configuring Web Content Caching

Protection Levels let administrators prevent browsers from caching Web content. The caching feature in most browsers presents a security risk because cache contents are easily accessible to hackers.

When the **Prevent caching of all content** option is enabled, users may not be able to open files that require an external viewer application (for example, a Word or PDF file). This requires the user to first save the file locally.

To let users open external files:

1. Set the Protection Level to **Allow caching of all content**.
2. To allow caching Microsoft Office documents, add them to the HTML caching category.

   a) Run: `cvpnstop`

   b) Backup the Apache configuration file: `$CVPNDIR/conf/http.conf`

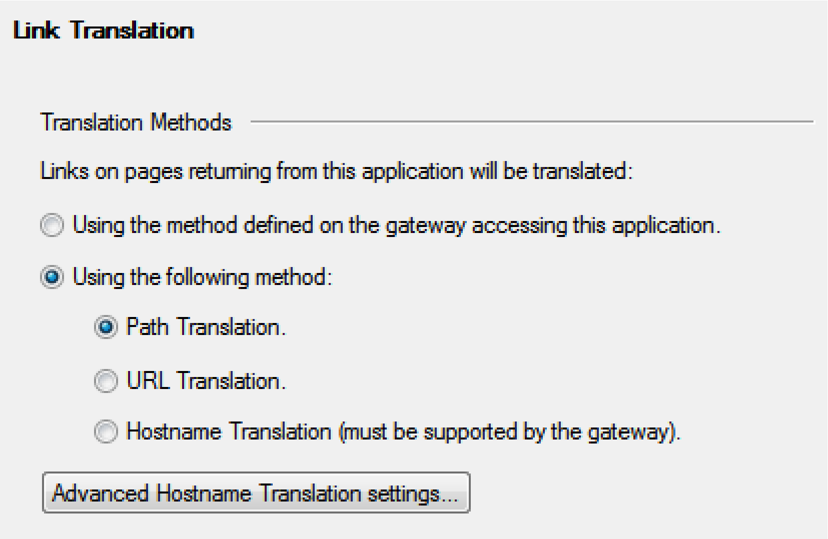
   c) In this file, uncomment the `CvpnCacheGroups` directives related to Microsoft Office documents.

   d) In cluster setups, repeat these steps for all cluster members.

   e) Run:`cvpnstart`
3. Install Policy.

Web Application — Link Translation Page

1. Go to the **Link Translation** page.



Link Translation

Translation Methods

Links on pages returning from this application will be translated:

○ Using the method defined on the gateway accessing this application.

● Using the following method:

● Path Translation.

○ URL Translation.

○ Hostname Translation (must be supported by the gateway).

2. Choose the Link Translation method used by Mobile Access to access this application.
   - **Use the method specified on the gateway through accessing this application** **-** Uses the method configured in the: **Additional Settings > Link Translation** page, in the **Link Translation Settings on Mobile Access Gateways** section.
   - **Using the following method** - Select the Link translation method ("Link Translation" on page 33) that will be used for this application.
     - **Path Translation -** Default for new installations.
     - **URL Translation -** Supported by the Mobile Access gateway with no further configuration
     - **Hostname Translation** - Requires further configuration (see "Configuring HT" on page 35).

Using the Login Name of the Currently Logged in User

Mobile Access applications can be configured to differ depending on the user name of the currently logged-in user. For example, portal links can include the name of the user, and a file-share can include the user's home directory. For this purpose, the `$$user` directive is used. During a Mobile Access session, `$$user` resolves to the login name of the currently logged-in user.

For such personalized configurations, insert the `$$user` string into the relevant location in the definitions of Web applications, file shares, and native applications.

For example, a Web application URL that is defined as `http://host/$$user` appears for user `aa` as `http://host/aa` and for user `bb` as `http://host/bb`.

If the user authenticates with a certificate, `$$user` resolves during the user's login process to the user name that is extracted from the certificate and authorized by the directory server.

For its use in configuring File Shares, see Using the $$user Variable in File Shares (on page 42).

Completing the Configuration of the Web Application

1. Go to the **Policy** page of the Mobile Access tab.
2. In the **Policy** page, associate:
   - *User groups*.
   - *Applications* that the users in those user groups are allowed to access.
   - *Install On* indicates the Mobile Access gateways and gateway clusters that users in those user groups are allowed to connect to.
3. From the SmartDashboard main menu, choose **Policy > Install** and install the policy on the Mobile Access gateways.

Configuring a Proxy per Web Application

It is possible to define an HTTP or HTTPS proxy server per Web application. This configuration allows additional control of access to Web resources allowed to users. For configuration details see sk34810 (http://supportcontent.checkpoint.com/solutions?id=sk34810).

Configuring Mobile Access to Forward Customized HTTP Headers

For proprietary Web applications that do not support a standard HTTP authentication method, the `CvpnAddHeader` directive can be used to forward end-user credentials (user name and IP address) that are carried in the HTTP header.

To configure Mobile Access to automatically forward a customized HTTP header, with a specified value, such as the user name or the client IP address:

1. Edit `$CVPNDIR/conf/http.conf`. For a Mobile Access cluster, edit all members.
2. Add or edit the line containing `CvpnAddHeader` according to the following syntax:

   ```
   CvpnAddHeader "customized_header_name" "customized_header_value"
   ```

You can use the following two macros for the `customized_header_value` string:

- `$CLIENTIP`, which is resolved to the actual IP address of the end-user's client machine.
- `$USER NAME` which is resolved to the user name entered as a credential in the login page

Examples:

- `CvpnAddHeader "CustomHTTPHeaderName" "MyCustomHTTPHeaderValue"`
- `CvpnAddHeader "CustomIPHeader" "$CLIENTIP"`
- `CvpnAddHeader "CustomUsernameHeader" "$USER NAME"`

Link Translation

Mobile Access ensures secure VPN connectivity by converting HTTP requests into secure HTTPS requests and by changing the port to 443. To accomplish this, Mobile Access translates the source URL into an HTTPS URL that routes traffic to its destination via the Mobile Access gateway. The translated URL is returned to the browser and is visible to the user.

What is Link Translation?

Link Translation is the process by which Mobile Access converts internal URLs to public URLs that are valid on the Internet, so that internal resources become accessible via any Internet-connected browser.

Mobile Access supports different methods of Link Translation:

- *URL Translation* (UT) the original link translation method, maintained for backward compatibility.
- *Hostname Translation* (HT) provides dramatically improved performance for Mobile Access gateways and end users, resulting in faster Web access and fewer connectivity issues. It gives access a wider range of websites, with enhanced support for HTML pages, JavaScript, VBscript, and Web applications (such as the SAP Portal).
- *Path Translation* (PT) is the newest Link Translation method. It offers the same connectivity level as Hostname Translation, without the more difficult and costly configurations. (Hostname Translation requires a more expensive server certificate.)

How Translated URLs Appear in a Browser

A translated URL appears to users in their browser differently, for the different Link Translation methods.

	Translated `http://www.example.com/path`
UT	`https://ssl.example.com/Web/path,CVPNHost=www.example.com,CVPNProtocol=http`
HT	`https://c-ds1q-itfgppae7oq.ssl.example.com/path` Note that the seemingly random character string, `c-ds1q-itfgppae7oq`, represents the destination URL.
PT	`https://ssl.example.com/PT/http://www.example.com/path`

Link Translation Per Gateway or Per Application

Some sites work better (or only) with a specific Link Translation method. If you can choose, each method has its advantages and disadvantages.

Check Point gateway versions support these methods:

	Supporting Gateways
UT	all gateways, all versions
HT	R66.x and higher Requires configuration to be supported.
PT	R71.40, R75.20 and higher (It is the default method for R75.20 new installations.)

You can choose a different method for different applications. You can set the default Link Translation method used by Mobile Access applications in the gateway. And Mobile Access applications can be configured override the default translation method.

SmartDashboard Configuration of Link Translation

Link Translation can be configured to accommodate the distinctive requirements of the application (a Web application or a Citrix service) or the gateway through which the applications are accessed. For example, you can configure a particular Mobile Access application to work with URL Translation, while all other applications supplied by the gateway use Path Translation.

- You can set the default Link Translation method for all applications of a gateway - only applications that have a different specified method will not use the default method.
- You can set the default Link Translation method of a specific application - this Web application will be accessed using the selected method, even if another method is default on the gateways.

Configuring UT

URL Translation is supported by all versions of gateways.

To configure UT as default method for gateways:

1. In the Mobile Access tab, click **Additional Settings** > **Link Translation**.
2. Select a gateway and click **Edit**.
3. Under **Supported Translation Methods**, leave **URL Translation (always supported)** selected.
4. Under **Default Translation Method**, select **URL Translation**.
5. Click **OK**.

To configure UT as default method for an application:

1. In the Mobile Access tab, click **Additional Settings** > **Link Translation**.
2. Select an application and click **Edit.**

The Link Translation page of the Mobile Access application opens.

3. Select **URL Translation**.
4. Click **OK**.

Configuring HT

Hostname Translation enhances security by replacing the destination host name with a seemingly random character string in the URL, as it appears in the client browser.

You must configure the DNS server to resolve wildcard hostnames, to enable HT.

Warning - If the DNS server is not configured to resolve wildcard Mobile Access host names, users will be unable to connect to Mobile Access, because the portal changes to a sub-domain: `portal.ssl.example.com`.

If you use Hostname Translation as your method for link translation, users must enter an FQDN as the portal URL and not an IP address.

To configure the DNS server for HT:

1. Add a record to the DNS server, to resolve Mobile Access sub-domains to the Mobile Access IP address: `*.domain`

   For example, assume `ssl.example.com` is the gateway. Configure the DNS to resolve `*.ssl.example.com` to the gateway IP address. This wildcard includes all sub-domains of the parent domain, such as `a.ssl.example.com` and `b.ssl.example.com`.
2. Define the parent domain (`ssl.example.com`) as a separate DNS record, to resolve Mobile Access IP address.

   This lets users access the Mobile Access portal directly, with its FQDN.
3. Use a wildcard server certificate to make sure clients can access Web applications in sub-domains behind the gateway without warnings ("Generating Wildcard Certificates for Hostname Translation " on page 142).

To configure HT as default method for gateways:

1. In the Mobile Access tab, click **Additional Settings** > **Link Translation**.
2. Select a gateway and click **Edit**.

   The Link Translation page of the gateway opens.
3. Click **Portal Settings**.

   If this message appears, clear **Hostname Translation**, for now:

   ```
   Hostname Translation requires Portal URL to be defined in the following format:
   'https://hostname/'
   ```
4. In the **Portal Settings** page > **Main URL**, enter the portal URL of the Mobile Access gateway.
5. In the **Link Translation** page > under **Supported Translation Methods**, select **Hostname Translation**.

   Leave **URL Translation (always supported)** selected.

   If the gateway is of a version earlier than R75.20:

   a) Enter the FQDN of the Mobile Access gateway in the **Link Translation** page.

   b) Create or select a DNS Name object for the parent DNS names of the Mobile Access gateway. Do not include the wildcard prefix ("*.") in the DNS name. For example, enter "ssl.example.com" as the **DNS Name object**.
6. Under **Default Translation Method**, select **Hostname Translation**.
7. Click **OK**.

To configure HT as default method for an application:

1. In the Mobile Access tab, click **Additional Settings** > **Link Translation**.
2. Select an application and click **Edit.**

   The Link Translation page of the Mobile Access application opens.
3. Select **Hostname Translation**.
4. Click **OK**.
5. Click **Advanced Hostname Translation Settings**.

6. Select a **Cookies Handling Mode**:
   - **On the gateway** - Default. All HTTP cookies that are sent to clients by internal Web servers are stored on Mobile Access, and are not passed on to the client's browser.
   - **On the endpoint machine** - If the default setting causes the JavaScript (from the internal servers that run on the client browser) that handles HTTP cookies to fail, select this option. Mobile Access passes HTTP cookies to the browser.
7. Click **OK**.

Statically Obscuring DNS Host Names

In versions prior to R66.1, when using Hostname Translation, each time a website is visited, the DNS host is dynamically obscured in a different way. With R66.1 and later, the default is that the obscured host is always the same for each user. This utilizes the browser cache and optimizes Web browsing.

By default an obscured host is always the same for each user. This utilizes the browser cache and optimizes Web browsing.

To turn off Static Obscure Key, run the following command from the Mobile Access CLI in expert mode:

```
cvpnd_settings set useStaticObscureKey false
```

To turn on Static Obscure Key (the default setting), run the following command from the Mobile Access CLI in expert mode:

```
cvpnd_settings set useStaticObscureKey true
```

You will be asked whether to first back up the current `$CVPNDIR/conf/cvpnd.C` file. It is recommended to do so. Follow the instructions on screen.

After making and saving the changes, run `cvpnrestart` to activate the settings.

If the Mobile Access gateway is part of a cluster, be sure to make the same changes on each cluster member.

Configuring PT

Path Translation is a new method, selected by default for newly installed gateways.

To support PT on R71.40 and higher R71-series gateways:

1. Enter expert mode.
2. Run: `cvpnPT on`

   This changes the link translation method for all applications that use the gateway default setting.

- To revert the method, run: `cvpnPT off`
- In a cluster environment, run the cvpnPT command on all members.

To configure PT as default method for gateways:

1. In the Mobile Access tab, click **Additional Settings** > **Link Translation**.
2. Select a gateway and click **Edit**.
3. Under **Supported Translation Methods**, leave **Path Translation (always supported)** selected.
4. Under **Default Translation Method**, select **Path Translation**.
5. Click **OK**.

To configure PT as default method for an application:

1. In the Mobile Access tab, click **Additional Settings** > **Link Translation**.
2. Select an application and click **Edit**.

   The Link Translation page of the Mobile Access application opens.
3. Select **Path Translation**.
4. Click **OK**.

Link Translation Issues

These Link Translation configuration tips apply to Web applications.

- For Web sites that use ActiveX and streaming media, configure Mobile Access Web applications to **Allow caching of all content.** This is configured in the **Protection Level** page of the Web application.
- Domain cookies created in JavaScript are not supported. For example, if you create a cookie with the following JavaScript code:

  document.cookie=Name=Value; domain=.example.com,

  The client browser cannot send the cookie to Mobile Access and the Web server if Mobile Access is not located under the domain .example.com.

  Note that domain cookies created in HTTP headers are supported, as long as they are not manipulated by JavaScript code.
- With Hostname Translation, the URL shown in the client browser is:

  https://<obscured destination host name>.<Mobile Access FQDN>/path

  (For an explanation, see How Hostname Translation Works (see "Configuring HT" on page 35)). The maximum number of characters in each part of the host name (between https:// and the /path) is limited to 63 (see RFC 1034 - Domain names - concepts and facilities). Therefore, the entire internal host name, including the protocol and the port, must not exceed 63 characters.
- Hostnames displayed in client browsers appear as a seemingly random character string, instead of the complete destination path.
- Signing out from Outlook Web Access, from Domino Web Access (iNotes), or from Microsoft SharePoint may disconnect the Mobile Access session as well.

Link Translation Domain

Defining a Link Translation Domain for Web applications:

- Improves connectivity to external sites. For example, links to external sites displayed in emails are not broken, because they are not translated by Mobile Access.
- Reduces the load on the Mobile Access machine, thereby increasing performance.
- Saves the administrator the trouble of defining all external content as Web applications.

To use the feature, you must define Mobile Access's internal Link Translation domain. Only URLs in the Link Translation Domain are translated by Mobile Access. URLs from outside the Link Translation Domain are directed to their original destination.

You should include all Web resources defined as Web applications in the Link Translation Domain. You can also add additional domains or hosts to the Link Translation Domain.

Configuring the Link Translation Domain

The Link Translation Domain is configured in GuiDBedit, the Check Point Database Tool. Select **Connectra_Global_Properties** and search for **translation_domain**.

Link Translation Domain can be enabled or disabled. Domains and hosts can be added to or excluded from the Link Translation Domain.

After making changes, save the changes in GuiDBedit and install policy on the Security Management Server.

To enable or disable Link Translation Domain in the Connectra_Global_Properties table:

- To enable: Set **enable_translation_domain** to **true**.
- To disable: Set **enable_translation_domain** to **false**.

To add each domain or host to the Link Translation Domain:

In the **Connectra_Global_Properties** table, in the **domains_to_translate** parameter, enter host names or domain names.

- Host names should be in the format,, **www.example.com**
- Domain names should begin with "**.**", for example, **.example.com**

Note - Be sure to add all DNS aliases of host names. for example, if intranet is an alias for **www.example.com**, you must add **intranet** to the Link Translation Domain.

You may want to exclude hosts or sub-domains that are included in the Link Translation Domain but have public access.

To exclude a host or sub-domain:

In the **connectra_global_properties** table, in the **domains_to_exclude** parameter, enter host names or domain names.

- Host names should be in the format,, **www.example.com**
- Domain names should begin with "**.**", for example, **.example.com**

You can add or exclude as many domains or hosts as you want .

Web Application Features

Mobile Access contains various features to make working with Web Applications efficient and secure. Some of these are described in the following sections.

Reuse TCP Connections

The Reuse TCP Connections feature enhances performance by letting the network reuse TCP connections that would otherwise be closed. To enable Reuse TCP Connections, make a change to the gateway configuration files.

Note - We strongly recommend that you back up configuration files before you make changes.

In the **General Properties** page of a Web application, there is a section called Application Type. In this section, you can define the application as having a specific type, either Domino Web Access or Outlook Web Access.

In previous versions, if you chose one of these Application Type options, the TCP connections for the application are closed after each request. However, if you enable Reuse TCP Connections, the connections are reused. This leads to a boost in performance as the three-way handshake does not have to be renewed and the optimized authorization cache feature can be fully utilized.

By default, Reuse TCP Connections is enabled. To turn off Reuse TCP Connections, change the following line in the `$CVPNDIR/conf/http.conf` configuration file from:

```
CvpnReuseConnections On
```

to:

```
CvpnReuseConnections Off
```

After making and saving the changes, run `cvpnrestart` to activate the settings.

If your Mobile Access gateway is part of a cluster, be sure to make the same changes on each cluster member.

Website Certificate Verification

In this version, Mobile Access includes the option to validate website security certificates, and either warn the user about problems, ignore any problems, or block websites with certificate problems.

By default, Website Certificate Verification is set to “monitor” this means that a record is entered in SmartView Tracker and there is no effect on end-users. The setting can also be set to "warn" so that users are alerted to any potential security issues and can then decide what steps to take. The setting can also be set to “block,” which blocks any website that has a problem with its SSL server certificate, or “ignore", to ignore any issues with a website’s security. All settings create a record in SmartView Tracker except for "ignore".

You must restart Mobile Access services after changing the website certificate verification setting.

You can configure Website Certificate Verification per gateway and per application.

Website Certificate Verification is configured in GuiDBedit, the Check Point Database Tool.

To change the Website Certificate Verification default behavior for Web applications on the gateway:

1. In GuiDBedit, go to the table of the gateway > **Connectra_settings**.
2. Search for **certificate_verification_policy**. Enter **block**, **warn**, **monitor** or **ignore** as the value. The default is monitor.

If your internal web servers do not use a commonly known certificate (such as an internal CA), then either change the default setting, or add a trusted Certificate Authority for Website certification to Mobile Access.

If the Mobile Access gateway is part of a cluster, be sure to make the same changes on the cluster object table.

To change the Website Certificate Verification default behavior per Web application:

1. In GuiDBedit, go to the table of the Web application in **Network Objects > network_objects**.
2. Search for **certificate_verification_policy**. Type **block**, **warn**, or **ignore** as the value.
3. For the **use_gateway_settings** parameter:
   - Enter **true** to use the gateway settings.
   - Enter **false** to use the setting configured for the application.
4. Save the changes in GuiDBedit.
5. Install policy on the Security Management Server using SmartDashboard.

Adding a Trusted Certificate Authority for Website Certification

You can add specific Certificate Authorities that Mobile Access does not recognize by default, such as your organization’s internal CA, to your trusted certificates. The list of default Certificate Authorities recognized by Mobile Access is the same as the list recognized by common browsers. To add CAs to this list, copy the certificate to a `.pem` file and then move the file to your Mobile Access gateway. If your Mobile Access gateway is part of a cluster, be sure to make the same changes on each cluster member.

Saving a Trusted Certificate in .pem Format

The procedure for saving a trusted certificate as a .pem file is similar for all browsers and versions with slight differences. Below is an example procedure, using Internet Explorer 7.0.

To save a trusted certificate in .pem format using Internet Explorer 7.0:

1. Using your browser, **View** the certificate of a website that uses the Certificate Authority you want to add. Be sure to choose the Certificate Authority certificate: In the **Certification Path** tab, choose the CA and click View Certificate.
2. Select the **Details** tab and click **Copy to File.**

   The **Certificate Export Wizard** opens.
3. In the **Export File Format** page, select Base-64 encoded.
4. In the **File to Export** page, type the File name under which you want to save the certificate information with a .pem file extension.
5. Click **Finish**.

Moving the CA Certificate to the Mobile Access Gateway

To move the CA Certificate to the Mobile Access Gateway:

1. Move the .pem file to your Mobile Access gateway, into a directory called:

`$CVPNDIR/var/ssl/ca-bundle/`

2. Run the following command: `rehash_ca_bundle`

   The Certificate Authority should now be accepted by the Mobile Access gateway without any warnings. You do not need to restart Mobile Access services for the change to take effect.

Deleting a Certificate Authority from a Trusted List

To delete a Certificate Authority from your trusted Certificate Authorities:

1. Delete the .pem file from the `$CVPNDIR/var/ssl/ca-bundle/` file of the Mobile Access gateway.
2. Run the following command: `rehash_ca_bundle`

   You do not need to restart Mobile Access services for the change to take effect.

File Shares

A file share defines a collection of files, made available across the network by means of a protocol, such as SMB for Windows, that enables actions on files, including opening, reading, writing and deleting files across the network.

File Share Viewers

Two file share viewers are available. For end-users using Microsoft Internet Explorer, the administrator can allow the end-user to choose the file share viewer:

- **Web-based file viewer** is browser-based, browser-independent, and therefore multi-platform. Note that when using this viewer, extremely large files (bigger than 2GB) cannot be viewed or accessed.
- **Windows Explorer** user interface is for Windows file shares, and requires Internet Explorer 6 or higher. It is based on Microsoft Web Folders and the WebDAV extension of HTML, and uses the familiar Windows file and folder handling model. However, the capabilities of this viewer depend on the version of Web Folders installed on the endpoint machine, and the viewer must be restarted if the user's credentials become out of date.

Configuring File Shares

To configure a File Share Application:

1. In the **Mobile Access** tab navigation tree, select **Applications > File Shares**.
2. Click **New**. The **File Share Application** window opens. The following subsections explain the fields in each page.

File Share Application — General Properties Page

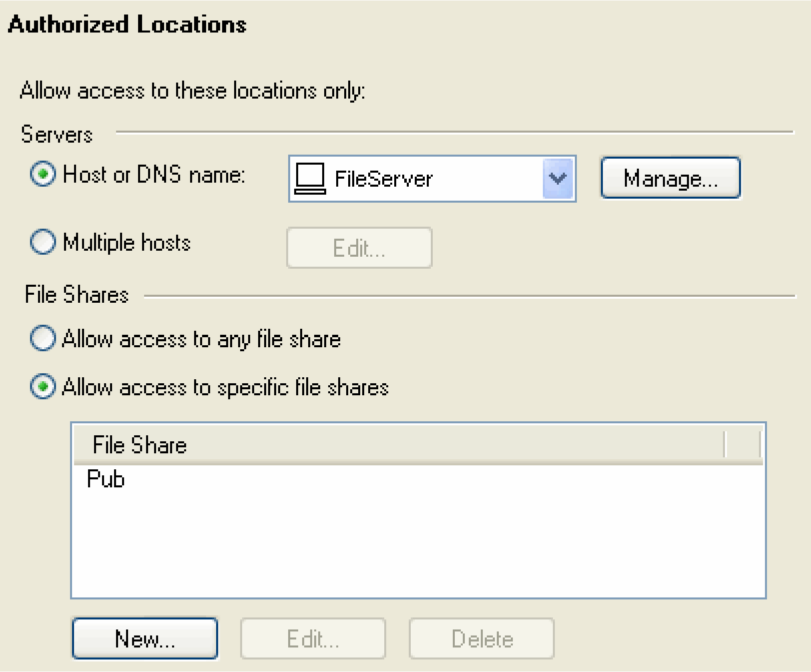
- Go to the **General Properties** page of the **File Share Application** object.

  Name is the name of the SmartDashboard object.

File Share Application - Authorized Locations Page

1. Go to the **Authorized Locations** page of the **File Share Application** object.

   This page allows you to configure the file shares that users are authorized to access. These settings take effect whenever a user attempts access, no matter what interface is used, whether by manually typing a path in the portal, browsing using the file viewer, clicking a user-defined file favorite, or clicking the predefined file favorite path defined by the administrator in the **Link in Portal** page.



Authorized Locations

Allow access to these locations only:

Servers

● Host or DNS name: FileServer

○ Multiple hosts

File Shares

○ Allow access to any file share

● Allow access to specific file shares

File Share
Pub

2. Fill in the fields on the page:
   - **Servers** are the machine(s) or DNS Name(s) on which the file server is hosted. Choose either a single **Host or DNS name**, or **Multiple hosts**.
   - **Allow access to any file share** gives the users access to all locations on the file server defined in **Servers**.
   - **Allow access to specific file shares** restricts user access to specific shares. For example `My_Share`. Use only the name of a share, such as `My_share`, `$$user`, or `My_share$`, without any slashes. Do not specify a subdirectory inside a share. The `$$user` variable represents the name of the currently logged-in user. This variable provides personalized authorization for users. If `$$user` is defined as a file share, then if the user currently logged-in is `alice, alice` will be allowed access to the share named `alice` defined on the server, such as `\\myserver\alice`.

   If you configure two or more overlapping file share applications (for example, one for Any Share and one for a specific share on the same host), the application settings that are in effect are undefined.

File Share Application — Link in Portal Page

This page allows you to configure one predefined favorite link. This link is displayed in the Mobile Access portal. By clicking the link the user is able to directly access the specified path. Note that you must authorize access to this location in the **Authorized Locations** page.

1. Go to the **Link in Portal** page of the **File Share Application** object.
2. Fill in the fields on the page:
   - **Add a link to this file share in the Mobile Access portal**. If you do not enter a link, users will be able to access the application by manually typing its link in the portal, but will not have a pre-configured link to access it.
     - **Link text (multi-language)** is shown in the Mobile Access Portal. Can include `$$user`, which represents the user name of the currently logged-in user. If more than one link is configured with the same (case insensitive) name, only one of them will be shown in the portal.
     - **Path** is the full file path that the link will attempt to access, specified using UNC syntax. It can be either a location of a share, or any path under the share. Can include `$$user`, which represents the user name of the currently logged-in user. For example, a path that is defined as `\\host\Pub\users\$$user` appears for user `alice` as `\\host\Pub\users\alice` and for user `Bob` as `\\host\Pub\users\Bob`.

       Note - The `host` defined here is the same host that is defined in the **Authorized Locations** page. However, the IP address of the host is resolved by the DNS Server that is defined on Mobile Access itself (and not by the Mobile Access management).

- **Tooltip (multi-language)** for additional information. Can include `$$user`, which represents the user name of the currently logged-in user. The text appears automatically when the user pauses the mouse pointer over the link and disappears when the user clicks a mouse button or moves the pointer away from the link.

File Share Application — Single Sign-On Page

To configure Single Sign On:

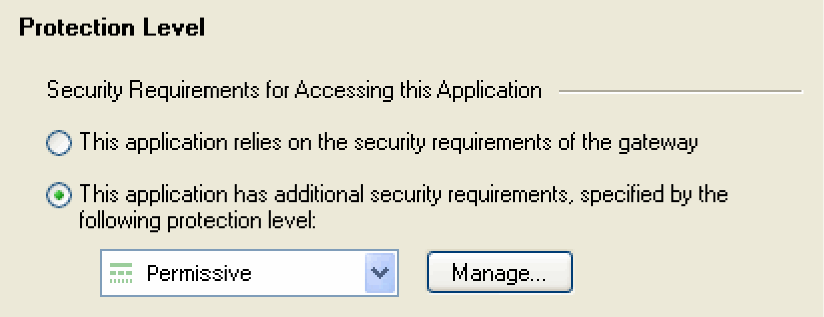
1. Go to the **Single Sign On** page of the **File Share Application** object.
2. Select **Turn on single Sign On for this application**.
3. Configure the sign on method for the application. The default option is:

   Prompt the users for their credentials and store them for future use

For more information, see Single Sign On.

File Share Application — Protection Level Page

1. Go to the **Protection Level** page of the **File Share Application** object.



Protection Level

Security Requirements for Accessing this Application

○ This application relies on the security requirements of the gateway

● This application has additional security requirements, specified by the following protection level:

Permissive

2. Fill in the fields on the page:
   - **Security Requirements for Accessing this Application** allows you to:
     - EITHER allow access to this application to any endpoint machine that complies with the security requirements of the gateway,
     - OR make access to the application conditional on the endpoint being compliant with the selected Endpoint Compliance Profile.

Completing the Configuration of the File Share Application

1. Go to the **Access to Application** page of the Mobile Access tab.
2. In the **Access to Application** page, associate:
   - *User groups*.
   - *Applications* that the users in those user groups are allowed to access.
   - *Install On* are the Mobile Access gateways and gateway clusters that users in those user groups are allowed to connect to.
3. From the SmartDashboard main menu, choose **Policy > Install...** and install the policy on the Mobile Access gateways.

Using the $$user Variable in File Shares

You can configure personalized user locations that use the login name of the currently logged in user. To do this, use the `$$user` variable (see "Using the Login Name of the Currently Logged in User" on page 32) wherever you need to specify the name of the user. The `$$user` variable is resolved during the Mobile Access session to the login name of the currently logged-in user.

For example, a UNC file path that is defined as `\\host\Pub\$$user` is resolved for user Alice as `\\host\Pub\Alice` and for user Bob as `\\host\Pub\Bob`.

Citrix Services

Mobile Access supports Citrix client connectivity to internal Presentation servers. In this type of deployment, Mobile Access functions as a Secure Gateway.

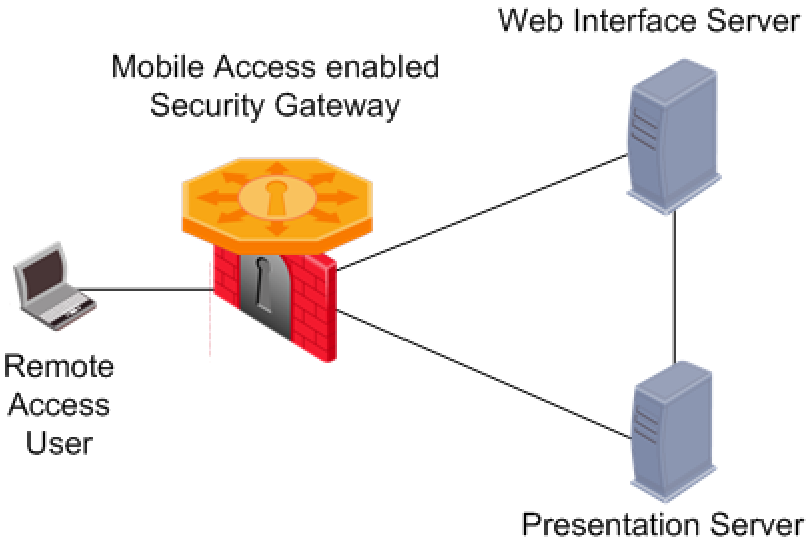
You do not need to use Secure Ticketing authority (STA) servers because Mobile Access implements its own STA engine. But, you can install Mobile Access in a topology with STA and Citrix Secure Gateway (CSG) servers.

Citrix Deployments Modes - Unticketed and Ticketed

Unticketed Mode

In the recommended Unticketed Mode scenario:

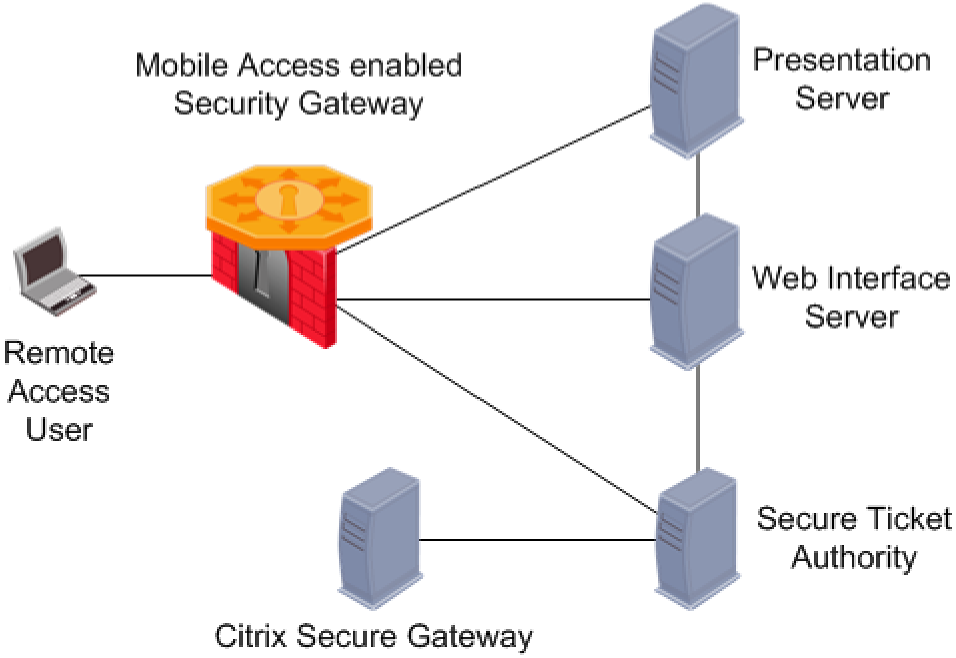
- The remote access user logs into the Mobile Access user portal
- Using the Mobile Access Web interface, the user is directed to the Citrix Web Interface server and then has access to the Presentation server.



Ticketed Mode

In the Ticketed Mode scenario:

- The remote access user logs into the Mobile Access user portal.
- Using the Mobile Access Web interface, the user is directed to the Citrix Web Interface server.
- The user logs into the Citrix Web Interface server and is assigned a secure ticket by the Secure Ticket Authority. This ticket allows the user to access the Presentation server once it is verified by the Mobile Access Web Security Gateway.



You do not need to use Secure Ticketing authority (STA) servers because Mobile Access implements its own STA engine.

Configuring Citrix Services

To configure a Citrix Service:

1. In the Mobile Access tab navigation tree, select **Applications > Citrix Services**.
2. Click **New**. The **Citrix Services** window opens.

Before Configuring Citrix Services

Mobile Access's server certificate must be Fully Qualified Domain Name (FQDN)-based i.e. issued to Mobile Access's FQDN, for example www.example.com.

Before configuring Citrix Services, change the Mobile Access server certificate to one that was issued to the Fully Qualified Domain Name (FQDN). This is required in order to comply with the accepted Citrix standards for server certificates. Additionally, end-users must browse to Mobile Access using its FQDN, and the FQDN must be routable from their network.

For instructions about how to install server certificates, see Mobile Access Server Certificates (see "Server Certificates" on page 141).

If your Web Interface server is configured to deploy ICA Web clients and Mobile Access's server certificate is issued by a private CA, the certificate's public key must be installed on the client side browser in order for ICA Web Client to function properly. Mobile Access's certificate public key is located under: `$CVPNDIR/var/ssl/server.crt`.

Citrix Service — Web Interface page

1. Go to the **Web Interface** page of the **Citrix Service** object.
2. Fill in the fields on the page:
   - **Servers** are the machine(s) or DNS Name(s) on which the Web Interface server is hosted. Choose either a single **Host or DNS name**, or **Multiple hosts**. In order to keep the environment simple, it is recommended to configure a single Web Interface server per Citrix Application.
   - **Services** must match the settings on the Web Interface server. Select `http` or `https`, as required. Other services are NOT supported.

Citrix Service — Link in Portal Page

1. Go to the **Link In Portal** page of the **Citrix Service** object.
2. Fill in the fields on the page:
   - **Link text (multi-language)** is shown in the Mobile Access Portal. If more than one link is configured with the same (case insensitive) name, only one of them will be shown in the portal.
   - **URL** is the link to the location of the application, or to a subdirectory of the application.
   - **Tooltip (multi-language)** for some additional information. The text appears automatically when the user pauses the mouse pointer over the link and disappears when the user clicks a mouse button or moves the pointer away from the link.

