Using VMware Horizon Client for Android

VMware Horizon Client for Android 4.1

vmware®

You can find the most up-to-date technical documentation on the VMware Web site at:

https://docs.vmware.com/

The VMware Web site also provides the latest product updates.

If you have comments about this documentation, submit your feedback to:

docfeedback@vmware.com

VMware, Inc.
3401 Hillview Ave.
Palo Alto, CA 94304
www.vmware.com

Contents

Using VMware Horizon Client for Android

This guide, *Using VMware Horizon Client for Android*, provides information about installing and using VMware Horizon® Client™ software on an Android device to connect to a remote desktop or application in the datacenter.

The information in this document includes system requirements and instructions for installing Horizon Client for Android. This document also provides tips for improving the user experience of navigating and using Windows desktop elements on an Android device.

This information is intended for administrators who must set up a View deployment that includes Android client devices. The information is written for experienced system administrators who are familiar with virtual machine technology and datacenter operations.

Setup and Installation 1

Setting up a View deployment for Android clients involves using certain Connection Server configuration settings, meeting the system requirements for View servers and Android device clients, and installing the Horizon Client app.

Note In Horizon 7 and later, View Administrator is renamed Horizon Administrator. This document uses the name View Administrator to refer to both View Administrator and Horizon Administrator.

This chapter includes the following topics:

System Requirements

You can install Horizon Client on Android devices.

The Android device on which you install Horizon Client, and the peripherals it uses, must meet certain system requirements.

Android operating systems	■ Android 4 (Ice Cream Sandwich) ■ Android 4.1, 4.2, and 4.3 (Jelly Bean) ■ Android 4.4 (KitKat) ■ Android 5 (Lollipop) ■ Android 6 (Marshmallow)
CPU architecture	■ ARM ■ x86
External keyboards	(Optional) Bluetooth and docked keyboard devices. For information about the external devices that your specific device supports, see the documentation from the device manufacturer.
Smart cards	See "Smart Card Authentication Requirements," on page 9.
Connection Server, Security Server, and View Agent or Horizon Agent	Latest maintenance release of View 5.3.x and later releases. VMware recommends that you use a security server so that your device will not require a VPN connection. To use the Unity Touch feature with View 5.3.x desktops, the Remote Experience Agent must be installed on the desktops. Remote applications are available on Horizon 6.0 with View and later servers.
Display protocol for View	■ PCoIP ■ VMware Blast (requires Horizon Agent 7.0 or later)

System Requirements for Thin Clients

You can install Horizon Client on certain thin clients.

The thin client on which you install Horizon Client, and the external input devices it uses, must meet certain system requirements.

Thin client models and Android operating systems	■ Remix Mini with Android 5.1 (RemixOS 2.0.205 or later) ■ NVIDIA SHIELD Android TV with Android 6.0

- Amazon Fire TV (1st Generation) with Android 5.1

External input devices

Horizon Client generally works with any external input device, including keyboards and controllers, that works with your thin client. For information about the devices that your specific thin client supports, see the documentation from the device manufacturer.

Horizon Client requirements

Enable the **Thin Client mode** setting in Horizon Client. See "Configure Horizon Client in Thin Client Mode," on page 13.

System Requirements for Real-Time Audio-Video

Real-Time Audio-Video works with standard audio devices and with standard conferencing applications such as Skype, WebEx, and Google Hangouts. To support Real-Time Audio-Video, your View deployment must meet certain software and hardware requirements.

Important Only the audio-in feature is supported. The video feature is not supported.

View remote desktop

The desktops must have View Agent 5.3 or later installed. For View Agent 5.3 desktops, the desktops must also have the corresponding Remote Experience Agent installed. For example, if View Agent 5.3 is installed, you must also install the Remote Experience Agent from View 5.3 Feature Pack 1. See the *View Feature Pack Installation and Administration* document for View. If you have View Agent 6.0 or later, or Horizon Agent 7.0 or later, no feature pack is required.

Real-Time Audio-Video is not supported in RDS desktop sessions or remote applications.

Client access device

Real-Time Audio Video is supported on all Android devices that run Horizon Client for Android. For more information, see "System Requirements," on page 8.

Smart Card Authentication Requirements

Client systems that use a smart card for user authentication must meet certain requirements.

VMware recommends that you use an Android 4.0 or later operating system. The CPU architecture may be ARM or x86. VMware tested the baiMobile 3000MP Bluetooth Smart Card reader, baiMobile 301MP USB Smart Card reader, and baiMobile 301MP_LT Smart Card reader.

Each client system that uses a smart card for user authentication must have the following software and hardware:

- Horizon Client
- A compatible smart card reader
- Smart card middleware

  The Android device app must support your baiMobile smart card reader. For example, one such app is baiMobile PCSC-Lite (Android device tile name baiMobile PC/SC). Version 6.1 contains support for both the baiMobile 3000MP Bluetooth and baiMobile 301MP USB smart card readers. Without such an app, you can pair the Bluetooth card reader with the Android device, but you cannot connect it. The app sends a connection request to the reader and you tap the **OK** button on the reader to establish the Bluetooth connection.
- Product-specific application drivers

You must also install product-specific application drivers on the remote desktops or Microsoft RDS host. VMware tested the ActiveClient6.2.0.50, ActivClient_7.0.1, and Gemalto.MiniDriver.NET.inf drivers.

Users that authenticate with smart cards must have a smart card and each smart card must contain a user certificate.

In addition to meeting these requirements for Horizon Client systems, other View components must meet certain configuration requirements to support smart cards:

- For information about configuring Connection Server to support smart card use, see "Configure Smart Card Authentication" in the *View Administration* document.

  You must add all applicable Certificate Authority (CA) certificates for all trusted user certificates to a server truststore file on the Connection Server host or security server host. These certificates include root certificates and must include intermediate certificates if the user's smart card certificate was issued by an intermediate certificate authority.

- For information about tasks you might need to perform in Active Directory to implement smart card authentication, see the topics about preparing Active Directory for smart card authentication in the *View Installation* document.

Configure Smart Card Authentication

Configuration tasks include connecting and pairing the card reader with the device and setting the smart card removal policy.

Prerequisites

- Verify that you are using the correct version of the client, desktop agent, server, operating system, smart card reader, and smart card. See "Smart Card Authentication Requirements," on page 9.
- Verify that smart card middleware is installed on the Android device.
- If you have not already done so, perform the tasks described in "Prepare Active Directory for Smart Card Authentication," in the *View Installation* document.
- Configure View servers to support smart card use. See the topic "Configure Smart Card Authentication," in the *View Administration* document.

Procedure

1 Install the smart card middleware app on the device.

2 Pair the device with the smart card reader, according to the documentation provided by the manufacturer of the reader.

  If you are using a Bluetooth smart card reader, a randomly generated number is displayed on both devices during this process. When you confirm that the numbers match, you establish secure Bluetooth communication.

3 Configure the smart card removal policy.

Option	Description
Set the policy on the server	If you use View Administrator to set a policy, the choices are to disconnect users from Connection Server when they remove their smart cards or to keep users connected to Connection Server when they remove their smart cards and let them start new desktop or application sessions without reauthenticating. a In View Administrator, select **View Configuration > Servers**. b On the **Connection Servers** tab, select the Connection Server instance and click **Edit**. c On the **Authentication** tab, select or deselect the **Disconnect user sessions on smart card removal** check box to configure the smart card removal policy. d Click **OK** to save your changes. e Restart the Connection Server service to make your changes take effect. If you select the **Disconnect user sessions on smart card removal** check box, Horizon Client returns to the **Recent** tab when users remove their smart cards.
Set the policy on the desktop	If you use the Group Policy Editor (`gpedit.msc`), you have the following possible settings: no action, lock workstation, force log off, or Disconnect if a Remote Desktop Services session. After you open `gpedit.msc` in the desktop operating system, go to **Windows settings > Security settings > Local policies > Security options > Interactive logon: smart card removal behavior**. Run the `gpupdate /force` command after you change the configuration to force a group policy refresh.

Fingerprint Authentication Requirements

To use fingerprint authentication in Horizon Client, the Android device on which you install Horizon Client must meet certain requirements.

Android device models

Any Android device model that has a fingerprint sensor and native fingerprint reader functionality.

Operating system requirements

- Android 6 (Marshmallow)
- The **Fingerprint Authentication** option must be enabled and at least one fingerprint must be enrolled.

Connection Server requirements

- Horizon 6 version 6.2 or a later release.
- Enable biometric authentication in Connection Server. For information, see "Configure Biometric Authentication" in the *View Administration* document.
- The Connection Server instance must present a valid root-signed certificate to Horizon Client.