Citrix Service — STA Servers Page

1. Go to the **STA servers** page of the **Citrix Service** object.
2. Get the Host from the current settings on the Web Interface (WI) server.
3. Get the STA ID from the Secure Ticketing Authority (STA) servers.

Note - Mobile Access implements its own Secure Ticketing authority (STA) engine. STA servers are not necessary.

To get the host name or IP address:

1. Login to the Web Interface Citrix administration page.
2. Click **Server-Side Firewall**.
3. Scroll to the **Secure Ticket Authority list**.
   - If the field is blank, you are in unticketed mode and you do not need to define any STA Servers on Mobile Access.
   - If the field contains entries, you are in ticketed mode. Each entry in this list is a URL containing the IP or FQDN of a Citrix server. Every entry in the Secure Ticket Authority list must be separately entered into Mobile Access.

To get the STA ID:

1. Login to the STA server.
2. From the Windows **Start** menu, select **Programs > Citrix > Citrix Secure Gateway > Secure Ticket Authority Configuration**.
3. Click **Next**.

The STA ID is shown in the **Enter the STA ID** field.

Citrix Service — Presentation Servers Page

Go to the **Presentation servers** page of the **Citrix Service** object. In this page you can allow access to all Presentation Servers, or restrict access to defined Presentation Servers.

If you select **Restrict access to these servers only:**

- Define the servers using an IP address or Fully Qualified Domain Name (FQDN).
- Make sure that the definition matches the configuration made on the XenApp server farm. If you do not, Mobile Access may not authorize the connection. The Presentation server configuration affects one of the parameters in the ICA file that is received by the client.

Citrix Service — Single Sign On Page

Single Sign On is increases application security.

To configure Single Sign On:

1. Go to the **Single Sign On** page of the **File Share Application** object.
2. Select **Turn on single Sign On for this application**.

   Configure the sign on method for the application.

Citrix Service — Protection Level Page

1. Go to the **Protection Level** page of the **Citrix Service** object.
2. Fill in the fields on the page.

   Security Requirements for Accessing this Application lets you:

   - Allow access to this application to any endpoint that complies with the security requirements of the gateway,
   - OR make access to the application conditional on the endpoint being compliant with the selected Endpoint Compliance Profile.

   Note - The Citrix architecture requires ICA files and ActiveX executables to be temporarily cached by the client-side browser. As a result, Mobile Access's Protection Level settings do not apply to these files.

3. Obtain the Host and the STA ID of the Secure Ticketing Authority (STA) servers from the current settings on the Web Interface (WI) server.

   Note - Mobile Access implements its own Secure Ticketing authority (STA) engine. STA servers are not necessary.

To get the hostname or IP address:

1. Login to the Web Interface Citrix administration page.
2. Click **Server-Side Firewall**.
3. Scroll to the **Secure Ticket Authority list**.
   - If the field is blank, you are in unticketed mode and you do not need to define any STA Servers on Mobile Access.
   - If the field contains entries, you are in ticketed mode. Each entry in this list is a URL containing the IP or FQDN of a Citrix server. Every entry in the Secure Ticket Authority list must be separately entered into Mobile Access.

To get the STA ID:

1. Login to the STA server.
2. From the Windows **Start** menu, select **Programs > Citrix > Citrix Secure Gateway > Secure Ticket Authority Configuration**.
3. Click **Next**.

   The STA ID is shown in the **Enter the STA ID** field.

Completing the Configuration of the Citrix Service

1. Go to the **Access to Application** page of the Mobile Access tab.
2. In the **Access to Application** page, associate:
   - *User groups*.
   - *Applications* that the users in those user groups are allowed to access.
   - *Install On* are the Mobile Access gateways and gateway clusters that users in those user groups are allowed to connect to.
3. From the SmartDashboard main menu, click **Policy > Install** and install the policy on the Mobile Access gateways.

Web Mail Services

Mobile Access supports built-in Web mail. Web mail provides a simple way for remote users, through a web browser interface, to access their email. Employees can access their email from any computer that has access to the Internet, such as a computer in a library, or Internet cafe. There is no need to install special email or remote access software. This is helpful for employees who work outside the office on a regular basis.

Note - The traffic log does not show actions done by the user through the Web mail interface.

Mobile Access also supports the IBM Lotus Domino Web Access (DWA, formerly known as iNotes) and Outlook Web Access (OWA). DWA and OWA are configured in Mobile Access as Web Applications.

Web Mail Services User Experience

Remote users login to Mobile Access and authenticate themselves in order to gain access to the portal. They can then click a link to access the Web mail application. Mobile Access can be configured to reuse the login credentials when authenticating to the IMAP account on the mail server. If the reused credentials are incorrect, Mobile Access again presents the user with a login page. Valid credentials are saved for future logins.

Once authenticated to the mail application, users can:

- Compose, send and receive email.
- Create, delete, rename, and manipulate mail folders.
- Index messages in various ways.
- Stores addresses.
- Search emails according to various criteria, such as body text, subject and sender's address.
- Highlight messages with different background colors, enabling quick differentiation.
- Display preferences.

Incoming (IMAP) and Outgoing (SMTP) Mail Servers

Mobile Access provides a Web front-end for any email application that uses the IMAP protocol for incoming mail, and SMTP for outgoing mail.

Email stored on the IMAP server is manipulated through the browser interface without having to transfer the messages back and forth. Users can connect to several mail servers depending on their authorization.

Configuring Mail Services

To configure a Web Mail application:

1. In the Mobile Access tab navigation tree, select **Applications > Web Mail**.
2. Click **New**. The **Web mail service** window opens. The following sections explain the fields on each page.

Web Mail Service — General Properties Page

1. Go to the **General Properties** page of the **Web mail service** object.
2. Fill in the fields on the page:
    - **Name** for the mail service, for example, my_mail_server
    - **Outgoing Mail Server (SMTP)**
        - **Host or DNS Name**, for example, smtp.example.com
        - **Service** is normally the standard predefined SMTP service.
    - **Incoming Mail Server**
        - **IMAP server type**
        - **Host or DNS Name**, for example, smtp.example.com
        - **Service** is normally the standard predefined IMAP service.

Web Mail Service — Link in Portal Page

1. Go to the **Link In Portal** page of the **Web mail service** object.
2. Fill in the fields on the page:
    - **Link text (multi-language)** is shown in the Mobile Access Portal. If more than one link is configured with the same (case insensitive) text, only one of them will be shown in the portal.

- **Tooltip (multi-language)** for additional information. The text appears automatically when the user pauses the mouse pointer over the link and disappears when the user clicks a mouse button or moves the pointer away from the link.

Web Mail Service — Single Sign-On Page

1. Go to the **Single Sign On** page of the **Web mail service** object.
2. Select the sign on method for the application.

For more information, see Single Sign On.

Web Mail Service — Protection Level Page

1. Go to the **Protection Level** page of the **Web mail service** object.
2. Fill in the fields on the page:
   - **Security Requirements for Accessing this Application** allows you to
     - EITHER allow access to this application to any endpoint machine that complies with the security requirements of the gateway,
     - OR make access to the application conditional on the endpoint being compliant with the selected Endpoint Compliance Profile.

Completing the Configuration of the Web Mail Service

1. Go to the **Access to Application** page of the Mobile Access tab.
2. In the **Access to Application** page, associate:
   - *User groups*.
   - *Applications* that the users in those user groups are allowed to access.
   - *Install On* are the Mobile Access gateways and gateway clusters that users in those user groups are allowed to connect to.
3. From the SmartDashboard main menu, choose **Policy > Install** and install the policy on the Mobile Access gateways.

Enabling LDAP Contacts Search in Web Mail Applications

By default, the contact search in Web Mail applications works only for internal users that are defined on the Mobile Access gateway. To enable search on contacts that are defined on an LDAP server, see sk34997 (http://supportcontent.checkpoint.com/solutions?id=sk34997).

Native Applications

Native applications are not clientless. They require the SSL Network Extender client on the endpoint machine. See Native Applications for Client-Based Access (on page 61).

DNS Names

If an internal application is hosted on a server inside the organization, using a DNS Name object in the definition of the Mobile Access application makes it possible to change the IP address of the server without having to change the definition of the host object in the Mobile Access application.

For example, if "myhost.example.com" is used in the definition of a Mobile Access application, Mobile Access resolves the IP address of "myhost" when authorizing access to the application.

If an internal application is hosted on multiple replicated servers, a single DNS Name object can be used in the definition of the Mobile Access application, instead of having to individually define each host.

The DNS server that is specified on Mobile Access resolves the DNS names. To set or change the DNS server, use the `sysconfig` command.

DNS Names and Aliases

A DNS name can have a number of aliases. For example, `www.example.com`, `www.example.co.uk` and `www.example.co.fr` could be aliases of the same DNS name.

In the definition of the DNS Name object, use the format "`a.b   x.y.z`", where each section of the DNS name is demarcated by a period. For example, `mail.example.com` or `www.example.co.uk`.

Wildcards can be used at the beginning of a domain name, but not at the end. For example, `*.example.com` includes `www.example.com` and `mail.example.com`. On the other hand, `www.example.*` is NOT valid.

Where DNS Name Objects are Used

DNS objects are used when defining hosts for Mobile Access Web applications, file share applications, Citrix services, and Web mail services. They are also used when configuring support for Hostname Translation.

DNS Name objects cannot be used in the Security Rule Base.

Defining the DNS Server used by Mobile Access

The DNS server that resolves the IP addresses of the DNS Name objects must be defined in one of these locations:

- In SmartDashboard, in the Mobile Access tab, in the **Additional Settings > Network Accessories > Name Resolution** page.
- From the Mobile Access Security Gateway itself, using either the console, or the Web User Interface.

	Using the Console	Using the Web User Interface
On SecurePlatform	1. Run `sysconfig`, 2. Select `3) Domain Name Servers`.	1. Connect your browser to the SecurePlatform Administration Portal. 2. Go to the **Network > DNS** page.
On Gaia	1. Run `set dns primary <ip_address>` 2. Optional: Run `set dns suffix VALUE`. An example of `VALUE` is `example.com` 3. Run `save config`	1. Connect your browser to the Gaia WebUI. 2. Go to the **Interface Management > Hosts and DNS page**.

Configuring DNS Name Objects

To create a DNS Name object:

1. In SmartDashboard, select **Network and Resources > DNS Names**.
2. Click **New**.

   The **DNS Name** window opens.
3. Give the DNS Name object a **Name**.
4. Click **DNS Names**.

   The **DNS Names** window opens.
5. Click **Add**.

   The **Edit DNS Name** window opens.
6. Type the DNS name.
7. Click **OK** three times.

   The **DNS Name** window closes.

Using the Login Name of the Currently Logged in User

Mobile Access applications can be configured to differ depending on the user name of the currently logged-in user. For example, portal links can include the name of the user, and a file-share can include the user's home directory. For this purpose, the `$$user` directive is used. During a Mobile Access session, `$$user` resolves to the login name of the currently logged-in user.

For such personalized configurations, insert the `$$user` string into the relevant location in the definitions of Web applications, file shares, and native applications.

For example, a Web application URL that is defined as `http://host/$$user` appears for user `aa` as `http://host/aa` and for user `bb` as `http://host/bb`.

If the user authenticates with a certificate, `$$user` resolves during the user's login process to the user name that is extracted from the certificate and authorized by the directory server.

For its use in configuring File Shares, see Using the $$user Variable in File Shares (on page 42).

Chapter 5

Single Sign On

In This Chapter

Single Sign On (SSO) eliminates the need for users to reauthenticate to an application when they access it for a second time, during a Mobile Access session, or between sessions. The authentication credentials used to log in to the Mobile Access portal can be re-used automatically to authenticate to multiple applications accessed through Mobile Access. You can also record other credentials for the application, and store them for future use. SSO user credentials are securely stored on Mobile Access and therefore remain valid even if the user logs in from a different client machine.

Supported SSO Authentication Protocol

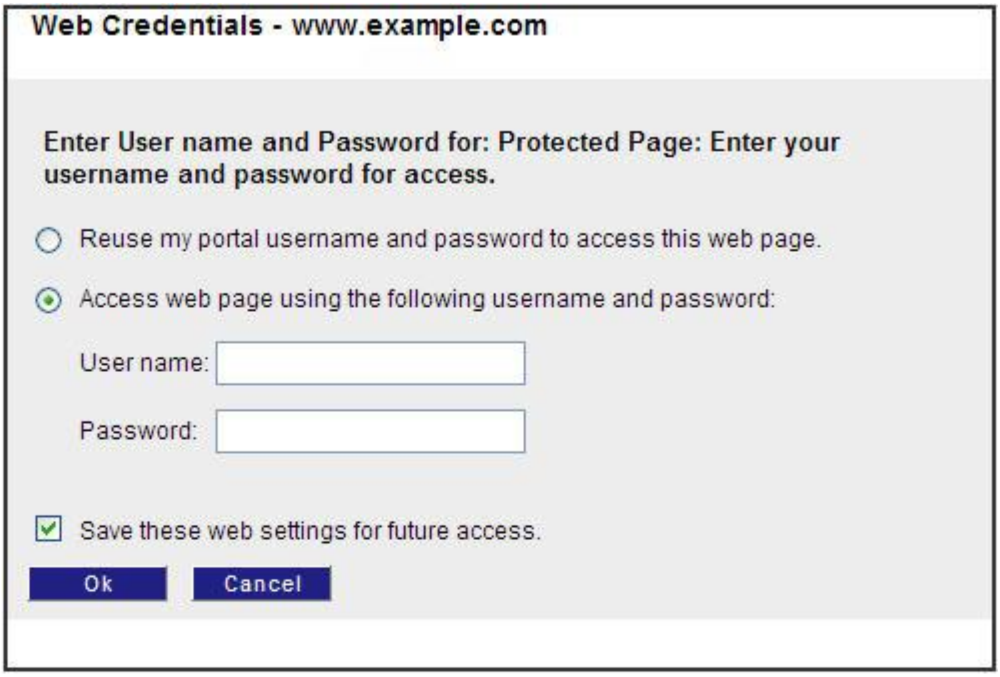
Mobile Access supports Single Sign On for authentication to internal Web and other application servers. The supported authentication protocols are:

- Basic Access - RFC enhancement. Not recommended because of security implications.
- Digest Access - RFC enhancement.
- Integrated Windows Authentication - RFC enhancement. Formerly NTLM version 1.
- Credential forwarding in HTTP headers - Ad hoc solution. Not recommended because of security implications.
- Web form (HTML) based.

HTTP Based SSO

For applications that perform authentication at the HTTP level, HTTP-based SSO is available, in which the credentials are forwarded in HTTP headers. This applies to the Basic, Digest, Integrated Windows Authentication, and Credential forwarding in HTTP headers authentication protocols.

When the user attempts to access these sites, a browser-specific form appears:



Web Credentials - www.example.com

Enter User name and Password for: Protected Page: Enter your username and password for access.

○ Reuse my portal username and password to access this web page.

● Access web page using the following username and password:

User name:

Password:

☑ Save these web settings for future access.

The user must enter his/her user name and password for that application, and click OK.

HTTP Based SSO Limitation

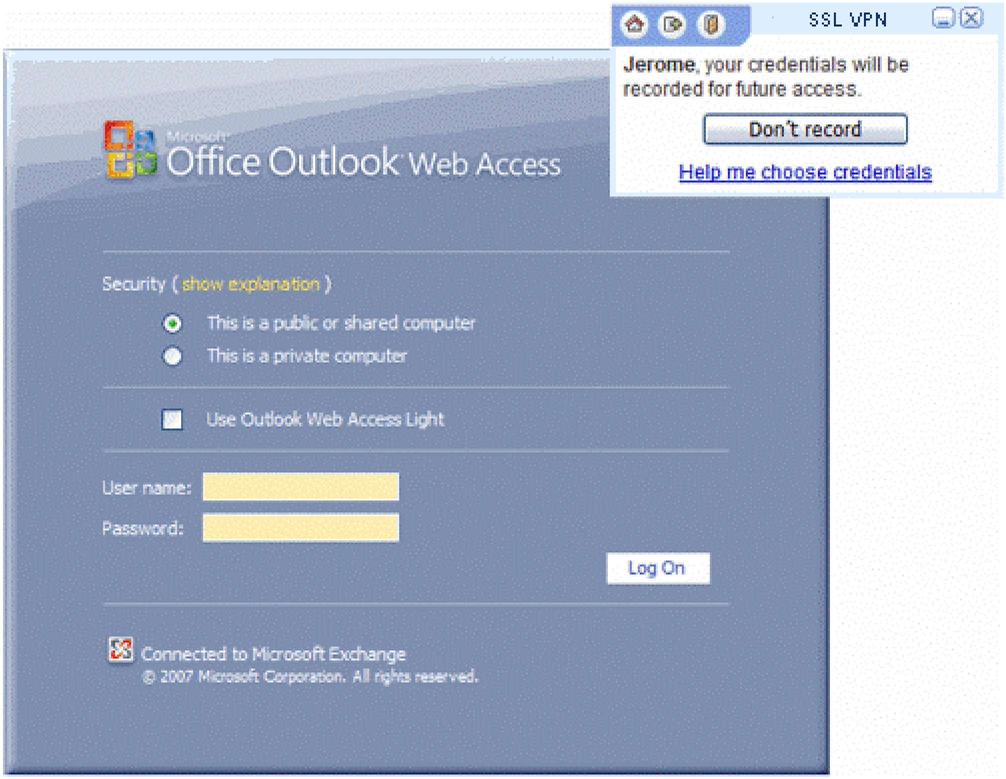
If the Web server requests authentication for a POST request in either the digest or Integrated Windows Authentication methods, and the server does not support sending of "100 Continue" responses, Single Sign On is not supported.

Web Form Based SSO

Most Web applications have their own Web forms for authentication. For these applications, Mobile Access supports Web form (HTML) based SSO.

The advantage of Web form based SSO authentication over HTTP authentication is that users are presented with the login page of the application itself, rather than a more obtrusive browser-specific page.

A typical Web form is shown below, for Outlook Web Access, together with a Mobile Access SSO popup that assists the user.



SSL VPN
Jerome, your credentials will be recorded for future access.
Don't record
Help me choose credentials
Microsoft Office Outlook Web Access
Security (show explanation)
● This is a public or shared computer
○ This is a private computer
□ Use Outlook Web Access Light
User name:
Password:
Log On
Connected to Microsoft Exchange
© 2007 Microsoft Corporation. All rights reserved.

It is recommended to use the Web form based SSO for every application that is configured to work with Web form authentication. Do not enable Web form SSO for other applications, in order to maintain performance and connectivity.

Application Requirements for Easy Configuration

Web form based SSO in its default configuration can be configured by selecting a single check box in SmartDashboard. In order for the default settings to work, the application must:

- Present the login form as the first form seen by the user.
- Redirect (status 301 or 302) on login success.

Web Form Based SSO Limitations

Web form based SSO does not support:

- Password remediation forms.
- Forms containing 'old/new/confirm' password fields. These fields are not recognized properly, and wrong credentials may be recorded or forwarded.

Application and Client Support for SSO

The following table shows which SSO methods are available for each Mobile Access application:

Mobile Access Application	Supports HTTP Based SSO	Supports Web Form Based SSO
Web applications	Yes	Yes
File shares	Yes	No
Citrix services	Yes	Yes
Web Mail	Simplified	No
Native applications	No	No

Most Mobile Access Web Applications and Citrix Services support Web Form SSO, with either no configuration, or minimal configuration required. Some applications have been tested and found to require manual configuration (of the HTTP Post details). Some applications do not support Web Form SSO at all.

For a list of common applications that are certified by Check Point to work with Web Form SSO, see SecureKnowledge solution sk35080 (http://supportcontent.checkpoint.com/solutions?id=sk35080).

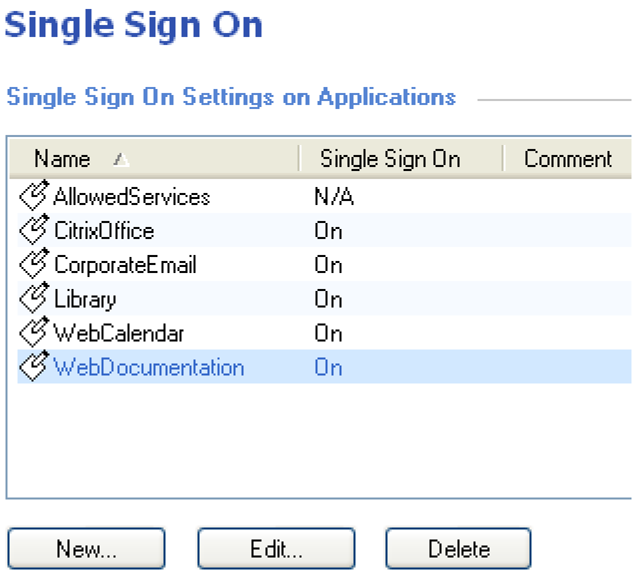
Mobile Access Client Support for SSO

Single Sign On is available only via the Mobile Access portal. It is *not* available for authentication via the VPN clients: SSL Network Extender, SecureClient Mobile, and Endpoint Connect.

Basic SSO Configuration

To configure a basic SSO setup:

1. In the SmartDashboard Connectra tab, select the **Additional Settings > Single Sign On** page.



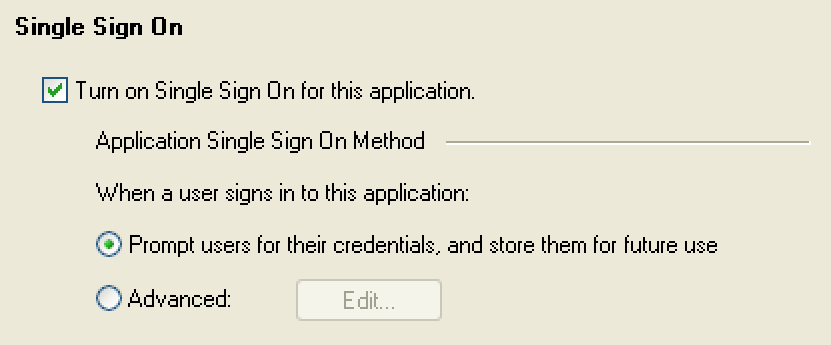
Single Sign On

Single Sign On Settings on Applications

Name	Single Sign On	Comment
AllowedServices	N/A	
CitrixOffice	On	
CorporateEmail	On	
Library	On	
WebCalendar	On	
WebDocumentation	On	

2. In the **Single Sign On** page, select an application and click **Edit**.

The **Single Sign On** page of the application window opens.



Single Sign On

☑ Turn on Single Sign On for this application.

Application Single Sign On Method

When a user signs in to this application:

● Prompt users for their credentials, and store them for future use

○ Advanced:

3. Select **Turn on single Sign On for this application**.
4. Configure the sign on method for the application. The default option is:

   For Web applications, File Shares and Citrix Services:
   Prompt the users for their credentials and store them for future use

   For Web Mail applications this same option is called:
   Prompt user for credentials

   With this option, the *application* credentials are stored and reused. The *portal* credentials are not used to authenticate to applications.

Basic Configuration of Web Form SSO

Web form SSO is supported only for Mobile Access Web applications and Citrix services.

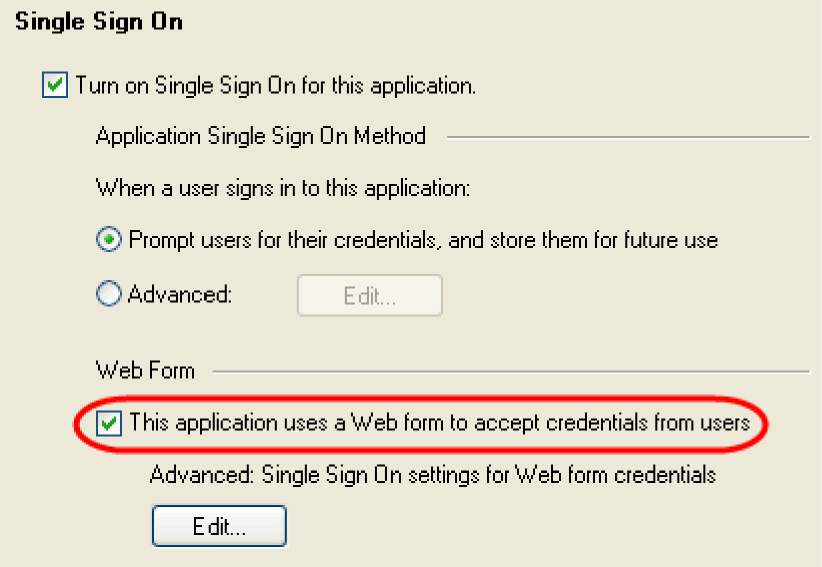
In the default settings, Web Form Single Sign On automatically analyses the sign-in Web page of the application. The default settings assume:

- HTTP redirect (301, 302) upon authentication success.
- No redirect upon authentication failure.

To configure Web Form SSO with default settings:

In the **Single Sign On** page of the Connectra application, select **This application uses a Web form to accept credentials from other users**

Note - Only enable Web form SSO for applications that use a Web form to accept user credentials, in order to maintain performance and connectivity.



Single Sign On

☑ Turn on Single Sign On for this application.

Application Single Sign On Method

When a user signs in to this application:

● Prompt users for their credentials, and store them for future use

○ Advanced:

Web Form

☑ This application uses a Web form to accept credentials from users

Advanced: Single Sign On settings for Web form credentials

Advanced Configuration of SSO

The following configuration instructions apply to both HTTP based SSO and to Web form based SSO. The advanced configuration options are supported for Web applications, file shares, and Citrix services.

For configuration options that are specific to Web form SSO, see Advanced Configuration of Web Form SSO (on page 58).

Configuring Advanced Single Sign On

There are a number of Single Sign On methods. The different options allow you to configure how to handle portal credentials, and how to handle other credentials used to authenticate to the application.

To configure the Single Sign On methods:

1. Go to the **Single Sign On** page of the Mobile Access application.
2. For the **Advanced** options, click **Edit**.

These are the available single sign on methods.

SSO Method	Single Sign On is On/Off	Forward portal credentials	Learn other credentials
Turn on Single Sign On for this application - Unchecked	Off Users are always prompted.	No	No
Prompt users for their credentials, and store them for future use	On Default method	No	Yes
This application reuses the portal credentials. Users are not prompted.	On Advanced method.	Yes	No
This application reuses the portal credentials. If authentication fails, Mobile Access **prompts users and stores their credentials.**	On Advanced method.	Yes	Yes

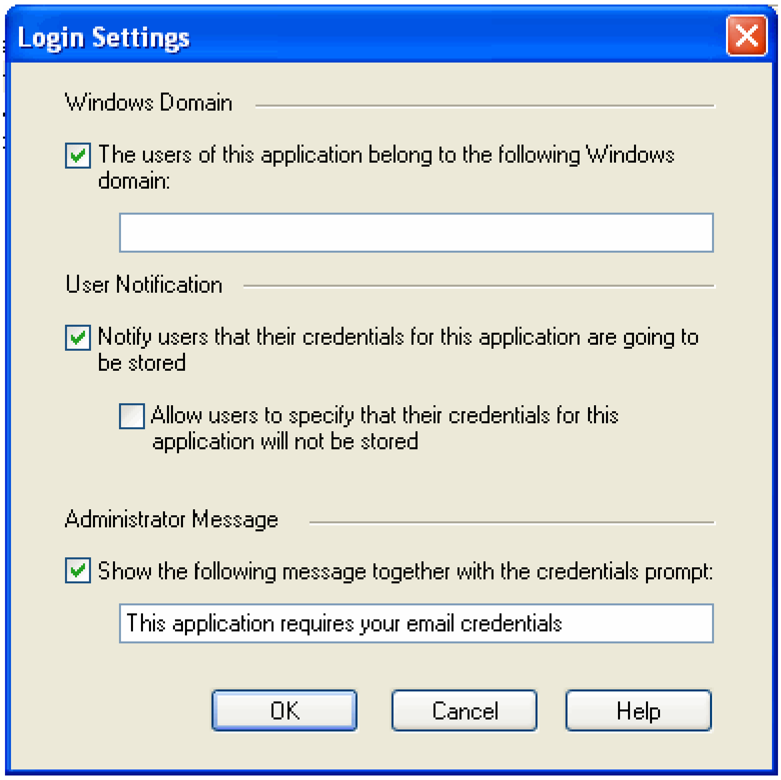
Configuring Login Settings

Login settings allow you to configure the default Windows domain (if Windows authentication is being used), to notify users that their credentials will be stored, and to specify a hint to help users supply the correct credentials.

To configure the login settings for Single Sign On:

1. Go the **Single Sign On** page of the Mobile Access application.
2. In the **Login Settings** section, click **Edit**.

The **Login Settings** window opens.



Login Settings

Windows Domain

☑ The users of this application belong to the following Windows domain:

User Notification

☑ Notify users that their credentials for this application are going to be stored

□ Allow users to specify that their credentials for this application will not be stored

Administrator Message

☑ Show the following message together with the credentials prompt:

This application requires your email credentials

3. Fill in the fields according to the explanations below.

Windows Domain

- **The user of this application belongs to the following Windows domain**:

  Specify the Windows domain or workgroup, for example "LOCALDOMAIN" if Windows authentication is used. Integrated Windows authentication requires the domain to be forwarded along with the user name and password, but if one of the **Accept the portal credentials from the gateway** Single Sign On methods are selected, Mobile Access does not know the domain because the user does not supply it with the portal credentials. Therefore, the domain is fetched from the one specified here.

User Notification

- **Notify the users that their credentials for this application are going to be stored**

  Users accessing the application login page for the first time see a popup message saying that their credentials will be stored for future access.

- **Allow the users to specify that their credentials for this application will not be stored**

  Users accessing the application login page for the first time see a popup message from which they can select not to record their credentials.

Administrator Message

- **Show the following message together with the credentials prompt**

  Show a hint to the user about the credentials they must supply. for example, whether or not they should supply the domain name and user name (for example: AD/user) or just the user name (for example: user). After clicking the **Help me choose credentials** link, the user sees the hint. The message can include ASCII characters only.

Advanced Configuration of Web Form SSO

Use the advanced Single Sign On settings for Web form credentials to configure an application for Web form SSO if there is:

- *No* HTTP redirect (301, 302) upon authentication success
  OR
- *No* redirect upon authentication failure.

You can specify different criteria for:

- Sign In Success or Failure Detection (on page 58).
- Credential Handling (on page 58).

Sign In Success or Failure Detection

Most Web applications respond to authentication success by redirecting to another page. If a redirect is not an indication of success, you can configure a different indicator of success or failure.

To configure Sign In success or failure criteria:

1. In the **Single Sign On** page of the Mobile Access application, in the **Web Form** section, click **Edit.**
2. Select **Specify a criterion for success or failure** and then select one of the following options:
   - **Mobile Access regards the authentication as successful, if after signing in, this application creates a cookie with the following name:**
     The application places a session cookie upon success. To obtain the exact name of the session cookie, install a sniffer or browser plug-in (such as the Fiddler HTTP debugging proxy)
   - **Mobile Access regards the authentication as a failure, if after signing in, this application redirects to the following URL:**
     The application redirects on failure. To find the target URL, install a sniffer or browser plug-in (such as the Fiddler HTTP debugging proxy). Use the following URL format:
     <protocol>://<host>/[<path>][?< query>]

Credential Handling

By default, Mobile Access looks for the user name and password fields at the application URL. If the default settings do not work, you can either configure an automatic credential detection method, or you can manually hard-code the POST details.

Note - This password cannot include special characters. Use ASCII characters only.

To configure automatic credential handling:

1. In the **Single Sign On** page of the Mobile Access application, in the **Web Form** section, click **Edit.**
2. In the **Credentials Handling** section, click **Edit**.

   The **Credentials Handling** window opens.
3. Select **Automatically handle the credentials**.
4. Under **Sign in Web Form Detection Settings**, select:

   Mobile Access regards the following URL as the sign in Web form:

   If the application presents a Web form that requires credentials, before the actual login form, so that Mobile Access is unable to automatically analyze the sign-in Web page, you can specify the URL of the actual login form.

   Syntax:
   ```
   <protocol>://<host>/[<path>][?< query>]
   ```
5. Under **Password Validation Settings**, select

   Mobile Access sends the following password:
   Clients need to submit the sign on Web form with a user name and password. However, it is not secure to store the password on the client for future SSO use. Mobile Access therefore generates a dummy password that it sends to the client, and replaces it upon sign on with the real password. Some

applications check the dummy password on the client side. If the Mobile Access dummy password is not compatible with the application, you can define a different one.

Manually Defining HTTP Post Details

If automatic Web form SSO does not work, you can define HTTP POST details.

To manually specify how to handle credentials:

1. From the **Credentials Handling** window, select **Manually specify how to handle the credentials.**
2. Fill in the fields for **When the following sign in URL is requested:**
   - **post to the following URL**
     In this and the previous field, the URL must be absolute. Use the URL format `<protocol>://<host>/[<path>][?< query>]`
   - **the following POST data**, which must include:
     - $USER NAME resolves to the user name stored on Mobile Access.
     - $PASSWORD resolves to the password stored on Mobile Access.

When manual credential handling is configured for Web form SSO, the HTTP authentication request window appears, when credentials are requested for the first time.

Kerberos Authentication Support

Kerberos is a network authentication protocol, which allows people and computers to securely identify themselves over a non-secure network. It is the Microsoft default authentication protocol in Windows 2000 and later versions. Microsoft IIS, and other web servers, can use Kerberos via the Negotiate method in HTTP authentication headers.

Kerberos Authentication is supported for Web Applications (HTTP(S)). Mobile Access can authorize against Kerberos servers on behalf of users.

By default, Kerberos support is turned off.

To turn on support for Kerberos:

1. Replace `/etc/krb5.conf` with a file suitable for the domain. The file must have the following template. Replace any string containing “your” with the appropriate values:

```
 [libdefaults]
          default_realm = YOUR.AD.NAME
[realms]
          YOUR.AD.NAME = {
                          admin_server =
your.domain.controller.name
                  default_domain = your.dns.domain
          }
[domain_realm]
        .your.dns.domain = YOUR.AD.NAME
         your.dns.domain = YOUR.AD.NAME
```

   - YOUR.AD.NAME is the Windows domain name.
   - To configure more than one Windows domain (also known as a “Realm”), add more domains to the [realms] section and to [domain_realm] section.
   - For each realm you can have more than one domain controller, in this case, instead of the admin_server statement, use several statements of the form:
2. Make sure clocks on the Mobile Access gateway and on the domain controller(s) are synchronized to within 1 minute. The best way to ensure this is to use an NTP time server.
3. Check that Kerberos is configured correctly.

   a) From the Mobile Access gateway command line, type:

   ```
   kinit your-ad-username
   ```

   `If there are several realms,` the `kinit` syntax works for the default realm. For other realms, use the syntax: `kinit your-ad-username@YOUR.OTHER.AD.NAME`

You should get a prompt, similar to: **Password for your-ad-username@YOUR.DOMAIN:**

b) Type the password and press Enter.

There should be no error messages

c) Type `klist`

You should get a listing of something called "Ticket cache", with one ticket in it.

d) You must delete the list. To do so, type `kdestroy`

4. Use the cvpnd_settings command to enable Kerberos:

```
cvpnd_settings set useKerberos true
cvpnd_settings listAdd kerberosRealms YOUR.AD.NAME
cvpnd_settings listAdd kerberosRealms YOUR.OTHER.AD.NAME
```

5. Restart the Mobile Access services by running cvpnrestart.
6. For a cluster setup, repeat step 1 to step 5 on each cluster member.

Chapter 6

Native Applications for Client-Based Access

In This Chapter

A n*ative application* is any IP-based application that is hosted on servers within the organization, and requires an installed client on the endpoint. The client is used to access the application and encrypt all traffic between the endpoint and Mobile Access.

SSL Network Extender automatically works with Mobile Access as a native application.

Microsoft Exchange, Telnet, and FTP, are all examples of native application servers. Authorized users can use their native clients (for example, telnet.exe, ftp.exe, or Outlook) to access these internal applications from outside the organization.