Horizon Client requirements

- Set the certificate checking mode to **Never connect to untrusted servers** or **Warn before connecting to untrusted servers**. For information about setting the certificate checking mode, see "Certificate Checking Modes for Horizon Client," on page 32.

- Enable fingerprint authentication by tapping **Enable Fingerprint** on the server login screen. After you successfully log in, your Active Directory credentials are stored securely in your Android device. The **Enable Fingerprint** option is shown the first time you log in and does not appear after fingerprint authentication is enabled.

You can use fingerprint authentication with smart card authentication and as part of two-factor authentication with RSA SecurID and RADIUS authentication. If you use fingerprint authentication with smart card authentication, Horizon Client connects to the server after you enter your PIN and the fingerprint authentication screen does not appear.

Supported Desktop Operating Systems

Administrators create virtual machines with a guest operating system and install agent software in the guest operating system. End users can log in to these virtual machines from a client device.

For a list of the supported Windows guest operating systems, see the "Supported Operating Systems for View Agent" topic in the View 5.x or 6.x installation documentation. See the "Supported Operating Systems for Horizon Agent" topic in the Horizon 7 installation documentation.

Preparing Connection Server for Horizon Client

Administrators must perform specific tasks to enable end users to connect to remote desktops and applications.

Before end users can connect to Connection Server or a security server and access a remote desktop or application, you must configure certain pool settings and security settings:

- If you plan to use Access Point, which is available with Horizon 6 version 6.2 or later, configure Connection Server to work with Access Point. See *Deploying and Configuring Access Point*. Access Point appliances fulfill the same role that was previously played by only security servers.
- If you are using a security server, verify that you are using the latest maintenance releases of Connection Server 5.3.x and Security Server 5.3.x or later releases. See the *View Installation* document.
- If you plan to use a secure tunnel connection for client devices and if the secure connection is configured with a DNS host name for Connection Server or a security server, verify that the client device can resolve this DNS name.

  To enable or disable the secure tunnel, in View Administrator, go to the Edit View Connection Server Settings dialog box and use the check box called **Use secure tunnel connection to desktop**.
- Verify that a desktop or application pool has been created and that the user account that you plan to use is entitled to access the pool. For Connection Server 5.3.x, see the topics about creating desktop pools in the *View Administration* document. For Connection Server 6.0 and later, see the topics about creating desktop and application pools in the *Setting Up Desktop and Application Pools in View* document.
- To use two-factor authentication with Horizon Client, such as RSA SecurID or RADIUS authentication, you must enable this feature on Connection Server. For more information, see the topics about two-factor authentication in the *View Administration* document.
- To enable end users to save their passwords with Horizon Client, so that they do not always need to supply credentials when connecting to a Connection Server instance, configure View LDAP for this feature on the Connection Server host.

  Users can save their passwords if View LDAP is configured to allow it, if the Horizon Client certificate verification mode is set to **Warn before connecting to untrusted servers** or **Never connect to untrusted servers**, and if Horizon Client can fully verify the server certificate that Connection Server presents. For instructions, see "Saving Credentials in Mobile and Mac OS X Horizon Clients" in the *View Administration* document.

- Verify that the desktop or application pool is set to use the VMware Blast display protocol or the PCoIP display protocol. For Connection Server 5.3.x, see the *View Administration* document. For Connection Server 6.0 and later, see the *Setting Up Desktop and Application Pools in View* document.

Install or Upgrade Horizon Client

Horizon Client for Android is an Android app, and you install it just as you do other Android apps.

Prerequisites

- If you have not already set up the device, do so. See the manufacturer's user's guide for your device.
- Verify that you have the URL for a download page that contains the Horizon Client installer. This URL might be the VMware Downloads page at http://www.vmware.com/go/viewclients.
- Become familiar with your device's procedure for installing apps.

  Devices from different manufacturers use different methods for installing Android apps. See the manufacturer's user's guide for your device. Depending on the device, you might have to perform the following tasks before you can install an app:

  - Install a particular driver.
  - Install a file browser.

Procedure

1. Browse to the URL for downloading the Horizon Client app, or search for the Horizon Client app in the Google Play Store or Amazon Appstore for Android.

   For some devices, you download the file to the device. For others, you download the file to a PC or a USB device.
2. If necessary, copy the app (`.apk` file) to your device.
3. Install the app according to your device's customary procedure for installing apps.

   For example, on some devices, you must tap the file to install it.

What to do next

To determine that installation succeeded, verify that the **Horizon** app icon appears on one of the desktops of your Home screen.

The first time you launch Horizon Client on Android 6 (Marshmallow), the app prompts you to allow Horizon Client to make and manage phone calls, access photos, media, and files, and record audio on your device.

If you installed Horizon Client on a thin client, see "Configure Horizon Client in Thin Client Mode," on page 13.

Configure Horizon Client in Thin Client Mode

You configure Horizon Client to work on a thin client by enabling the **Thin Client mode** setting.

Prerequisites

Install Horizon Client on your thin client. For thin client requirements, see "System Requirements for Thin Clients," on page 8.

Procedure

1. Start Horizon Client on your thin client.
2. Click the **Settings** (gear) icon in the upper-right corner of the Horizon Client screen.

3 Click **Thin Client mode** and select the **Thin Client mode** check box.

What to do next

See "Using Horizon Client on a Thin Client," on page 14.

Using Horizon Client on a Thin Client

Some features are different or unavailable when you use Horizon Client in thin client mode.

- The Horizon Client screen resolution is set to **Auto-fit** by default. The auto-fit resolution is the same as your thin client's HDMI output. For example, if your thin client supports HDMI 4K output, the auto-fit resolution is 4K. If your thin client supports HDMI 1080p output, the auto-fit resolution is 1920x1080. You can downscale the resolution by modifying the Horizon Client **Resolution** setting.
- The Horizon Client **Presentation Mode** and **Stay Awake** display settings are not available.
- You cannot modify the Horizon Client **Keyboard** settings.
- The Horizon Client Tools radial menu is not available in remote desktops and applications.
- In general, the gestures you use in Horizon Client depend on your thin client model and the type of external input device that you use with your thin client. For example, you might have a keyboard, mouse, remote control, or game controller. See the documentation for your external input device for more information.
- The Unity Touch sidebar contains **Keyboard**, **Settings**, and **Disconnect** icons. For more information, see "Using the Unity Touch Sidebar with a Remote Desktop," on page 41 and "Using the Unity Touch Sidebar with a Remote Application," on page 44.
- The Unity Touch sidebar is supported on Remix Mini and NVIDIA SHIELD Android TV devices. The Unity Touch sidebar is not supported on Amazon Fire TV.
- If you are connected to a remote desktop or application from an Amazon Fire TV device, you must use a pop-up menu to display Horizon Client Settings and to disconnect from the remote desktop or application. On a remote control or external keyboard, press the **Menu** button to display the pop-up menu.

Using Embedded RSA SecurID Software Tokens

If you create and distribute RSA SecurID software tokens to end users, they need enter only their PIN, rather than PIN and token code, to authenticate.

Setup Requirements

You can use Compressed Token Format (CTF) or dynamic seed provisioning, which is also called CT-KIP (Cryptographic Token Key Initialization Protocol), to set up an easy-to-use RSA authentication system. With this system, you generate a URL to send to end users. To install the token, end users paste this URL directly into Horizon Client on their client devices. The dialog box for pasting this URL appears when end users connect to Connection Server with Horizon Client.

Horizon Client also supports file-based provisioning. When a file-based software token is issued to a user, the authentication server generates an XML-format token file, which is called an SDTID file for its `.sdtid` extension. Horizon Client can import the SDTID file directly. Users can also launch Horizon Client by tapping the SDTID file in a file browser.

After the software token is installed, end users enter a PIN to authenticate. With external RSA tokens, end users must enter a PIN and the token code generated by a hardware or software authentication token.

The following URL prefixes are supported if end users will be copying and pasting the URL into Horizon Client when Horizon Client is connected to an RSA-enabled Connection Server instance:

- `viewclient-securid://`
- `http://127.0.0.1/securid/`

End users can install the token by tapping the URL. Both prefixes `viewclient-securid://` and `http://127.0.0.1/securid/` are supported. Note that not all browsers support hyperlinks that begin with `http://127.0.0.1`. Also some file browsers, such as the File Manager app on the ASUS Transformer Pad, cannot link the SDTID file with Horizon Client.

For information about using dynamic seed provisioning or file-based (CTF) provisioning, see the Web page *RSA SecurID Software Token for iPhone Devices* at http://www.rsa.com/node.aspx?id=3652 or *RSA SecurID Software Token for Android* at http://www.rsa.com/node.aspx?id=3832.

Instructions to End Users

When you create a CTFString URL or CT-KIP URL to send to end users, you can generate a URL with or without a password or activation code. You send this URL to end users in an email that must include the following information:

- Instructions for navigating to the Install Software Token dialog box.

  Tell end users to tap **External Token** in the Horizon Client dialog box that prompts them for RSA SecurID credentials when they connect to a Connection Server instance.

- CTFString URL or CT-KIP URL in plain text.

  If the URL has formatting on it, end users will get an error message when they try to use it in Horizon Client.

- Activation code, if the CT-KIP URL that you create does not already include the activation code.

  End users must enter this activation code in a text field of the dialog box.

- If the CT-KIP URL includes an activation code, tell end users that they need not enter anything in the **Password or Activation Code** text box in the Install Software Token dialog box.

Configure Advanced TLS/SSL Options

You can select the security protocols and cryptographic algorithms that are used to encrypt communications between Horizon Client and Horizon servers and between Horizon Client and the agent in the remote desktop.

By default, TLSv1.0, TLSv1.1, and TLSv1.2 are enabled. SSL v2.0 and 3.0 are not supported. The default cipher control string is "!aNULL:kECDH+AES:ECDH+AES:RSA+AES:@STRENGTH".

If you configure a security protocol for Horizon Client that is not enabled on the Horizon server to which the client connects, a TLS/SSL error occurs and the connection fails.

For information about configuring the security protocols that are accepted by Connection Server instances, see the *View Security* document.

Procedure

1 Open **Settings** and tap **Security options**.

  If you are connected to a remote desktop or application in full-screen mode, tap the Horizon Client Tools radial menu icon and tap the gear icon to access **Settings**. If you are not using full-screen mode, **Settings** is in the menu in the upper right corner of the Horizon Client toolbar. If you are not connected to a remote desktop or application, tap the gear icon in the upper right corner of the Horizon Client screen.

2 Tap **Advanced SSL Options**.

3 Make sure that **Use Default Settings** is unchecked.

4 To enable or disable a security protocol, tap the check box next to the security protocol name.

5 To change the cipher control string, replace the default string.

6 (Optional) If you need to revert to the default settings, tap to select the **Use Default Settings** option.

7 Tap **OK** to save your changes.

Your changes take effect the next time you connect to the server.

Configure VMware Blast Options

You can configure decoding and network protocol options for remote desktop and application sessions that use the VMware Blast display protocol.

Prerequisites

This feature requires Horizon Agent 7.0 or later.

Procedure

1 Open **Settings** and tap **VMware Blast**.

If you are connected to a remote desktop or application in full-screen mode, tap the Horizon Client Tools radial menu icon and tap the gear icon to access **Settings**. If you are not using full-screen mode, **Settings** is in the menu in the upper right corner of the Horizon Client toolbar. If you are not connected to a remote desktop or application, tap the gear icon in the upper right corner of the Horizon Client screen.

2 Configure the decoding and network protocol options.

Option	Description
H.264	Select this option to allow H.264 decoding in Horizon Client. When this option is selected (the default setting), Horizon Client uses H.264 decoding if the agent supports H.264 software encoding. If the agent does not support H.264 software encoding, Horizon Client uses JPG/PNG decoding. Deselect this option to always use JPG/PNG decoding.
UDP	Select this option to allow UDP networking in Horizon Client. When this option is selected (the default setting), Horizon Client uses UDP networking if UDP connectivity is available. If UDP networking is blocked, Horizon Client uses TCP networking. Deselect this option to always use TCP networking. **Note** UDP is disabled by default on a Horizon remote desktop. For UDP to work, it must be enabled on the desktop, the client, and the Blast Secure Gateway (BSG).

Your changes take effect the next time a user connects to a remote desktop or application and selects the VMware Blast display protocol. Your changes do not affect existing VMware Blast sessions.

Configure the Horizon Client Default View

You can configure whether the Recent screen or the Servers screen appears when you launch Horizon Client.

Procedure

1 Open **Settings** and tap **Display**.

If you are connected to a remote desktop or application in full-screen mode, tap the Horizon Client Tools radial menu icon and tap the gear icon to access **Settings**. If you are not using full-screen mode, **Settings** is in the menu in the upper right corner of the Horizon Client toolbar. If you are not connected to a remote desktop or application, tap the gear icon in the upper right corner of the Horizon Client screen.

2 Tap **Default launch view**.

3 Tap an option to select the default view.

Option	Description
Recent	The Recent screen appears when you launch Horizon Client. The Recent screen contains shortcuts to recently used desktops and applications. This is the default setting.
Servers	The Servers screen appears when you launch Horizon Client. The Servers screen contains shortcuts to the servers that you added to Horizon Client.

The default view you selected takes effect immediately.

Configure AirWatch to Deliver Horizon Client to Mobile Devices

You can configure AirWatch to deliver Horizon Client to mobile device users. You can optionally specify a default list of Connection Server instances. The Connection Server instances that you specify appear as shortcuts in Horizon Client.

If your mobile device users use both the ARM and x86 versions of Horizon Client, you must decide which version of Horizon Client to deploy with the AirWatch console. The AirWatch console cannot deploy both the ARM and the x86 version at the same time.

Prerequisites

- Install and deploy AirWatch. See http://www.air-watch.com.
- Download the Horizon Client app from the VMware Downloads page at http://www.vmware.com/go/viewclients or from the Google Play Store or Amazon Appstore for Android.
- Become familiar with the AirWatch console. This procedure assumes you know how to use the AirWatch console. For more information, see the AirWatch documentation or online help.

Procedure

1 Log in to the AirWatch console as an administrator.

2 Select **Accounts > Users > List View**, click **Add User**, and add user accounts for the users who will run Horizon Client on their mobile devices.

3 Select **Accounts > Users > User Groups**, click **Add**, and create a user group for the user accounts that you created.

4 Create an application profile for Horizon Client in AirWatch.

   a Select **Apps & Books > Applications > Application Settings > Profiles** and click **Add Profile**.

   b Select the **SDK Profile** configuration type.

   c Select the **Android** profile type.

   d (Optional) Click **Custom Settings** to configure a default list of View Connection Server instances.

   For example:

```
{
  "settings": {
    "server-list": [
{"server":"123.456.1.1", "description":"View server 1"},
{"server":"123.456.1.2", "description":"View server 2"},
{"server":"123.456.1.3", "description":"View server 3"},
{"server":"viewserver4.mydomain.com", "description":"View server 4"},
    ]
  }
}
```

   The `server` property specifies the IP address or host name of a View Connection Server instance and the `description` property specifies a description of the server.

5 Upload and add the Horizon Client application to AirWatch.

   a Select **Apps & Books > Applications > List View** and click **Add Application** on the **Internal** tab.

   b Browse to the Horizon Client app that you downloaded and click **Save** to upload the application to AirWatch.

   c On the **Info** tab, type an application name and specify the supported mobile device models.

   d On the **Assignment** tab, assign the Horizon Client application to the user group that you created.

   e On the **Deployment** tab, set **Application uses AirWatch SDK** to **Yes** and select the SDK profile that you created from the **SDK Profile** drop-down menu.

   f Publish the Horizon Client application.

6 Install and set up the AirWatch MDM Agent on each Android device.

   You can download the AirWatch MDM Agent from the Google Play Store or Amazon Appstore for Android.

7 Use the AirWatch console to install the Horizon Client application on the mobile devices.

   You cannot install the Horizon Client application before the effective date on the **Deployment** tab.

AirWatch delivers Horizon Client to the mobile devices in the user group that you associated with the Horizon Client application.

When a user launches Horizon Client, Horizon Client communicates with the AirWatch MDM Agent on the device. If you configured a default list of Connection Server instances, AirWatch pushes the server information to the AirWatch MDM Agent on the device and shortcuts for those servers appear in Horizon Client.

What to do next

You can use the AirWatch console to edit the Horizon Client application and push those changes to mobile devices. For example, you can add a default Connection Server instance to the server list for the Horizon Client application.

Horizon Client Data Collected by VMware

If your company participates in the customer experience improvement program, VMware collects data from certain Horizon Client fields. Fields containing sensitive information are made anonymous.

VMware collects data on the clients to prioritize hardware and software compatibility. If your company's administrator has opted to participate in the customer experience improvement program, VMware collects anonymous data about your deployment in order to improve VMware's response to customer requirements. No data that identifies your organization is collected. Horizon Client information is sent first to Connection Server and then on to VMware, along with data from Connection Server instances, desktop pools, and remote desktops.