A native application is defined by the:

- Server hosting applications.
- Services used by applications.
- Connection direction (usually client to server, but can also be server to client, or client to client).
- Applications on the endpoint (client) machines. These applications are launched on demand on the user machine when the user clicks a link in the user portal. They can be:
  - Already installed on the endpoint machine, or
  - Run via a default browser, or
  - Downloaded from Mobile Access.

VPN Clients

The SSL Network Extender client makes it possible to access native applications via Mobile Access. SSL Network Extender can operate in two modes: Network Mode and Applications Mode.

Note - Beginning with version R71, Endpoint Connect, SecureClient Mobile, and Check Point GO are only available through the IPsec VPN blade. To use these VPN clients, you must have the IPsec VPN blade activated.

SSL Network Extender

The SSL Network Extender client makes it possible to access native applications using Mobile Access.

Once you have enabled the Mobile Access blade on a gateway, SSL Network Extender only works through Mobile Access and its policy should be configured in the **Policy** page of the **Mobile Access** tab. If the Mobile Access blade is disabled and the IPsec VPN blade is enabled, SSL Network Extender can work from the IPsec VPN blade and its policy should be configured in the main security rule base.

Note - If you had SSL Network Extender configured through IPsec VPN and now you enabled the Mobile Access blade on the gateway, you must reconfigure SSL Network Extender policy in the Mobile Access tab of SmartDashboard. Rules regarding SSL Network Extender in the main security rule base are not active if the Mobile Access tab is enabled.

SSL Network Extender is downloaded automatically from the Mobile Access portal to the endpoint machines, so that client software does not have to be pre-installed and configured on users' PCs and laptops. SSL Network Extender tunnels application traffic using a secure, encrypted and authenticated SSL tunnel to the Mobile Access gateway.

SSL Network Extender requires ActiveX (for Windows with Internet Explorer), or Java. For details see First time Installation of ActiveX and Java Components (on page 13).

SSL Network Extender Network Mode

The SSL Network Extender Network Mode client provides secure remote access for all application types (both Native-IP-based and Web-based) in the internal network via SSL tunneling. To install the Network mode client, users must have administrator privileges on the client computer.

After installing the client, an authenticated user can access any authorized internal resource that is defined on Mobile Access as a native application. The user can access the resource by launching the client application, either directly from the desktop or from the Mobile Access portal.

SSL Network Extender Application Mode

The SSL Network Extender Application Mode client provides secure remote access for most application types (both Native (IP-based) and Web-based) in the internal network via SSL tunneling. Most TCP applications can be accessed in Application mode. The user does not require administrator privileges on the endpoint machine.

After the client is installed, the user can access any internal resource that is defined on Mobile Access as a native application. The application must be launched from the Mobile Access portal and not from the user's desktop.

Note - UDP based applications are not supported with SSL Network Extender in Application mode or Network mode.

Supported Application Mode Applications

Most TCP applications work with SSL Network Extender in the Application Mode. If an application is defined in the Mobile Access tab in SmartDashboard as one that can be used in Application Mode, a user that connects in Application Mode will be able to see it and launch it. If the application is not supported in Application Mode, a user who connects with Application Mode will not see it in the list of applications.

The following applications have been tested and are Check Point OPSEC-certified for use with Mobile Access SSL Network Extender in Application mode. Note that this mode is different from SSL Network Extender in Network mode which supports any IP-based application. While Application Mode is designed to work with most applications, only OPSEC-certified applications have been tested and verified to work with SSL Network Extender in Application mode. Only specified versions are guaranteed to work and are fully supported. However, in most cases other versions of the same client and most other applications that are TCP based will work.

SSL Network Extender - Application Mode Support

Partner/ Company	Client	Version
Telnet / SSH		
Microsoft	Microsoft Telnet (Command Line)	2000 XP
Microsoft	HyperTerminal	5.1
Putty	Putty	0.55
VanDyke	SecureCRT	4.1
Database Clients		
Rational	ClearQuest	2003.06.00.436.000
Siebel	Siebel Client	7
TN3270		
Ericom	PowerTerm InterConnect for Windows	6.6.2
IBM	Personal Communications Workstation Program	5.8
FTP		
Microsoft	FTP (Command Line)	2000 XP
Ipswitch	WS_FTP Home/PRO	9.1.0.429
GlobalSCAPE	CuteFTP	4.2 7
E-Mail (POP3, IMAP, SMTP)		
Microsoft	Outlook Express	6
Microsoft	Outlook (See note below table)	2000 2003 SP1 XP
QUALCOMM	Eudora	6.2
Mozilla	Thunderbird	1.0.2
IBM	Lotus Notes	6.0.3 6.5.3
Web Browser (HTTP, HTTPS, Passive FTP)		
Microsoft	Internet Explorer	5.5 and up

Mozilla	Mozilla Firefox	1.0.3 1.0.4
Terminal Services		
Microsoft	Remote Desktop Connection	XP 2000
RealVNC	VNC Viewer	4.1.1
Famatech	Remote Administrator	2.0 2.1
Citrix		
Citrix	Program Neighborhood	6.20.985 9.0.0.32649
Citrix	Java Connection Center	8.0.1672
Citrix	JICA	8.2.1684
Citrix	ActiveX	8.0.24737.0
Productivity Suites		
IBM	Lotus Notes	6.0.3 6.5.3

Note - Some Anti-Virus applications do not scan email when Microsoft Outlook is launched with SSL Network Extender Application mode, because the mail is encrypted in SSL before scanning begins.

Configuring VPN Clients

To configure SSL Network Extender on VPN clients:

1. Open **Gateway Properties > Mobile Access > SSL Clients**.

   SSL Network Extender is automatically enabled when the Mobile Access blade is turned on.
2. Select an option:
   - **Automatically decide on client type according to endpoint machine capabilities** downloads the SSL Network Extender Network Mode client if the user on the endpoint machine has administrator permissions, and downloads the Application Mode client if the user does not have administrator permissions.
   - **Application Mode only** specifies that the SSL Network Extender Application Mode client is downloaded to the endpoint machines — irrespective of the capabilities of the endpoint machine.
   - **Network Mode only** specifies that the SSL Network Extender Network Mode client is downloaded to the endpoint machines — irrespective of the capabilities of the endpoint machine. The user on the endpoint machine must have administrator permissions in order to access Native Applications.

If you had SSL Network Extender configured through IPsec VPN and now you enabled the Mobile Access blade on the gateway, you must reconfigure the SSL Network Extender policy in the Mobile Access tab of SmartDashboard. Rules regarding SSL Network Extender in the main security rule base are not active if the Mobile Access tab is enabled.

Office Mode

When working with Office Mode, Remote Access clients receive an IP addresses allocated for them by the VPN administrator. These addresses are used by the clients in the source field of the IP packets they build. Since the IP packets are then encrypted and encapsulated, the packets appear to the Internet with their original IP address, but to the organization's internal network, after decapsulation and decryption, they appear with the allocated IP address. The clients seem to be on the internal network.

For more about Office Mode, see the *R75.40 VPN Administration Guide* (http://supportcontent.checkpoint.com/solutions?id=sk76540).

Configuring Office Mode

Configure Office Mode in **Gateway Properties > Mobile Access > Office Mode**. The settings configured here apply to Mobile Access clients and IPsec VPN clients.

Office Mode Method

Choose the methods used to allocate IP addresses for Office Mode. All of the methods selected below will be tried sequentially until the office mode IP addresses are allocated.

- **From ipassignment.conf in \FWDIR\conf** - You can over-ride the Office Mode settings created on Security Management server by editing a plain text file called **ipassignment.conf** in the **\FWDIR\conf** directory of the Check Point Security Gateway. The gateway uses these Office Mode settings and not those defined for the object in Security Management server.

  Ipassignment.conf can specify:

  - An IP per user/group, so that a particular user or user group always receives the same Office Mode address. This allows the administrator to assign specific addresses to users, or particular IP ranges/networks to groups when they connect using Office Mode.
  - A different WINS server for a particular user or group
  - A different DNS server
  - Different DNS domain suffixes for each entry in the file.
- **From the RADIUS server used to authenticate the user** - A RADIUS server can be used for authenticating remote users. When a remote user connects to a gateway, the user name and password are passed on to the RADIUS server, which checks that the information is correct, and authenticates the user. The RADIUS server can also be configured to allocate IP addresses.
- **Using one of the following methods:**
  - **Manually (IP pool) -** Create a Network Object with the relevant addresses. The allocated addresses can be illegal but they have to be routable within the internal network.
  - **Automatically (Using DHCP) -** Specify the machine on which the DHCP server is installed. In addition, specify the virtual IP address to which the DHCP server replies. The DHCP server allocates addresses from the appropriate address range and relates to VPN as a DHCP relay agent. The virtual IP address must be routable to enable the DHCP send replies correctly.

    DHCP allocates IP addresses per MAC address. When VPN needs an Office Mode address, it creates a MAC address that represents the client and uses it in the address request. The MAC address can be unique per machine or per user. If it is unique per machine, then VPN ignores the user identity. If different users work from the same Remote Access client they are allocated the same IP address.

Multiple Interfaces

If the gateway has multiple external interfaces, there might be a routing problem for packets whose destination address is a client working in Office Mode. The destination IP address is replaced when the packet is encapsulated and thus previous routing information becomes irrelevant. Resolve this problem by setting the gateway to **Support connectivity enhancement for gateways with multiple external interfaces**. Do not select this option if your gateway has only one external interface, as this operation effects the performance.

Anti Spoofing

If this option is selected, VPN verifies that packets whose encapsulated IP address is an Office Mode IP address are indeed coming from an address of a client working in Office Mode.

If the addresses are allocated by a DHCP server, VPN must know the range of allocated addresses from the DHCP scope for the Anti Spoofing feature to work. Define a Network object that represents the DHCP scope and select it here.

IP Pool Optional Parameters

Configure additional optional parameters for how office mode addresses are assigned by clicking **Optional Parameters**. If the office mode addresses are allocated from an IP pool, this window allows you to you specify the DNS and WINS addresses by selecting the appropriate Network Objects. In addition, specify the backup DNS and WINS servers and supply the Domain name.

If the office mode addresses are allocated by a DHCP server, DNS and WINS addresses are set on the DHCP server.

These details are transferred to the Remote Access client when a VPN is established.

IP Lease Duration

Specify the amount of time after which the Remote Access client stops using the allocated IP address and disconnects. By default, the duration is 15 minutes. The client tries to renew the IP address by requesting the same address after half of the set time has elapsed. When this request is granted, the client receives the same address until the lease expires. When the new lease expires, it must be renewed again.

Configuring SSL Network Extender Advanced Options

For advanced SSL Network Extender configuration options, in the SmartDashboard **Mobile Access** tab, select the **Additional Settings > VPN Clients > Advanced Settings for SSL Network Extender** page, and click **Edit**.

Deployment Options

- **Client upgrade upon connection** specifies how to deploy a new version of the SSL Network Extender Network Mode client on endpoint machines, when it becomes available.

  Note - Upgrading requires Administrator privileges on the endpoint machine.

- **Client uninstall upon disconnection** specifies how to handle the installed SSL Network Extender Network Mode client on the endpoint machine when the client disconnects.
  - *Do not uninstall* allows the user to manually uninstall if they wish to.
  - *Ask User* allows the user to choose whether or not to uninstall.
  - *Always uninstall* does so automatically, when the user disconnects.

Encryption

- **Supported Encryption methods** defines the strength of the encryption used for communication between SSL Network Extender clients and all Mobile Access gateways and gateway clusters that are managed by the Security Management Server.
  - *3DES only*. This is the default. The 3DES encryption algorithm encrypts data three times, for an overall key length of 192 bits.
  - *3DES or RC4* to configure the SSL Network Extender client to support the RC4 encryption method, as well as 3DES. RC4 is a variable key-size stream cipher. The algorithm is based on the use of a random permutation. It requires a secure exchange of a shared key that is outside the specification. RC4 is a faster encryption method than 3DES.

Launch SSL Network Extender Client

These settings define the behavior of the SSL Network Extender clients when launched on the endpoint machines.

- **On demand, when user clicks 'Connect" on the portal** - SSL Network Extender only opens when the user clicks "Connect" from the Mobile Access portal.
- **Automatically, when user logs on** - When users log in to the Mobile Access portal, SSL Network Extender launches automatically.
- **Automatically minimize client window after client connects** - For either of the options above, choose to minimize the SSL Network extender window to the system tray on the taskbar after connecting. This provides better usability for non-technical users.

Endpoint Application Types

When defining a Native Application, you can define applications on endpoint machines. These applications launch on the endpoint machine when the user clicks a link in the Connectra portal. You do not have to configure endpoint applications for users using SSL Network Extender in Network Mode, as they will be able to access them using their native clients.

Application Installed on Endpoint Machine

These endpoint applications are already installed on the endpoint machines.

Application Runs Via a Default Browser

Run via default browser is used to define a link to any URL. The link appears in the Mobile Access portal, and launches the current Web browser (the same browser as the Mobile Access portal). The link can include $$user, which represents the user name of the currently logged-in user.

This option has a user experience similar to a Web Application with a URL: The application is opened in a Web browser. However, Mobile Access Web applications perform Link Translation on the URL and encrypt the connection over SSL, while the "Run via default browser" option with SSL Network Extender does not perform link translation, and encrypts using SSL Network Extender. You may prefer to define a Native Application rather than a Web Application for convenience, or because some websites have problems working with Link Translation.

Applications Downloaded-from-Gateway

Downloaded-from-Gateway applications allow you to select a client application located on the Mobile Access gateway, that is downloaded from Mobile Access to the endpoint machine when the user clicks a link in the Mobile Access portal.

These applications allow end users to securely use client-server applications, without requiring a native client to be installed on their machines.

Two kinds of Downloaded-from-Gateway applications are available by default: *Certified Applications* and *Add-on Applications*. Certified applications are an integral part of Mobile Access, and are fully supported. Add-on Downloaded-from-Gateway applications are third-party applications, which are supplied as-is, and for which Check Point provides limited support.

Mobile Access provides eight built-in applications that the administrator can configure. Downloaded-from-Gateway applications are either Java-based applications or single-executable applications (including batch files). All the applications that are available by default, other than the Terminal (PuTTY) client, are Java based applications, and are therefore multi-platforms applications. The PuTTY client can only be used on Windows machines.

It is possible to add Downloaded-from-Gateway applications to Mobile Access, in addition to the built-in applications. See Adding a New Downloaded-from-Gateway Endpoint Application (see "Adding New Downloaded-from-Gateway Endpoint Applications" on page 74).

Certified Applications

Certified applications are an integral part of Mobile Access, and are fully supported. The packages that are downloaded to the endpoint machine are signed by Check Point. The following table lists the available certified Downloaded-from-Gateway Native Applications:

Downloaded-from-Gateway Certified Applications

Application	Description
Telnet	Telnet terminal. Provides user oriented command line login sessions between hosts on the Internet.
SSH	Secure Shell (SSH) is designed for logging into and executing commands on a networked computer. It provides secure encrypted communications between two hosts over an insecure network. An SSH server, by default, listens on the standard TCP port 22.
TN3270	IBM 3270 terminal emulator tailored to writing screen-scraping applications. TN3270 is the remote-login protocol used by software that emulates the IBM 3270 model of mainframe computer terminal.
TN5250	IBM 5250 terminal emulator that interprets and displays 5250 data streams.

For configuration details, see Configuring Downloaded-from-Gateway Endpoint Applications (on page 79).

Add-on Applications

Add-on Downloaded-from-Gateway applications are third-party applications, which are supplied as-is, for which Check Point provides limited support.

These packages are not signed by Check Point, and when they are downloaded by end- users a popup warning informs the user that the package is not signed. If the application does not function as expected, it can be deleted or replaced. The following table lists the available Downloaded-from-Gateway Native Applications:

Downloaded-from-Gateway Add-On Applications

Application	Description
Remote Desktop (RDP)	Downloaded-from-Gateway Client for Windows NT Terminal Server and Windows 2000/2003 Terminal Services. Communicates using Remote Desktop Protocol (RDP) in order to present the user's NT desktop. Unlike Citrix ICA, no server extensions are required. Runs on Java 1.1 up (optimized for 1.4), and works on Linux, Windows and Mac.
Terminal (PuTTY)	An implementation of Telnet and SSH for Win32 platforms, including an Xterm terminal emulator.
Jabber	Downloaded-from-Gateway Jabber Client is an instant messenger based on the Jabber protocol Runs on every computer with at least Java 1.4.
FTP	Graphical Java network and file transfer client. Supports FTP using its own FTP API and various other protocols like SMB, SFTP, NFS, HTTP, and file I/O using third party APIs, includes many advanced features such as recursive directory up/download, browsing FTP servers while transferring files, FTP resuming and queueing, browsing the LAN for Windows shares, and more

For configuration details, see Configuring Downloaded-from-Gateway Endpoint Applications (on page 79).

Configuring Authorized Locations per User Group

The authorized locations (hosts or address ranges) of a Native application are defined in the **Authorized Locations** page of the Native Application. However, it is also possible to configure authorized locations per user group. Users who belong to two or more groups can access the union of the authorized locations of the groups.

For configuration details, see sk32111 (http://supportcontent.checkpoint.com/solutions?id=sk32111).

Ensuring the Link Appears in the End-User Browser

If an endpoint application is defined by the administrator, but is not available on the endpoint machine, the link to the application will not be shown in the Mobile Access portal.

For example, the link will not be shown if:

- An endpoint application that is pre-installed on the endpoint machine (of type "Already Installed") is configured, and the application is in fact not installed on the endpoint machine.
- A Downloaded-from-Gateway (Embedded) application requires Java, but Java is not installed on the endpoint machine.

Configuring a Simple Native Application

To configure a simple Native Application:

1. In the **Mobile Access** tab navigation tree, select Applications > Native Application.
2. Click **New**. The **Native Application** window opens. The following sections explain the fields in each page.

General Properties

In the **General Properties** page, define the name of the Native Application.

Authorized Locations

1. Go to the **Authorized Locations** page.

   An authorized location ensures users of the Native Application can only access the specified locations using the specified services.
2. Fill in the fields:
   - **Host or Address Range** is the machine or address range on which the application is hosted.
   - **Service** is the port on which the machine hosting the application listens for communication from application clients.

Applications on the Endpoint Computer

1. Go to the **Endpoint Applications** page.
2. Fill in the fields:
   - **Add link in the** Mobile Access **portal** must be selected if you want to make endpoint application(s) associated with the Native Applications available to users.
   - **Link text** can include $$user, a variable that represents the user name of the currently logged-in user.
   - **Tooltip** for additional information. Can include `$$user`, which represents the user name of the currently logged-in user.
   - **Path and executable name** must specify one of the following:

Note - If the endpoint application is not available on the endpoint machine, the link to the application will not be shown in the end user's browser.

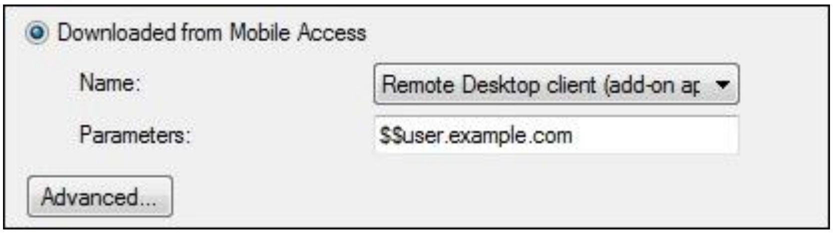
- Full path of the application on the endpoint machines. For example, `c:\WINDOWS\system32\ftp.exe`
- The location of the application by means of an environment variable. This allows the location of the application to be specified in a more generalized way. For example `%windir%\system32\ftp.exe`
- If the application is listed in the Windows **Start > Programs** menu, only the application name need be entered, as it appears to the user in the Start menu. For example **HyperTerminal**.
- If the location of the application is in the `path` of the endpoint computer, only the application name need be entered. For example `ftp.exe`

- **Parameters** are used to pass additional information to applications on the endpoint computer, and to configure the way they are launched.

Using the $$user Variable in Native Applications

You can use the `$$user` variable to define customized login parameters for native applications. To do this, enter the `$$user` variable wherever you need to specify a user name.

For example, you can use the `$$user` variable to return the user name as a part of the login string for Remote Desktop. In this example, `$$user.example.com` (in the **Parameters** field) resolves to the login string `ethan.example.com` for Ethan or `richard.example.com` for Richard.



● Downloaded from Mobile Access

Name: Remote Desktop client (add-on ap

Parameters: $$user.example.com

Completing the Native Application Configuration

If necessary, configure VPN clients. See Configuring VPN Clients (on page 64).

After doing so:

1. Go to the **Policy** page of the Mobile Access tab.
2. In the **Policy** page, associate:
   - *User groups*.
   - *Applications* that the users in those user groups are allowed to access.
   - *Install On* the Mobile Access gateways and gateway clusters that users in those user groups are allowed to connect to.
3. From the SmartDashboard main menu, choose **Policy > Install** and install the policy on the Mobile Access gateways.

Configuring an Advanced Native Application

To configure an advanced Native Application:

1. In the Mobile Access tab navigation tree, select **Applications > Native Application**.
2. Click **New**. The **Native Application** window opens. The following sections how to define advanced Native Application features.

Configuring Connection Direction

1. In the **General Properties** page of the Native Application object, click **Connection direction**.

   An **Advanced** window opens.

2. Select an option for the **Direction of communication from the connection initiator**:
   - **Client to server:** (For example, Telnet.) This is the default option. When you create a client to server application and assign it to a user group, you enable users of the group to initiate a connection to the specified server.
   - **Server to client:** (For example, X11.) When you create a server to client application, the specified server can initiate a connection to all SSL Network Extender or Secure Client Mobile users currently logged on to the Mobile Access gateway, regardless of their group association.
   - **Client to client:** (For example, running Remote Administration from one client to another.) When you create a client to client Native Application and assign it to a user group, you enable users of that group to initiate a connection to all of the SSL Network Extender or Secure Client Mobile users currently logged on to Mobile Access, regardless of their user group association.

Note - A Client to Client Native Application does not require configuration of a destination address.

Multiple Hosts and Services

The native application can reside on a range of hosts, which can be accessed by the native application clients. You can also specify more than one service that clients may use to communicate with the application.

Users of the native application can only access the specified locations using the specified services.

To define a native application with multiple hosts and services:

1. Define a **Native Application**.
2. In the **Authorized Locations** page of the Native Application object, select **Advanced: Edit**.

   The **Native Application - Advanced** window opens.
3. **Click Add** or **Edit**.

   The **Native Application Hosts** window opens.

Configuring the Endpoint Application to Run Via a Default Browser

To configure the Endpoint Application to run via a default browser:

1. Define a Native Application.
2. In the **Endpoint Applications** page of the Native Application object, select **Add link in the Mobile Access portal**.
3. Select **Advanced > Edit**. The **Endpoint Applications - Advanced** window opens.
4. Click **Add**. The **Edit Endpoint Application** window opens.
5. Select **Run via default browser**. This is used to define a link to any URL. The link appears in the Mobile Access portal, and launches the current Web browser (the same browser as the Mobile Access portal). The link can include `$$user`, which represents the user name of the currently logged-in user.

   This option has a similar user experience to a Web Application with a URL: The application is opened in a Web browser. However, Mobile Access Web applications perform Link Translation on the URL and encrypt the connection over SSL, while the "Run via default browser" option with SSL Network Extender does not perform link translation, and encrypts using SSL Network Extender. You may prefer to define a Native Application rather than a Web Application for convenience, or because some Web sites have problems working with Link Translation.

Automatically Starting the Application

To configure the Endpoint Application to start automatically:

1. Define a Native Application.
2. In the **Endpoint Applications** page of the Native Application object, select **Add link in the** Mobile Access **portal**.
3. Select **Advanced > Edit**. The **Endpoint Applications - Advanced** window opens.
4. Click **Add** or **Edit**. The **Edit Endpoint Application** window opens.

5. Click **Advanced**.

   The **Advanced** window opens.

   - **Automatically Start this Application** - Configure a Native Application to run a program or command automatically, after connecting to or disconnecting from SSL Network Extender (either Network mode or Application mode). When more than one Native Application is defined for automatic connection or disconnection, the applications run in the alphabetical order of the names of the Native Applications.
   - **When SSL Network Extender is disconnected** - Do not use this option to launch applications that require connectivity to the organization - SSL Network Extender Application Mode. In Network Mode, automatic start of applications when SSL Network Extender is disconnected, works correctly.

Making an Application Available in Application Mode

To make an application available in Application Mode:

1. Define a Native Application.
2. In the **Endpoint Applications** page of the Native Application object, select **Add link in the Mobile Access portal**.
3. Select **Advanced > Edit**. The **Endpoint Applications - Advanced** window opens.
4. Click **Add** or **Edit**. The **Edit Endpoint Application** window opens.
5. Click **Advanced**. The **Advanced** window opens.
6. Select **Show link to this application in SSL Network Extender Application Mode**. The option **SSL Network Extender application mode compatibility** lets you make an application available to Application Mode clients. Users that connect using the SSL Network Extender Application Mode client are able to see a link to the application and launch it. Use this option if the application works well in Application Mode.

Note - If this option is NOT selected:

- Users who connect with Application Mode, do not see it in their list of applications.
- Users with SecureClient Mobile on handheld devices, are unable to connect to the application.

Automatically Running Commands or Scripts

It is possible to configure a Native Application to run a program or command automatically, after connecting to or disconnecting from SSL Network Extender (either Network mode or Application mode).

Note - The user must have the appropriate privileges on the endpoint machine to run the commands.

One example of how automatically running a command can be useful is to mount or unmount a network drive. Giving users access to network drives is a convenient way of providing access to internal resources. A drive can be mapped by configuring an application that invokes the Windows `net use` command.

Note - When more than one Native Application is defined for automatic connection or disconnection, the applications run in the alphabetical order of the names of the Native Applications.

For configuration details, see How to Automatically Map and Unmap a Network Drive (on page 72).

It is possible to extend this ability by defining a dynamic add-on Downloaded-from-Gateway application that runs a script (batch file) containing a sequence of commands to execute on the endpoint machine. This script can be launched manually when the user clicks a link, or it can launch automatically after connecting to or disconnecting from SSL Network Extender.

For configuration details, see How to Automatically Run a Script (Batch File) (on page 73).

How to Automatically Map and Unmap a Network Drive

A drive can be mapped by configuring an application that invokes the Windows `net use` command.

Note - The `net use` command is available for SSL Network Mode only.

To automatically map (mount) and unmap (unmount) a network drive, create a Native Application that automatically maps the network drive when SSL Network Extender is launched:

1. Define a Native Application.
2. In the **Endpoint Applications** page of the Native Application object, select **Add link in the Mobile Access portal**.
3. Select **Advanced > Edit**. The **Endpoint Applications - Advanced** window opens.
4. Click **Add** or **Edit**. The **Edit Endpoint Application** window opens.
5. Configure the **Edit Endpoint Application** page as follows:
   - **Already installed**.
   - **Path and executable name**: `net.exe`
   - **Parameters**: `use drive_letter: \\server name\share name`
6. Click **Advanced**. In the **Advanced** page, check **When SSL Network Extender is launched**.
7. Create another Native Application that automatically unmaps the network drive when SSL Network Extender is disconnected. Configure the **Edit Endpoint Application** page as follows:
   - **Already installed**.
   - **Path and executable name**: `net.exe`
   - **Parameters**: `use /DELETE drive_letter:`
8. Click **Advanced**. In the **Advanced** page, check **When SSL Network Extender is disconnected**.

How to Automatically Run a Script (Batch File)

It is possible to define a new Downloaded-from-Gateway Endpoint Application (embedded application) that runs a script (batch file) automatically after connecting to or disconnecting from SSL Network Extender.

Proceed as follows:

1. Create a batch (script) file containing a sequence of commands.
2. Define the batch file as a new Downloaded-from-Gateway Endpoint Application (Embedded Application) (see "Adding New Downloaded-from-Gateway Endpoint Applications" on page 74).
3. Define a Native Application.
4. In the **Endpoint Applications** page of the Native Application object, select **Add link in the Mobile Access portal**.
5. Select **Advanced > Edit**. The **Endpoint Applications - Advanced** window opens.
6. Click **Add** or **Edit**. The **Edit Endpoint Application** window opens.
7. Click **Advanced**.
8. In the **Automatically start this application** section of the **Advanced** page, select **When SSL Network Extender is launched**.

Protection Levels for Native Applications

On Mobile Access gateways of version R71 and higher, protection levels can be set individually for each native application.

Protection Levels are predefined sets of security settings that offer a balance between connectivity and security. Protection Levels allow Mobile Access administrators to define application protections for groups of applications with similar requirements.

Mobile Access comes with three default Protection Levels — Normal, Restrictive, and Permissive. You can create additional Protection Levels and change the protections for existing Protection Levels.

Protection Levels in Older Gateways

For Mobile Access gateways of versions before R71, one Protection Level can be set for all native applications, or all native applications can rely on the security requirements of the Mobile Access gateway. These settings are configured on the main **Native Applications** page.

Protection Levels in R71 and Higher Gateways

For Mobile Access gateways of versions R71 and higher, Protection Level settings are configured in the Properties window of each native application by selecting **Additional Settings > Protection Level**.

Note - The Protection Level settings in Mobile Access gateways of versions R71 and higher *cannot* be set globally on the main **Native Applications** page.

When defining an application, in the **Protection Level** page of the application object, you can choose:

- **This application relies on the security requirements of the gateway**
  Rely on the gateway security requirement. Users authorized to use the portal are also authorized to use this application. This is the default option.
- **This application has additional security requirements specific to the following protection level**
  Associate the Protection Level with the application. Users are required to be compliant with the security requirement for this application in addition to the requirements of the portal.

Defining Protection Levels

To access the Protection Level page from the Mobile Access tab:

1. From the Mobile Access tab in SmartDashboard, select the **Additional Settings > Protection Levels** page from the navigation tree.
2. Click **New** to create a new Protection Level or double-click an existing Protection Level to modify it.

   The **Protection Levels** window opens, displaying the **General Properties** page.

To access the Protection Level page from a Mobile Access application:

1. From the **Properties** window of a Mobile Access application, select **Additional Setting > Protection Level**.
2. To create a new Protection Level, select **Manage > New**.
3. To edit the settings of a Protection Level, select the Protection Level from the drop down list and then select **Manage > Details**.

   The **Protection Levels** window opens, displaying the **General Properties** page.

To define a Protection Level:

1. In the **General Properties** page, enter a unique name for the Protection Level (for a new Protection Level only), select a display color and optionally add a comment in the appropriate fields.
2. Click on **Authentication** in the navigation tree and select one or more authentication methods from the available choices. Users accessing an application with this Protection Level must use one of the selected authentication schemes.
3. If required, select **User must successfully authenticate via SMS.**
4. Click **Endpoint Security** in the navigation tree and select one or both of the following options:
   - **Applications using this Protection Level can only be accessed if the endpoint machine complies with the following Endpoint compliance policy**. Also, select a policy. This option allows access to the associated application only if the scanned client computer complies with the selected policy.
   - **Applications using this Protection Level can only be accesses from within Secure Workspace**. This option requires Secure Workspace to be running on the client computer.
5. Click **OK** to close the **Protection Level** window
6. Install the Security Policy.

Adding New Downloaded-from-Gateway Endpoint Applications

It is possible to add Downloaded-from-Gateway applications to Mobile Access, in addition to the eight built-in applications. This section explains how, and gives two detailed examples.

Downloaded-from-Gateway Application Requirements

Downloaded-from-Gateway applications are either Java-based applications or single-executable applications (including batch files).

Java applications have the following requirements:

- Application must be packaged into a JAR file
- The JVM of a version required by the application must be installed on the endpoint machine.
- The application must have a `Main` class.

Single-executable applications have the following requirements:

- Must not require installation.
- Must be platform-specific for Windows, Linux or MAC OS.

Adding a New Application

To add a new Downloaded-from-Gateway application, first put the application in the relevant directory on the gateway. Then use the Database Tool (GuiDBedit) to set its properties.

To add a new downloaded-from-gateway endpoint application:

1. Compress your downloaded-from-gateway application file into CAB file with the same name as the original file but with a `.cab` extension.

   To compress a file into a CAB file, you can use the Microsoft Cabinet Tool `cabarc.exe` (which can be downloaded from the Microsoft Web site). For example

   ```
   cabarc.exe -m LZX:20 -s 6144 N ssh2.cab ssh2.jar
   ```
2. Copy both your downloaded-from-gateway application file and the `.cab` file you created to the gateway machine at: `$CVPNDIR/htdocs/SNX/CSHELL`
3. Change the application file permissions to read, write and execute.
4. Run the Check Point Database Tool `GuiDBedit.exe` from the directory where SmartConsole is installed (in the same installation directory as SmartDashboard).
5. Log in to the Security Management Server.
6. Select **Table > Other > embedded_applications**.

   The `embedded_applications` table shows.
7. In the right side pane, right-click and select **New**.
8. In the **Object** field, enter a name for the new downloaded-from-gateway application.
9. Specify the characteristics of the new downloaded-from-gateway application.

Field Name	Explanation
`display_name`	The application name, which will appear in the drop-down list of downloaded-from-gateway applications in SmartDashboard, in the **Edit Endpoint Application** window.
`embedded_application_type`	The type of downloaded-from-gateway application. Choose one of the options in the **Valid Values** list (*java_applet*, *linux_executable mac_executable*, *windows_executable*).
`file_name`	The name of the file you placed in `$CPVNDIR/htdocs/SNX/CSHELL` (not the .cab version).
`server_name_required_params`	Indicate if the new downloaded-from-gateway application requires the server name to be configured in the Parameters field of the new downloaded-from-gateway application, in the SmartDashboard **Edit Endpoint Application** window.

Field Name	Explanation
pre_custom_params	Parameters concatenated before the server_name_required_params field. Usually used when configuring a new downloaded-from-gateway Java application. In that case, specify the Main Class name of the application.
post_custom_params	Parameters concatenated after the server_name_required_params field. Can be left blank.
type	Leave as embedded_application.

You will now be able to see and configure the new downloaded-from-gateway application in SmartDashboard, just as you do with the built-in downloaded-from-gateway applications. The downloaded-from-gateway applications appear in the **Edit Network Application** page of the Native Application object (Getting there: **Native Application object > Endpoint applications page > Advanced: Edit > Add/Edit**.

Example: Adding a New SSH Application

This example adds two applications to Mobile Access as new downloaded-from-Mobile Access applications:

1. SSH2 Java application:
   - Jar file name: ssh2.jar
   - Main class name: ssh2.Main
   - The application gets its server name as a parameter.
   - Name in SmartDashboard: Jssh2 Client.
2. SSH2 Windows executable:
   - Executable file name: WinSsh2.exe
   - The application gets its server name as parameter.
   - Name in SmartDashboard: Essh2 Client.

To add these applications:

1. Compress the ssh2.jar and WinSsh2.exe application files into ssh2.cab and WinSsh2.cab

```
# cabarc.exe -m LZX:20 -s 6144 N ssh2.cab ssh2.jar
# cabarc.exe -m LZX:20 -s 6144 N WinSsh2.cab WinSsh2.exe
```

2. Assuming the IP address of the SSH2 server is 1.1.1.1, save the files ssh2.jar and WinSsh2.exe to $CVPNDIR/htdocs/SNX/CSHELL with the proper permissions.
3. Put the application files in $CVPNDIR/htdocs/SNX/CSHELL with the proper permissions.
4. Use GuiDBedit to configure the two new downloaded-from-Mobile Access applications.

SSH2 Java Application - Field Name	Value
display_name	*Jssh2 Client*
embedded_application_type	java_applet
file_name	ssh2.jar
post_custom_params	Empty
pre_custom_params	ssh2.Main
server_name_required_params	*true*
type	embedded_application

SSH2 Windows Executable - Field Name	Value
`display_name`	*Essh2 Client*
`embedded_application_type`	`windows_executable`
`file_name`	`WinSsh2.exe`
`post_custom_params`	Empty
`pre_custom_params`	Empty
`server_name_required_params`	*true*
`type`	`embedded_application`

When you configure one of these new downloaded-from-Mobile Access applications (*Jssh2 Client* and *Essh2 Client*) in SmartDashboard , the **Parameters** field will be: 1.1.1.1 (the SSH2 server IP in this example).

Example: Adding a New Microsoft Remote Desktop Profile

This example demonstrates how to configure Mobile Access to work with Microsoft Remote Desktop, with a predefined profile. It also shows how to configure the profile per user group.