Although the information is encrypted while in transit to Connection Server, the information on the client system is logged unencrypted in a user-specific directory. The logs do not contain any personally identifiable information.

The administrator who installs Connection Server can select whether to participate in the VMware customer experience improvement program while running the Connection Server installation wizard, or an administrator can set an option in View Administrator after the installation.

Table 1-1. Data Collected from Horizon Clients for the Customer Experience Improvement Program

Description	Is This Field Made Anonymous?	Example Value
Company that produced the Horizon Client application	No	VMware
Product name	No	VMware Horizon Client
Client product version	No	(The format is *x.x.x-yyyyyy*, where *x.x.x* is the client version number and *yyyyyy* is the build number.)
Client binary architecture	No	Examples include the following: ■ i386 ■ x86_64 ■ arm
Client build name	No	Examples include the following: ■ VMware-Horizon-Client-Win32-Windows ■ VMware-Horizon-Client-Linux ■ VMware-Horizon-Client-iOS ■ VMware-Horizon-Client-Mac ■ VMware-Horizon-Client-Android ■ VMware-Horizon-Client-WinStore
Host operating system	No	Examples include the following: ■ Windows 8.1 ■ Windows 7, 64-bit Service Pack 1 (Build 7601) ■ iPhone OS 5.1.1 (9B206) ■ Ubuntu 12.04.4 LTS ■ Mac OS X 10.8.5 (12F45)

Table 1-1. Data Collected from Horizon Clients for the Customer Experience Improvement Program (Continued)

Description	Is This Field Made Anonymous ?	Example Value
Host operating system kernel	No	Examples include the following: ■ Windows 6.1.7601 SP1 ■ Darwin Kernel Version 11.0.0: Sun Apr 8 21:52:26 PDT 2012; root:xnu-1878.11.10~1/RELEASE_ARM_S5L8945X ■ Darwin 11.4.2 ■ Linux 2.6.32-44-generic #98-Ubuntu SMP Mon Sep 24 17:27:10 UTC 2012 ■ unknown (for Windows Store)
Host operating system architecture	No	Examples include the following: ■ x86_64 ■ i386 ■ armv71 ■ ARM
Host system model	No	Examples include the following: ■ Dell Inc. OptiPlex 960 ■ iPad3,3 ■ MacBookPro8,2 ■ Dell Inc. Precision WorkStation T3400 (A04 03/21/2008)
Host system CPU	No	Examples include the following: ■ Intel(R) Core(TM)2 Duo CPU E8400 @ 3.00GH ■ Intel(R) Core(TM)2 Quad CPU Q6600 @ 2.40GH ■ unknown (for iPad)
Number of cores in the host system's processor	No	For example: 4
MB of memory on the host system	No	Examples include the following: ■ 4096 ■ unknown (for Windows Store)
Number of USB devices connected	No	2 (USB device redirection is supported only for Linux, Windows, and Mac OS X clients.)
Maximum concurrent USB device connections	No	2
USB device vendor ID	No	Examples include the following: ■ Kingston ■ NEC ■ Nokia ■ Wacom
USB device product ID	No	Examples include the following: ■ DataTraveler ■ Gamepad ■ Storage Drive ■ Wireless Mouse

Table 1-1. Data Collected from Horizon Clients for the Customer Experience Improvement Program (Continued)

Description	Is This Field Made Anonymous ?	Example Value
USB device family	No	Examples include the following: ■ Security ■ Human Interface Device ■ Imaging
USB device usage count	No	(Number of times the device was shared)

Using URIs to Configure Horizon Client

2

Using uniform resource identifiers (URIs), you can create a Web page or an email with links that end users click to launch Horizon Client, connect to Connection Server, and launch a specific desktop or application with specific configuration options.

You can simplify the process of connecting to a remote desktop or application by creating Web or email links for end users. You create these links by constructing URIs that provide some or all of the following information, so that your end users do not need to supply it:

- Connection Server address
- Port number for Connection Server
- Active Directory user name
- RADIUS or RSA SecurID user name, if different from Active Directory user name
- Domain name
- Desktop or application display name
- Actions including reset, log off, and start session

To construct a URI, you use the `vmware-view` URI scheme with Horizon Client specific path and query parts.

NOTE You can use URIs to launch Horizon Client only if the client software is already installed on end users' client computers.

This chapter includes the following topics:

Syntax for Creating vmware-view URIs

Syntax includes the `vmware-view` URI scheme, a path part to specify the desktop or application, and, optionally, a query to specify desktop or application actions or configuration options.

URI Specification

Use the following syntax to create URIs for launching Horizon Client:

`vmware-view://[authority-part][/path-part][?query-part]`

The only required element is the URI scheme, `vmware-view`. For some versions of some client operating systems, the scheme name is case-sensitive. Therefore, use `vmware-view`.

IMPORTANT In all parts, non-ASCII characters must first be encoded according to UTF-8 [STD63], and then each octet of the corresponding UTF-8 sequence must be percent-encoded to be represented as URI characters.

For information about encoding for ASCII characters, see the URL encoding reference at http://www.utf8-chartable.de/.

authority-part

Specifies the server address and, optionally, a user name, a non-default port number, or both. Note that underscores (_) are not supported in server names. Server names must conform to DNS syntax.

To specify a user name, use the following syntax:

`user1@server-address`

Note that you cannot specify a UPN address, which includes the domain. To specify the domain, you can use the `domainName` query part in the URI.

To specify a port number, use the following syntax:

`server-address:port-number`

path-part

Specifies the desktop or application. Use the desktop display name or application display name. This name is the one specified in View Administrator when the desktop or application pool was created. If the display name has a space in it, use the **`%20`** encoding mechanism to represent the space.

query-part

Specifies the configuration options to use or the desktop or application actions to perform. Queries are not case-sensitive. To use multiple queries, use an ampersand (&) between the queries. If queries conflict with each other, the last query in the list is used. Use the following syntax:

`query1=value1[&query2=value2...]`

Supported Queries

This topic lists the queries that are supported for this type of Horizon Client. If you are creating URIs for multiple types of clients, such as desktop clients and mobile clients, see the *Using VMware Horizon Client* guide for each type of client system.

action

Table 2-1. Values That Can Be Used with the action Query

Value	Description
`browse`	Displays a list of available desktops and applications hosted on the specified server. You are not required to specify a desktop or application when using this action. If you use the `browse` action and specify a desktop or application, the desktop or application is highlighted in the list of available items.
`start-session`	Launches the specified desktop or application. If no action query is provided and the desktop or application name is provided, `start-session` is the default action.

Table 2-1. Values That Can Be Used with the action Query (Continued)

Value	Description
`reset`	Shuts down and restarts the specified desktop. Unsaved data is lost. Resetting a remote desktop is the equivalent of pressing the Reset button on a physical PC. Specifying an application is not supported. If you specify an application, an error message appears. If you do not specify a desktop or application, Horizon Client quits all remote applications.
`logoff`	Logs the user out of the guest operating system in the remote desktop. If you specify an application, the action will be ignored or the end user will see the warning message "Invalid URI action."

appProtocol For remote applications, valid values are **`PCOIP`** and **`BLAST`**. For example, to specify PCoIP, use the syntax **`appProtocol=PCOIP`**.

defaultLaunchView Sets the default launch view for Horizon Client. Valid values are **`recent`** and **`servers`**.

desktopProtocol For remote desktops, valid values are **`PCOIP`** and **`BLAST`**. For example, to specify PCoIP, use the syntax **`desktopProtocol=PCOIP`**.

domainName The NETBIOS domain name associated with the user who is connecting to the remote desktop or application. For example, you would use `mycompany` rather than `mycompany.com`.

tokenUserName Specifies the RSA or RADIUS user name. Use this query only if the RSA or RADIUS user name is different from the Active Directory user name. If you do not specify this query and RSA or RADIUS authentication is required, the Windows user name is used. The syntax is **`tokenUserName=`*`name`***.

Examples of vmware-view URIs

You can create hypertext links or buttons with the `vmware-view` URI scheme and include these links in email or on a Web page. Your end users can click these links to, for example, launch a particular remote desktop with the startup options you specify.

URI Syntax Examples

Each URI example is followed by a description of what the end user sees after clicking the URI link.

1 `vmware-view://view.mycompany.com/Primary%20Desktop?action=start-session`

Horizon Client is launched and connects to the `view.mycompany.com` server. The login box prompts the user for a user name, domain name, and password. After a successful login, the client connects to the desktop whose display name is displayed as **Primary Desktop**, and the user is logged in to the guest operating system.

Note The default display protocol and window size are used. The default display protocol is PCoIP. The default window size is full screen.