1. Create the Remote Desktop Profile (on page 77)
2. Create a CAB Package from the Profile (on page 78)
3. Configure the Package Downloaded-from-Gateway Application (on page 78)
4. Configure the Link to the Remote Desktop Application (on page 79)
5. Configure the Remote Desktop Profile to Start Automatically (on page 79)
6. Assign the Native Application to the User Group (on page 79)

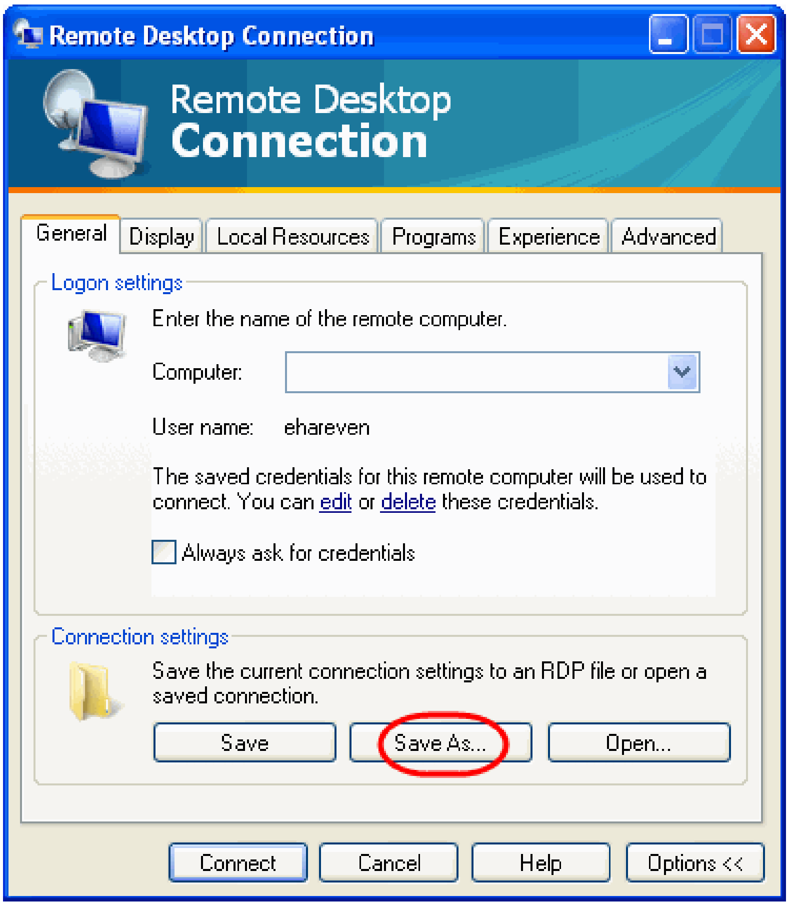
Repeat for every new Microsoft Remote Desktop Connection.

Create the Remote Desktop Profile

Create the RDP profile file (with an .rdp extension) using Microsoft Remote Desktop Connection, found at `%SystemRoot%\system32\mstsc.exe`.

When creating the profile, you can define the address, the settings, applications that should run at log in, and more.

In this example, the profile file has the name of the relevant user group. For a user group called `mygr1`, save a profile file called `mygr1.rdp`.



Enter the name of the remote computer.

Computer:

User name: ehareven

The saved credentials for this remote computer will be used to connect. You can edit or delete these credentials.

□ Always ask for credentials

Save the current connection settings to an RDP file or open a saved connection.

Create a CAB Package from the Profile

1. Compress the profile file into CAB file with the same name as the original file. The Microsoft Cabinet Tool Cabarc.exe can be used. It is available at http://msdn2.microsoft.com/en-us/library/aa751974.aspx.

   For this example, run the command:

   ```
   cabarc.exe -m LZX:20 -s 6144 N mygr1.cab mygr1.rdp
   ```

   This produces the output file `mygr1.cab`.
2. Copy both `mygr1.rdp` and `mygr1.cab` to the Mobile Access machine at `$CVPNDIR/htdocs/SNX/CSHELL`.
3. Change their permissions to read, write and execute.

Configure the Package Downloaded-from-Gateway Application

1. Run the Database Tool GuiDBedit.exe from the directory where SmartConsole is installed. The default location is:
   C:\Program Files\CheckPoint\SmartConsole\R71\PROGRAM.
2. Enter the administrator user name and password.
3. Select **Table > Other > embedded_applications**.

   The **embedded_applications** table opens.
4. In the right side pane, right-click and select **New**.
5. In the **Object** field, enter a name for the new downloaded-from-gateway application. Give it the name of the relevant user group. In this example: **mygr1**
6. Specify the characteristics of the new downloaded-from-gateway application as follows:
   - **display_name**: **mygr1_RDP_Policy**
   - **embedded_application_type**: **windows_executable**
   - **file_name**: **mygr1.rdp**

You can now see and configure the new downloaded-from-gateway application in SmartDashboard, just as for the built-in downloaded-from-gateway applications.

Configure the Link to the Remote Desktop Application

Configure the link to Microsoft Remote Desktop that will appear in the SSL Network Extender window. Define it as an Already Installed endpoint application.

1. Define a Native Application.
2. In the **Endpoint Application** page of the Native Application, select **Add a Link to the application in the** Mobile Access **portal**.
3. Select **Advanced**, and click **Edit**.

   The **Endpoint Applications - Advanced** window opens.
4. Click **Add**. The **Edit Endpoint Application** window opens.
5. In the **Edit Endpoint Application** window, use the following settings, as shown in the screen capture:
   - **Link text (Multi-language):** `MS-RDP` (or any other name).
   - **Path and executable name:** `%SystemRoot%\system32\mstsc.exe`
   - **Parameters:** `%temp%\mygr1.rdp`
6. Click **OK**.

Configure the Remote Desktop Profile to Start Automatically

In the same Native Application, add another endpoint application for the Remote Desktop Profile. Define it as a Downloaded from Mobile Access endpoint application, which is downloaded to the user desktop as soon as SSL Network Extender is launched.

1. In the **Endpoint Applications - Advanced** window, click **Add**.

   The **Edit Endpoint Application** window opens.
2. Configure the Remote Desktop profile package with the following settings.
   - **Add link to the application in the** Mobile Access **portal** must be *unchecked*.
   - **Name: mygr1_RDP_Policy** (as configured in `GuiDBedit.exe`).
3. Click **Advanced**.

   The **Advanced** window opens
4. Select **Automatically Start this Application: When SSL Network Extender is launched**.
5. Click **OK** three times to save and close the Native Application.

Assign the Native Application to the User Group

Assign the Native Application to the relevant user group.

Configuring Downloaded-from-Gateway Endpoint Applications

In the **Endpoint Applications** page of the Native Application object:

1. Select **Add link in the Mobile Access portal**.
2. Select **Advanced > Edit**. The **Endpoint Applications - Advanced** window opens.
3. Click **Add**. The **Edit Endpoint Application** window opens.
4. Select **Downloaded-from-Gateway**.
5. From the Name drop-down list, select the desired downloaded-from-gateway application.
6. Specify the **Parameters** for the downloaded-from-gateway application. The parameters field is used to pass additional information to the downloaded-from-gateway applications on the endpoint machine, and to configure the way they are launched.

   The `$$user` variable can be used here to dynamically change according to the login name of the currently logged in user.

   See the configuration sections below for details of the required parameters :

Note - In the configuration sections for certified and add-on applications, below:
`parameter` is a compulsory parameter,
`[parameter]` is an optional parameter,
`|` indicates a required choice of one from many.

- Configuring the Telnet Client (Certified Application) (on page 80)
- Configuring the SSH Client (Certified Application) (on page 80)
- Configuring the TN3270 Client (Certified Application) (on page 81)
- Configuring the TN5250 Client (Certified Application) (on page 81)
- Configuring the Remote Desktop Client (Add-On Application) (on page 81)
- Configuring the PuTTY Client (Add-On Application) (on page 82)
- Configuring the Jabber Client (Add-On Application) (on page 83)
- Configuring the FTP Client (Add-On Application) (on page 83)

7. Continue with Completing the Native Application Configuration (on page 70).

Configuring the Telnet Client (Certified Application)

Telnet Client Configuration

Supported Platforms	All
Parameters field	Server name or IP address. Default port is 23.
Parameters usage	`server [port]`
Description	Telnet terminal. Provides user oriented command line login sessions between hosts on the Internet.
Home page	http://javassh.org

Configuring the SSH Client (Certified Application)

SSH Client Configuration

Supported Platforms	All
Parameters field	Server name or IP address.
Parameters usage	`server`
Description	Secure Shell (SSH) is designed for logging into and executing commands on a networked computer. It provides secure encrypted communications between two hosts over an insecure network. An SSH server, by default, listens on the standard TCP port 22.
Home page	http://javassh.org

Configuring the TN3270 Client (Certified Application)

TN3270 Client Configuration

Supported Platforms	All. Requires Java 1.3.1 or higher.
Parameters field	Ignored
Description	IBM 3270 terminal emulator tailored to writing screen-scraping applications. TN3270 is the remote-login protocol used by software that emulates the IBM 3270 model of mainframe computer terminal.
Home page	http://jagacy.com

Configuring the TN5250 Client (Certified Application)

TN5250 Client Configuration

Supported Platforms	All endpoint machines must have Java 1.4 or higher.
Parameters field	Optional. Can use the Configure button on the application instead. For the full list of options that can be used in the parameters field, see the Quick Start Guide http://tn5250j.sourceforge.net/quick.html.
Parameters usage	`[Server [options]]`
Description	IBM 5250 terminal emulator that interprets and displays 5250 data streams. You will be presented with a Connections screen for defining sessions. Select the configure button to define sessions when the session selection window opens. On first invocation of the emulator there are some console warning messages. These inform you that defaults files are being set up for the first run.
Home page	http://tn5250j.sourceforge.net/index.html
Quick Start Guide	http://tn5250j.sourceforge.net/quick.html

Configuring the Remote Desktop Client (Add-On Application)

Remote Desktop Client Configuration

Supported Platforms	All platforms. Endpoint machines must have Java 1.4 or higher.
Parameters field	Must contain the server name or its IP address.

Parameters usage	`[options] server[:port]` For example: -g 800x600 -l WARN RDP_Server. The following `options` are available: • `-b` Bandwidth saving (good for 56k modem, but higher latency). Clears TCP 'no delay' flag. • `-d` Windows domain you are connecting to. • `-f` Show the window full-screen (requires Java 1.4 for proper operation). • `-g` WIDTHxHEIGHT. The size of the desktop in pixels. • `-m` Keyboard layout on the terminal server for different languages (for example, en-us). • `-l {DEBUG, INFO, WARN, ERROR, FATAL}` Amount of debug output (otherwise known as the logging level). • `-lc` Path to a log4j configuration file. • `-n` Override the name of the endpoint machine. • `-u` Name of the user to connect as. • `-p` Password for the above user. • `-s` Shell to launch when the session is started. • `-t` Port to connect to (useful if you are using an SSH tunnel, for example). • `-T` Override the window title.
Description	Downloaded-from-Mobile Access Client for Windows NT Terminal Server and Windows 2000/2003 Terminal Services. Communicates using Remote Desktop Protocol (RDP) in order to present the user's NT desktop. Unlike Citrix ICA, no server extensions are required. Runs on Java 1.1 up (optimized for 1.4), and works on Linux, Windows and Mac.
Home page	http://properjavardp.sourceforge.net

Configuring the PuTTY Client (Add-On Application)

Putty Client Configuration

Supported Platforms	Windows only
Parameters field	Optional. Leaving the Parameters field empty leads PuTTY Client to open in full graphical mode.
Parameters usage	`[[-ssh | -telnet | -rlogin | -raw] [user@]server [port]]`
Description	An implementation of Telnet and SSH for Win32 platforms, including an Xterm terminal emulator.
Home page	http://www.eos.ncsu.edu/remoteaccess/putty.html

Configuring the Jabber Client (Add-On Application)

Jabber Client Configuration

Supported Platforms	All platforms. Endpoint machines must have Java 1.4 or higher.
Parameters field	Ignored
Description	Downloaded-from-Gateway Jabber Client is an instant messenger based on the Jabber protocol Runs on every computer with at least Java 1.4.
Home page	http://jeti.jabberstudio.org

Configuring the FTP Client (Add-On Application)

FTP Client Configuration

Supported Platforms	All. endpoint machines must have Java 1.4 or higher.
Parameters field	Ignored
Description	Graphical Java network and file transfer client. Supports FTP using its own FTP API and various other protocols like SMB, SFTP, NFS, HTTP, and file I/O using third party APIs, includes many advanced features such as recursive directory up/download, browsing FTP servers while transferring files, FTP resuming and queuing, browsing the LAN for Windows shares, and more.
Home page	http://j-ftp.sourceforge.net

Chapter 7

Mobile Access for Smartphone and Handheld Devices

In This Chapter

Authentication for Handheld Devices

For handheld devices to connect to the gateway, these certificates must be properly configured:

- A client certificate ("Initializing Client Certificates" on page 84) that the administrator generates and the user enters into the device.
- A server certificate (see "Server Certificates" on page 141) signed by a trusted third-party Certification Authority (for example, Entrust) is strongly recommended. If you have a third-party certificate, make sure the CA is trusted by the device. If you do not have a third-party certificate, a self-signed (ICA) certificate, is already configured on the server.

Initializing Client Certificates

Check Point Mobile for Android and iPhone/iPad uses two-factor authentication with: client certificate and username/password. You must make a registration key for each certificate. The certificate is signed by the internal CA of the Security Management Server that manages the Mobile Access Security Gateway.

Note - If you use LDAP or AD, initiating client certificates does not change the LDAP or AD server. If you get an error message regarding LDAP/AD write access, ignore it and close the window to continue.

If your AD server uses UTF-8 encoding for DN strings or user names, do not use the procedure here. Use the instructions in sk65021 (http://supportcontent.checkpoint.com/solutions?id=sk65021).

Note - You can use the procedure in sk65021 to generate certificates in bulk, for hundreds or thousands of users.

To initialize a client certificate for AD users:

1. On SmartDashboard, open the properties window of the user.
2. Open **Certificates**.
3. **Optional:** If a user had a certificate previously, click **Revoke** to revoke the current client certificate.
4. Select **New** > **Registration Key** for certificate enrollment.

   A Registration Key is generated.

   Note - The device may ask the user for the *Activation Key*. This is the same as the Registration Key.

5. In the **Registration Key for Certificate Enrollment** window, click the email icon to send the registration key to the user. Or copy the key and send it to the user.

Note - To initialize certificates for users imported from LDAP, double-click the Account Unit object (**Objects Tree** > **Users** tab) and select a user.

ActiveSync Applications

If your organization uses Exchange ActiveSync for synchronized email, calendar, and contacts, define ActiveSync applications in SmartDashboard.

ActiveSync for mobile device support is available for Microsoft Exchange Server 2007 SP2 or higher.

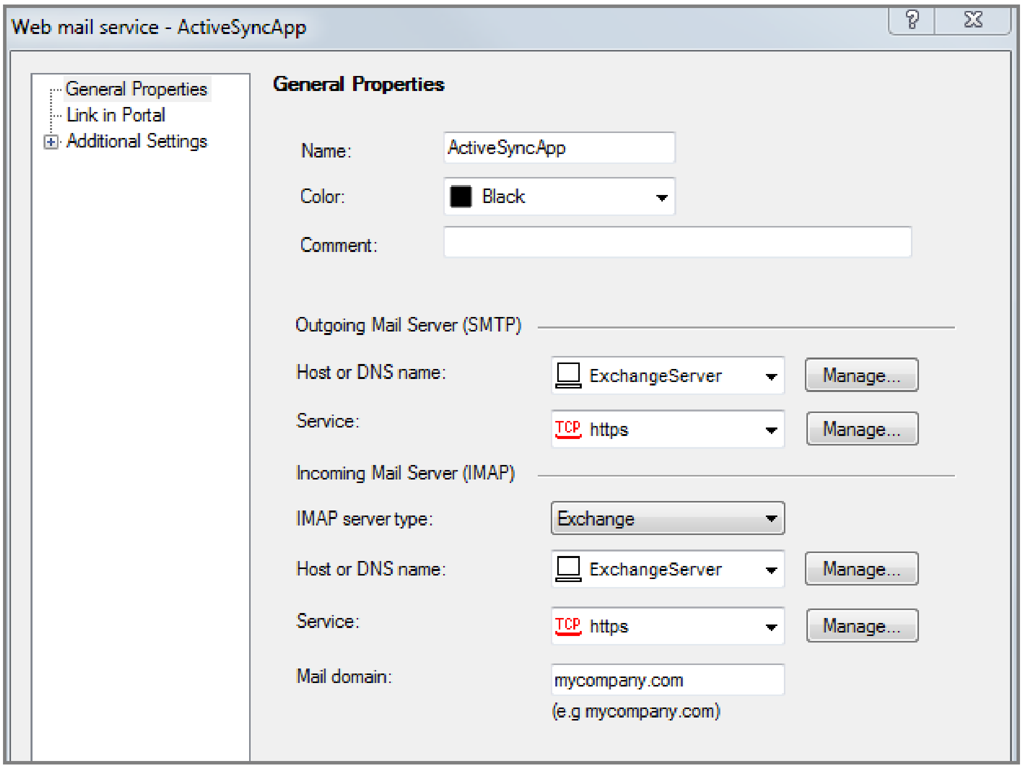
Configuring ActiveSync Applications

To let users access the Exchange server, create a rule in the Mobile Access Policy that allows included users to access the ActiveSync Web Mail application.

To create the ActiveSync Web Mail application:

1. In **Mobile Access** > **Policy**, right-click in the **Applications** column of a rule and select **Add Applications**.
2. Click **New** and select **Web Mail**.

   The **Web mail service** window opens.



Web mail service - ActiveSyncApp

General Properties

Name: ActiveSyncApp

Color: Black

Comment:

Outgoing Mail Server (SMTP)

Host or DNS name: ExchangeServer

Service: https

Incoming Mail Server (IMAP)

IMAP server type: Exchange

Host or DNS name: ExchangeServer

Service: https

Mail domain: mycompany.com

(e.g mycompany.com)

3. Make a selection for each field:
   - **Name** - Enter a name that starts with `ActiveSyncApp`.
   - **Outgoing Mail Server (SMTP)** - Select the Exchange server.
   - **Incoming Mail Server (IMAP)** - Select the Exchange server.
   - **SMTP Service** and **IMAP Service** - Select the Exchange server protocol for ActiveSync (**http** or **https**).
   - **Mail domain** - Enter the Exchange server Windows domain.

     Note - The mail domain and Windows domain may be different. Make sure to enter the Windows domain.
   - **Link in Portal** must be filled, but ignored for the ActiveSync application.

4. Click **OK**.

   The ActiveSyncApp is added to the rule.
5. Install the policy on the Mobile Access gateway.

Policy Requirements for ActiveSync Applications

- To access ActiveSync, users must belong to a user group that is allowed to access ActiveSync applications.
- Each user must have an email address defined the **Email Address** field in the properties of an internal user object, or on an LDAP server (for LDAP users).
- If users are internal, their Check Point client passwords must be the same as their Exchange passwords, otherwise ActiveSync will not work.

User Access to ActiveSync Applications

- For iPhone/iPad users to access the ActiveSync Applications: Tap **Mail Setup** in the Check Point Mobile app on the device. The ActiveSync profile installs automatically.
- For Android users to access the ActiveSync Applications, see Setting Up Androids for Email Access (on page 88).

ESOD Bypass for Mobile Apps

Hand-held devices cannot run ESOD components. If your organization has ESOD configured, mobile apps will not be able to access ESOD enforced applications by default.

You can configure access to these blocked applications by configuring an attribute called `MobileAppBypassESODforApps`.

Note - Mobile apps are not recognized by their HTTP User-Agent header.

To configure the Security Gateway:

1. On the Security Gateway run:
   ```
   cvpnd_settings set MobileAppBypassESODforApps "true"
   ```
2. Restart the Mobile Access services: `cvpnrestart`
3. If you use a cluster, copy the `$CVPNDIR/conf/cvpnd.C` file to all cluster members and restart the services on each.

System Specific Configuration

This section describes system specific configuration required for iPhones, iPads, and Android devices. In some instances, end-user configuration is also required.

iPhone/iPad Configurations

Note - OS 3.x iPhones support only one Exchange email account. Before users install the new profile, make sure they remove previously configured profiles (**Settings** > **General** > **Profiles** > **Configuration Profiles**) and other Exchange accounts.

Connecting iPhone/iPad Clients to ActiveSync Applications

Users who see the **Mail Setup** item can install the ActiveSync profile. This gives users access to their corporate email.

The next procedure is for end users to configure on their devices. For all end user configuration procedures, see Instructions for End Users.

To connect to corporate email:

1. Sign in to the Mobile Access site.
2. Tap **Mail Setup**.
3. Do the on-screen instructions.

Getting Logs from iPhones or iPads

To resolve issues with client devices, tell the users to send you the logs. The iPhone or iPad must have an email account set up.

The next procedure is for end users to configure on their devices. For all end user configuration procedures, see Instructions for End Users.

To configure logs:

1. Tap **Information**.

   Before login, this is on the top right. After login, this is on the bottom right.
2. Tap **Send Logs** on the navigation bar.

   If you do not have an email account configured on the iPhone, a message shows that one must be configured. After this is done, you must open Check Point Mobile Access again.

   When an email account is configured, the email page opens. The logs are attached.

   Note - The email account that the iPhone uses to send the email is the default account. This might not be your organization's ActiveSync account.

   If the iPhone is not configured for a destination email address for logs, the email that opens has an empty **To** field. You can enter the destination address now, or set up a default destination address for Check Point Mobile logs.

To set up a default destination address:

1. Tap **Settings**.
2. Scroll down to the **Check Point Mobile** icon and tap it.
3. In the **Mobile** global settings, enter the address in **Logs email**.

Disabling Client SSO

Single Sign On (SSO) lets users in a session connect to the Mobile Access gateway, without authenticating when the client starts. If a user cannot access the gateway while SSO is enabled, disable it.

The next procedure is for end users to configure on their devices. For all end user configuration procedures, see Instructions for End Users.

To disable SSO on a client:

1. Tap **Settings**.
2. Scroll down to the **Check Point Mobile** icon and tap it.
3. In the **Mobile** global settings, tap the **Single Sign On** > **Enabled** switch.

Android Configurations

Browsing to Servers with Untrusted Server Certificates

When browsing from the Android app to a server with an untrusted server certificate, you are denied access and you get this message:

"Some resources on this page reside on an untrusted host."

In some cases, such as in a staging or demo environment, you can enable browsing to servers with untrusted certificates.

Important - Disabling the server certificate validation in the client app is forbidden for production setups since it allows any 3rd-party to intercept the SSL traffic.

The next procedure is for end users to configure on their devices. For all end user configuration procedures, see Instructions for End Users.

To disable the server certificate validation for Web applications:

1. Launch the Check Point Mobile app.
2. Log in to the site.
3. Press the menu button and tap **Settings**.
4. Enable **Allow connection to untrusted servers**.

Note - HTTP (non-SSL) requests are always blocked even when this attribute is disabled.

Session Timeout for Android Devices

For Androids, idle timeout cannot be modified or enforced by the device or the gateway.

The only timeout setting that applies to the device is the active session timeout. It is configured in SmartDashboard: **Mobile Access Software Blade > Additional Settings > Session > Re-authenticate users every x minutes** option. This setting indicates the maximum session length. When this period is reached, the user must log in again. For example, if re-authentication is set to 120 minutes, a user will need to log in again after 2 hours in an active session.

Setting Up Androids for Email Access

Setting up Androids for email access includes configuration on the Exchange server, the Security Gateway, and the hand-held device.

If there are Android clients that cannot connect to your network using the default device settings, do one of these steps:

- Configure the Security Gateway to not use client certificate authentication (not recommended as this reduces the security of *all* mobile devices accessing the gateway).
- Configure a 3rd party Android mail client that uses an exported client certificate to let you read emails from the corporate Exchange mail server.

Preparing the Exchange Server for Android Clients

To view emails, configure the Exchange Server to let Android clients bypass the Exchange Server's device security policy.

To remove Android users from the Exchange Server device security policy:

1. Open Exchange System Manager.
2. Open **Global Settings**.
3. Right-click **Mobile Services** and select **Properties**.
4. Click **Device Security**.
5. Click **Exceptions**.
6. Click **Add** and select all Android device users.
7. Click **OK**.

Preparing the Gateway for ActiveSync with SSL VPN

Most Android devices do not support client certificate authentication for ActiveSync.

Important - If you want to turn off the client certificate authentication to allow Android clients to use ActiveSync, be aware that this will reduce the security of *all* mobile devices accessing the gateway.

To configure the gateway to not use client certificate authentication:

1. Disable the Client Certificate requirement on the Security Gateway. Run:
   ```
   cvpnd_settings set ActiveSyncClientCertificateNeeded "false"
   ```
2. Restart the Mobile Access services: `cvpnrestart`

3. If you use a cluster, copy the `$CVPNDIR/conf/cvpnd.C` file to all cluster members and restart the services on each.

Using 3rd Party Android Mail Clients

The Android native mail client does not support client certificate authentication but there are some 3rd party mail clients that do support it. To use 3rd party Android mail clients, you must set a gateway property that lets you transfer the client certificate to the mail application.

Note - Only mail clients using SSL and ActiveSync are supported.

Important - Exporting the certificate allows users to access the gateway from any device. Before allowing the export of client certificates, make sure this complies with the corporate policy.

To configure the Security Gateway:

1. On the Security Gateway run:
   `cvpnd_settings set MobileAppAllowClientCertExport "true"`
2. Restart the Mobile Access services: cvpnrestart
3. If you use a cluster, copy the `$CVPNDIR/conf/cvpnd.C` file to all cluster members and restart the services on each.

The next procedure is for end users to configure on their devices. For all end user configuration procedures, see Instructions for End Users.

To transfer the client certificate to the 3rd party mail client:

1. Launch the Check Point Mobile app.
2. Log in to the site.
3. Press the menu button and tap **Settings**.
4. From the **Export Certificate** option, tap **Export**. The Export Certificate window opens.

   If the Export Certificate option is disabled, contact the system administrator.
5. Select the certificate format appropriate for your mail client: P12 or PFX.
6. Select the location to save the certificate.
   The default path is /sdcard (for devices that have an SD card) or an external resource folder (for devices that do not have an SD card).
7. Tap **OK** to save the certificate to the selected location.

   A window shows: Export succeeded. Certificate password is: _______
8. You can copy the password to the clipboard. You will need the password when you import the certificate to the third party mail app.

After users export the Check Point certificate, they can import the certificate to an external email client, for example Moxier Mail. The certificate lets them read email from the corporate Exchange mail server via the Security Gateway.

Getting Logs from Android Clients

To resolve issues with client devices, tell the users to send you the logs.

The next procedure is for end users to configure on their devices. For all end user configuration procedures, see Instructions for End Users.

To enable logs:

1. Open the Check Point application.
2. Tap **About**.
3. Press the **Menu** button on the device.
4. Tap **Write Logs** and then **Enable**.
5. Enter the email address of the system administrator.
6. Tap **OK**.

To send logs:

1. Open the Check Point application.
2. Tap **About**.
3. Press the **Menu** button on the device.
4. Tap **Send Logs**.
5. Select a way to send the logs.

Instructions for End Users

Give these instructions to end users to configure their mobile devices to work with Mobile Access.

iPhone/iPad End User Configuration

Do these procedures on your iPhone/iPad so you can work with Mobile Access.

Before you start, make sure that your administrator gives you:

- The name of the site you will connect to.
- The required Registration key (also called Activation key).

⚠ **Important -** Do only the procedures that your network administrator has instructed you to do.

To connect to the corporate site:

1. Get the Check Point Mobile app from the App Store.
2. When prompted, enter the:
   - Site Name
   - Registration key

To connect to corporate email:

1. Sign in to the Mobile Access site.
2. Tap **Mail Setup**.
3. Do the on-screen instructions.
4. When asked for the password, enter the Exchange password.

To configure logs:

1. Tap **Information**.

   Before login, this is on the top right. After login, this is on the bottom right.
2. Tap **Send Logs** on the navigation bar.

   If you do not have an email account configured on the iPhone, a message shows that one must be configured. After this is done, you must open Check Point Mobile Access again.

   When an email account is configured, the email page opens. The logs are attached.

   Note - The email account that the iPhone uses to send the email is the default account. This might not be your organization's ActiveSync account.

   If the iPhone is not configured for a destination email address for logs, the email that opens has an empty **To** field. You can enter the destination address now, or set up a default destination address for Check Point Mobile logs.

To set up a default destination address:

1. Tap **Settings**.
2. Scroll down to the **Check Point Mobile** icon and tap it.
3. In the **Mobile** global settings, enter the address in **Logs email**.

To disable SSO on a client:

1. Tap **Settings**.
2. Scroll down to the **Check Point Mobile** icon and tap it.

3. In the **Mobile** global settings, tap the **Single Sign On** > **Enabled** switch.

Android End User Configuration

Do these procedures on your Android device so you can work with Mobile Access.

Before you start, make sure that your administrator gives you:

- The name of the site you will connect to.
- The required Registration key (also called Activation key).

Important - Do only the procedures that your network administrator has instructed you to do.

To connect to the corporate site:

1. Get the Check Point Mobile app from the Android Market.
2. When prompted, enter the:
   - Site Name
   - Registration key

To enable logs:

1. Open the Check Point application.
2. Tap **About**.
3. Press the **Menu** button on the device.
4. Tap **Write Logs** and then **Enable**.
5. Enter the email address of the system administrator.
6. Tap **OK**.

To send logs:

1. Open the Check Point application.
2. Tap **About**.
3. Press the **Menu** button on the device.
4. Tap **Send Logs**.
5. Select a way to send the logs.

To disable the server certificate validation for Web applications:

1. Launch the Check Point Mobile app.
2. Log in to the site.
3. Press the menu button and tap **Settings**.
4. Enable **Allow connection to untrusted servers**.

To transfer the client certificate to the 3rd party mail client:

1. Launch the Check Point Mobile app.
2. Log in to the site.
3. Press the menu button and tap **Settings**.
4. From the **Export Certificate** option, tap **Export**. The Export Certificate window opens.

   If the Export Certificate option is disabled, contact the system administrator.
5. Select the certificate format appropriate for your mail client: P12 or PFX.
6. Select the location to save the certificate.
   The default path is /sdcard (for devices that have an SD card) or an external resource folder (for devices that do not have an SD card).
7. Tap **OK** to save the certificate to the selected location.

   A window shows: Export succeeded. Certificate password is: _______
8. You can copy the password to the clipboard. You will need the password when you import the certificate to the third party mail app.

Advanced Gateway Configuration for Handheld Devices

You can customize client authentication, device requirements, certificate details, and ActiveSync behavior. Use the CLI commands explained here to change the configuration file:
`$CVPNDIR/conf/cvpnd.C`

Note - Disable Link Translation Domain on Mobile Access gateways before you connect to them with the Android client.

To apply changes:

Restart the Mobile Access services: `cvpnrestart`

If you use a cluster, copy the `$CVPNDIR/conf/cvpnd.C` file to all cluster members and restart the services on each.

To set Mobile Access attributes:

```
cvpnd_settings set <attribute_name> "<value>"
```

To get the current value of an attribute:

```
cvpnd_settings get <attribute_name>
```

Attribute	Description
ActiveSyncAllowed (true)	If access to ActiveSync applications is allowed.
ActiveSyncExchangeServerAuthenticationMethod (basic)	Method of forwarding authentication from the Mobile Access gateway to the internal Exchange server. Valid values: `basic`, `digest`, `ntlm`
ActiveSyncClientCertificateNeeded (true)	If ActiveSync access for all mobile devices requires a client certificate. Changing this value affects all mobile devices using the gateway.
MobileAppAllowActiveSyncProfileConfig (true)	Make the automatic ActiveSync Profile configuration for iPhones and iPads available to users. If true, only users with authorization to access ActiveSync applications see this feature. If false, no user sees this feature.
MobileAppMinRequiredClientOSVersion (3.1)	Minimum operating system version for iPhones and iPads. If a client fails this requirement, user sees `Your OS version must be upgraded`
MobileAppAndroidMinRequiredClientOSVersion (2.1)	Minimum operating system version for Android. If a client fails this requirement, user sees `Your OS version must be upgraded`
MobileAppMinRecommendedClientOSVersion (3.1)	Recommended operating system version for iPhones and iPads. If a client fails this recommendation, user sees a message but usage continues. Note: value must be equal to or greater than **Required** value, or Mobile Access will not start.

Attribute	Description
MobileAppAndroidMinRecommendedClientOSVersion (2.1)	Recommended operating system version for Android. If a client fails this recommendation, user sees a message but usage continues. Note: value must be equal to or greater than **Required** value, or Mobile Access will not start.
MobileAppMinRequiredClientAppVersion (1.3)	Minimum App version required for iPhones and iPads. If a client fails this requirement, user sees `Application Update Required`
MobileAppAndroidMinRequiredClientAppVersion (1.0)	Minimum App version required for Android. If a client fails this requirement, user sees `Application Update Required`
MobileAppMinRecommendedClientAppVersion (1.3)	Recommended App version for iPhones and iPads. If a client fails this recommendation, user sees a message but usage continues. Note: value must be equal to or greater than **Required** value, or Mobile Access will not start.
MobileAppAndroidMinRecommendedClientAppVersion (1.0)	Recommended App version for Android. If a client fails this recommendation, user sees a message but usage continues. Note: value must be equal to or greater than **Required** value, or Mobile Access will not start.
MobileAppMinClientOSVersionForProfileConfig (3.1)	Minimum operating system version for iPhone and iPad to configure ActiveSync with the app. If you want data encryption, change this value from the default to `4.0`. Make sure the ActiveSync policy (configured on the Exchange server) enforces data encryption.
MobileAppAndroidMinClientOSVersionForProfileConfig (2.1)	Minimum operating system version for Android to configure ActiveSync with the app. If you want data encryption, change this value from the default to `3.0`. Make sure the ActiveSync policy (configured on the Exchange server) enforces data encryption.
MobileAppIncludeLocationInLogs (false)	A GPS feature. When true, iPhones/iPads send physical location data to the gateway, where it is collected and appears in authentication logs.
MobileAppClientSideTimeout (0)	Timeout (in seconds), controlled by the device. If the active Web application is idle for this amount of time, the end-user is redirected to the login page. This protects sensitive data that a user could have left open on the device. The default zero (0) means that the timeout is taken from the Mobile Access **Session** option: **Disconnect idle sessions**. This attribute is not applicable to Android clients.

Attribute	Description
MobileAppBypassESODforApps (false)	When true, mobile apps are allowed access to MAB applications whose protection level requires ESOD compliance. Mobile apps can always access the MAB portal.
MobileAppAllowClientCertExport (false)	When true, allows mobile app clients to export their client certificates to other apps and devices. See Using 3rd Party Android Mail Clients (on page 89).

Chapter 8

User Authentication in Mobile Access

In This Chapter

User Authentication to the Mobile Access Portal

To enter the Mobile Access portal and get access to its applications, users defined in SmartDashboard must authenticate to the Security Gateway. Authentication ensures that a user is who he or she claims to be. Users authenticate using one of these Authentication schemes:

- **Check Point Password -** Users are challenged to enter a password and user name that are stored in the internal Security Gateway database
- **Personal Certificates** - Digital Certificates are issued by the Internal Certificate Authority or by a third party OPSEC certified Certificate Authority.

  For more about User Certificates, see the *R75.40 VPN Administration Guide* *(*http://supportcontent.checkpoint.com/solutions?id=sk76540*).*
- **RADIUS Server** - Remote Authentication Dial-In User Service (RADIUS) is an external authentication scheme. The security gateway forwards authentication requests by remote users to the RADIUS server. The RADIUS server, which stores user account information, authenticates the users. The RADIUS protocol uses UDP for communications with the gateway. RADIUS Servers and RADIUS Server Group objects are defined in SmartDashboard.

  For more about configuring a Security Gateway to use a RADIUS server, see the R75.40 *Firewall Administration Guide (*http://supportcontent.checkpoint.com/solutions?id=sk76540*).*
- **SecurID -** SecurID is a proprietary authentication method of RSA Security. An external SecurID server manages access by changing passwords every few seconds. Each user carries a SecurID token, a piece of hardware that is synchronized with the central server and displays the current password. The security gateway forwards authentication requests by remote users to the ACE/Server.

  For more about configuring a Security Gateway to use SecureID, see the R75.40 *Firewall Administration Guide* (http://supportcontent.checkpoint.com/solutions?id=sk76540).

A user who tries to authenticate with an authentication scheme that is not configured for the Mobile Access gateway will not be allowed to access resources through the gateway.

Optionally, two-factor authentication with DynamicID One Time Password can also be required as a secondary authentication method. When this is configured, users who successfully complete the first-phase authentication are challenged to enter an additional credential: a DynamicID One Time Password (OTP). The OTP is sent to their mobile communications device (such as a mobile phone) through SMS or directly to their email account.

Configuring Authentication

Permitted Authentication schemes must be configured for each Security Gateway.

On the Security Gateway, you can configure authentication in one of two places:

- In the **Gateway Properties** window of a gateway in **Mobile Access** > **Authentication**. If you select an authentication method on this page, that is the method that all users must use to authenticate to Mobile Access. You can configure other authentication methods that users must use for different blades on different pages.

On this page you can also configure per gateway settings for Two- Factor Authentication with a DynamicID One Time Password.

If you do not make a selection on the **Mobile Access** > **Authentication** page, the Security Gateway takes authentication settings for Mobile Access from the gateway **Legacy Authentication** page.

- In the **Gateway Properties** window of a gateway in **Legacy Authentication.** In the **Legacy Authentication** page, you can allow access to users authenticating with different authentication methods. Authentication using Client Certificates from the Internal Certificate Authority is enabled by default in addition to the selected method.

In the **Mobile Access** tab, select **Users and Authentication > Authentication > Authentication to Gateway** to see an overview of the Mobile Access gateways and their allowed authentication schemes.

On this page you can also configure global settings for Two- Factor Authentication with a DynamicID One Time Password that will be used for all gateways that do not have their own DynamicID settings.

How the Gateway Searches for Users

If you configure authentication for a blade from the main Security Gateway **Legacy Authentication** page, the Security Gateway searches for users in a standard way when they try to authenticate. The gateway searches:

1. The internal users database.
2. If the specified user is not defined in this database, the gateway queries the User Directory (LDAP) servers defined in the Account Unit one at a time, and according to their priority.
3. If the information still cannot be found, the gateway uses the external users template to see if there is a match against the generic profile. This generic profile has the default attributes applied to the specified user.

If you configure an authentication method for a specific blade, the gateway searches for users according to the user groups that are used for authorization in that blade.

For example, in Mobile Access, the gateway looks at the Mobile Access policy to see which user groups are part of the policy. When the gateway tries to authenticate a user, it starts to search for users in the databases related to those user groups.

In IPsec VPN, the gateway looks at the Remote Access VPN Community to see which user groups are included. It starts to search for users in the databases related to those user groups.

A search based on the authentication scheme is faster, with better results. You can have users with the same user name in unrelated groups. The gateway will know which user is relevant for the blade based on the user groups.

Two-Factor Authentication with DynamicID

Two-factor authentication is a system where two different methods are used to authenticate Users. Using two-factors as opposed to one delivers a higher level of authentication assurance.

In the first phase of the authentication, users must authenticate to the Mobile Access portal using either:

- One of the authentication methods that is enabled in the **Gateway Properties > Legacy Authentication** page of the gateway.
- The authentication method configured in **Gateway Properties** > **Mobile Access** > **Authentication**. If an authentication method is configured on this page, users must use that method and not other methods configured on the main **Authentication** page of the gateway.

Users who successfully complete the first-phase authentication can be challenged to provide an additional credential: a DynamicID One Time Password (OTP). The OTP is sent to their mobile communications device (such as a mobile phone) via SMS or directly to their email account.

How DynamicID Works

When logging in to the Mobile Access portal, users see an additional authentication challenge such as:

Please type the verification code sent to your phone.

Users enter the one time password that is sent to the configured phone number or email address and they are then admitted to the Mobile Access portal.

On the User Portal sign in screen, the **I didn't get the verification code** link shows. If the user does not receive an SMS or email with the verification code within a short period of time, the user can click that button to receive options for resending the verification code.

Administrators can allow users to select a phone number or email address from a list. Only some of the phone number digits are revealed. Users can then select the correct phone number or email address from the list and click **Send** to resend the verification code. By default, users can request to resend the message three times before they are locked out of the Portal.

Match Word

The Match Word feature ensures that users can identify the correct DynamicID verification code in situations when they may receive multiple messages. Users are provided with a match word on the Login page that will also appear in the correct message. If users receive multiple SMS messages, they can identify the correct one, as it will contain the same match word.

The SMS Service Provider

The DynamicID messages are sent by the SMS service provider that Mobile Access is configured to work with. DynamicID can be configured to work with any SMS provider that is able to accept an HTTP request and translate it into an SMS and that can receive email messages.

If DynamicID is configured to work with email only, an SMS Service Provider is not necessary.

To access the SMS service provider, the proxy settings that are configured in the SmartDashboard Mobile Access tab, **Additional Settings > Network Elements > HTTP Proxy** page are used. If none is defined, no proxy is used.

Whichever provider you work with, in order for the SMS messages to be sent to users, valid account details must be obtained from the provider and be configured in Mobile Access.

SMS Authentication Granularity

Two-factor authentication with DynamicID can be made a requirement for logging in to the gateway. Alternatively, DynamicID authentication can be made a requirement for accessing particular applications. This flexibility allows for varying security clearance levels.

Making two-factor authentication with DynamicID a requirement for accessing specific applications is done by configuring a Protection Level to require two-factor authentication, and associating the Protection Level with Mobile Access applications (see "Two-Factor Authentication per Application" on page 103).

In an environment with multiple Mobile Access gateways, making two-factor authentication a requirement for logging into a particular gateway is done by configuring two-factor authentication for that gateway ("Two-Factor Authentication per Gateway" on page 102).

Basic DynamicID Configuration for SMS or Email

The workflow for basic configuration of two-factor authentication via DynamicID is:

1. Obtaining the SMS provider credentials and/or email settings.
2. Configuring the Phone Directory
3. Basic SmartDashboard Configuration of DynamicID
4. Testing DynamicID Two-Factor Authentication

Obtaining the SMS Provider Credentials

Get these required SMS service provider settings from your SMS provider.

- A URL in the format specified by the SMS provider or a valid email address.
- Account credentials:

- User name
- Password
- API ID (optional and may be left empty)

Note - If DynamicID is configured to work with email only, an SMS Service Provider is not necessary.

Configuring the Phone Directory

The default phone number and email search method is that the gateway searches for phone numbers or email addresses in user records on the LDAP account unit, and then in the phone directory on the local gateway. If the phone number configured is actually an email address, an email will be sent instead of an SMS message. The phone number and email search method can be changed in the **Phone Number or Email Retrieval** section of the **Two-Factor Authentication with DynamicID - Advanced** window.

Configuring Phone Numbers or Email Addresses in LDAP

If users authenticate via LDAP, configure the list of phone numbers on LDAP by defining a phone number or email address for each user. By default, Mobile Access uses the **Mobile** field in the **Telephones** tab. If the phone number configured is actually an email address, an email will be sent instead of an SMS message.

Configuring Phone Numbers or Email Addresses on Each Security Gateway

Configure the list of phone numbers or email addresses on each Mobile Access gateway. For a Mobile Access cluster, configure the directory on each cluster member.

To configure a list of phone numbers on a gateway:

1. Log in to the Mobile Access gateway using a secure console connection.
2. Change to Expert mode: Type `expert` and then the expert mode password.
3. Backup `$CVPNDIR/conf/SmsPhones.lst`
4. Edit `$CVPNDIR/conf/SmsPhones.lst`, and add to it a list of user names and phone numbers, and/or email addresses. The list must be followed by a blank line. Use this syntax:

```
<user name | Full DN> <phone number | email address>
```

Parameter	Meaning
user name or Full DN	Either a user name or, for users that log in using a certificate, the full DN of the certificate.
phone number	All printable characters can be used in the phone number, excluding the space character, which is not allowed. Only the digits are relevant.
email address	A valid email address in the format user@domain.com

Example of acceptable ways to enter users and their phone numbers or email addresses in `$CVPNDIR/conf/SmsPhones.lst`

```
 bob +044-888-8888
jane tom@domain.com
CN=tom,OU=users,O=example.com +044-7777777
CN=mary,OU=users,O=example.com +mary@domain.com
```

Configuring Multiple Phone Numbers

You can let users choose from multiple phone numbers when resending the verification code.

To configure choice of numbers:

- Enter one number in the LDAP directory in the Mobile field and one or more in the gateway configuration file:
  `$CVPNDIR/conf/SmsPhones.lst`

Enter multiple phone numbers separated by white space in the gateway configuration file: `$CVPNDIR/conf/SmsPhones.lst`

For example, user_a 917-555-5555 603-444-4444

Basic SmartDashboard Configuration of DynamicID

To configure DynamicID settings in SmartDashboard:

1. Go to the **Users and Authentication > Authentication > Authentication to Mobile Access** page of the SmartDashboard Mobile Access tab.
2. In the **Authentication Schemes** page, select **Challenge users to provide an OTP received at their mobile device via SMS**.

   This makes two-factor authentication a requirement for logging in to all Mobile Access gateways with authentication settings (configured in the **Additional Settings > Authentication** page of the Mobile Access gateways) of **Use the global settings, configured in the Mobile Access tab, under "Authentication to Mobile Access"**).
3. Fill in the **SMS Provider and Email Settings** field using one of the following formats:

   a) To allow the DynamicID code to be delivered by SMS only, use the following syntax:

   ```
   https://api.example.com/http/sendmsg?api_id=$APIID&use
   r=
   $USERNAME&password=$PASSWORD&to=$PHONE&text=$MESSAGE
   ```

   b) To allow the DynamicID code to be delivered by email only, without an SMS service provider, use the following syntax:

   ```
   mail:TO=$EMAIL;SMTPSERVER=smtp.checkpoint.com;FROM=ssl
   vpn@example.com;BODY=$RAWMESSAGE
   ```

   c) To allow the DynamicID code to be delivered by SMS or email, use the following syntax:

   ```
   sms:https://api.example.com/sendsms.php?username=$USER
   NAME&password=$PASSWORD&phone=$PHONE&smstext=$MESSAGE
   mail:TO=$EMAIL;SMTPSERVER=smtp.checkpoint.com;FROM=ssl
   vpn@example.com;BODY=$RAWMESSAGE
   ```

   The following table explains parameters used in the SMS Provider and Email Settings field. The value of these parameters is automatically used when sending the SMS or email.

Parameter	Meaning
$APIID	The value of this parameter is the API ID.
$USERNAME	The value of this parameter is the username for the SMS provider.
$PASSWORD	The value of this parameter is the password for the SMS provider.
$PHONE	User phone number, as found in Active Directory or in the local file on the gateway, including digits only and without a + sign.
$EMAIL	The email address of the user as found in Active Directory or in the local file on the gateway. If the email address should be different than the listed one, it can be written explicitly.
$MESSAGE	The value of this parameter is the message configured in the Advanced Two-Factor Authentication Configuration Options in SmartDashboard.
$RAWMESSAGE	The text from $Message but without HTTP encoding.

4. In the **SMS Provider Account Credentials** section, enter the credentials received from the SMS provider:
   - **Username**
   - **Password**
   - **API ID** (optional)
5. For additional configuration options, click **Advanced**.

   See Advanced Two-Factor Authentication Configuration Options for more information.
6. Install the policy. Select **Policy > Install**.

Testing Two-Factor Authentication

To test the two-factor authentication via DynamicID, after completing the configuration:

1. Browse to the URL of the Mobile Access portal.
2. Log in as a user. Supply the gateway authentication credentials.
3. Wait to receive the DynamicID code on your mobile communication device or check your email.
4. Enter the DynamicID code in the portal.

You should now be logged in to the Mobile Access portal.

Advanced Two-Factor Authentication Configuration

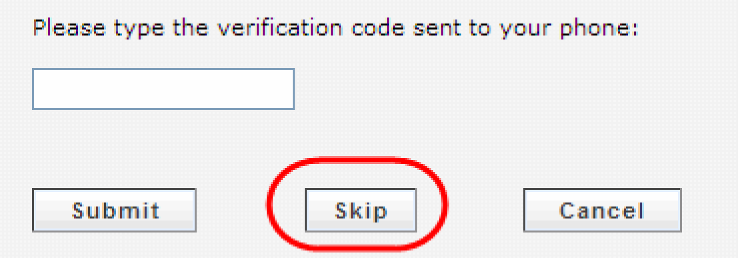
Advanced options for two-factor authentication with DynamicID are available on the SmartDashboard **Users and Authentication > Authentication > Authentication to gateway > Two-Factor Authentication with DynamicID -Advanced** page.

You can also configure advanced options for two-factor authentication per gateway on the **Mobile Access Gateway Properties** window, in the **Additional Settings Authentication > Advanced** page.

The following sections explain the fields.

DynamicID Authentication Enforcement

- **Optional**
  Allow users to log in but deny access to applications that require DynamicID authentication: When users log in, they are given the option to "Skip" the two-factor authentication. Users who choose **skip** are allowed to log in, but are denied access to applications that require two-factor authentication.



Please type the verification code sent to your phone:

- **Mandatory**
  Users must successfully authenticate using DynamicID in order to log in.

DynamicID Message

- **Message text to be sent to the user**

  By default, the text of the message is "**Mobile Access DynamicID one time password:**". The message can contain the template fields shown in the following table to include the user's name and prompt users to use enter a One Time Password.

For example, the message could say: **$NAME, use the verification code $CODE to enter the portal**.

Parameter	Meaning
$NAME	User name used in the first phase of authentication to the portal.
$CODE	Replaced with the One Time Password. By default, $CODE is added to the end of the message.

DynamicID Settings

- **Length of one time password** is 6 digits by default
- **One time password expiration (in minutes)** is 5 minutes by default. Ensure there is a reasonably sufficient time for the message to arrive at the mobile communication device or email account, for the user to retrieve the password, and to type it in.
- **Number of times users can attempt to enter the one time password before the entire authentication process restarts.** By default the user has 3 tries.

Display User Details

- **In the portal, display the phone number or email address that received the DynamicID.** By default, the phone number to which the SMS message was sent is not shown.

Country Code

- **Default country code for phone numbers that do not include country code.** The default country code is added if the phone number stored on the LDAP server or on the local file on the gateway starts with 0.

Phone Number or Email Retrieval

- **Active Directory and Local File**
  Try to retrieve the user details from the Active Directory user record. If unsuccessful, retrieve from the local file on the gateway. The LDAP account unit is defined in the **Users and Authentication > Authentication > LDAP Account Units** page of the SmartDashboard Mobile Access tab. The phone directory on the local gateway is stored at $CVPNDIR/conf/SmsPhones.lst.
- **Active Directory Only**
  Retrieve phone numbers from Active Directory user record without using the local file on the gateway. The LDAP account unit is defined in the **Users and Authentication > Authentication > LDAP Account Units** page of the SmartDashboard Mobile Access tab.
- **Local File Only**
  Retrieve the user details from the local file on the gateway. The phone directory on the local gateway is stored at $CVPNDIR/conf/SmsPhones.lst.

Configuring Resend Verification and Match Word

The DynamicID troubleshooting and match word features are configured in GuiDBedit, Check Point's database tool that is a standard component of the SmartConsole. To run GuiDBedit, access:

```
C:\%ProgramFiles%\CheckPoint\SmartConsole\R75.40\PROGRAM\GuiDBedit.exe
```

The GuiDBedit table to edit depends on the Two Factor Authentication with SMS One Time Password (OTP) setting that you configured in SmartDashboard in the Mobile Access Gateway Properties page > Authentication.

- If your DynamicID One Time Password settings are global across all of your gateways (use the global settings configured in the Mobile Access tab is selected), in GuiDBedit select **Other > Mobile Access Global Properties**.
- If your DynamicID One Time Password settings are configured for a specific gateway (This gateway has its own two-factor authentication settings is selected), in GuiDBedit select network_objects and then select the specific gateway you want to edit.

The following table shows the DynamicID features that can be configured, and where in GuiDBedit to configure them.

Configuring DynamicID Settings in GuiDBedit

Feature	Field Name/s to Edit	Value Options
Match Word	use_message_matching_helper	**true**: match word provided **false**: match word not provided (default)
Resend message	Enable_end_user_re_transmit_message	**true**: enable resend SMS feature (default) **false**: disable resend SMS feature
Display multiple phone numbers	enable_end_user_select_phone_num	**true**: enable option to choose from multiple phone numbers or email addresses when resending the verification code (default) **false**: one phone number or email address from the LDAP server or local file is used automatically without choice
Conceal displayed phone numbers	Edit both: reveal_partial_phone_num number_of_digits_revealed	**true**: conceal part of the phone number or email address (default) **false**: display the full phone number or email address **1-20**: Choose the amount of digits to reveal (default is 4)

After editing the values in GuiDBedit, save the changes, connect to SmartDashboard, and install the policy.

Configuring the Number of Times Messages are Resent

By default, users can request to resend the verification code message three times by clicking the **I didn't get the verification code** link before they are locked out of the Mobile Access Portal. The number of times the message can be resent is configured using the `cvpnd_settings` command from the Mobile Access CLI in expert mode.

The instructions below relate to actually resending the verification code message. The number of times users can try to input the verification code is configured in SmartDashboard in the **Two Factor Authentication Advanced** window.

To change the number of times the verification code message can be resent to 5, run:

```
    cvpnd_settings set smsMaxResendRetries 5
```

You can replace "5" with any other number to configure a different amount of retries.

After making the changes, run `cvpnrestart` to activate the settings.

If the Mobile Access gateway is part of a cluster, be sure to make the same changes on each cluster member.

Two-Factor Authentication per Gateway

Successful two-factor authentication can be made a requirement for logging on to some but not all Mobile Access gateways.

There are two possible approaches:

- **Globally on, with custom settings per gateway**: Turn on two-factor authentication globally, and then for each Mobile Access gateway, configure custom settings: either turn off the feature, or configure gateway-specific settings.
- **Globally off, with custom settings per gateway**: Turn off two-factor authentication globally, and then for selected Mobile Access gateways, turn it on, while configuring custom settings for those gateways.

To configure two-factor authentication Globally on, with custom settings per gateway**:**

1. Set up basic two-factor authentication.
2. Turn on two-factor authentication in the **Users and Authentication > Authentication > Authentication to Gateway** page.
3. For each gateway, go to Gateway Properties > Mobile Access Authentication.
4. Do one of the options:
   - **To use the global settings** - Select **Global settings** and the global settings are used from the **Authentication to Gateway** page of the Mobile Access tab. This is the default.
   - **To turn off two-factor authentication for the gateway** - Select **Custom Settings for this Gateway** and click **Configure.** In the window that opens, do not select the check box. This turns off two-factor authentication for this gateway.
   - **To activate two-factor authentication for the gateway with custom settings -** Select **Custom Settings for this Gateway** and click **Configure.** In the window that opens, select the check box. You must then configure custom SMS Provider Credentials for this gateway. Optionally, configure **Advanced** options.
5. Repeat **step 3** to **step 4** for all other gateways.
6. Install the policy. Select **Policy > Install**.

Two-Factor Authentication per Application

Two-factor authentication can be made a requirement for accessing particular applications. This is done by configuring a Protection Level to require two-factor authentication, and associating the Protection Level with Mobile Access applications.

To configure two-factor authentication per application:

1. Set up basic two-factor authentication. See Basic Two-Factor Authentication Configuration.
2. Configure the Protection Level. See Defining Protection Levels. In the **Authentication** page, select **User must successfully authenticate via SMS.**
3. Assign the protection level to Mobile Access applications that require two-factor authentication. See Using Protection Levels (on page 26).

Changing the SMS Provider Certificates and Protocol

By default, it is recommended to use a secure (https) protocol for communication with the SMS provider. Mobile Access also validates the provider server certificate using a predefined bundle of trusted CAs.

If your SMS provider uses a non-trusted server certificate you can do one of the following:

- Add the server certificate issuer to the trusted CA bundle under `$CVPNDIR/var/ssl/ca-bundle/` and run:
  `$CVPNDIR/bin/rehash_ca_bundle`
- Ignore the server certificate validation by editing `$CVPNDIR/conf/cvpnd.C` and replacing the `SmsWebClientProcArgs` value with `("-k").`

If your SMS provider is working with the non-secure http protocol, edit the file `$CVPNDIR/conf/cvpnd.C` and replace the `SmsWebClientProcArgs` value with `("").`

Two-Factor Authentication for Certain Authentication Methods

You can configure DynamicID to be enforced only if the primary authentication method was of a certain type. For example, you can configure DynamicID to be required if someone authenticates using a user name and password, but not if they use RADIUS authentication.

By default, once configured in SmartDashboard, DynamicID is enforced for all authentication types. Therefore the default `enforceSMSforAuthTypes` parameter in the `cvpnd.C` configuration file is:

```
   :enforceSMSforAuthTypes (
                   : (USER_PASS)
                   : (CERT)
                   : (RADIUS)
                   : (SECURID)
      )
```

To enforce DynamicID only for certain authentication types, remove the authentication types after which DynamicID enforcement is not required. For example, to require DynamicID when a user authenticates using a certificate or user name and password, but not using SECURID or RADIUS authentication, edit the lines:

```
   :enforceSMSforAuthTypes (
                   : (USER_PASS)
                   : (CERT)
     )
```

DynamicID Authentication for Certain Methods and by Protection Level

If, in SmartDashboard, you have configured a Protection Level to require two-factor authentication using DynamicID, the settings configured in the cvpnd.C configuration file will override the Protection Level Authentication settings in SmartDashboard.

For example: You have configured the Restrictive Protection Level to require DynamicID for users authenticating with Certificate authentication, but you have removed CERT from the enforceSMSforAuthTypes parameter. In this case, DynamicID authentication will not be required for anyone using Certificate authentication, even when accessing an application assigned to the Restrictive Protection Level.

Session Settings

Once authenticated, remote users are assigned a Mobile Access *session*. The session provides the context in which Mobile Access processes all subsequent requests until the user logs out or the session ends due to a time-out.

This section discusses Mobile Access settings and best practices for Mobile Access sessions. These settings are configured in SmartDashboard from the Mobile Access tab by selecting **Additional Settings > Session**.

Session Timeouts

Once authenticated, remote users work in a Mobile Access *session* until they log out or the session terminates. Security best practices provide for limiting the length of active and inactive Mobile Access sessions to prevent abuse of secure remote resources.

Note - Mobile Access uses the system time to keep track of session timeouts. Changing the system time may disrupt existing session timeouts. Therefore, it is recommended to change the system time during low activity hours.

Mobile Access provides two types of session timeouts, both of which are configured in SmartDashboard from the Mobile Access tab by selecting **Additional Settings > Session.**

- **Re-authenticate users every** is the maximum session time. When this period is reached, the user must log in again. The default value is 60 minutes. Changing this timeout affects only future sessions, not current sessions.
- **Disconnect idle sessions after** is the disconnection time-out if the connection remains idle. The default value is 15 minutes. When users connect via SSL Network Extender, this timeout does not apply.

Roaming

The **Roaming** option allows users to change their IP addresses during an active session. By default, user requests are denied if sent from a different IP address than that used for login.

Note - SSL Network Extender users can always change IP address while connected, regardless of the Roaming setting.

Tracking

Configure Mobile Access to log session activity, including login attempts, logouts, timeouts, activity states and license expiration warnings.

Securing Authentication Credentials

Having multiple users on the same machine accessing the Mobile Access portal can be a security hazard. A user logged in to the Mobile Access portal can open a new browser window and get the access of the earlier session. Then the user can browse directly to the Mobile Access portal without entering the login credentials again.

To make sure authentication credentials are not stolen by others, recommend to users that they log off or close all browser windows when done using a browser.

Simultaneous Logins to the Portal

Having a single user logged in to Mobile Access more than once, from two different locations for example, is a potential security issue.

Simultaneous login prevention enables a gateway to automatically disconnect a remote user who is logged more than once.

When simultaneous login prevention is enabled, and a user's authentication information used to log in from two different computers, only the later login is considered legitimate, and the earlier session is logged out.

Note - Simultaneous login prevention is available for Connectra NGX R66 and higher, and for Mobile Access.

Configuring Simultaneous Login Prevention

Simultaneous login prevention is configured in SmartDashboard from the Mobile Access tab by selecting **Additional Settings > Session.**

The options are:

- **User is allowed several simultaneous logins to the Portal**

  Simultaneous login detection is disabled. This is the default option.

- **User is allowed only a single login to the portal** *selected*
  Inform user before disconnecting his previous session *not selected*

  The earlier user is disconnected and the later user is allowed. The earlier user is logged out. For Mobile Access portal users, the following message appears: "**Your Mobile Access session has timed out. would you like to sign in again now?**". The later user is not informed that an earlier user is logged in.

- **User is allowed only a single login to the portal** *selected*
  Inform user before disconnecting his previous session *selected*

  The later user is informed that an earlier user is logged in, and is given the choice of canceling the login and retaining the existing session, or logging in and terminating the existing session. If the existing session is terminated, the user is logged out with the message: "**Your Mobile Access session has timed out. would you like to sign in again now?**".

Tracking of Simultaneous Logins

To track simultaneous login events, select **All Events** in the **Tracking** section of the **Additional Settings > Session** page.

When the gateway disconnects a user, the gateway records a log of the disconnection, containing the connection information of both logins.

All disconnect and connect events create a corresponding entry in the traffic log. The following values of the authentication status field relate to simultaneous logins:

- *Success* - User successfully logged in. Existing active sessions were terminated.
- *Inactive* - User successfully authenticated, but existing sessions need to be terminated prior to logging on.
- *Disconnected* - An existing user session has been terminated because the same user has logged on to another session.

Simultaneous Login Issues

The following issues may arise in connection with simultaneous login:

Endpoint Connect- Simultaneous Login Issues

For Endpoint Connect users, Mobile Access does not prevent simultaneous login. This is equivalent to the **User can have several simultaneous logins to the portal** option. An Endpoint Connect user cannot log out another user with the same user name, and cannot be logged out by another user with the same user name.

SecureClient Mobile - Simultaneous Login Issues

With **User can have only a single simultaneous login to the portal** *selected* and **Inform user before disconnecting previous sessions** *not selected* SecureClient Mobile users can be logged off by another user, and can log off other users.

However, the **Inform user before disconnecting his previous session** option does not work, because no message can be sent to those users. User can be logged off, but cannot log off other users.

Other Simultaneous Login Issues

1. When a session is disconnected by another user and SSL Network Extender application mode client is being used, the SSL Network Extender window remains open, while the session is disconnected. Similarly, when a session is disconnected by another user and Secure Workspace is being used, Secure Workspace remains open, while the session is disconnected.
2. When a session is disconnected by another user and Citrix is being used, the Citrix window remains open, while the session is disconnected.
3. All current sessions are deleted when changing the section from **User can have only a single login to the Portal** to **User is allowed several simultaneous logins to the Portal**.

Chapter 9

Endpoint Security On Demand

In This Chapter

Endpoint Compliance Enforcement

The Check Point Endpoint Security On Demand scanner enforces endpoint compliance by scanning the endpoint to see if it complies with a pre-defined endpoint compliance policy. For example, an endpoint compliance policy would make sure that the endpoint client has updated Anti-Virus and an active firewall. If the endpoint is compliant with the endpoint compliance policy, the user is allowed to access the portal.

By ensuring that endpoints comply with a security policy, Endpoint Security On Demand protects enterprises from threats emanating from unsecured endpoint computers that can result in data loss and excessive bandwidth consumption.

The endpoint compliance policy is made up of rules. A policy can specify, for example, that the endpoint machine must have an approved Anti-Virus application, and that it must be free of spyware. A policy could also specify that a machine must be managed by the organization in order to gain full access to internal data and applications.

On gateways of version R71 and higher, a combination of Endpoint Compliance Policy and Secure Workspace Policy can require the following Policy: Any client connecting to the gateway from a machine that is not managed by the organization or that does not meet a specific enforcement policy, must use Check Point Secure Workspace. This ensures that no unauthorized information is accessed.

Endpoint Compliance Policy Granularity

The administrators can make compliance with a policy a requirement for accessing either the portal or specific applications. This makes it possible to assign varying levels of security clearance to the portal and to Mobile Access applications.

Endpoint Compliance policies can be assigned to Mobile Access gateways. They can also be assigned to Protection Levels, which are in turn associated with Mobile Access applications.

- If an Endpoint Compliance policy is assigned to a gateway, endpoint machines must comply with the policy before they are allowed to log in to the portal.
- If an endpoint machine does not comply with the Endpoint Compliance policy on a gateway, users can be required to use Check Point Secure Workspace. This is possible on gateways of version R71 and higher.
- To provide additional protection to an application, it is possible to "harden" the Endpoint Compliance protection that is enforced by the gateway by assigning an Endpoint Compliance policy to a Protection Level, and then assigning that Protection Level to an application.

  In order to access that application, the endpoint machine must comply with the policy associated with the Protection Level, in addition to the policy associated with the gateway.

In either case, the scan takes place *before* logging in to the portal. Only one scan is performed. Compliance to policies is determined according to the results of the scan.

Endpoint Compliance Licensing

To use Endpoint Compliance, a valid Endpoint Security On Demand license is required for the Mobile Access gateway. At least as many Endpoint Security On Demand users as Mobile Access users must be installed.

Endpoint Compliance Policy Rule Types

There are different types of Endpoint Compliance policy rules, for different types of security applications. It is possible to have multiple rules of the same type, each with different settings.

Windows Security Rule

Windows security rules perform Windows-specific checks. For example:

- Check for the latest Windows Service Pack on endpoint.
- Check the enabled/disabled state of the built-in Microsoft Windows Automatic Updates system.
- Check for Microsoft Windows Hotfixes and patches on the endpoint.
- Enforce Windows patches by their ID.

Endpoint computers running Windows must pass these checks in order to gain access to the network.

At least one of the Hotfixes in the rule must be active on the endpoint computer in order for the endpoint to be considered compliant and be granted access to the portal.

The rules also specify the action to be taken if an endpoint computer fails to comply with a rule and the error message that is presented to users in the event of non-compliance, such as remediation information.

Anti-Spyware Application Rule

Choose which Anti-Spyware applications endpoint computers (on the Windows platform) must have to gain access to the network.

Ensure that appropriate Anti-Spyware software is running on endpoint computers, and that the software version and virus signature files are up-to-date.

At least one of the Anti-Spyware applications in the rule must be active on the endpoint computer in order for the endpoint to be considered compliant and be granted access to the portal.

For convenience, Anti-Spyware enforcement rules are pre-configured with supported anti-spyware providers. To require a non-supported Anti-Spyware provider, use a custom check rule.

The rules also specify the action to be taken if an endpoint computer fails to comply with a rule and the error message that is presented to users in the event of non-compliance, such as remediation information.

Anti-Virus Application Rule

Choose which Anti-Virus applications the endpoint computer must have in order to gain access to the network.

Ensure that appropriate Anti-Virus software is running on endpoint computers, and that the software version and virus signature files are up-to-date.

At least one of the Anti-Virus applications in the rule must be active on the endpoint computer in order for the endpoint to be considered compliant and be granted access to the portal.

For convenience, Anti-Virus enforcement rules are pre-configured with supported Anti-Virus providers. To require a non-supported anti-virus provider, use a custom check rule.

The rules also specify the action to be taken if an endpoint computer fails to comply with a rule and the error message that is presented to users in the event of non-compliance, such as remediation information.

Firewall Application Rule

Choose which personal firewall applications endpoint computers (on Windows, Linux or Macintosh platforms) must have to gain access to your network.

Ensure that appropriate firewall software is installed, enabled and running on endpoint computers.

At least one of the firewall applications in the rule must be active on the endpoint computer in order for the endpoint to be considered compliant and be granted access to the portal.

For convenience, firewall enforcement rules are pre-configured with supported firewall providers. To require a non-supported firewall provider, use a custom check rule.

The rules also specify the action to be taken if an endpoint computer fails to comply with a rule and the error message that is presented to users in the event of non-compliance, such as remediation information.

Custom Check Rule

Perform custom checks on endpoint computers (on the Windows, Linux or Macintosh platforms) that are not covered by any of the other rule types. For example:

- Custom applications. These applications may include proprietary spyware scanners that supplement the predefined types and/or other special security solutions.
- Specific files.
- Registry keys or processes running on the endpoint computer.
- Non-English or localized names of processes and files.

Custom check rules can be configured to check for specific versions and modification dates.

The rules also specify the action to be taken if an endpoint computer fails to comply with a rule, and the error message that is presented to users in the event of non-compliance, such as remediation information.

OR Group of Rules

An "OR Group of Rules" rule includes a list of previously defined rules. An endpoint satisfies a rule of type "OR Group of Rules" if it satisfies one or more of the rules included in the "OR Group of Rules" rule.

The rules also specify the action to be taken if an endpoint computer fails to comply with a rule and the error message that is presented to users in the event of non-compliance, such as remediation information.

Spyware Scan Rule

Select the action that should take place for each type of spyware present on endpoint computers.

Customizable protection is available for a wide variety of spyware threats, as shown in the following table:

Spyware Types

Spyware Type	Description
Dialer	Software that change the user's dial-up connection settings so that instead of connecting to a local Internet Service Provider, the user connects to a different network, usually a toll number or international phone number.
Worm	Programs that replicate over a network for the purpose of disrupting communications or damaging software or data.
Keystroke Logger	Programs that record user input activity (keystrokes or mouse activity). Some keystroke loggers transmit the recorded information to third parties.
Hacker Tool	Tools that facilitate unauthorized access to a computer and/or extraction of data from a computer.

Spyware Type	Description
Remote Administration Tool	Commercially developed software that allows remote system access and control.
Trojan	Malicious programs that masquerade as harmless applications.
Adware	Programs that display advertisements or record information about Web use habits and forward it to marketers or advertisers without the user's authorization or knowledge.
Other	Any unsolicited software that secretly performs undesirable actions on a user's computer and does not fit any of the above descriptions.
Screen Logger	Software that record what a user's monitor displays.
Tracking Cookie	Cookies that are used to deliver information about the user's Internet activity to marketers.
Browser Plug-in	Software that modifies or adds browser functionality. Browser plug-ins change the default search page to a pay-per-search site, change the user's home page, or transmit the browser history to a third party.

It is possible to define an exception list of spyware software. For example, you can specify that a specific spyware signature is not blocked (see Excluding a Spyware Signature from a Scan (on page 117)).

The rules also specify the action to be taken if an endpoint computer fails to comply with a rule and the error message that is presented to users in the event of non-compliance, such as remediation information.

Endpoint Compliance Logs

If the end user machine is not compliant with one or more of the Endpoint Compliance policy rules, Mobile Access generates Endpoint Compliance-specific logs with the category "Endpoint Security on Demand" (Endpoint Security On Demand). The log entries appear in SmartView Tracker, and include the:

1. Rule ID and name that causes the authorization failure.
2. Policies that this rules belongs to.

   Note - Mobile Access logs non-compliant rules from all policies, not only the Endpoint Compliance policy that is assigned to the gateway or to an application. This means that there may be entries in SmartView Tracker for rules that do not appear in the report presented to the end user.

3. A description in the "info" field of the log. Two logging levels are available to the administrator: (For configuration details, see Configuring Endpoint Compliance Logs (on page 116).)
   - **Summary**: only one log entry per scan is written to SmartView Tracker. The log entry shows endpoints that do not comply with the Endpoint Compliance policy. The date and time of the scan, the source IP, and the Endpoint Compliance scan ID are logged.
   - **Details**: In addition to the Summary mode information, this adds a log entry for each non-compliant rule. For example, in the case of a Spyware Scan rule that screens for tracking cookies, a log entry is generated that contains the following fields:
     - Malware name: `unwantedexample`.
     - Malware type: `3rd party cookie`.
     - Description: `symptom type: URL. Symptom value: cookie:bob@unwantedexample.net.`

Configuring Endpoint Compliance

The workflow for configuring Endpoint Compliance enforcement is below. Each step is described in detail in the sections that follow:

1. **Plan the Endpoint Compliance Policy**

   Decide on security clearance levels for Mobile Access portals and applications. For example, is it OK for users to gain access to all Mobile Access applications as long as they comply with a single policy? If some resources are more sensitive than others, you may wish to draw up a more stringent policy for some applications than for others.