2 `vmware-view://view.mycompany.com:7555/Primary%20Desktop`

This URI has the same effect as the previous example, except that it uses the nondefault port of 7555 for Connection Server. (The default port is 443.) Because a desktop identifier is provided, the desktop is launched even though the `start-session` action is not included in the URI.

3 `vmware-view://fred@view.mycompany.com/Finance%20Desktop?desktopProtocol=PCOIP`

Horizon Client is launched and connects to the `view.mycompany.com` server. In the login box, the **User name** text box is populated with the name **fred**. The user must supply the domain name and password. After a successful login, the client connects to the desktop whose display name is displayed as **Finance Desktop**, and the user is logged in to the guest operating system. The connection uses the PCoIP display protocol.

4 `vmware-view://view.mycompany.com/Calculator?action=start-session&appProtocol=BLAST`

Horizon Client is launched and connects to the `view.mycompany.com` server. In the login box, the user must supply the user name, domain name, and password. After a successful login, the client connects to the application whose display name is displayed as **Calculator**. The connection uses the VMware Blast display protocol.

5 `vmware-view://fred@view.mycompany.com/Finance%20Desktop?domainName=mycompany`

Horizon Client is launched and connects to the `view.mycompany.com` server. In the login box, the **User name** text box is populated with the name **fred**, and the **Domain** text box is populated with **mycompany**. The user must supply only a password. After a successful login, the client connects to the desktop whose display name is displayed as **Finance Desktop**, and the user is logged in to the guest operating system.

6 `vmware-view://view.mycompany.com/`

Horizon Client is launched, and the user is taken to the login prompt for connecting to the `view.mycompany.com` server.

7 `vmware-view://view.mycompany.com/Primary%20Desktop?action=reset`

Horizon Client is launched and connects to the `view.mycompany.com` server. The login box prompts the user for a user name, domain name, and password. After a successful login, Horizon Client displays a dialog box that prompts the user to confirm the reset operation for Primary Desktop. After the reset occurs, depending on the type of client, the user might see a message indicating whether the reset was successful.

Note This action is available only if the View administrator has enabled this feature for end users.

8 `vmware-view://view.mycompany.com?action=reset`

Horizon Client is launched and connects to the `view.mycompany.com` server. The login box prompts the user for a user name, domain name, and password. After a successful login, Horizon Client displays a dialog box that prompts the user to confirm the reset operation for all remote applications. After the reset occurs, the user sees a message that indicates whether the reset was successful.

9 `vmware-view://`

If the client is already running, the Horizon Client app comes to the foreground. If the client is not already running, Horizon Client is launched.

10 `vmware-view://?defaultlaunchview=recent`

The Horizon Client is launched and the user sees the Recent screen.

HTML Code Examples

You can use URIs to make hypertext links and buttons to include in emails or on Web pages. The following examples show how to use the URI from the first URI example to code a hypertext link that says, **Test Link**, and a button that says, **TestButton**.

```
<html>
<body>

<a href="vmware-view://view.mycompany.com/Primary%20Desktop?action=start-session">Test
Link</a><br>
```

```
<form><input type="button" value="TestButton" onClick="window.location.href=
'vmware-view://view.mycompany.com/Primary%20Desktop?action=start-session'"></form> <br>

</body>
</html>
```

Managing Remote Desktop and Application Connections 3

Use Horizon Client to connect to Connection Server or a security server, edit the list of servers you connect to, log in to or off of remote desktops, and use remote applications. For troubleshooting purposes, you can also reset remote desktops and applications.

Depending on how the administrator configures policies for remote desktops, end users might be able to perform many operations on their desktops.

This chapter includes the following topics:

Connect to a Remote Desktop or Application

To connect to a remote desktop or application, you must provide the name of a server and supply credentials for your user account.

To use remote applications, you must connect to Connection Server 6.0 or later.

NOTE Before you have end users access their remote desktops, test that you can log in to a remote desktop from a client device.

Prerequisites

- Obtain the credentials you need to log in, such as a user name and password, RSA SecurID user name and passcode, RADIUS authentication user name and passcode, or smart card personal identification number (PIN).
- Obtain the NETBIOS domain name for logging in. For example, you would use `mycompany` rather than `mycompany.com`.
- Perform the administrative tasks described in "Preparing Connection Server for Horizon Client," on page 12.

- If you are outside the corporate network and are not using a security server to access the remote desktop, verify that your client device is set up to use a VPN connection and turn that connection on.

  Important VMware recommends using a security server rather than a VPN.

  If your company has an internal wireless network to provide routable access to remote desktops that your device can use, you do not have to set up a View security server or VPN connection.

- Verify that you have the fully qualified domain name (FQDN) of the server that provides access to the remote desktop or application. Note that underscores (_) are not supported in server names. You also need the port number if the port is not 443.
- If you plan to use embedded RSA SecurID software, verify that you have the correct CT-KIP URL and activation code. See "Using Embedded RSA SecurID Software Tokens," on page 14.
- Configure the certificate checking mode for the SSL certificate presented by Connection Server. See "Certificate Checking Modes for Horizon Client," on page 32.
- If you plan to use fingerprint authentication, verify that the Fingerprint Authentication option is enabled and at least one fingerprint is enrolled on your Android device. For complete fingerprint authentication requirements, see "Fingerprint Authentication Requirements," on page 11.

Procedure

1 If a VPN connection is required, turn on the VPN.

2 Tap the **Horizon** app icon on the Home screen.

3 Connect to a server.

Option	Action
Connect to a new server	Type the name of a server, type a description (optional), and tap **Connect**.
Connect to an existing server	Tap the server shortcut on the **Servers** tab.

Connections between Horizon Client and servers always use SSL. The default port for SSL connections is 443. If the View server is not configured to use the default port, use the format shown in this example: `view.company.com:1443`.

4 If a smart card is required or optional, select the smart card certificate to use and enter your PIN.

If your smart card has only one certificate, that certificate is already selected. If there are many certificates, you can scroll through them if necessary.

5 If you are prompted for RSA SecurID credentials or RADIUS authentication credentials, either type your credentials or, if you plan to use an embedded RSA SecurID token, install an embedded token.

Option	Action
Existing token	If you use a hardware authentication token or software authentication token on a smart phone, enter your user name and passcode. The passcode might include both a PIN and the generated number on the token.
Install software token	Click **External Token**. In the Install Software Token dialog box, paste the CT-KIP URL or CTFString URL that your administrator sent to you in email. If the URL contains an activation code, you do not need to enter anything in the **Password or Activation Code** text box.

6 If you are prompted a second time for RSA SecurID credentials or RADIUS authentication credentials, enter the next generated number on the token.

Do not enter your PIN and do not enter the same generated number entered previously. If necessary, wait until a new number is generated.

If this step is required, it is required only when you mistype the first passcode or when configuration settings in the RSA server change.

7 If you are prompted for a user name and password, supply Active Directory credentials.

a Type the user name and password of a user who is entitled to use at least one desktop or application pool.

b Select a domain.

c (Optional) If the **Enable Fingerprint** check box is available, select it to use fingerprint authentication.

The **Enable Fingerprint** check box is available only if biometric authentication is enabled on the server and you have not previously authenticated with fingerprint authentication.

d (Optional) Select the **Save Password** check box if your administrator has enabled this feature and if the server certificate can be fully verified.

If this is the first time you are saving a password, you are prompted to activate the device administrator, which is required to save a password on Android devices.

e Tap **Connect**.

If fingerprint authentication is enabled and you are logging in for the first time, your Active Directory credentials are stored securely in the Android device's database for future use.

8 If you are prompted for fingerprint authentication, place your finger on the fingerprint sensor.

If you do not want to use fingerprint authentication, tap **Cancel**. You can connect to the server again and tap **Use password** to enter a user name and password.

9 (Optional) Tap the display protocol settings icon in the upper-right corner of the screen to select the display protocol to use.

PCoIP provides an optimized PC experience for delivery of images, audio, and video content on the LAN or across the WAN. **VMware Blast** provides better battery life and is the best protocol for high-end 3D and mobile device users. The default display protocol is **PCoIP**.

10 Tap a desktop or application to connect to it.

If you are using smart card authentication, you are not prompted to supply your PIN again, but the login process takes longer than if you use Active Directory authentication.

If you are connecting to a session-based remote desktop, which is hosted on a Microsoft RDS host, and if the desktop is already set to use the Microsoft RDP display protocol, you will not be able to connect immediately. You will be prompted to have the system log you off of the remote operating system so that a connection can be made with the PCoIP display protocol or the VMware Blast display protocol. VMware Blast requires Horizon Agent 7.0 or later.