2. **Use the ICSInfo Tool**

   Set up a stand-alone test computer with all the endpoint security applications you want to create enforcement rules for, and the run the ICSinfo tool to obtain the information needed to correctly define Endpoint Compliance policy rules.

3. **Create Endpoint Compliance Policies**

   Policies are made up of rules. In order to comply with the policy, endpoints must comply with all rules in the policy. Rules can be used in more than one policy. Rules that are not in a policy are not used.

   There are different types of rules for different security applications. The Endpoint Compliance policy configuration tool comes with a number of predefined rules which can be edited to match the needs of the organization.

4. **Configure Endpoint Compliance Settings for Applications and Gateways**

   Configure which Endpoint Compliance Policies should be assigned to which applications and gateways.

   - To make access to the *portal* conditional on passing an Endpoint Compliance scan, assign a policy to a *gateway.*
   - To make access to *applications* conditional on passing an Endpoint Compliance scan:
     - Assign a policy to a *Protection Level.*
     - Assign Protection Levels to Mobile Access *applications*.

5. **Complete the Endpoint Compliance Configuration**

   Configure tracking options for the endpoint scan results, then save and install the security policy

Planning the Endpoint Compliance Policy

Defining the Endpoint Compliance policy for Mobile Access clients involves some planning, prior to performing the SmartDashboard configuration.

You need to define security clearance levels for the both the Mobile Access portal (that is, the gateway) and for portal applications. There are various approaches, and the best one to use depends on how granular you need to make the policy.

Basic Approach

The simplest approach is to define a single Endpoint Compliance policy for the gateway and all applications accessed via the gateway. In this approach, all applications accessed via the gateway are protected by the Endpoint Compliance policy of the gateway. Users whose client machines comply with the policy have access to the portal and all applications.

For example:

Resource	Endpoint Compliance Policy
Gateway A	Low Security
Web App P	Rely on gateway requirements
Web App Q	Rely on gateway requirements
File Share R	Rely on gateway requirements

Advanced Approach

A more advanced approach is appropriate if there is one application (or a small number of applications) that has stricter security requirements than other applications. These additional requirements are specified in a separate Endpoint Compliance policy, which is enforced in addition to the gateway policy. To access the Mobile Access portal, all users must fulfill the threshold security requirements of the gateway policy. Users clicking a link in the portal to an application with additional security requirements are only allowed access to the application if they fulfill those additional requirements.

For example:

Resource	Endpoint Compliance Policy
Gateway A	Low Security
Web App P	Rely on gateway requirements
Web App Q	High Security
File Share R	Rely on gateway requirements

Very Advanced Approach

Where most or every application has its own endpoint security requirements, it is possible to define an individual Endpoint Compliance policy for each application. In this scenario, there are no gateway security requirements: All users are able to access the portal. However, when clicking a link to an application, users are only allowed access if they fulfill the requirements for that application. If no requirements are configured for the application, users are allowed to access it.

For example:

Resource	Endpoint Compliance policy
Gateway A	None
Web App P	Low Security
Web App Q	High Security
File Share R	Medium Security

Example Rules for Endpoint Compliance Policies

The following table illustrates Endpoint Compliance policies with different rules, for different security requirements.

Rule	Description	High Security Endpoint Compliance Policy	Medium Security Endpoint Compliance Policy	Low Security Endpoint Compliance Policy
1	Default Windows Security rule	Yes	Yes	No
2	Anti-Virus applications check	Yes	Yes	Yes
3	Firewall applications check	Yes	Yes	Yes
4	Spyware Scan rule	Yes	No	No

Using the ICSInfo Tool

When defining Endpoint Compliance policy rules, you must use the correct format. This format varies from vendor to vendor. The `ICSinfo.exe` utility scans your computer, and generates an xml file that gives you the information in the correct format for all supported security programs it finds.

Run ICSinfo before configuring the Endpoint Compliance policy rules.

To use the `ICSinfo.exe` utility:

1. Set up a stand-alone test computer with all the endpoint security applications you want to create enforcement rules for. Be sure to apply the latest updates to your security software.
2. Copy the `ICSinfo` tool from the Mobile Access gateway to the test computer. The tool is located at `$CVPNDIR/htdocs/ICS/components/ICSinfo.exe`.
3. Run `ICSinfo.exe`. This utility lists all detected security software, along with the required information in the correct format. The xml format output file `ICSinfo.xml` can be viewed in a browser. The sections of the file can be collapsed or expanded by clicking the - or +.
4. Record the information for each security program and use this information to create your Endpoint Compliance policy rules.

Creating Endpoint Compliance Policies

To create Endpoint Compliance policies, you define rules, and then assign the rules to a policy.

There are different types of rules for different security applications. The Endpoint Compliance policy configuration tool comes with a number of predefined rules which can be edited to match the needs of the organization.

To configure Endpoint Compliance policies:

1. From the SmartDashboard Mobile Access tab navigation tree, select **Endpoint Security On Demand > Endpoint Compliance**.

   The **Endpoint Compliance** page appears**.**
2. Click **Edit policies**.

   The Endpoint Compliance policy configuration tool opens at the **Policies** page.
3. Either create a new Endpoint Compliance policy or edit an existing policy.
   - To create an Endpoint Compliance policy click **New Policy**.

     The **Policies > New Policy** page opens.
   - To edit an existing policy, select the policy and click **Edit**.

     The **Policies > Edit Policy** page opens.
4. Give the policy a **Name**, and a **Description**. The description can be long and detailed.
5. This step applies only to Endpoint Compliance policies that include Spyware Scan rules (Note that a Spyware Scan rule is different from an Anti-Spyware rule):

   If an endpoint machine has a valid Anti-Spyware of Anti-Virus application, you may consider they do not need to undergo an Endpoint Security On Demand Spyware Scan. If that is the case, select **Bypass malware scan if endpoint meets Anti-Virus or Anti-Spyware requirements**.

   Note - This option is disabled if there is no Spyware Scan rule in the policy.
6. Within a Policy, either add previously defined Endpoint Compliance rules, or create new rules or edit previously defined rules. There are different types of rules for different security applications. It is possible to have multiple rules of the same type, each with different settings. See Endpoint Compliance Policy Rule Types (on page 108).
   - To add a previously defined rule, click **Add**.

     The **Add Enforcement Rules** page opens. Select a rule and click **OK**.
   - To create a rule, click **New Rule**, and select the rule type
   - To edit a previously defined rule, select the rule and click **Edit**.
7. Define the rules.

Note - For explanations of the meanings of particular fields in the Endpoint Compliance rule configuration windows, see the online help.

8. Click OK. This takes you back to the Edit Policy or the New Policy page.
9. Click OK. This takes you back to the Policies page.
10. Click OK. This completes the configuration of the Endpoint Compliance Policies, and takes you back to the Endpoint Security On Demand > Endpoint Compliance page.

After the Endpoint Compliance policies are configured, Endpoint Compliance settings can be configured to make use of the polices.

Configuring Endpoint Compliance Settings for Applications and Gateways

The Endpoint Compliance scanner performs a scan on the endpoint computer when the user connects to a Mobile Access portal. Mobile Access enforces the Endpoint Compliance policy, and allows access to the Mobile Access portal applications according to the Endpoint Compliance policy.

To configure Endpoint Compliance:

1. On the **Mobile Access** tab of SmartDashboard, select **Endpoint Security On Demand > Endpoint Compliance** from the navigation tree. The **Endpoint Compliance** page appears**.**
2. In the **Endpoint Security Settings on Mobile Access Gateways** section, select a gateway and click **Edit**.

   The **Endpoint Compliance** page of the **Mobile Access Properties** window opens.
3. Enable **Scan endpoint machine when user connects**.
4. Choose one of the following approaches:
   - Basic Approach: Configuring a Common Policy for the Portal and all Applications (on page 114)
   - Advanced Approach: Configuring a Threshold Policy for the Portal, Hardened for Specific Applications (on page 114)
   - Very Advanced Approach: Configuring Individual Policies for Each Application (on page 115)

Basic Approach: Configuring a Common Policy for the Portal and all Applications

To make access to the *portal* and all applications conditional on passing an Endpoint Compliance scan, assign a policy to the *gateway*:

1. Enable the **Threshold policy to access any application via this gateway, the endpoint must comply with the following policy** option.
2. From the drop-down list, select the Endpoint Compliance policy to be used for all applications accessed via this gateway.
3. Click **OK**.
   This takes you back to the **Endpoint compliance** page.
4. Maintain all applications with their default Endpoint compliance settings. In the **Additional Settings > Protection Level** page of the application, ensure **This application relies on the security requirements of the gateway** is selected.
5. Continue with Configuring Endpoint Compliance Logs (on page 116).

Advanced Approach: Configuring a Threshold Policy for the Portal, Hardened for Specific Applications

To configure the threshold Endpoint Compliance policy for the portal, hardened for specific Mobile Access applications, define a policy for the gateway. Then, for applications that require hardened endpoint security, assign a Protection Level to the application.

1. In the **Endpoint Compliance** page of the gateway, enable the **Threshold policy: to access any application via this gateway, the endpoint must comply with the following policy** option.
2. From the drop-down list, select the default Endpoint Compliance policy to be used for applications accessed via this gateway.

3. Click **OK**.
4. In the Mobile Access tab **Endpoint Compliance** page, select the application that requires hardened endpoint security and click **Edit**.

   The Mobile Access application opens at the **Additional Settings > Protection Level** page. (Mobile Access applications are defined in the **Applications** section of the Mobile Access tab.)
5. Select the second option (**This application has additional...**).
6. From the drop-down list, select a Protection Level for this application.

   To define a new Protection Level, click **Manage** and define the protection level ("Defining Protection Levels" on page 27).
7. Click **OK**.
8. Continue with Configuring Endpoint Compliance Logs (on page 116).

Very Advanced Approach: Configuring Individual Policies for Each Application

It is possible to configure an individual policy for each application. In this scenario, there are no gateway security requirements: All users are able to access the portal. However, when clicking a link to an application, users are only allowed access if they fulfill the requirements for that application. If no requirements are configured for the application, users are allowed to access it.

To configure an individual policy for each application:

1. In the **Endpoint Compliance** page of the gateway, enable the **No threshold** option.
2. Click **OK**.
3. In the Mobile Access tab **Endpoint Compliance** page, select the application that requires hardened endpoint security.
4. Click **Edit.**

   The Mobile Access application opens at the **Additional Settings > Protection Level** page. (Mobile Access applications are defined in the **Applications** section of the Mobile Access tab.)
5. Select the second option (**This application has additional...**), and from the drop-down list, select a Protection Level with the required Endpoint compliance policy for this application.
6. To define a new Protection Level, click **Manage** and define the protection level ("Defining Protection Levels" on page 27).

   Note - If **This application relies on the security requirements of the gateway** is selected for the Mobile Access application, users are allowed to access the application without any Endpoint Compliance requirements.
7. Repeat steps **step 3** to **step 5** for all Mobile Access applications that require hardened endpoint security.
8. Click **OK**.

Configuring Advanced Endpoint Compliance Settings

You can edit the Advanced Endpoint Compliance Settings to configure whether or not to allow access to the gateway and applications if the Endpoint Compliance scanner is not supported on the endpoint operating system.

In the **Endpoint Security On Demand > Endpoint Compliance** page, click **Edit**.

The **Advanced Endpoint Compliance Settings** window opens.

In this window you can decide whether or not to allow access to the gateway and applications if the Endpoint Compliance scanner is not supported on the endpoint operating system.

The Endpoint Compliance scanner supports the following operating systems: Windows, Mac, and Linux.

Configuring Platform-Based Bypass Per OS

If you want to allow some endpoint operating systems to bypass Endpoint Compliance requirements, you must select the **Allow access** option in the **Advanced Endpoint Compliance Settings** window.

For details, see the operating system compatibility table in the Mobile Access Release Notes.

To configure different rules on endpoints with different operating systems, see SecureKnowledge solution sk34989 (http://supportcontent.checkpoint.com/solutions?id=sk34989).

Platform-Based Bypass Per Protection Level

Configuring Endpoint Compliance Settings per Protection Level lets you set Platform-Based Bypass per application.

By default all Advanced Endpoint Compliance Settings are taken from the SmartDashboard configuration, in the Advanced Endpoint Compliance Settings page.

Enabling Platform Based Bypass per Protection Level

To configure different access permissions for various Protection Levels for Endpoint Compliance scanning, run:

```
cvpnd_settings set useICSRelaxedModeInProtectionLevel true
```

To return to the default setting, change `true` to `false` in the above command.

Configuring the Protection Levels that are Bypassed

In the Mobile Access tab of SmartDashboard, under **Additional Settings > Protection Levels**, is a list of Protection Levels. From this page you can edit the Authentication and Endpoint Security settings that are required for applications assigned to each Protection Level. You can also create new Protection Levels.

In the Mobile Access application properties, assign a Protection Level to an application. For example, if you want to allow access to an application only if the user is compliant with Endpoint Compliance policy1, but you also need to accommodate the user connecting from an endpoint that does not support Endpoint Compliance scanning (such as an iPhone), then:

1. Create or use a Protection Level named ESOD_Relaxed_PL which enforces Endpoint Compliance Policy policy1.
2. Assign the Protection Level to the application.
3. Configure the Protection Level as “Bypassed”.

   To configure different access permissions for various Protection Levels for Endpoint Compliance, from the Mobile Access CLI, in expert mode, run:

   ```
   cvpnd_settings listAdd ICSRelaxedModeProtectionLevelNames ESOD_Relaxed_PL
   ```

You can add other Protection Levels as well.

To restore a Protection Level from being "Bypassed", for Endpoint Compliance:

1. Run:

   ```
   cvpnd_settings listRemove
   ICSRelaxedModeProtectionLevelNames
   ```

2. Follow the on-screen instructions.

To finalize the configuration of granular platform-based bypass for Endpoint Security On Demand:

1. Restart the Mobile Access services by running cvpnrestart.

   If the Mobile Access gateway is part of a cluster, be sure to make the same change on each cluster member.
2. In SmartDashboard, assign the Protection Levels to the applications.
3. Install the policy.

Configuring Endpoint Compliance Logs

Mobile Access generates Endpoint Compliance-specific logs. The logs can be viewed using SmartView Tracker, and have the category "Endpoint Security On Demand" (abbreviated in the log entry as "Endpoint Security on Demand"). The Endpoint Security On Demand information can be found on the "info" field of the logs.

For more information, see Endpoint Compliance Logs (on page 110).

To configure tracking options for the Endpoint Compliance scanner:

In the Mobile Access tab of SmartDashboard, select **Endpoint Security On Demand > Endpoint Compliance** from the navigation tree.

In the **Endpoint Compliance** page, in the **Tracking** section, enable **Log the endpoint scan results** to record the results of Endpoint Compliance scans to the log. Select **Details** or **Summary** to determine the level of detail to record in the log file.

The Tracking options are as follows:

- **Summary**: only one log entry per scan is written to SmartView Tracker. The log entry shows endpoints that do not comply with the Endpoint Compliance policy. The date and time of the scan, the source IP, and the Endpoint Compliance scan ID are logged.
- **Details**: In addition to the Summary mode information, this adds a log entry for each non-compliant rule. For example, in the case of a Spyware Scan rule that screens for tracking cookies, a log entry is generated that contains the following fields:

    a) Malware name: `unwantedexample`.

    b) Malware type: `3rd party cookie`.

    c) Description:
    `symptom type: URL. Symptom value: cookie:bob@unwantedexample.net.`

Assign Policies to Gateways and Applications

To assign policies to gateways:

1. On the Endpoint Compliance page, add all Mobile Access gateways to the Endpoint Security Settings on Mobile Access Gateways section.
2. **Edit** any gateway whose access will be conditional on passing an Endpoint Compliance scan. Choose the **Threshold policy** and select S**can the endpoint machine when a user connects**.

To assign policies to applications:

1. To make access to *applications* conditional on passing an Endpoint Compliance scan, assign a policy to a *Protection Level.*
2. Assign Protection Levels to *Mobile Access applications*.

Excluding a Spyware Signature from a Scan

It is possible to exclude a specific spyware from a scan so that its presence on an endpoint computer does not cause the computer to fail the scan. Obtain the name of the spyware signature from a scan report and then modify the Endpoint Compliance policy to exclude that signature.

To exclude a spyware signature from a scan:

1. Configure Mobile Access so that endpoint computers must undergo an Endpoint compliance scan before they connect. The Endpoint Compliance policy must include a Spyware Scan rule.
2. Set up a stand-alone test computer that has the spyware to be excluded from the scan.
3. Run an Endpoint compliance scan on the test computer by connecting from it to Mobile Access.

    When Endpoint Security On Demand detects the spyware (irrespective of the action configured in the Spyware Scan rule), the name of the spyware (something like `Win32.megaspy.passwordthief`) is included in the report.
4. Make a note of the name of the spyware.
5. Open SmartDashboard.
6. In the Mobile Access tab, select **Endpoint Security On Demand > Endpoint Compliance**.
7. Click **Edit Policies**.
8. Select the policy that is applicable to the clients, and click **Edit**.
9. Select the Spyware Scan rule from the list and click **Edit**.
10. In the **Software exception list** section, click **Add**.
11. Type the **Name** of the spyware obtained in step 3, and a **Description**.
12. Click **OK** three times to close the Endpoint Compliance policy editor.

13. Install the policy (**Policy > Install**).

Preventing an Endpoint Compliance Scan Upon Every Login

By default, the end user computer is scanned by the Endpoint Compliance scanner every time the user logs in. This is the default, and most secure configuration.

It is possible to configure Mobile Access so that after logging in, the user is not scanned, even after logging in again, until the end of a timeout period.

For configuration details, see sk34844 (, http://supportcontent.checkpoint.com/solutions?id=sk34844).

Endpoint Compliance Scanner End-User Workflow

The Endpoint Compliance scanner on endpoint computers is supported on browsers that run ActiveX (for Windows with Internet Explorer), or Java.

When using the Endpoint Compliance scanner with Internet Explorer, the browser must be configured to download and run ActiveX controls and to allow Active Scripting. This section explains how to configure Internet Explorer to ensure that the Endpoint Compliance scanner will install and run properly on the endpoint computer.

To configure Internet Explorer for the Endpoint Compliance scanner:

1. Select **Tools > Internet Options** from the Internet Explorer menu.
2. Select the **Security** tab.
3. Select the Web content zone used by the endpoint computer for remote connections from the **Security Settings** window.
4. Click **Custom Level**.
5. Enable the following options in the **Security Settings** window and then click **OK**:
   - Download signed ActiveX controls
   - Run ActiveX controls and plug-ins
   - Script ActiveX controls marked as safe for scripting
   - Active scripting
6. Select the **Privacy tab. Select the Medium** setting and then click **Advanced**.
7. Enable **Override automatic cookie handling** and then enable **Accept** in the **1st party cookies** section.
8. Click **OK**.

Endpoint Compliance Scanner End-User Experience

When a user connects to a portal where the Endpoint Compliance is enabled, the end user computer is scanned before the user sees the login screen.

Note - The Endpoint Compliance scan takes place if Endpoint compliance is configured for any Mobile Access application in a portal, even if accessing the portal itself does not require compliance with any policy.

The Endpoint Compliance Scanner is installed on the endpoint machine, by using ActiveX (for Windows with Internet Explorer), or Java. For more details see First time Installation of ActiveX and Java Components (on page 13).

To login to the Mobile Access Portal with the Endpoint Compliance scanner enabled:

1. Enter the Mobile Access Portal URL in your browser.
2. If using the Endpoint Compliance scanner for the first time on a particular endpoint computer, you are prompted to download and install the Check Point Deployment Agent ActiveX or Java control.

   Some warnings may appear, regarding the Mobile Access site server certificate, and the downloaded applet.
3. During the scan, a progress bar is displayed.

4. If the endpoint computer successfully passes the Endpoint compliance scan, the Mobile Access Portal login screen appears.

   If the endpoint computer fails to pass the scan, Endpoint Security On Demand displays a result screen showing the potentially harmful software and security rule violations detected during the scan.

   - Click on a potentially harmful software item to display a short description of the detected malware, what it does and recommended removal method(s).
   - If the **Continue Anyway** button appears, you can continue and log on to the Mobile Access Portal without removing the malware or correcting the security rule violation.
   - If there is no **Continue Anyway** button, you must remove the detected malware or correct the security rule violation before you can log on to the Mobile Access Portal. When you have corrected the problem, click **Scan again** to repeat the scan.
5. When the Mobile Access Portal login page appears, you can log on normally.

Note - The scan results are presented to the user and the administrator as log entries in the Traffic Log. Each log entry lists the user name, his/her user group, the source computer, malware name, malware type, and malware description.

Using Endpoint Security On Demand with Unsupported Browsers

Endpoint Security On Demand for Mobile Access requires browsers that support ActiveX or Java.

The following sections describe Endpoint Security On Demand behavior when users attempt to access the Mobile Access Portal using an unsupported browser.

- If the **Block access to all applications** option on the Endpoint compliance scan **Policy** page is enabled and *either* of the following conditions exist, the endpoint computer cannot connect to the Mobile Access Portal.
  - The **Prevent Connectivity** option is enabled for at least one malware protection rule.
  - The **Restrict** action is selected for at least one enforcement rule (anti-virus or custom).

    In this case, Endpoint Security On Demand presents an error message and generates a log entry in the administrator's traffic log.
- In all other cases, users can log on to the Mobile Access Portal without passing an Endpoint compliance scan. In some cases, an incompatibility message appears with a **Continue** button that allows users to proceed with Mobile Access login. Endpoint Security On Demand generates a log entry in the administrator's traffic log.
- When an application's Protection Level is configured to require an Endpoint Compliance scan, users can still gain access to the Mobile Access Portal, but cannot run that application.

Preventing Portal Access with Unsupported Browsers

The following steps can prevent users using unsupported browsers from gaining access to the Mobile Access Portal and applications without passing an Endpoint Compliance scan:

- Enable the **Scan endpoint machine when user connects option**, and set a **threshold policy**. This setting is found on the **Endpoint Security On Demand > Endpoint compliance** page.
- Assign Protection Levels that require passing an Endpoint Compliance scan to all applications.
- Prevent users from using an unsupported browser to access the Mobile Access portal by forcing Endpoint Security On Demand to reject all connections from unsupported browsers. Do this by manually editing a Mobile Access configuration file as follows:

  On the Mobile Access gateway, in the `$CVPNDIR/conf/cvpnd.C` file, set the `useMagicBrowser` parameter to '`false`'.

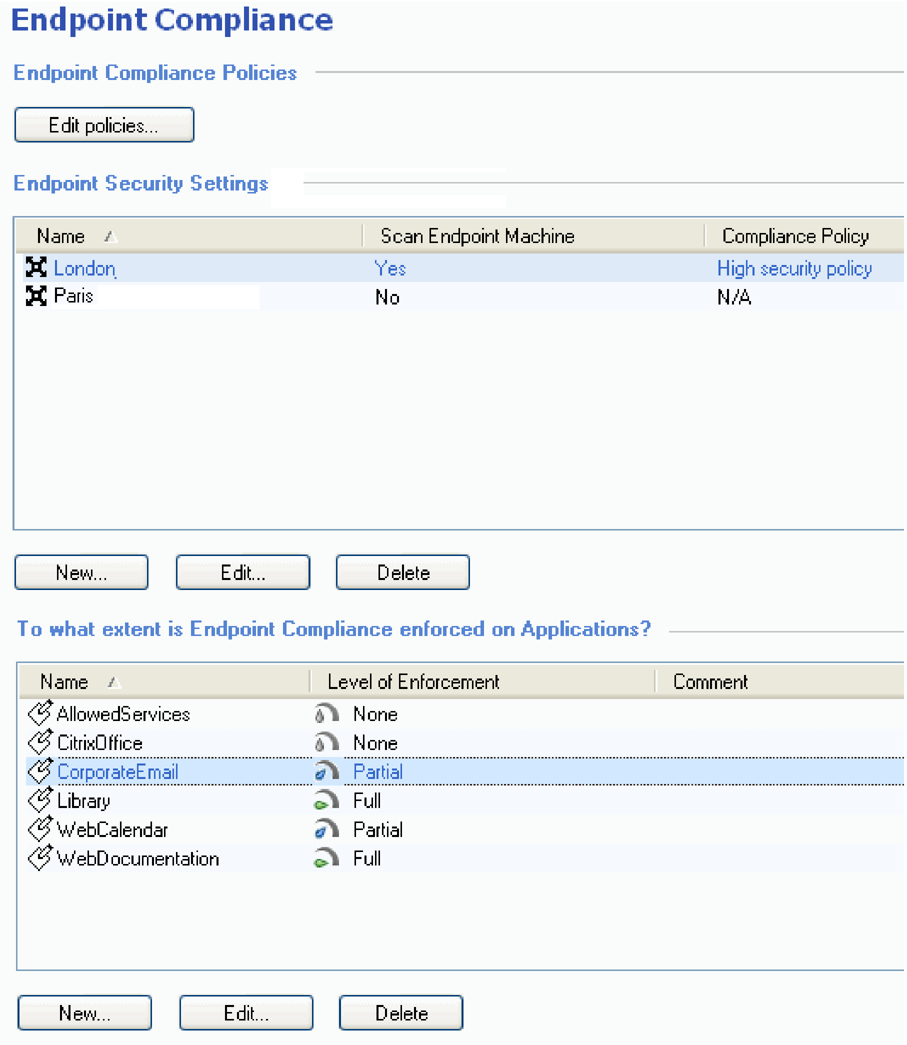
Completing the Endpoint Compliance Configuration

After completing the Endpoint Compliance configuration, take an overall view of the configuration by looking at the **Endpoint Security On Demand > Endpoint Compliance** page of the Mobile Access tab.

The Endpoint Compliance page shows:

- Number of Mobile Access gateways configured to scan endpoint machines.
- Security policy required on the gateway.
- Number of Mobile Access applications, with Level of Enforcement (full, partial, or none).

If this is correct for your organization, save and install the policy.



Endpoint Compliance

Endpoint Compliance Policies

Endpoint Security Settings

Name	Scan Endpoint Machine	Compliance Policy
London	Yes	High security policy
Paris	No	N/A

To what extent is Endpoint Compliance enforced on Applications?

Name	Level of Enforcement	Comment
AllowedServices	None	
CitrixOffice	None	
CorporateEmail	Partial	
Library	Full	
WebCalendar	Partial	
WebDocumentation	Full	

Secure Workspace

Secure Workspace is a security solution that allows remote users to connect to enterprise network resources safely and securely. The Secure Workspace virtual workspace provides a secure environment on endpoint computers that is segregated from the "real" workspace.

No data is allowed to leave this secure environment except through the Mobile Access portal. Also, Secure Workspace users cannot access any applications, files, system tools, or other resources from the virtual workspace unless they are explicitly permitted by the Secure Workspace policy.

Administrators can easily configure Secure Workspace policy to allow or prevent activity according to enterprise requirements.

Secure Workspace creates an encrypted folder called **My Secured Documents** on the virtual desktop that contains temporary files, cookies, registry changes, browser credentials, and so on. It deletes this folder and all other session data when the session terminates.

Secure Workspace severely restricts user's ability to write to "real" workspace folders. However, in order to allow certain applications to run properly, Secure Workspace policy may be configured to permit write access to specific files and folders in the "real" workspace.

After enabling Secure Workspace, administrators can configure a gateway to either require all users to connect to the Mobile Access portal via Secure Workspace, or to give users the option of connecting via Secure Workspace or from their endpoint computers.

For more about support for Secure Workspace by platform, see the *Release Notes* for this release.

Enabling Secure Workspace

To enable Secure Workspace for an Mobile Access gateway:

1. On the SmartDashboard **Mobile Access** tab, select **Endpoint Security On Demand > Secure Workspace**.
2. To configure the Secure Workspace policy, click **Edit policy**.

   For details, see Configuring the Secure Workspace Policy (on page 126).
3. Select the Mobile Access gateway and click **Edit**.

   The **Secure Workspace** page of the Mobile Access gateway opens.
4. To enable Secure Workspace on the gateway, select **This gateway supports access to applications from within the Secure Workspace**.
5. Select any of the following options to choose the behavior of Secure Workspace when a user logs in to the Mobile Access portal:
   - **Allow user to choose whether to use Check Point Secure Workspace**
   - **Users must use Check Point Secure Workspace**
   - **User must use Check Point Secure Workspace only if the following Endpoint Compliance policy is not satisfied -** This option allows you to set a rule that if a certain Endpoint Compliance policy is not satisfied by the client connecting to the gateway, the client must use Secure Workspace. If the Endpoint Compliance policy is satisfied, using Secure Workspace is optional. This option is available on Security Gateways of version R71 or higher.
     - Select the Endpoint Compliance Policy that should be enforced on the gateway. If the criteria of the selected policy are not satisfied, the client connecting must use Secure Workspace.
6. Install the policy.

Configuring Advanced Secure Workspace Settings

In the **Endpoint Security On Demand > Secure Workspace** page, in the A**dvanced Secure Workspace Settings** section, click **Edit**. The **Advanced Secure Workspace Settings** window opens.

In this window you can decide whether or not to allow access to the gateway and applications if Secure Workspace is not supported on the endpoint operating system.

To configure advanced operating system-specific settings, see sk34989 (http://supportcontent.checkpoint.com/solutions?id=sk34989).

Configuring Platform-Based Bypass Per OS in Secure Workspace

If you want to allow some endpoint operating systems to bypass Secure Workspace requirements, you must select the **Allow access** option in the **Advanced Secure Workspace Settings** window.

To configure different rules on endpoints with different operating systems, see sk34989 (http://supportcontent.checkpoint.com/solutions?id=sk34989).

Platform -Based Bypass Per Protection Level in Secure Workspace

Configuring Secure Workspace Settings per Protection Level allows you to configure “Platform-Based Bypass” per application.

By default all Advanced Secure Workspace Settings are taken from the SmartDashboard configuration, in the Advanced **Secure Workspace Settings** page.

Enabling Platform Based Bypass per Protection Level

To configure different access permissions for various Protection Levels for Secure Workspace, from the CLI run:

```
 cvpnd_settings set useISWRelaxedModeInProtectionLevel
true
```

To return to the default setting, change `true` to `false` in the above command.

Configuring the Protection Levels that are Bypassed

In the Mobile Access tab of SmartDashboard, under **Additional Settings > Protection Levels**, is a list of Protection Levels. From this page you can edit the Authentication and Endpoint Security settings that are required for applications assigned to each Protection Level. You can also create new Protection Levels. If you select, **Applications using this protections level can only be accessed from within Check Pint Secure Workspace**, all applications assigned to that Protection level will only be accessed from within Secure Workspace.

However, if you want to allow access to an application only from Secure Workspace, but you also need to accommodate the user connecting from an endpoint that does not support Secure Workspace (such as an iPhone), then:

1. Create or use a Protection Level named ESOD_Relaxed_PL which enforces Endpoint Compliance Policy policy1.
2. Assign the Protection Level to the application.
3. Configure the Protection Level as “Bypassed”.

   To configure different access permissions for various Protection Levels for Secure Workspace, from the Mobile Access CLI, in expert mode, run:

   ```
    cvpnd_settings listAdd ISWRelaxedModeProtectionLevelNames
   ESOD_Relaxed_PL
   ```

You can add other Protection Levels as well.

Restoring a Protection Level from being Bypassed for Secure Workspace

1. Run:

   ```
    cvpnd_settings listRemove
   ISWRelaxedModeProtectionLevelNames
   ```

2. Follow the on-screen instructions.

Finalize the Configuration for Secure Workspace

1. Restart the Mobile Access services by running `cvpnrestart`.

   If the Mobile Access gateway is part of a cluster, be sure to make the same change on each cluster member.
2. In SmartDashboard, assign the Protection Levels to the applications.
3. Install the policy.

Applications Permitted by Secure Workspace

In its default configuration, Secure Workspace allows access to a limited group of applications. This is likely to be sufficient for most end-users working with the Mobile Access Portal and retrieving information from network hosts.

The following table lists the latest version of applications that Secure Workspace permits by default.

Applications Permitted by Secure Workspace by Default

Process Name	Application	Description
DW20.EXE, dwwin.exe	Dr. Watson	A process offers support proper application crash handling.
igfxsrvc.exe	Intel video card driver process	A process offers support video card functional.
iedw.exe	Internet Explorer	Microsoft Internet Explorer web browser
unsecapp.exe	Microsoft Windows process	A process offers support towards compatibility issues.
ieuser.exe	Internet Explorer	Microsoft Internet Explorer web browser
ieinstal.exe	Internet Explorer	Microsoft Internet Explorer web browser
conime.exe	Microsoft Console IME (Input Method Editor)	A process is used when the locale of the computer is set to a non-western language.
runner.exe	CShell ActiveX component	A CShell process required on Windows Vista.
sndvol.exe	Microsoft Windows Volume Control	A process associated with the Microsoft Windows OS.
SearchIndexer.exe	Content indexing service	A Windows Vista service to index modified content.
Acrobat.exe	Adobe Acrobat Writer	A process is used to create and print PDF documents.
acrodist.exe	Adobe Acrobat Distiller	A process is used to create and print PDF documents.
acrotray.exe	Acrobat Traybar Assistant	A process provides a shortcut to additional configuration options for Adobe products and is used to create PDF documents.
telnet.exe	Microsoft Telnet Client	A terminal emulation program for TCP/IP networks.
hypertrm.exe	Microsoft HyperTerminal	A Windows utility that offers Telnet facilities.
Putty.exe	Putty	Free implementation of Telnet and SSH client.
SecureCRT.exe	SecureCRT	Telnet and SSH client implementation from VanDyke Software, Inc.
ptw32.exe	TN3270 Telnet Client	TN3270 telnet client.
pcsfe.exe	TN3270 Telnet Client	IBM Personal Communications Session Manager. A TN3270 telnet client.
ftp.exe	Microsoft FTP Client	Microsoft FTP Utility process that provides basic FTP access.
internat.exe	Predefined Application	Windows process that provides multi-lingual features in Microsoft Windows. This program is important for the stable and secure running of the computer and should not be terminated.

Process Name	Application	Description
Mstsc.exe	Microsoft Remote Desktop	Allows initiation of terminal services commands via command line.
Vncviewer.exe	VNC Viewer	Remote administration tool process from TWD Industries.
radmin.exe	RAdmin	Remote Administrator Server from Famatech Corp.
WISPTIS.EXE	Predefined Application	Process is installed alongside Microsoft office or comes packaged with Windows update. This process handles Windows Ink Services and often runs with Adobe Acrobat Reader.
MSOHELP.EXE	Predefined Application	Microsoft Office 2003 suite process.
MSTORDB.EXE	Predefined Application	Microsoft Office 2003 suite process.
imapi.exe	Predefined Application	Microsoft Windows Image Mastering API process, used for CD recording. This program is important for the stable and secure running of endpoint computers and should not be terminated.
OIS.EXE	Predefined Application	Microsoft Office Picture Manager process.
CPSWS.exe	Check Point Secure Workspace	Check Point Secure Workspace executable. This executable should be allowed in order to enable Secure Workspace to start.
net.exe	Predefined Application	Microsoft Windows OS process that offers additional functions to the Local Area Network.
net1.exe	Predefined Application	Microsoft Windows OS process that offers additional functions to the Local Area Network.
svchost.exe	Predefined Application	Generic Host Process for Win32 Services, an integral part of Microsoft Windows OS. It manages 32-bit DLLs and other services and cannot be stopped or restarted manually.
rundll32.exe	Predefined Application	Process that executes DLLs and places their libraries into memory. This program is important for the stable and secure running of the computer.
msiexec.exe	Predefined Application	Windows Installer Component process. This program is important for the stable and secure running of the computer.
verclsid.exe	Predefined Application	Microsoft Windows OS process that verifies a COM object before the COM object is instantiated by Windows Explorer.
AcroRd32Info.exe	Predefined Application	Adobe Acrobat Reader process. This process starts automatically when opening a PDF file and collects information about this file.
MSOXMLED.exe	Predefined Application	Microsoft Office InfoPath process used by Microsoft Office to open and edit XML files.
java.exe	Predefined Application	Sun Microsystems Java Runtime component

Process Name	Application	Description
javaw.exe	Predefined Application	Sun Microsystems Java Runtime component
jview.exe	Predefined Application	Microsoft Java Virtual Machine Command Line Interpreter
wjview.exe	Predefined Application	Microsoft Java Virtual Machine Command Line Interpreter
helpctr.exe	Predefined Application	Microsoft Windows OS process. Process is initiated when launching online Help in Windows 2000 or later versions.
unregmp2.exe	Predefined Application	Windows Media Player component. A process associated with the Microsoft Windows OS.
sndvol32.exe	Predefined Application	Microsoft Windows Volume Control. A process associated with the Microsoft Windows OS.
STAProxy.exe	Predefined Application	Check Point SNX Application Mode component.
ctfmon.exe	Predefined Application	Microsoft Office Suite process that activates the Alternative User Input Text Input Processor (TIP) and the Microsoft Office XP Language Bar.
mobsync.exe	Predefined Application	Microsoft Synchronization Manager. Process associated with Internet Explorer.
netsh.exe	Predefined Application	Microsoft Windows OS process that allows display or modification of the network configuration of a computer that is currently running.
notepad.exe	Microsoft Notepad	Microsoft Notepad
calc.exe	Microsoft Calculator	Microsoft Calculator
wordpad.exe	Microsoft Wordpad	Microsoft Wordpad
mspaint.exe	Microsoft Paint	Microsoft Paint
winword.exe	Microsoft Word	Microsoft MS Office Word
excel.exe	Microsoft Excel	Microsoft MS Office Excel
powerpnt.exe	Microsoft PowerPoint	Microsoft MS Office PowerPoint
acrord32.exe	Adobe Acrobat Reader	Adobe Acrobat Reader
netscape.exe	Netscape Navigator	Netscape Navigator web browser
mozilla.exe	Mozilla	Mozilla web browser
firefox.exe	Mozilla Firefox	Mozilla Firefox web browser
iexplore.exe	Internet Explorer	Microsoft Internet Explorer web browser
cmd.exe	Predefined Application	Microsoft Windows Command Prompt
Citrix	Predefined Application	Citrix Presentation Server (XenApp) application pool.