After you connect to a desktop or application for the first time, a shortcut for the desktop or application is saved to the **Recent** tab. The next time you want to connect to the remote desktop or application, you can tap the shortcut instead of typing the server's name.

Certificate Checking Modes for Horizon Client

Administrators and sometimes end users can configure whether client connections are rejected if any or some server certificate checks fail.

Certificate checking occurs for SSL connections between Connection Server and Horizon Client. Certificate verification includes the following checks:

- Is the certificate intended for a purpose other than verifying the identity of the sender and encrypting server communications? That is, is it the correct type of certificate?
- Has the certificate expired, or is it valid only in the future? That is, is the certificate valid according to the computer clock?
- Does the common name on the certificate match the host name of the server that sends it? A mismatch can occur if a load balancer redirects Horizon Client to a server that has a certificate that does not match the host name entered in Horizon Client. Another reason a mismatch can occur is if you enter an IP address rather than a host name in the client.
- Is the certificate signed by an unknown or untrusted certificate authority (CA)? Self-signed certificates are one type of untrusted CA.

  To pass this check, the certificate's chain of trust must be rooted in the device's local certificate store.

Important For instructions about distributing a self-signed root certificate that users can install on their Android devices, as well as instructions for installing a certificate on an Android device, see documentation on the Google Web site, such as the *Android 3.0 User's Guide*.

To set the security mode, open **Settings**. If you are connected to a remote desktop or application in full-screen mode, tap the Horizon Client Tools radial menu icon and tap the gear icon. If you are not using full-screen mode, **Settings** is in the menu in the upper right corner of the Horizon Client toolbar. If you are not connected to a remote desktop or application, tap the gear icon in the upper right corner of the Horizon Client screen. In **Settings**, tap **Security options** and tap **Security mode**. You have three choices:

- **Never connect to untrusted servers**. If any of the certificate checks fails, the client cannot connect to the server. An error message lists the checks that failed.
- **Warn before connecting to untrusted servers**. If a certificate check fails because the server uses a self-signed certificate, you can click **Continue** to ignore the warning. For self-signed certificates, the certificate name is not required to match the server name you entered in Horizon Client.
- **Do not verify server identity certificates**. This setting means that no certificate checking occurs.

If the certificate checking mode is set to **Warn**, you can still connect to a Connection Server instance that uses a self-signed certificate.

If an administrator later installs a security certificate from a trusted certificate authority, so that all certificate checks pass when you connect, this trusted connection is remembered for that specific server. In the future, if that server ever presents a self-signed certificate again, the connection fails. After a particular server presents a fully verifiable certificate, it must always do so.

Share Access to Local Storage

You can configure Horizon Client to share local storage with a remote desktop or application. This feature is called client drive redirection.

In a Windows remote desktop or remote application, local storage appears in the **Devices and drives** section in the **This PC** folder, or in the **Other** section in the **Computer** folder. The folders and storage devices that you select for sharing use the naming format ***name* on HorizonClient**.

Prerequisites

- Enable the client drive redirection feature. This task includes installing View Agent 6.1.1 or later, or Horizon Agent 7.0 or later, and enabling the agent **Client Drive Redirection** option. It can also include setting policies or registry settings to control client drive redirection behavior. For more information, see *Setting Up Desktop and Application Pools in View*.
- Connect to the remote desktop or application with which you want to share local storage. If you have not logged in at least once, become familiar with the procedure "Connect to a Remote Desktop or Application," on page 29.

Procedure

1 Open **Settings** and tap **Local storage redirection**.

If you are connected to the remote desktop or application in full-screen mode, tap the Horizon Client Tools radial menu icon and tap the gear icon. If you are not using full-screen mode, **Settings** is in the menu in the upper-right corner of the Horizon Client toolbar.

2 Tap **Local Storage Redirection** and configure the local storage redirection options.

Option	Action
Automatically share all removable storage devices	Select the **Enable auto direct for mounted storage** check box. All removable storage devices mounted to your device are automatically shared with the remote desktop or application. This option is selected by default.
Do not automatically share all removable storage devices	Deselect the **Enable auto direct for mounted storage** check box. The next time you connect to the remote desktop or application, removable storage devices mounted to your device are not automatically shared with the remote desktop or application. **Note** Deselecting the **Enable auto direct for mounted storage** check box does not stop sharing a removable storage device that is already shared with the remote desktop or application.
Share a specific folder or removable storage device	Select the check box next to the name of the local folder or removable storage device in the list. The device becomes available in the remote desktop or application. When you connect a removable storage device, its name appears in the list. When you disconnect a removable storage device, its name is removed from the list.
Stop sharing a specific folder or removable storage device	Deselect the check box next to the name of the local folder or removable storage device in the list. The device is no longer available in the remote desktop or application.

3 Tap **OK** to save your settings.

What to do next

Verify your changes from within the remote desktop or application.

- From within a Windows remote desktop, open the **This PC** folder and look in the **Devices and drives** section, or open the **Computer** folder and look in the **Other** section. If you shared a folder or storage device, you should see the folder or device. Shared folders and storage devices use the naming format ***name* on HorizonClient**.
- From a remote application, select **File > Open** or **File > Save As**, if applicable. If you shared a folder or storage device, you should be able to navigate to the folder or device. Shared folders and storage devices use the naming format ***name* on HorizonClient**.

Create a Desktop or Application Shortcut for the Android Home Screen

You can use a desktop or application shortcut to create a shortcut for your Android Home screen.

NOTE This feature is not available on Kindle Fire devices.

Prerequisites

Connect to the remote desktop or application at least once from the device so that a shortcut for the desktop or application appears on the **Recent** tab.

If you have not logged in at least once, familiarize yourself with the procedure "Connect to a Remote Desktop or Application," on page 29.

Procedure

1 On the **Recent** tab, touch and hold the shortcut.

Add To Home appears at the bottom of the screen.

2 Drag the shortcut to **Add To Home**.

3 Type a name for the shortcut and tap **OK**.

If the name is longer than 12 characters, the extra characters do not appear on the Android Home screen.

Manage Server Shortcuts

After you connect to a server, Horizon Client creates a server shortcut. You can edit and remove server shortcuts.

Horizon Client saves the server name or IP address in a shortcut, even if you mistype the server name or type the wrong IP address. You can delete or change this information by editing the server name or IP address. If you do not type a server description, the server name or IP address becomes the server description.

Server shortcuts can appear on multiple pages and you can swipe across pages to see more shortcuts. Horizon Client creates new pages, as needed, to accommodate all of your server shortcuts.

Procedure

1 On the **Servers** tab, touch and hold the server shortcut until the context menu appears.

2 Use the context menu to delete the server or edit the server name, server description, or user name.

You can also remove a credential that was saved for fingerprint authentication by tapping **Remove Credential**.

Select a Favorite Remote Desktop or Application

You can select remote desktops and applications as favorites. Favorites are identified by a star. The star helps you quickly find your favorite desktops and applications. Your favorite selections are saved, even after you log off from the server.

Prerequisites

Obtain the credentials you need to connect to the server, such as a user name and password or RSA SecurID and passcode.

Procedure

1 On the **Servers** tab, tap the server shortcut to connect to the server.

2 If prompted, supply your RSA user name and passcode, your Active Directory user name and password, or both.

3 Perform these steps to select or deselect a desktop or application as a favorite.

Option	Action
Select a favorite	Touch and hold the desktop or application name until the context menu appears and tap **Mark as Favorite**. A star appears in the upper right corner of the name and the name appears on the **Favorites** tab.
Deselect a favorite	On the **All** or **Favorites** tab, touch and hold the desktop or application name until the context menu appears and tap **Unmark Favorite**. A star no longer appears in the upper right corner of the name and the name disappears from the **Favorites** tab.

4 (Optional) Tap the **Favorites** tab to display only favorite desktops or applications.

You can tap the **All** tab to display all the available desktops and applications.

Disconnecting from a Remote Desktop or Application

You can disconnect from a remote desktop without logging off, so that applications remain open on the remote desktop. You can also disconnect from a remote application so that the remote application remains open.

On a mobile device, when you are using a remote desktop or application in full-screen mode, you can disconnect by tapping the Horizon Client Tools radial menu icon and tapping the **Disconnect** icon. If you are not using full-screen mode, **Disconnect** is in the menu in the upper-right corner of the Horizon Client toolbar.

On a thin client, when you are connected to a remote desktop or application, you disconnect by clicking the **Disconnect** icon in the Unity Touch sidebar or in a pop-up menu, depending on your thin client model. For more information, see "Using Horizon Client on a Thin Client," on page 14.

Note A View administrator can configure your desktop to automatically log off when disconnected. In that case, any open programs in your desktop are stopped.