SSL Network Extender in Secure Workspace

When using SSL Network Extender inside Secure Workspace, Secure Workspace traffic and traffic from outside the Secure Workspace are encrypted.

Secure Workspace Policy Overview

Secure Workspace governs access to applications and directories on endpoint computers according to a Secure Workspace policy.

Each Mobile Access gateway has its own, individual Secure Workspace policy. The policy:

- Grants or denies permission for users to run applications.
- Allows applications to save files to specific files and directories.
- Defines general portal protection security settings and user experience behavior.

Administrators can add to the list of *Approved Applications*, and can add, edit, or delete applications from the list.

For some applications, you may also need to define locations where the application is allowed to save files that remain after Secure Workspace shuts down. These locations are called *Allowed Save locations*. There is no need to define locations for files that are not needed after Secure Workspace shuts down. Temporary files are deleted when the Secure Workspace is closed.

Secure Workspace includes a built-in Firewall that allows you define *Outbound Firewall Rules*. These are the IP addresses and ports that approved applications are allowed to access. By default, desktop applications are allowed access to all addresses and ports.

Note that settings for the approved applications, save locations, and Outbound Firewall Rules are independent. For example, the save locations are not restricted to a particular application, and similarly, Outbound Firewall Rules apply to all applications.

Integration with Check Point Program Advisor

Secure Workspace can be configured to work together with a Check Point Program Advisor server to check whether an application that is not an approved application is legitimate. Program Advisor identifies programs according to their filename and MD5 hash.

For details of Program Advisor, see your version of the *Endpoint Security Administrator Guide*. If the Program Advisor is used, the sequence of Secure Workspace checks is as follows:

1. User selects a program to run in Secure Workspace.
2. Secure Workspace checks the policy. If the program is not allowed by the Secure Workspace policy, program execution is blocked.
3. If the program is allowed by the policy, Secure Workspace queries the Program Advisor server about the program.
4. Program Advisor returns one of three responses about the application: Trusted, Untrusted, or Unknown.
5. Secure Workspace allows or blocks the application according to the Program Advisor responses, in one the following ways, as defined in the policy:
   - **Allow Trusted only**.
   - **Allow Trusted and Unknown**.

Configuring the Secure Workspace Policy

The Secure Workspace policy determines the permitted activities and behavior that end users will experience when working in Secure Workspace.

To configure the Secure Workspace Policy:

1. On the SmartDashboard Mobile Access tab, select **Endpoint Security On Demand > Secure Workspace**.
2. Configure the Secure Workspace policy. Click **Edit policy**.

   The Secure Workspace Settings window opens.

3. Fill in the fields according to the explanations below.

Portal Protection Settings

- **Prevent endpoint from printing secure documents** prevents any documents in the Secure Workspace being printed
- **Secure clipboard contents** prevents any item copied from inside Secure Workspace from being pasted or saved outside Secure Workspace
- **Enable Program Advisor to validate the integrity of approved applications**. When a user starts an application that is not an Approved Application, Secure Workspace contacts a Check Point Program Advisor server and checks whether the application is legitimate. The server returns one of three responses: The application is trusted; The application is untrusted, or the application is unknown. Configure the Secure Workspace policy to handle Program Advisor responses in one the following ways:
  - **Allow Trusted only**
  - **Allow Trusted and Unknown**

User Experience Settings

- **Prevent endpoint from switching between Secure Workspace and regular desktop** prevents the user from switching back and forth between these environments. Access to the regular desktop is only allowed if Secure Workspace is closed.
- **Enable welcome window** prevents the window that says "Welcome to Secure Workspace" from appearing on the endpoint machine.

Configuring Approved Applications

Approved applications are available from Secure Workspace, and are allowed to run on endpoint computers. You can add, edit or remove applications from the list.

- **Application Name** is the name of the approved application.
- **File Name** is the path and filename corresponding to the application selected. If needed, specify more than one location per application. You can specify it using one of the following formats:
  - Absolute path in the following format: <disk>:\<folder_path>\<binary_name>. Secure Workspace allows the endpoint to run the binary from specified location only. The full path is needed if the location of the program does not appear in the PATH.
  - File name, for example: \<binary_name>. Secure Workspace allows the endpoint to run the binary with the specified name from any location on the disk. Use if the location appears in the PATH.
  - Path with environment variable, for example: <path_with_env_variable(s)>\<binary_name>. Secure Workspace resolves the environment variable on endpoint, and uses its value as part of the path to executable.

Add Application

- **Add shortcut to the Start Menu** adds a shortcut to the application to the Start Menu in the Secure Workspace. The shortcut is only added if the application exists on the client computer.
- **MD5 hash** is the signature of the application. It is possible to add several hashes, for example: one for each version of the application. The ICSinfo tool (see Using the ICSInfo Tool (on page 113)) can be used to calculate the hash function of an application. Alternatively, MD5 calculators are freely available on the Internet.

  Note - Check Point Program Advisor is a more maintainable and reliable way of checking the security and integrity of programs than manually adding MD5 hashes.

Configuring Applications by Vendor

You can configure which applications users can access from Secure Workspace. If a vendor is trusted then all applications from this vendor are trusted.

By default, users can access applications from these vendors. You cannot add a vendor to the list.

Vendor ID	Vendor Name	Description
1	Adobe	Signed by Adobe
2	Apple	Signed by Apple
3	Check Point	Signed by Check Point
4	Computer Associates	Signed by Computer Associates
5	Google	Signed by Google
6	IBM	Signed by IBM
7	Intel	Signed by Intel
8	Microsoft	Signed by Microsoft
9	Mozilla	Signed by Mozilla
10	Oracle	Signed by Oracle
11	Sun	Signed by Sun
12	Rare Ideas	Signed by Rare Ideas

To change user access to vendor applications:

1. Use the instructions in sk34939 (http://supportcontent.checkpoint.com/solutions?id=sk34939) to:
   - Configure Secure Workspace to operate in local mode.
   - Open the local Secure Workspace policy file on the gateway.
2. Find the vendor that you want to change in the local Secure Workspace policy file:
3. Edit the file:

   a) To block user access, add this attribute to the vendor tag: Config="_disabled".

   For example: To block IBM applications, change the IBM line from:

   ```
   <ExecuteVendor id="6" VendorName="IBM" UIDescription="Signed by IBM"/>
   ```
   to
   ```
   <ExecuteVendor id="6" VendorName="IBM" UIDescription="Signed by IBM"
   Config="_disabled"/>
   ```

   b) To allow user access to IBM applications, remove the Config attribute:

   For example: Change the line back to:

   <ExecuteVendor id="6" VendorName="IBM" UIDescription="Signed by IBM"/>

Configuring Allowed Save Locations

- *Allowed Save locations* are locations where the application is allowed to save files that remain after Secure Workspace shuts down. There is no need to define locations for temporary files that can be deleted after Secure Workspace shuts down. Save locations for the default approved applications are predefined.

  A good way of finding out the required save locations is to note the locations specified when installing an application. If after defining an application you are unable to use it, examine Secure Workspace log, which records attempts to save files or access locations that are not allowed.

Configuring Outbound Firewall Rules

Outbound Firewall Rules are IP addresses and ports that approved applications are allowed to access when they make outbound connections.

A default rule allows desktop applications to access to all addresses and ports.

The default rule can be deleted and replaced with more restricted rules. However, configure the rules carefully. At a minimum, define a rule that allows loopback traffic to 127.0.0.1. Also, take into account all ports required by the allowed protocols.

Configuring a Secure Workspace Policy per Gateway

Note - Applies to centrally managed Mobile Access only.

A Secure Workspace policy that is configured in SmartDashboard is applicable for all Mobile Access gateways. To configure a Secure workspace policy that is applicable per gateway, see sk34939 (http://supportcontent.checkpoint.com/solutions?id=sk34939).

Testing the Secure Workspace Policy

SecureKnowledge solution sk31592 (http://supportcontent.checkpoint.com/solutions?id=sk31592) explains how to test a new Secure Workspace policy on a standalone computer, without using Mobile Access.

Secure Workspace End-User Experience

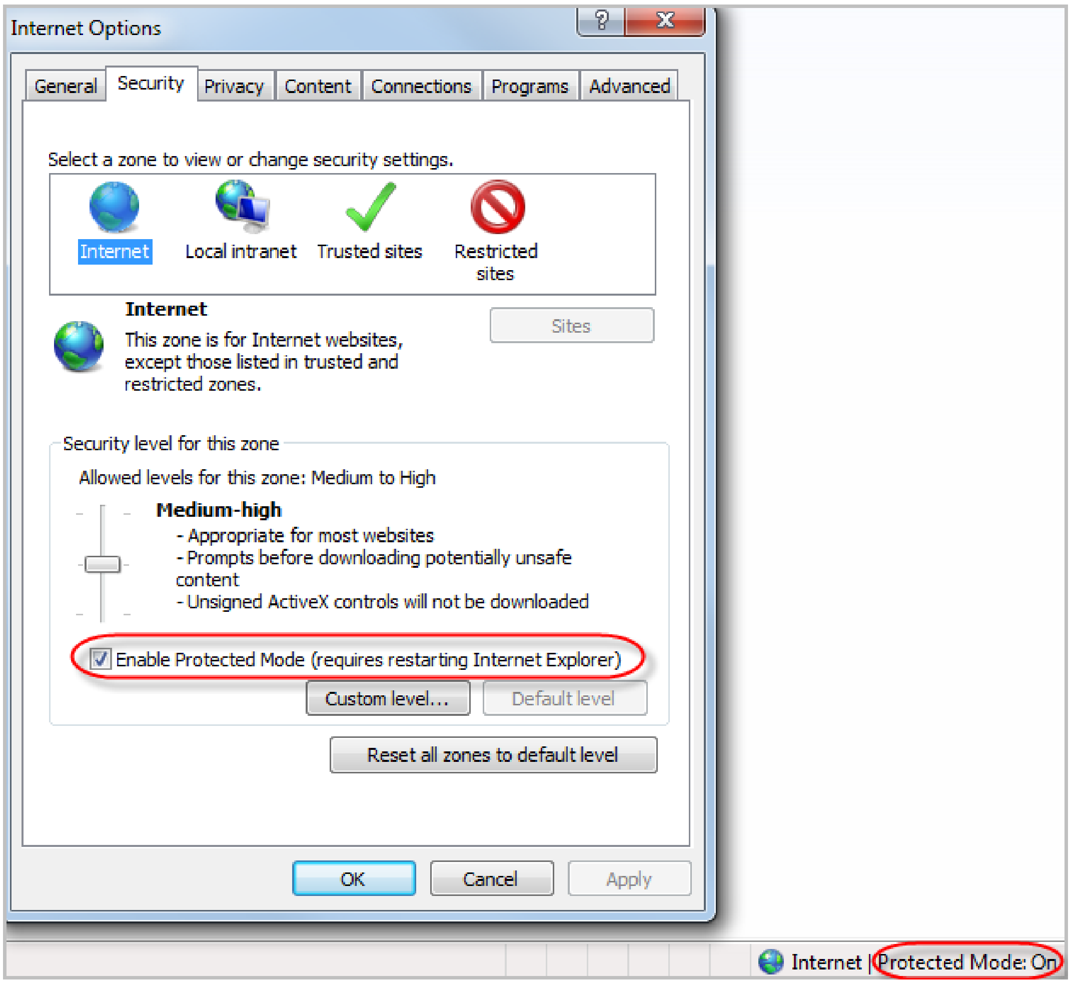
This section provides an overview of the Secure Workspace workflow.

Disabling Internet Explorer Protected Mode

If users use Internet Explorer to open the SSL VPN portal on Windows Vista or Windows 7, they must disable Internet Explorer Protected Mode. If Protected Mode is not disabled, SSL VPN might run, but they can have unexpected errors.

On Windows 7 , protected mode is enabled by default. You can see that it is enabled:

- In the **Internet Options** > **Security** tab. See that **Enable Protected Mode** is selected.
- In the bottom right of the Internet Explorer browser window, it says **Protected Mode On**.



Internet Options

General | Security | Privacy | Content | Connections | Programs | Advanced

Select a zone to view or change security settings.

Internet

This zone is for Internet websites, except those listed in trusted and restricted zones.

Security level for this zone

Allowed levels for this zone: Medium to High

Medium-high

- Appropriate for most websites
- Prompts before downloading potentially unsafe content
- Unsigned ActiveX controls will not be downloaded

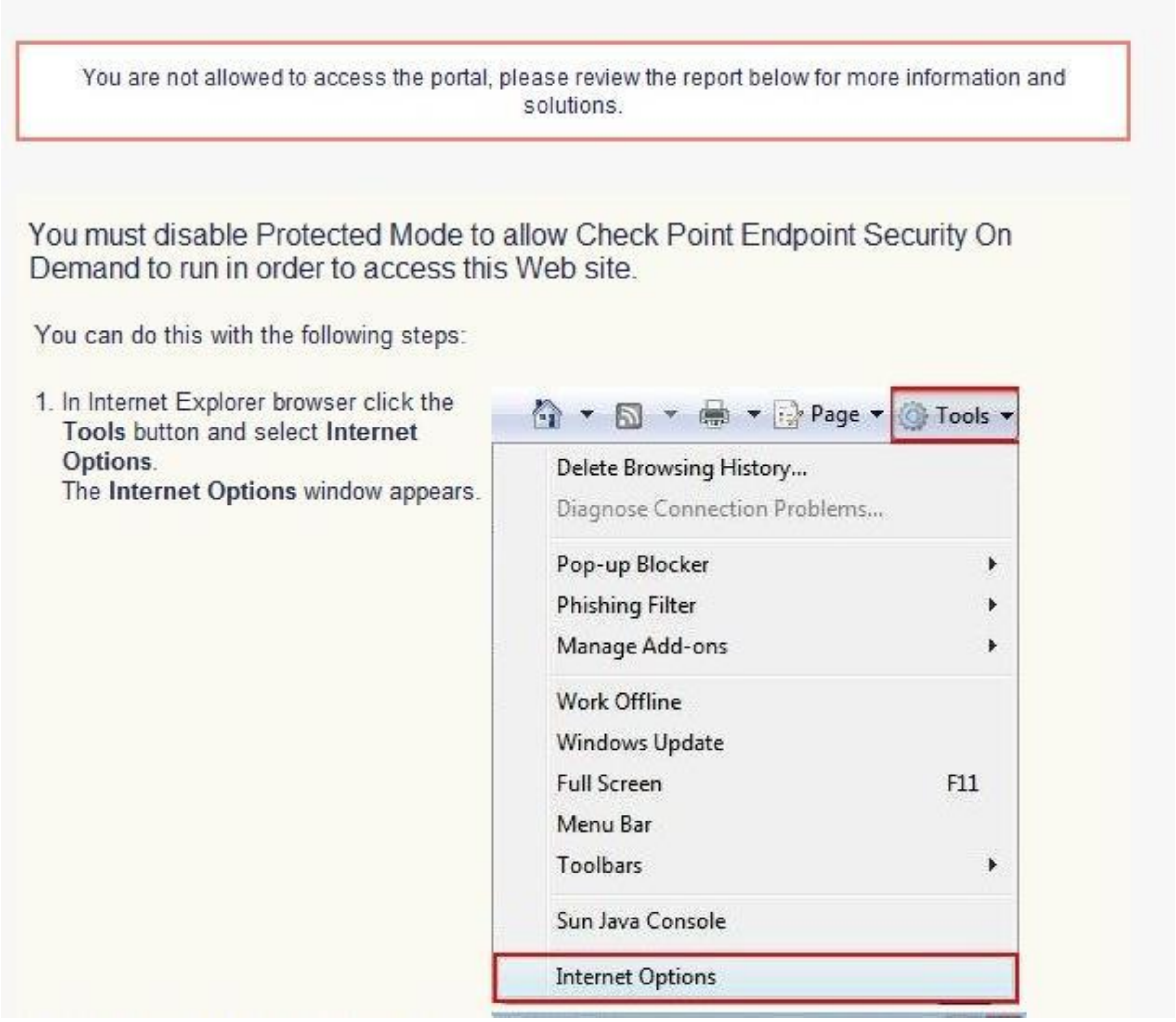
☑ Enable Protected Mode (requires restarting Internet Explorer)

Internet | Protected Mode: On

If Endpoint Security on Demand is configured on the gateway, the scan detects that Protected mode is on and instruction to disable Protected mode open.

If Endpoint Security on Demand is not configured on the gateway, users are not alerted that they must disable Protected mode. However they must do the same steps to disable Protected mode so that they can access the SSL VPN portal without problems.

Here are the instructions that users get to disable Protected Mode. All users must do these steps even if they do not get the instructions automatically.

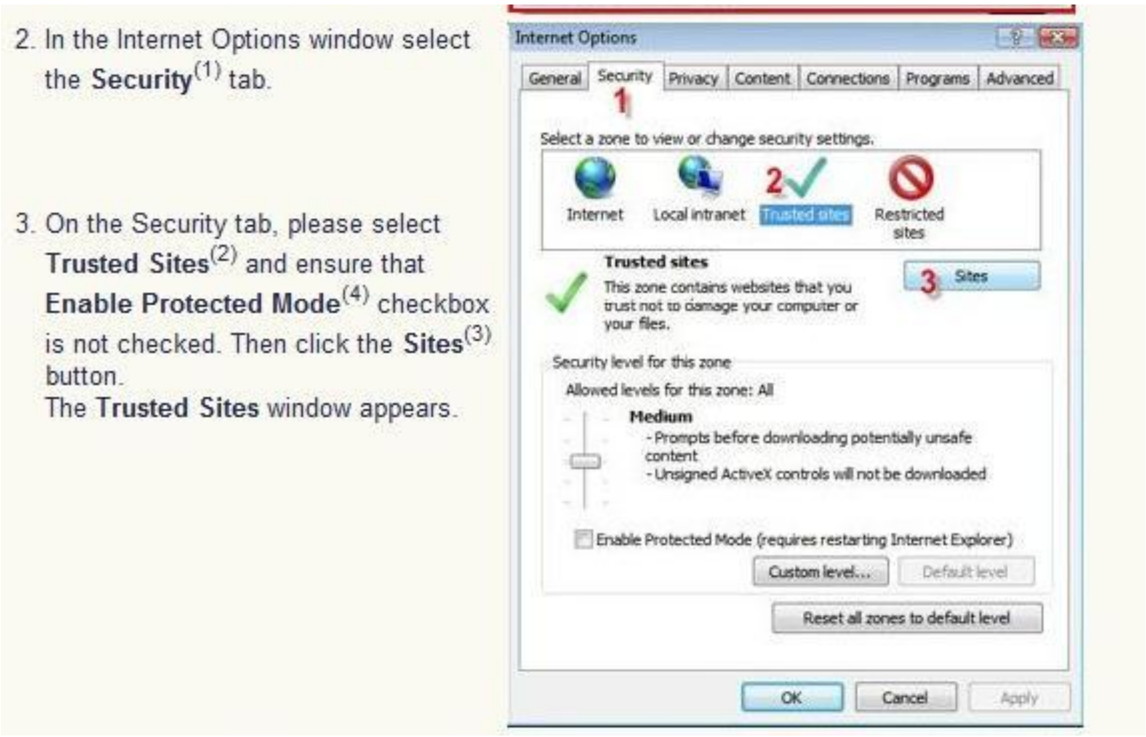


You are not allowed to access the portal, please review the report below for more information and solutions.

You must disable Protected Mode to allow Check Point Endpoint Security On Demand to run in order to access this Web site.

You can do this with the following steps:

1. In Internet Explorer browser click the **Tools** button and select **Internet Options**.
   The **Internet Options** window appears.



2. In the Internet Options window select the **Security**(1) tab.

3. On the Security tab, please select **Trusted Sites**(2) and ensure that **Enable Protected Mode**(4) checkbox is not checked. Then click the **Sites**(3) button.
   The **Trusted Sites** window appears.

Select a zone to view or change security settings.

Trusted sites

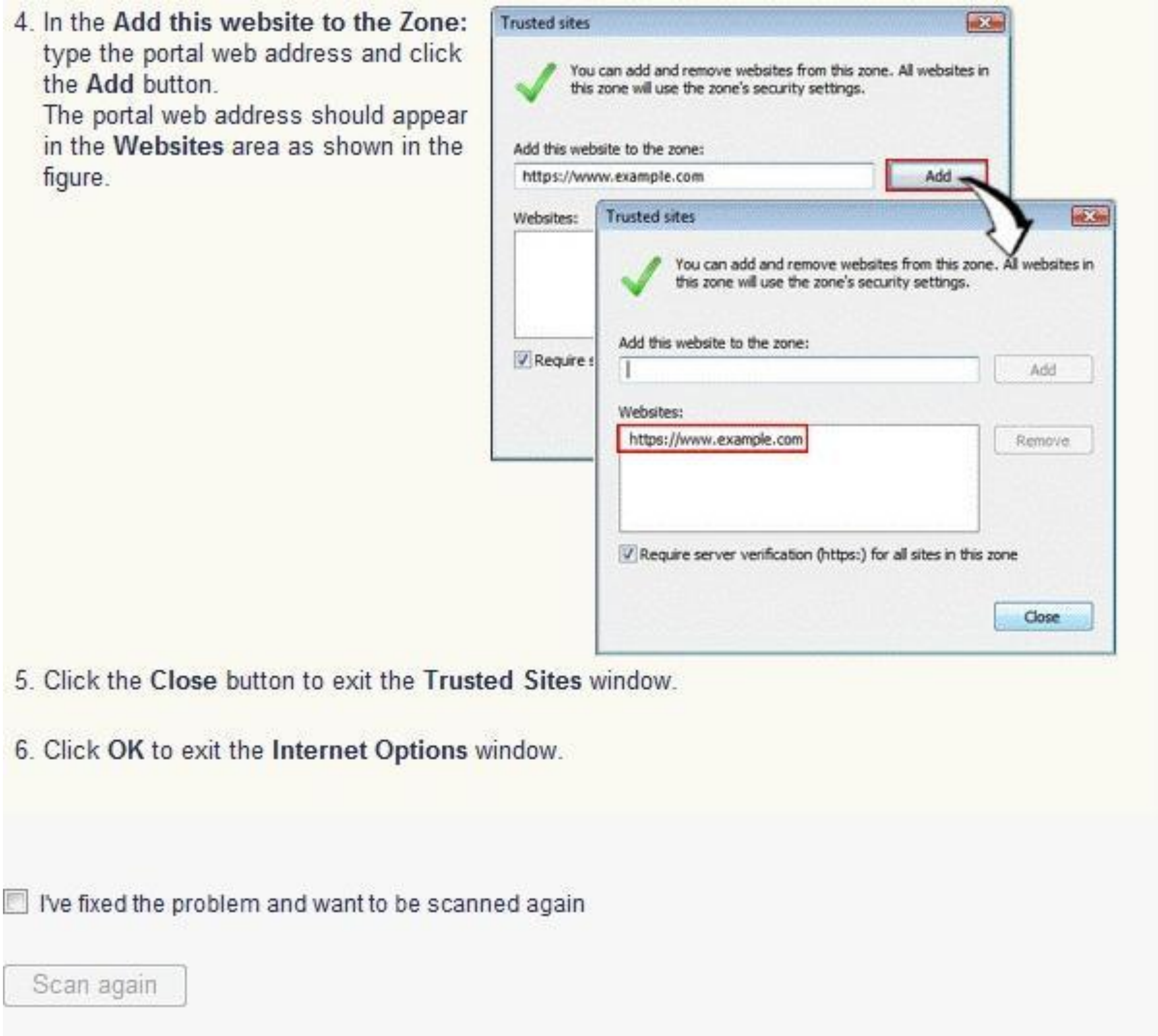
This zone contains websites that you trust not to damage your computer or your files.

Security level for this zone

Allowed levels for this zone: All

Medium
- Prompts before downloading potentially unsafe content
- Unsigned ActiveX controls will not be downloaded

□ Enable Protected Mode (requires restarting Internet Explorer)



4. In the **Add this website to the Zone:** type the portal web address and click the **Add** button.
The portal web address should appear in the **Websites** area as shown in the figure.

Trusted sites
You can add and remove websites from this zone. All websites in this zone will use the zone's security settings.
Add this website to the zone:
https://www.example.com
Add
Websites:
☑ Require s
Trusted sites
You can add and remove websites from this zone. All websites in this zone will use the zone's security settings.
Add this website to the zone:
Add
Websites:
https://www.example.com
Remove
☑ Require server verification (https:) for all sites in this zone
Close

5. Click the **Close** button to exit the **Trusted Sites** window.

6. Click **OK** to exit the **Internet Options** window.

☐ I've fixed the problem and want to be scanned again

After these steps, close all Internet Explorer windows. The next time you open Internet Explorer, Protected mode is off.

Logging on to the Mobile Access Portal Using Secure Workspace

Secure Workspace initializes when a user logs on to the Mobile Access Portal. If the administrator has configured the Mobile Access gateway to require Secure Workspace, this occurs automatically. If the administrator has configured the gateway to allow users to choose whether or not to use Endpoint Security On Demand, an option appears on the Login screen.

To log on using Secure Workspace,

1. Enter the Mobile Access Portal URL in your browser. If the **Use Check Point Secure Workspace option** appears on to login screen, enable it and log on normally.
2. Secure Workspace is installed on the endpoint machine by using ActiveX (for Windows with Internet Explorer), or Java. For more details see First time Installation of ActiveX and Java Components (on page 13).
3. The Mobile Access Portal appears in a browser window on the secure desktop.

Working with the Secure Workspace Virtual Desktop

The Secure Workspace virtual desktop looks and feels like a normal Windows desktop.

The principal difference is that Secure Workspace only allows users to work with a limited number of pre-approved applications and files and, by default, does not allow users to print, customize the desktop or perform any system configuration activities. Since most users only use Secure Workspace to work with the Mobile Access Portal, these functions are rarely needed.

Start Menu and Taskbar

The virtual desktop Start menu and taskbar function in the same manner their "real" counterparts do. Configuration settings in the Secure Workspace policy determine which shortcuts and options are available to users.

Allowing Users to Save Files to the "Real" Desktop

Users occasionally need to download and save files from resources behind the Mobile Access gateway to "real" desktop folders. Conversely remote users may need to upload files to the corporate network from the endpoint computer.

To allow this, this, the administrator must configure the Secure Workspace policy to allow endpoints to switch between the secure and regular desktops. This is accomplished in the **User Experience Settings** section of the Secure Workspace policy editor.

Accessing Files and Applications on the Endpoint Computer

Generally, users can access files and run applications in Secure Workspace in the same manner as on the "real" desktop. Since, by default, users have read-only (access) privileges to all folders and files, they can freely navigate the file system using Windows Explorer. When attempting to run a program or open a file for which a user does not have Secure Workspace permission, an error message appears.

Likewise, if a users attempts to save a file to a "real" desktop folder without Secure Workspace permissions, an error message appears.

Running Secured Programs

Secured programs (those with *execute* privileges) run normally. Administrators can configure the Secure Workspace policy to include such programs in the **Secured Programs** entry on the **Start** menu. Secured programs display the Secure Workspace icon in the upper right-hand corner of the application window title bar.

Accessing Endpoint Applications in Secure Workspace

When SSL Network Extender *network mode* users initiate a Secure Workspace session, permitted Endpoint Applications are available in the virtual desktop as follows:

An Endpoint Application defined in the Native Application as...	... is available to Users as a
Path and executable name (already installed)	Shortcut in the Windows **Start > Program** menu.
Runs via default browser	Shortcut on the desktop.
Downloaded-from-Mobile Access application	Link in the Mobile Access Portal.

Note - During a Secure Workspace session, SSL Network Extender cannot toggle between the Network Mode and the Application Mode. User can change the mode, but must start a new Secure Workspace session after doing so.

Switching Between Secure Workspace and the "Real" Desktop

You can switch back and forth between the Secure Workspace virtual workspace and the "real" desktop at any time. To do so, click the (Lock_Icon) icon, located in the tray area of the taskbar.

Exiting Secure Workspace

To exit Secure Workspace:

1. From the Windows **Start** menu, select **Close Secure Workspace**.

   A confirmation and reminder to save open files appears.

2. Click **Yes, close it now** to continue closing Secure Workspace.

Endpoint Compliance Updates

Check Point provides Endpoint Compliance updates. You can download Endpoint Security On Demand updates from the **Mobile Access** tab in SmartDashboard.

You can configure Endpoint Security On Demand to retrieve updates automatically according to a defined schedule or you can manually download and install the updates.

Working with Automatic Updates

You can periodically check for and automatically download Endpoint Compliance updates. You can choose to download updates from the Check Point Download Center or you can install updates previously downloaded to your Security Management Server.

Note - Before performing an Endpoint Security On Demand update, install a policy at least once.

To configure automatic updates:

1. On the SmartDashboard Mobile Access tab, select **Endpoint Security On Demand > Endpoint Compliance Updates** from the navigation tree.
2. Select **Enable Automatic Updates**.
3. In the **Update Configuration** section, click **Configure**.

   The **Automatic Updates** window opens.
4. On the **User Center Credentials** tab, enter your User Center email address and password.
5. In the **Endpoint Security On Demand** tab, do the following:

   a) To install updates from the Download Center, select the **Check Point website** option.

   b) To install updates from your Security Management Server, select the **My local Security Management Server** option. If you want to install updates from the Download Center when the Security Management Server is unavailable, enable the indicated option.

   c) Select the interval, in minutes, after which Endpoint Security On Demand checks for available downloads.
6. In the **Tracking Configuration** tab, select the various tracking options from the lists. You can select logging events or a variety of alert types.
7. If there is a proxy server between the Security Management Server and the User Center, select the **Proxy** tab, and enter the proxy host name or IP address, and the proxy port number (for example: 8080).
8. Click **OK** to complete the definition.
9. Install the policy on the Mobile Access gateways.

Performing Manual Updates

To perform a manual Endpoint Security On Demand update:

1. In the SmartDashboard **Mobile Access** tab, select **Endpoint Security On Demand** from the navigation tree.
2. Click **Update Databases Now**.
3. Enter your Check Point User Center credentials and click **Next**.
4. Choose the **All supporting gateways** option to download to all available Mobile Access gateways. Alternatively, choose the **Select** option to select specific Mobile Access gateways for update, and then select the desired gateways in the left-hand list and then click **Add**.
5. Click **Finish**. A progress bar appears during the download.
6. Install policies on all affected gateways.

Chapter 10

Advanced Password Management Settings

In This Chapter

If your organization uses Microsoft Active Directory (AD) to manage users, you can use these password settings allow continuous remote access for your users.

Note - Mobile Access does not support Microsoft Active Directory 2000.

Password Expiration Warning

Administrators can configure SmartDashboard to tell users to change their passwords before they expire. This is an efficient way to ensure that users have continuous access to resources. See sk33404 (http://supportcontent.checkpoint.com/solutions?id=sk33404).

Managing Expired Passwords

Passwords expire in these cases:

- The password exceeds the maximum number of days set in **t**he Active Directory Group Policy.
- The **User must change password at next logon** option in the Active Directory configuration is enabled.

When the password expires, a message tells the user that the login failed. The administrator can configure a setting in SmartDashboard to give users the option to enter a new password after the old one expired. Users whose passwords expired then receive a message: **Your password has expired. Enter a new password**. They must then enter and confirm a new password to enter the Mobile Access or VPN client portal.

Configuring Password Change After Expiration

You can configure password change after expiration on gateways of version R71 or higher. Make sure that the LDAP server is configured to work with LDAP over SSL.

To enable password change after expiration:

1. In SmartDashboard, select **Global Properties > User Directory (LDAP)**.
2. Under **User Directory (LDAP) Properties**, select **Enable Password change when a user's Active Directory password expires**.
3. In the **LDAP Account Unit Properties** window, make sure the assigned **Profile** is **Microsoft_AD**.
4. Make sure that the Login DN for the LDAP server, as configured in SmartDashboard, has sufficient permissions to modify the passwords of Active Directory users.
5. In the LDAP Server Properties window in the **Encryption** tab, select **Use Encryption (SSL)**
6. If the LDAP schema of the Active Directory is not extended with Check Point's LDAP schema, use GuiDBedit, the Check Point Database Tool to make these changes:
    - Select **Managed Objects > LDAP > Microsoft_AD > Common**
    - Find `SupportAblE` and change its value to `1`

Chapter 11

Mobile Access Blade Configuration and Settings

In This Chapter

Interoperability with Other Software Blades

The Mobile Access Software Blade is fully integrated with the other Software Blades. Any Security Gateway running on SecurePlatform or Gaia with the Firewall blade enabled can also have the Mobile Access blade enabled.

Most Network objects, Resources, and Users created in SmartDashboard also apply to Mobile Access and can be used when configuring Access to Applications. Similarly, any Network objects, Users and User Groups that you create or modify in Mobile Access appear in the SmartDashboard navigation tree and are usable in all of the SmartDashboard applications.

IPS Blade

When you enable Mobile Access on a Security Gateway certain IPS Web Intelligence protections are activated. The settings of these protections are taken from a local file and are not connected to the IPS profile. These IPS protections always apply to Mobile Access traffic only, even if the Security Gateway does not have the IPS blade enabled.

Disabling Protections for Advanced Troubleshooting

You should only disable the Mobile Access Web Intelligence protections for advanced troubleshooting.

⚠ **Important** - We do not recommend that you deactivate these protections because of potential security risks to the Security Gateway while the protections are off.

To disable the local Web Intelligence protections:

1. Backup the `$CVPNDIR/conf/httpd.conf` configuration file.
2. Edit `$CVPNDIR/conf/httpd.conf` by deleting or commenting out this line:
   `LoadModule wi_module /opt/CPcvpn-<`*current version*`>/lib/libModWI.so`

   Note - <*current version*> is the Check Point version installed. For example, R75.20.

Changing to an IPS Profile Configuration for Mobile Access

We recommend using the local IPS Web Intelligence protections that are automatically configured and activated when you enable the Mobile Access blade. If you want to use the IPS profile that you assign to the

Security Gateway instead of the local file, make sure that certain crucial protections are active so that your Security Gateway stays secure.

To change to a Security Gateway IPS profile configuration for Mobile Access instead of the local configuration:

1. Edit the IPS profile assigned to the Security Gateway to include all of the protections listed in IPS Protections Crucial for Mobile Access (on page 137).
2. From the CLI, run:

```
cvpnd_settings set use_ws_local_configuration false
```

3. When prompted, backup `$CVPNDIR/conf/cvpnd.C`
4. Restart the Check Point processes by running `cvpnstop, cvpnstart.`

Note - If IPS is disabled, Mobile Access will use the local IPS configuration to ensure that the Security Gateway is protected. This is true regardless of the use_ws_local_configuration flag settings.