Log Off from a Remote Desktop

You can log off from a remote desktop operating system, even if you do not have a desktop open in Horizon Client.

If you are currently connected to and logged in to a remote desktop, you can use the Windows **Start** menu to log off. After Windows logs you off, the desktop is disconnected.

Note Any unsaved files that are open on the remote desktop are closed during the logoff operation.

Prerequisites

- Obtain the credentials that you need to log in, such as Active Directory user name and password, RSA SecurID user name and passcode, or RADIUS authentication user name and passcode.
- If you have not logged in at least once, become familiar with the procedure "Connect to a Remote Desktop or Application," on page 29.

Procedure

1 On the **Servers** tab, tap the server shortcut.

2 If prompted, supply your RSA user name and passcode, your Active Directory user name and password, or both.

3 Touch and hold the desktop name until the context menu appears.

You can perform this step from either the **All** or **Favorites** tab.

4 Tap **Log Off** in the context menu.

What to do next

Tap the Android Back button or the **Disconnect** icon in the upper-right corner of the screen and tap **Log Out** to disconnect from the server.

Manage Desktop and Application Shortcuts

After you connect to a remote desktop or application, Horizon Client saves a shortcut for the recently used desktop or application. You can rearrange and remove these shortcuts.

Desktop and application shortcuts can appear on multiple pages and you can swipe across pages to see more shortcuts. Horizon Client creates new pages, as needed, to accommodate all of your shortcuts.

Procedure

- Perform these steps to remove a desktop or application shortcut from the **Recent** tab.
  a Touch and hold the shortcut until **Remove Shortcut** appears at the bottom of the screen.
  b Drag the shortcut to **Remove Shortcut**.
- To move a desktop or application shortcut, touch and hold the shortcut and drag it to the new location.

  You cannot drag a shortcut to another page unless that page already exists.

Using a Microsoft Windows Desktop or Application

4

On Android devices and thin clients,Horizon Client includes additional features to aid in navigation.

This chapter includes the following topics:

Feature Support Matrix for Android

Some features are supported on one type of Horizon Client but not on another.

Table 4-1. Features Supported on Windows Desktops for Android Horizon Clients

Feature	Windows 10 Desktop	Windows 8.x Desktop	Windows 7 Desktop	Windows Vista Desktop	Windows XP Desktop	Windows Server 2008/2012 R2 Desktop
RSA SecurID or RADIUS	X	X	X	Limited	Limited	X
Single sign-on	X	X	X	Limited	Limited	X
RDP display protocol						
PCoIP display protocol	X	X	X	Limited	Limited	X
VMware Blast display protocol	X	X	X			X

Table 4-1. Features Supported on Windows Desktops for Android Horizon Clients (Continued)

Feature	Windows 10 Desktop	Windows 8.x Desktop	Windows 7 Desktop	Windows Vista Desktop	Windows XP Desktop	Windows Server 2008/2012 R2 Desktop
USB redirection						
Client drive redirection	X	X	X			X
Real-Time Audio-Video (audio-in only)	X	X	X			X
Wyse MMR						
Windows 7 MMR						
Virtual printing						
Location-based printing	X	X	X	Limited	Limited	X
Smart cards	X	X	X	Limited	Limited	X
Multiple monitors						

Windows 10 desktops require View Agent 6.2 or later or Horizon Agent 7.0 or later. Windows Server 2012 R2 desktops require View Agent 6.1 or later or Horizon Agent 7.0 or later.

Important View Agent 6.1 and later and Horizon Agent 7.0 and later releases do not support Windows XP and Windows Vista desktops. View Agent 6.0.2 is the last View release that supports these guest operating systems. Customers who have an extended support agreement with Microsoft for Windows XP and Vista, and an extended support agreement with VMware for these guest operating systems, can deploy the View Agent 6.0.2 version of their Windows XP and Vista desktops with View Connection Server 6.1.

For descriptions of these features, see the *View Planning* document.

Feature Support for Session-Based Desktops on RDS Hosts

RDS hosts are server computers that have Windows Remote Desktop Services and View Agent or Horizon Agent installed. Multiple users can have desktop sessions on an RDS host simultaneously. An RDS host can be either a physical machine or a virtual machine.

Note The following table contains rows only for the features that are supported. Where the text specifies a minimum version of View Agent, the text "and later" is meant to include Horizon Agent 7.0 and later.

Table 4-2. Features Supported for RDS Hosts with View Agent 6.0.x or Later, or Horizon Agent 7.0 or Later, Installed

Feature	Windows Server 2008 R2 RDS Host on a Physical Machine	Windows Server 2008 R2 RDS Host on a Virtual Machine	Windows Server 2012 RDS Host on a Physical Machine	Windows Server 2012 RDS Host on a Virtual Machine
RSA SecurID or RADIUS	X	X	X	X
Smart card	View Agent 6.1 and later	View Agent 6.1 and later	View Agent 6.1 and later	View Agent 6.1 and later
Single sign-on	X	X	X	X
RDP display protocol (for desktop clients)	X	X	X	X
PCoIP display protocol	X	X	X	X

Table 4-2. Features Supported for RDS Hosts with View Agent 6.0.x or Later, or Horizon Agent 7.0 or Later, Installed (Continued)

Feature	Windows Server 2008 R2 RDS Host on a Physical Machine	Windows Server 2008 R2 RDS Host on a Virtual Machine	Windows Server 2012 RDS Host on a Physical Machine	Windows Server 2012 RDS Host on a Virtual Machine
VMware Blast display protocol	Horizon Agent 7.0 and later	Horizon Agent 7.0 and later	Horizon Agent 7.0 and later	Horizon Agent 7.0 and later
HTML Access		View Agent 6.0.2 and later		View Agent 6.0.2 and later
Client drive redirection	View Agent 6.1.1 and later	View Agent 6.1.1 and later	View Agent 6.1.1 and later	View Agent 6.1.1 and later
Virtual printing (for desktop clients)		View Agent 6.0.1 and later		View Agent 6.0.1 and later
Location-based printing		View Agent 6.0.1 and later		View Agent 6.0.1 and later
Multiple monitors (for desktop clients)	X	X	X	X
Unity Touch (for mobile and Chrome OS clients)	X	X	X	X

For information about which editions of each guest operating system are supported, or which service packs, see the "Supported Operating Systems for View Agent" topic in the View 5.x or 6.x installation documentation. See the "Supported Operating Systems for Horizon Agent" topic in the Horizon 7 installation documentation.

Limitations for Specific Features

Specific features that are supported on Windows desktops for Horizon Client for Android have certain restrictions.

Table 4-3. Requirements for Specific Features

Feature	Requirements
Location-based printing for Windows Server 2008 R2 desktops, RDS desktops (on virtual machine RDS hosts), and remote applications	Horizon 6.0.1 with View and later servers.
Smart cards for RDS desktops	View Agent 6.1 and later or Horizon Agent 7.0 and later.
Real-Time Audio-Video (audio-in only)	See "System Requirements for Real-Time Audio-Video," on page 9.
Client drive redirection	View Agent 6.1.1 and later or Horizon Agent 7.0 and later.

Note You can also use Horizon Client to securely access remote Windows-based applications, in addition to remote desktops. Selecting an application in Horizon Client opens a window for that application on the local client device, and the application looks and behaves as if it were locally installed.

You can use remote applications only if you are connected to Connection Server 6.0 or later. For information about which operating systems are supported for the RDS (Remote Desktop Sessions) host, which provides remote applications and session-based desktops, see "Supported Operating Systems for Horizon Agent" topic in the View 5.x or 6.x installation documentation. See the "Supported Operating Systems for Horizon Agent" topic in the Horizon 7 installation documentation.

Input Devices, Keyboards, and Keyboard Settings

Horizon Client for Android supports Bluetooth and docked keyboard devices and keyboards. You can also set preferences for settings such as auto-capitalization and text correction.

External Keyboards and Input Devices

For information about the devices that your specific tablet supports, see the documentation from the tablet manufacturer.

External keyboards are sometimes automatically detected by Horizon Client. For some external keyboards, you must either tap the tablet screen with three fingers at the same time, or you must tap the **Keyboard** icon. If you are using a remote desktop or application in full-screen mode, the **Keyboard** icon is in the Horizon Client Tools radial menu. If you are not using full-screen mode, the **Keyboard** icon is on the Horizon Client toolbar.

Note On Kindle Fire tablets, tapping with three fingers does not display the onscreen keyboard. You can instead use the **Keyboard** icon to display the onscreen keyboard.

After the external keyboard is detected, you might not be able to use the Horizon Client Tools or three-finger tap to display the onscreen keyboard. You might first have to deactivate the external keyboard by pressing its Eject key.