To switch back to the local, automatic IPS settings for Mobile Access:

1. From the CLI, run:

```
cvpnd_settings set use_ws_local_configuration true
```

2. Restart the Check Point processes by running `cvpnstop, cvpnstart`.

IPS Protections Crucial for Mobile Access

The protections listed below should always be active on Mobile Access traffic. They are included in the local IPS settings that are automatically activated when Mobile Access is enabled on a Security Gateway. See that most but not all are included in the **Recommended_Protection** IPS Profile.

Protection Name	In Recommended_Protection Profile?
HTTP Format Sizes	yes
HTTP Methods	yes
ASCII Only Request	yes
General HTTP Worm Catcher	yes
Directory Traversal	yes
Cross-Site Scripting	no
Command Injection	yes
Header Rejection	yes
Malicious Code Protector	no
Non Compliant HTTP	yes

Anti-Virus and Anti-malware Blade

Certain Anti-Virus settings configured for a Security Gateway in the **Security Gateway > HTTP** page of the **Anti-Virus** tab also apply to Mobile Access traffic. In order to activate Anti-Virus protection, enable the **Anti-Virus and Malware** blade on the Security Gateway.

These settings apply to Mobile Access traffic when **Traditional Anti-Virus** is configured to scan traffic **By File Direction**:

- **Incoming files arriving to** - Inspects traffic that Mobile Access users upload to Mobile Access. (The drop-down menu is not relevant.)

- **Outgoing files leaving** - Inspects the traffic that Mobile Access users download from Mobile Access. (The drop-down menu is not relevant.)
- The **Internal Files** field is not relevant since Mobile Access uses an external interface.
- **Exceptions** are not supported.

If **Traditional Anti-Virus** is configured to scan traffic **By IPs**, all portal traffic is scanned according to the settings defined for the Mail, FTP and HTTP protocols in SmartDashboard.

Mobile Access Anti-Virus protections always work in **proactive mode** regardless of which option you select.

Note - Once SSL Network Extender traffic is rerouted to the Security Gateway, Anti-Virus inspects the traffic as it does to any other unencrypted traffic.

IPsec VPN Blade

The IPsec VPN blade and Mobile Access blade can be enabled on the same gateways. They can be used in parallel to enable optimal site to site and remote access VPN connectivity for your environment.

Certain VPN Clients that worked with Mobile Access in previous versions do not work with the Mobile Access blade on R71 and higher gateways. They only work with the IPsec VPN blade. These are:

- Endpoint Connect
- SecureClient Mobile

SSL Network Extender works either with Mobile Access or with IPsec VPN, however, if the Mobile Access blade is enabled on a gateway, SSL Network Extender must be configured through Mobile Access. If you had SSL Network Extender configured through IPsec VPN and now you enabled the Mobile Access blade on the gateway, you must reconfigure SSL Network Extender policy in the Mobile Access tab of SmartDashboard. Rules regarding SSL Network Extender in the main security rule base are not active if the Mobile Access tab is enabled.

Office mode can be configured either with Mobile Access or with IPsec VPN.

Portal Settings

Each Mobile Access enabled gateway has its own Mobile Access portal that end users browse to for remote access. On the gateway you can configure:

- How the portal can be accessed.
- The look and feel of the portal.
- The default language of the portal.
- An alternative portal for specific user groups.

Portal Accessibility Settings

Configure how users access the Mobile Access portal.

Main URL

Each Mobile Access enabled Security Gateway leads to its own Mobile Access user portal. Remote users log in to the portal using an authentication scheme configured for that Security Gateway.

Remote users access the portal from a Web browser by entering https://<Gateway_IP>/sslvpn, where <Gateway_IP> is:

- Either the FQDN that resolves to the IP address of the Security Gateway
  or
- The IP address of the Security Gateway

If remote users enter http://<Gateway_IP>/sslvpn, they will automatically be redirected to the portal using HTTPS.

Note - If you use Hostname Translation as your method for link translation, you must enter an FQDN as the portal URL and not an IP address.

You set up the URL for the first time in the Mobile Access First Time Wizard.

Aliases

Click the **Aliases** button to **Add** URL aliases that are redirected to the main portal URL. For example, portal.example.com can send users to the portal. To make the alias work, it must be resolved to the main URL on your DNS server.

Certificate

Click **Import** to import a p12 certificate for the portal website to use. If you do not import a certificate, the portal uses a Check Point auto-generated certificate. This might cause browser warnings if the browser does not recognize the gateway's management. All portals on the same IP address use the same certificate.

Accessibility

Click **Edit** to select from where the portal can be accessed. The options are based on the topology configured for the gateway.

- **Through all interfaces**
- **Through internal interfaces**
  - **Including undefined internal interfaces**
  - **Including DMZ internal interfaces**
- **According to the Firewall policy** - Select this if there is a rule that states who can access the portal.

Portal Customization

You can configure the look and feel of the default Mobile Access end user portal. There is a default end user portal for each Mobile Access gateway or cluster.

To customize the Mobile Access end user portal:

1. Go to the Portal Customization page of the gateway in one of these ways:
   - From the properties of the gateway, select **Mobile Access > Portal Customization**.
   - In the SmartDashboard Mobile Access tab, select the **Portal Settings > Portal Customization**.
     - Select a gateway or cluster object and click **Edit**.

   The Portal Customization page opens.
2. Make a selection in each field.

Title of the Portal

Title text (multi-language) of the end user portal, such as the name of your company, or any other text.

Localization

Default language (can be changed by user) localizes the end user portal to the selected language.

Logo in the Portal

Use custom logo image and browse to a location where logos are stored. The logo must be 165 x 35 pixels or smaller. Larger images are resized.

Note - If the custom logo is changed, end users must refresh their browser cache in order see the new logo image.

Clicking the logo redirects to this URL is a URL that can serve as a starting point. It is often used for the URL of the organization's intranet home page.

Localization Features

Mobile Access localizes the user interface of the Mobile Access user portal and the Secure Workspace to multiple languages.

The Mobile Access user portal and the Secure Workspace can be configured by gateway in the **Portal Settings > Portal Customization page** to use these languages:

- English (the default language)
- Bulgarian
- Chinese- Simplified
- Chinese- Traditional
- Finnish
- French
- German
- Italian
- Japanese
- Polish
- Romanian
- Russian
- Spanish

Auto Detection of User Language Preferences

Automatic language detection is an optional feature that gives priority to the language settings in the user's browser over the language chosen by the administrator.

Automatic language detection is activated by configuring the `CVPN_PORTAL_LANGUAGE_AUTO_DETECT` flag in the `Main.virtualhost.conf` file on Mobile Access.

By default, the language preference in the user's browser is not automatically detected. If automatic detection is configured, the language used in SmartDashboard is the first language supported by Mobile Access that is found in the Language Preference list defined in the user's browser settings. If no supported language is found in the Language Preference list in the user's browser, the language set by the administrator in SmartDashboard is used.

To activate automatic language detection, perform the following steps on each cluster member:

1. Open an SSH connection to Mobile Access, or connect to it via a console.
2. Log in to Mobile Access using your administrator user name and password.
3. Change to Expert mode by typing expert and supplying the password.
4. Edit the `$CVPNDIR/conf/includes/Main.virtualhost.conf` file, and change the following line from:

   ```
   SetEnv CVPN_PORTAL_LANGUAGE_AUTO_DETECT 0
   ```

   to:

   ```
   SetEnv CVPN_PORTAL_LANGUAGE_AUTO_DETECT 1
   ```
5. Run the command: `cvpnrestart`.

Language Selection by End Users

Any explicit language selection by the user in any of the portal pages overrides both the administrator's default language setting, and the automatic language detection.

Users can select a language in the user portal sign-in page, in the **Change Language To** field.

Alternative Portal Configuration

It is possible to specify the portal that is presented to users when they sign in to Mobile Access. You can specify alternative portals for different user groups. Users that do not belong to any of these user groups reach the default Mobile Access portal.

Note - There should be an Mobile Access policy rule that includes the alternative portal as a Web application and allows its intended users to access it.

To specify an alternative user portal:

1. In the SmartDashboard Mobile Access tab, select **Portal Settings > Alternative Portal**.
2. Click **Add**. The **Mobile Access Sign-In Home Page** window opens.
3. In the **User Groups** tab, specify user groups that may access the alternative user portal.
4. In the **Install On** tab, specify the Mobile Access gateways and gateway clusters that host the alternative portal.
5. In the **Sign-In Home Page** tab, choose an alternative portal for users, in place of the Mobile Access user portal that users reach by default. **URL** is the location of the alternative user portal for the user group(s) specified in the **User Groups** tab.

When a user belongs to more than one group, the table in the **Alternative Portal** page acts as an ordered rule base. Users are directed to the alternative portal of the first group that they are part of.

Concurrent Connections to the Gateway

In the **Gateway Properties** > **Capacity Optimization,** you can configure the maximum limit for concurrent connections.

When users connect to corporate resources through the Mobile Access blade, it creates multiple connections. For example, from the user to the gateway, and from the gateway to the internal server. Therefore, in an environment with over 1000 remote users, we recommend that you increase the maximum concurrent connections.

For example: The default maximum is 25,000. If you have 2000 mobile access users, increase the maximum to 29,000 (2 times 2000).

Server Certificates

For secure SSL communication, gateways must establish trust with endpoint computers by showing a *Server Certificate*. This section discusses the procedures necessary to generate and install server certificates.

Check Point gateways, by default, use a certificate created by the Internal Certificate Authority on the Security Management Server as their server certificate. Browsers do not trust this certificate. When an endpoint computer tries to connect to the gateway with the default certificate, certificate warning messages open in the browser. To prevent these warnings, the administrator must install a server certificate signed by a trusted certificate authority.

All portals on the same Security Gateway IP address use the same certificate.

Obtaining and Installing a Trusted Server Certificate

To be accepted by an endpoint computer without a warning, gateways must have a server certificate signed by a known certificate authority (such as Entrust, VeriSign or Thawte). This certificate can be issued directly to the gateway, or it can be a chained certificate that with a certification path to a trusted root certificate authority (CA).

Generating the Certificate Signing Request

First, generate a *Certificate Signing Request* (CSR). The CSR is for a *server* certificate, because the gateway acts as a server to the clients.

Note - This procedure creates private key files. If private key files with the same names already exist on the machine, they are overwritten without warning.

1. From the gateway command line, log in to expert mode.
2. Run:

   ```
   cpopenssl req -new -out <CSR file>  -keyout <private key
   file> -config $CPDIR/conf/openssl.cnf
   ```

   This command generates a private key. You see this output:

   ```
   Generating a 2048 bit RSA private key
   .+++
   ...+++
   writing new private key to 'server1.key'
   Enter PEM pass phrase:
   ```

3. Enter a password and confirm. You see this message:

   ```
   You are about to be asked to enter information that will be
   incorporated into your certificate request. What you are
   about to enter is what is called a Distinguished Name or a
   DN. There are quite a few fields but you can leave some blank.
   For some fields there will be a default value. If you enter
   '.', the field will be left blank.
   ```

   Fill in the data.

   - The **Common Name** field is mandatory. This field must have the Fully Qualified Domain Name (FQDN). This is the site that users access. For example: `portal.example.com`.
   - All other fields are optional.

4. Send the CSR file to a trusted certificate authority. Make sure to request a *Signed Certificate* in PEM format. Keep the `.key` private key file.

Generating the P12 File

After you get the Signed Certificate for the gateway from the CA, generate a P12 file that has the Signed Certificate and the private key.

1. Get the Signed Certificate for the gateway from the CA.

   If the signed certificate is in P12 or P7B format, convert these files to a PEM (Base64 encoded) formatted file with a CRT extension.

2. Make sure that the CRT file has the full certificate chain up to a trusted root CA.

   Usually you get the certificate chain from the signing CA. Sometimes it split into separate files. If the signed certificate and the trust chain are in separate files, use a text editor to combine them into one file. Make sure the server certificate is at the top of the CRT file.

3. From the gateway command line, log in to expert mode.
4. Use the `*.crt` file to install the certificate with the `*.key` file that you generated.

   a) Run:

   ```
   cpopenssl pkcs12 -export -out <output file> -in <signed cert chain
   file> -inkey <private key file>
   ```

   For example:
   `cpopenssl pkcs12 -export -out server1.p12 -in server1.crt -inkey server1.key`

   b) Enter the certificate password when prompted.

Generating Wildcard Certificates for Hostname Translation

If you use Hostname Translation, you need a wildcard certificate. This lets clients access Web applications on sub-domains behind the gateway. If Mobile Access uses a fixed domain certificate, client browsers issue certificate warnings when users try to access Web applications in a sub-domain behind the Mobile Access gateway. This is because each Web application URL is translated to a different Mobile Access hostname.

Before you begin, make sure the Hostname Translation support is configured in the DNS server (see "Configuring HT" on page 35) and in the SmartDashboard ("SmartDashboard Configuration of Link Translation" on page 34).

To prepare a request a 3rd-Party wildcard server certificate:

1. In **Subject DN**, start with `CN=`*FQDN*.

   For example: `CN=sslvpn.example.com`
2. In **Alternate Name**, enter two DNS names: the FQDN and the wildcard.

   For example: `sslvpn.example.com, *.sslvpn.example.com`

To configure wildcard certificate generation:

1. Backup and edit the configuration file of the **csr_gen** script. The file is:

   $CPDIR/conf/openssl.cnf
2. In the `[ req ]` section, uncomment the line:
   `req_extensions = v3_req`
3. In the `[ v3_req ]` section, add this line:
   `subjectAltName=DNS:`*FQDN*`,DNS:*.`*ParentDomain*

   For example: `subjectAltName=DNS:sslvpn.example.com,DNS:*.sslvpn.example.com`
4. Save **openssl.cnf**.
5. Run **csr_gen** and create the CSR.

   To make sure the CSR was generated properly, run `cpopenssl req -in requestFile.csr -text`
6. When asked for the CommonName (CN), enter the FQDN. For example: `sslvpn.example.com`
7. Restore the **openssl.cnf** file from the backup.

Note - To support mobile devices with this wildcard certificate, see sk62884 (http://supportcontent.checkpoint.com/solutions?id=sk62884).

Installing the Signed Certificate

Install the Third Party signed certificate to create Trust between the Mobile Access Software Blade and the clients.

All portals on the same IP address use the same certificate. Define the IP address of the portal in the Portal Settings page for the blade/feature.

1. Import the new certificate to the gateway in SmartDashboard from a page that contains the Portal Settings for that blade/feature. For example:
   - **Gateway Properties** > **Mobile Access** > **Portal Settings**
   - **Gateway Properties** > **SecurePlatform Settings**
   - **Gateway Properties** > **Data Loss Prevention**
   - **Gateway Properties** > **Identity Awareness** > **Captive Portal** > **Settings** > **Access Settings**

   In the **Certificate** section, click **Import** or **Replace**.
2. Install the policy on the gateway.

   Note - The **Repository of Certificates** on the IPsec VPN page of the SmartDashboard gateway object is only for self-signed certificates. It does not affect the certificate installed manually using this procedure.

Viewing the Certificate

To see the new certificate from a Web browser:

The gateway uses the certificate when you connect with a browser to the portal. To see the certificate when you connect to the portal, click the lock icon that is next to the address bar in most browsers.

The certificate that users see depends on the actual IP address that they use to access the portal- not only the IP address configured for the portal in SmartDashboard.

To see the new certificate from SmartDashboard:

From a page that contains the portal settings for that blade/feature, click the **View** button in the **Certificate** section.

Web Data Compression

Mobile Access can be configured to compress Web content. This can produce a much faster website for users. It also reduces bandwidth needs, and therefore, costs.

Most compression algorithms, when applied to a plain-text file, can reduce its size by 70% or more, depending on the content in the file.

Be aware that compression does increase the CPU usage of Mobile Access, which in itself does have some performance implications.

Most browsers can accept compressed data, uncompress it and display it.

If configured to compress data, Mobile Access compresses the data received from Web servers (the http or https response). If the Web browser at the endpoint compresses the http or https request, Mobile Access uncompresses it and sends it on to the server. This is illustrated in the figure below.

Mobile Access supports the gzip, deflate, and compress compression methods.

It is possible to specify the mime types that will be compressed.

Configuring Data Compression

Web data compression is configured per gateway in GuiDBedit, the Check Point Database Tool.

To configure data compression by Mobile Access:

Note - In a cluster, perform the following steps on the cluster object.

1. In GuiDBedit, go to n**etwork_objects >** the table of the gateway.
2. Search for **web_compression** under **connectra_settings** and fill in the following parameters:
   - **enable_web_compression** - Enter **true** to enable data compression and **false** to disable it.
   - **compression_level** - Enter e a value between 1 and 9. The higher the number, the more CPU is used. The default is 5.
   - **compress_specific_mime** - Enter **true** if you want to compress specific mime types and **false** if you do not.
   - **mime_types** - If you typed true for **compress_specific_mime**, enter the mime type, for example, **text/html**.
3. Save the changes in GuiDBedit and close it.
4. Install policy on the Security Management Server using SmartDashboard.

Using Mobile Access Clusters

A remote access enabled gateway is a business critical device for an organization. A failure of a gateway results in immediate loss of remote access traffic in and out of the organization. Many of these sessions may be mission critical, and losing them will result in loss of critical data.

Using ClusterXL, you can set up a Load Sharing or High Availability clustering solution that distributes network traffic among Mobile Access cluster members.

A cluster including Mobile Access gateways provides:

- Transparent failover in case of cluster member failure.
- Zero downtime for mission-critical environments.
- Enhanced throughput (in Load Sharing mode).

All cluster members are aware of the sessions tracked through each of the other cluster members. The cluster members synchronize their sessions and status information across a secure synchronization network.

The Sticky Decision Function

If you are using SSL Network Extender, you must enable the Sticky Decision Function.

A connection is *sticky* when all of its packets are handled, in either direction, by a single cluster member.

The Sticky Decision Function distributes sessions from client IPs between the cluster members, and ensures that connections from a given IP always pass through the same member.

How Mobile Access Applications Behave Upon Failover

The table below summarizes the end-user experience upon failover for each Mobile Access application.

Application	**Survives failover?**	**User experience upon failover**
Web browsing through the user portal Domino Web Access Outlook Web Access File Shares	Yes	User is unaware of failover. If the failover happens while a user is clicking a link or waiting for a server response, user may be disconnected and may need to refresh the page.
Web Mail	No	If failover occurs while a user is clicking a link or waiting for a server response, user sees an error page. By clicking the link "Go to the login page" the user returns to the Inbox, and the original session is lost.
Citrix	No	User is disconnected, and the Citrix session is lost. User must actively re-establish a connection.
Endpoint Compliance Scan	Yes	Re-scan may be required if user logs out of the portal, or needs to log in again.
Secure Workspace	Yes	User is unaware of failover. However, if the failover happens while a user is clicking a link or waiting for a server response, user may be disconnected and may need to refresh the page.
Multi challenge login	No	If user is in the middle of a multi-challenge login he/she is redirected to the initial login page.
SSL Network Extender Network Mode	Yes	The user may notice the connection stalling for a few seconds, as if there was a temporary network disconnection.
SSL Network Extender Application Mode	No	SSL Network Extender remains open and in a connected state. However, connections of applications using the VPN tunnel are lost. Some applications (such as Outlook) try to reopen lost connections, while others (Telnet for example) are closed (or exit).
SSL Network Extender—Downloaded-to-Mobile Access applications	Mode dependant	Network Mode — Survives failover. Application Mode — Does not survive failover.

Chapter 12

Troubleshooting Mobile Access

In This Chapter

Troubleshooting Web Connectivity

Web connectivity issues can occur in Mobile Access Web Applications, while working with applications that use/require HTTP cookies. This is because some cookies usually forwarded by Microsoft Internet Explorer to a Web server are not forwarded by Mobile Access in the same scenario. To solve this, see sk31636 (http://supportcontent.checkpoint.com/solutions?id=sk31636).

Troubleshooting Outlook Web Access

Note - This section applies to Outlook Web Access-related issues occurring when working through Mobile Access without SSL Network Extender.

If you have problems with Outlook Web Access (OWA) after deploying Mobile Access:

1. Read the relevant sections in this Administration Guide. See Web Applications (on page 27).
2. Go over the Troubleshooting OWA Checklist.
3. Look for a description that matches your issues in Common OWA Problems (on page 147).

Troubleshooting OWA Checklist

The following sections describe steps to take if you are experiencing problems using Outlook Web Access with Mobile Access.

1. Check your traffic logs for errors. The logs may help you to pinpoint the problem.
2. Reproduce the scenario without Mobile Access and ensure that the problem does not occur.
3. Verify connectivity. Make sure that:
   - The Mobile Access machine has a network route to all relevant Microsoft Exchange servers and relevant server ports are accessible, usually port 80 or 443.

     HTTP and/or HTTPS packets must be able to reach Microsoft Exchange servers.
   - Mobile Access users have a network route to the Mobile Access machine.
4. Verify that your configuration is valid. Make sure that:
   - The Outlook Web Access version is supported by Mobile Access.
   - Client-side browsers are supported by OWA and by Mobile Access.
   - OWA Services are configured to use protocols acceptable by the servers in question. For example, if an Exchange server is configured to accept HTTPS traffic only, the corresponding OWA Web application on Mobile Access must utilize HTTPS.
   - Security restrictions are disabled (see "Troubleshooting Security Restrictions in OWA" on page 149).

- Users are authorized to access all necessary resources.
- OWA services are configured with correct paths, according to the specific version of the Microsoft Exchange server.

Unsupported Feature List

The following OWA features, platforms and product versions are not supported by Mobile Access:

- Outlook Web Access (OWA) 5.5.
- OWA 2000 on Microsoft Exchange 2003. (*)
- Outlook Mobile Access.

(*) These products and platforms have not been tested with Mobile Access. However, Mobile Access has been successfully integrated in such environments.

Note - According to Microsoft, only the following OWA configuration supports non-IE browsers: OWA 2000 / 2003 running on Microsoft Exchange 2003 using "Outlook Web Access Basic" scheme.

If you must utilize one of these features, use SSL Network Extender.

Common OWA problems

These sections describe issues related to browsing to OWA through Mobile Access.

Note - Examine your traffic logs for errors, to pinpoint the problem.

Troubleshooting Authentication with OWA

After users log in to Mobile Access, and attempt to access an OWA application, they are required by OWA to provide authentication credentials.

Outlook Web Access has two authentication schemes: the regular HTTP-based authentication (HBA), which is the default, and Form-Based authentication (FBA). In addition, Mobile Access supports single sign-on (SSO) through HBA and FBA.

HBA Problems

If an internal Web Server requests Integrated Windows Authentication (NTLM) or any other HTTP-based authentication, Mobile Access either displays a dialog box requesting login credentials, or tries to use the user's portal credentials, depending on the configuration of the Mobile Access Web application. HBA-related problems may result from the use of IIS web-based password management services.

IIS Web applications (such as Outlook Web Access) can be configured to use IIS Web-based password management services. These services make it possible for users to change their Windows NT passwords via a web server. These services use IIS HTR technology which is known to be vulnerable to attack, and can allow an attacker to run malicious code on the user system. Microsoft has long advocated that customers disable HTR on their Web servers, unless there is a business-critical need for the technology (Microsoft Security Bulletin MS02-028)..

In keeping with the Microsoft recommendation, IPS protects against HTR exploits by default. If you wish to allow the use of the HTR mechanism, deactivate the "htr" worm pattern in the IPS **General HTTP Worm Catcher** protection. Install the Security policy from SmartDashboard after making these changes.

Single Sign On Problems

When troubleshooting, eliminate the possibility of Single Sign On problems by removing the OWA user credentials from the credentials list in the Mobile Access user portal.

Troubleshooting Authorization with OWA

The authorization mechanisms of Mobile Access allow administrators to grant access to various resources on a per-path, per-host and per-port basis. Mobile Access views Outlook Web Access as a Web application with special properties, connecting to a special Web server.

Authorization-related problems may result from:

- **Discrepancies in the OWA Web Application Configuration** (on page 148) versus the setup in Microsoft Exchange server.
- **Alternative References to OWA** (on page 148).

User experiences may vary widely. However, most authorization failures will result in the following error message: Error: Access denied. The destination of your request has not been configured , or you do not have authorization access to it. (401).

Discrepancies in the OWA Web Application Configuration

Possible discrepancies may occur in the configuration of the OWA port, protocol or paths versus the setup of the corresponding Microsoft Exchange server.

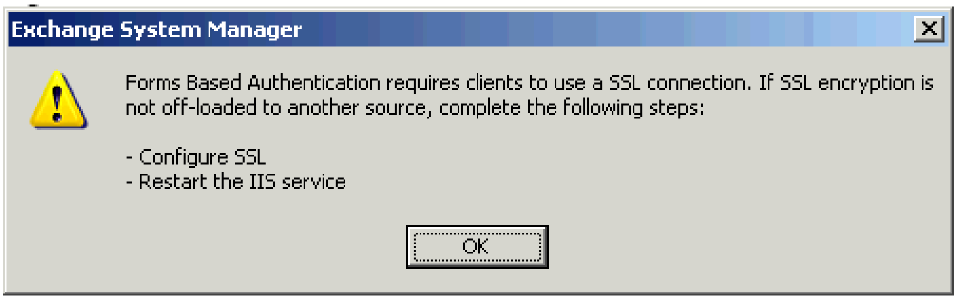
OWA Service must be configured in accordance with the Microsoft Exchange server configuration. Otherwise, Mobile Access will not be able to authorize access to the application.

Authorization Example Scenario

A user launches an OWA application, gets to the Form-Based Authentication (FBA) page and authenticates using his/her credentials. Subsequently, the user gets the "Access denied" page.

Cause: The Microsoft Exchange server side component (IIS or other) is configured to accept both HTTP and HTTPS traffic, whereas the Mobile Access OWA Web application is configured to authorize HTTP traffic only.

Explanation: The Form Based Authentication setting on the Microsoft Exchange server requires clients to use SSL, which means that some server-side component (be it IIS or other) must also accept SSL traffic. The following message is displayed to the Microsoft Exchange administrator upon FBA configuration:



Forms Based Authentication requires clients to use a SSL connection. If SSL encryption is not off-loaded to another source, complete the following steps:

- Configure SSL
- Restart the IIS service

This means that IIS is likely to be configured to work over SSL. However, in complex cases, such as SSL encryption being off-loaded to another source, and the IIS server itself allowing HTTP traffic, the Mobile Access administrator may not be aware of the need to authorize HTTPS traffic. As a result, discrepancies may occur.

Note - When FBA is in use, always set the OWA Web application to allow HTTPS traffic.

Solution: Make sure that the OWA application configuration on the Mobile Access blade matches the configuration requirements of the Microsoft Exchange server.

Alternative References to OWA

Some companies access their OWA applications via intermediary websites. These intermediary websites may reference the OWA server by its IP(s) or host name(s). If, when defining access to the OWA server, the intermediary website is ignored, it can cause an authorization failure in Mobile Access.

User experiences may vary. In some cases the problem may result in a run-time JavaScript error or OWA becomes unresponsive (see Insufficient User Permissions for more information).

To troubleshoot such problems, test OWA operations without using any mediator (such as proxies, gateways or websites).

Troubleshooting Security Restrictions in OWA

Mobile Access utilizes many built-in security features that screen inner networks from external threats. In addition, the Mobile Access endpoint security features protect the endpoint devices.

Occasionally, protection mechanisms may interfere with legitimate user activities. To eliminate this possibility, switch off all Web Intelligence protections during troubleshooting and the install the security policy.

User experiences may vary widely so they are not detailed here. Use the following steps to troubleshoot issues with security restrictions.

1. Check the traffic log to see if any relevant URL was blocked due to security restrictions.
2. To reduce the number of false-positives:
    - In SmartDashboard, in the IPS tab, go to **Protections > By Protocol > Integrated > Web Intelligence** and turn all Application Layer Protection Level settings to *Low*.
    - In the **ASCII Only Request** protection, clear **Block non ASCII characters in form fields**.
    - Install the Security policy from SmartDashboard.
3. If Step 2 did not solve the problem, try the following:
    - Modify the **Endpoint Compliance** page of the Mobile Access Web Application to **Allow caching of all content**.
    - In SmartDashboard, in the IPS tab, go to **Web Intelligence** and
        - In the **HTTP Protocol Inspection > HTTP Methods** protection, clear **Block standard Unsafe HTTP methods**.
        - In the **Malicious Code > General HTTP Worm Catcher** protection, disable the "htr" worm pattern.
    - Install the Security Policy from the administration portal.
4. If Step 3 did not solve the problem, try the following steps in order:

    a) Turn off all Web Intelligence protections.

    b) Turn off all IPS protections.

    c) Install the Security policy from SmartDashboard.

Troubleshooting Performance Issues in OWA

Performance issues may occur with OWA for the following reasons:

- Logging Issues (see "Mobile Access Logging Issues" on page 149)
- OWA over SSL or OWA with Form Based Authentication Enabled (on page 150)
- Slow Network Problems (on page 150)
- Latency Overhead Problems (on page 150)
- Authorization Problems
- SSL Time-out Problems (on page 151)

Mobile Access Logging Issues

Generations of Debug and Trace logs (that are accessed via the console), and the storage of these log records when they grow too big, may considerably degrade the performance of the machine.

Note - Traffic and event logs (that are accessible using the SmartConsole clients) do not degrade the performance of Mobile Access.

To get rid of these logs, turn off Debug logs, Trace logs and purge existing Debug logs and Trace logs.

To turn off Debug logs and Trace logs:

1. Modify `$CVPNDIR/conf/httpd.conf as follows:`
   a) Set the `LogLevel` parameter to `emerg`.
   b) Make sure the following lines are commented. Commented lines are preceded by `#`:

      ```
      #CvpnTraceLogMaxByte 10000000
      #CvpnWsDebugSubjects ...
      ```
2. Run the `cvpnrestart` command
3. If you have a Mobile Access cluster, repeat on all cluster members.

To purge existing Debug logs and Trace logs:

1. Empty or delete all `httpd.log*` files located in `$CVPNDIR/log` directory
2. Empty or delete the `mod_ws.log` file located in `$CVPNDIR/log` directory
3. Empty or delete the `mod_ws_boa.log` file located in `$CVPNDIR/log` directory
4. Delete all files located under `$CVPNDIR/log/trace_log` directory
5. If you have a Mobile Access cluster, repeat on all cluster members.

OWA over SSL or OWA with Form Based Authentication Enabled

The Outlook Web Access service can be configured to work over SSL inside secure networks. This option is normally used if the Microsoft Exchange server is configured to accept SSL-encrypted traffic (HTTPS).

This is the case if OWA is configured to use Form Based Authentication (FBA). Upon enabling FBA, the Exchange administrator is prompted by the IIS to change the Web application to work over SSL.

Configuring OWA to use SSL inside secure networks may cause degradation in performance and browsing experience. This is because, in such a topology, the amount of SSL negotiations grows considerably. SSL negotiations are very CPU-intensive, and therefore may cause performance degradation.

To solve this problem:

- Change the topology to use HTTP instead of HTTPS inside secure networks.
- Use a stronger machine.

Slow Network Problems

Introducing Mobile Access into an OWA topology allows users to connect to enterprise resources from remote locations.

Users connecting from remote locations may be subject to temporary or permanent network problems. The rate of packet loss in those networks can vary widely, as can the throughput.

Latency Overhead Problems

Mobile Access inspects and modifies all HTTP traffic passing through the gateway. It takes time to process each particular packet of information.

There is therefore a difference in latency between connections passing through Mobile Access and those that do not. The overhead in absolute elapsed time is proportional to the amount of data passed through the network.

Latency and therefore performance problems when working through Mobile Access may be felt in particular by users with large numbers of emails, calendar events, task items and the like.

To solve this problem:

Minimize the latency overhead by increasing the performance of Mobile Access. You can do this by using a stronger machine.

SSL Time-out Problems

SSL time-out problems can occur with Internet Explorer while working through Mobile Access. They can cause slowness and even temporary or permanent unresponsiveness of the browser.

To solve this problem:

- If feasible, upgrade Internet Explorer by following the instructions in the relevant Microsoft articles below.
- Alternatively, configure Mobile Access so that it does not use keep-alive packets when communicating with those hosts or paths.

See these Microsoft articles for more information:

- http://support.microsoft.com/kb/183110/
- http://support.microsoft.com/?kbid=831167
- http://support.microsoft.com/?scid=kb;EN-US;Q305217

To configure Mobile Access to work without keep-alive packets to specific locations:

1. Supply additional `LocationMatch` directives for each host used by the Web Application in question. All directives go in the `$CVPNDIR/conf/includes/Main.virtualhost.conf` file, in the `VirtualHost` section.

   For more information, see: http://httpd.apache.org/docs/2.0/mod/core.html#locationmatch

   ```
    <LocationMatch "CVPNHost=<IP or DNS namedelimited by
   dots>">
     SetEnv nokeepalive
   </LocationMatch>
   ```

   For example:

   ```
    <LocationMatch "CVPNHost=208\.77\.188\.166">
      SetEnv nokeepalive
   </LocationMatch>
   ........
   <LocationMatch
   "CVPNHost=myhost\.example\.com|CVPNHost=myhost">
      SetEnv nokeepalive
   </LocationMatch>
   ```

2. Run `cpstop` and then `cpstart`.
3. Repeat for each Mobile Access cluster member (if any).

Saving File Attachments with OWA

When trying to save a file attachment with Outlook Web Access (OWA), Mobile Access adds the full path to the file name. For example, the file name appears something like:

```
Bulletin1H.PDF,CVPNHost=192.168.201.6,CVPNProtocol=http,CVPNOrg=full
,CVPNExtension=.PDF
```

To solve this, configure the Web Application to use Path Translation or Hostname Translation ("Link Translation" on page 33).

Troubleshooting File Shares

- Mobile Access gives an informative error message when an attempt to access a file share fails. However, if a user tries to access a share that does not exist on the file server, Mobile Access cannot always distinguish this error from an Access Denied error. In this case the user may be presented with the credentials input form again, or get an Access Denied error.
- The Windows Explorer viewer can normally be used for browsing website. However, the Mobile Access SSL Network Extender window may not load properly when using it, and the user may be presented with the Mobile Access login page. It is recommended to use the Web-based viewer instead.

- When browsing file shares through the Mobile Access user portal, users can open most files by clicking them. However, some files, for example .wmv extension files, cannot be opened that way, and must be downloaded to the local desktop and opened from there. When using the Mobile Access Web-based file viewer, download the file by right-clicking on the file and choosing "Save Target As...". When using the Windows File Explorer viewer, download the file by copying or drag-and-dropping it to the local desktop.
- When accessing files via Mobile Access, the client application used to view a file depends on the file type. Some file types (such as jpg files) can be configured to be opened by a Web browser. In some client configurations, the result of opening such a file may show the Mobile Access login page instead of the requested file. If this happens, verify that the client uses the latest recommended browser version including all patches and fixes. Specifically, install Internet Explorer patch Q823353 on the endpoint.

Troubleshooting Citrix

Note - This Citrix troubleshooting section pertains to Citrix-related issues occurring when working through Mobile Access without the use of SSL Network Extender.

If you have issues with Citrix after the deployment of Mobile Access, see the section on Citrix Services (on page 43) and then try the troubleshooting checklist.

Troubleshooting Citrix Checklist

Follow the steps below to pinpoint the issue that may be causing trouble with Citrix.

Connectivity Issues

1. Make sure that Mobile Access has a network route to all Web Interface servers intended to be used and relevant server ports are accessible. Usually ports 80 or 443.

   HTTP and/or HTTPS protocols must be traversable towards Web Interface servers.
2. Make sure that Mobile Access has a network route to all Presentation servers intended to be used and relevant server ports are accessible. Usually ports 1494 or 2598.

   ICA protocol must be traversable towards Presentation servers.
3. Make sure that Mobile Access machine has a network route to all STA servers intended to be used, if any, and port 80 on STA servers is accessible, and HTTP protocol is traversable.
4. Make sure that Mobile Access users have a network route to the Mobile Access machine.

Configuration Issues

1. Make sure that Citrix servers and clients are of those versions supported by Mobile Access.
2. Make sure that all necessary STA servers are configured with corresponding Citrix Services on Mobile Access.
3. Make sure that the Mobile Access server certificate:
   - is issued to the Fully Qualified Domain Name (such as www.example.com) of the gateway.
   - is properly configured.
   - is trusted by the client-side.

Index