International Onscreen Keyboards

With the correct input methods installed, you can input characters for the following languages: English-United States, Japanese, French, German, Simplified Chinese, Traditional Chinese, and Korean.

To choose a language for the keyboard or voice, tap the Keyboard Settings key on the onscreen keyboard. The Keyboard Settings key is the left-most key on the bottom row of the onscreen keyboard. When you finish selecting settings, tap the Android Back button to dismiss the dialog box.

Enable the Japanese 106/109 Keyboard Layout

If you are connected to a Windows XP desktop, you can configure Horizon Client to use the Japanese 106/109 keyboard layout.

Prerequisites

Use Horizon Client to connect to a Windows XP desktop that has the Japanese keyboard layout enabled.

Procedure

1 Open **Settings** and tap **Keyboard**.

If you are using the remote desktop in full-screen mode, tap the Horizon Client Tools radial menu icon and tap the gear icon. If you are not using full-screen mode, **Settings** is in the menu in the upper-right corner of the Horizon Client toolbar. If you are not connected to a remote desktop or application, tap the gear icon in the upper right corner of the Horizon Client screen.

2 Tap **Use Japanese 106/109 Keyboard Layout** to select the check box.

This setting is disabled if the keyboard layout on the Windows XP desktop is not set to Japanese or if the desktop is not running Windows XP.

Using the Real-Time Audio-Video Feature for Microphones

With the Real-Time Audio-Video feature, you can use a microphone connected to your mobile device on your remote desktop. Real-Time Audio-Video is compatible with standard audio devices and with standard conferencing applications such as Skype, WebEx, and Google Hangouts.

Real-Time Audio-Video is enabled by default when you install Horizon Client on your device.

Note Only the audio-in feature is supported. The video feature is not supported.

For information about setting up the Real-Time Audio-Video feature on a remote desktop, see the *Setting Up Desktop and Application Pools in View* document.

When you install Horizon Client on an Android 6 device, Horizon Client prompts you for permission to access the microphone. You must grant permission for the microphone to work with your remote desktop. You can enable or disable access to the microphone by changing the Microphone permission for Horizon Client in the Android Settings app. For Android devices earlier than Android 6, permission to the microphone is opened by default.

Using Native Operating System Gestures with Touch Redirection

You can use native operating system gestures from your touch-based mobile device when you are connected to a Windows 8, Windows 10, or Windows Server 2012 remote desktop, or to a remote application that is hosted on Windows Server 2012. For example, you can touch, hold, and release an item on a Windows 8 desktop to display the item's context menu.

When touch redirection is enabled, you can use only native operating system touch gestures. Horizon Client local gestures, such as double-click and pinch, no longer work. You must drag the Unity Touch tab button to display the Unity Touch sidebar.

Touch redirection is enabled by default when you connect to a Windows 8, Windows 10, or Windows Server 2012 remote desktop, or to a remote application that is hosted on Windows Server 2012.

To disable touch redirection, open **Settings**, tap **Touch**, and deselect the **Windows native touch gestures** check box. If you are connected to a remote desktop or application in full-screen mode, tap the Horizon Client Tools radial menu icon and tap the gear icon. If you are not using full-screen mode, **Settings** is in the menu in the upper-right corner of the Horizon Client toolbar. If you are not connected to a remote desktop or application, tap the gear icon in the upper right corner of the Horizon Client screen.

Using the Unity Touch Sidebar with a Remote Desktop

You can quickly navigate to a remote desktop application or file from a Unity Touch sidebar. From this sidebar, you can open files and applications, switch between running applications, and minimize, maximize, restore, or close windows and applications in a remote desktop.

If the Unity Touch feature is enabled, the sidebar appears on the left side of the screen when you first access a remote desktop.

Figure 4-1. Unity Touch Sidebar for a Remote Desktop on a Mobile Device

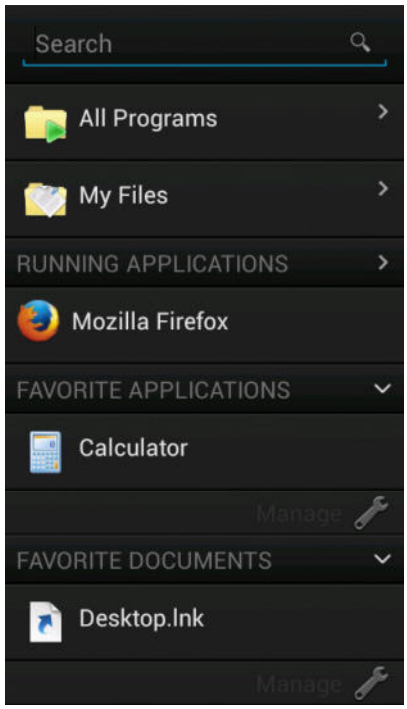
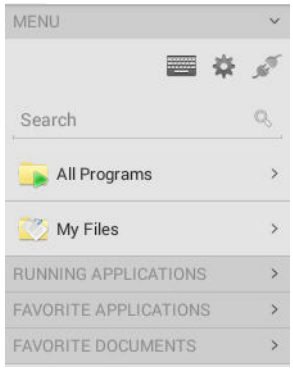


Figure 4-2. Unity Touch Sidebar for a Remote Desktop on a Thin Client



If you access a desktop that has Unity Touch enabled but the sidebar is not displayed, you can see a tab on the left side of the screen. Besides swiping this tab to the right to open the sidebar, you can slide the tab up or down.

From this sidebar, you can perform many actions on a file or application.

Table 4-4. Unity Touch Sidebar Actions for a Remote Desktop

Action	Procedure
Show or hide the onscreen keyboard	(Thin client only) Select the **Keyboard** icon.
Change the Horizon Client settings	(Thin client only) Select the **Settings** icon.
Disconnect from the desktop	(Thin client only) Select the **Disconnect** icon.
Show the sidebar	Swipe the tab to the right. When the sidebar is open, you cannot perform actions on the desktop screen or the Horizon Client Tools radial menu.
Hide the sidebar	Swipe the tab to the left to close the sidebar. When the sidebar is open, you cannot perform actions on the desktop screen or the Horizon Client Tools radial menu.

Table 4-4. Unity Touch Sidebar Actions for a Remote Desktop (Continued)

Action	Procedure
Navigate to an application	Tap **All Programs** and navigate to the application just as you would from the Windows Start menu.
Navigate to a file	Tap **My Files** to access the `User` folder, and navigate to the file. **My Files** includes folders such as `My Pictures`, `My Documents`, and `Downloads`. **My Files** includes the folders in the user profile (`%USERPROFILE%` directory). If you relocate the `system` folder in the `%USERPROFILE%` directory, the **My Files** menu can also display content from the relocated folder, whether it is a local relocated folder or a network share folder.
Search for an application or file	■ Tap in the **Search** box and type the name of the application or file. ■ To use voice dictation, tap the microphone on the keyboard. ■ To launch an application or file, tap the name of the application or file in the search results. ■ To return to the home view of the sidebar, tap the **X** to close the **Search** box.
Open an application or file	Tap the name of the file or application in the sidebar. The application starts and the sidebar closes.
Switch between running applications or open windows	Tap the application name under **Running Applications**. If more than one file is open for one application, tap the chevron (>) next to the application to expand the list.
Minimize a running application or window	Touch and hold the application name under **Running Applications** until the context menu appears. Tap **Minimize**.
Maximize a running application or window	Touch and hold the application name under **Running Applications** until the context menu appears. Tap **Maximize**.
Close a running application or window	Touch and hold the application name under **Running Applications** until the context menu appears. Tap **Close**.
Restore a running application or window to its previous size and position	Touch and hold the application name under **Running Applications** until the context menu appears. Tap **Restore**.
Create a list of favorite applications or files	1 Search for the application or file, or tap **Manage** under the **Favorite Applications** or **Favorite Documents** list. If the **Manage** bar is not visible, tap the chevron (>) next to **Favorite Applications** or **Favorite Files**. 2 Tap the check box next to the names of your favorites in the search results or in the list of available applications or files. The favorite that you add last appears at the top of your favorites list. Your favorites are remembered across all of your mobile devices so that, for example, you have the same list whether using your smart phone or your tablet.
Remove an application or file from the favorites list	1 Search for the application or file, or tap **Manage** under the **Favorite Applications** or **Favorite Dcuments** list. If the **Manage** bar is not visible, tap the chevron (>) next to **Favorite Applications** or **Favorite Documents**. 2 Tap to remove the check mark next to the name of the application or file in the favorites list.
Reorder an application or file in the favorites list	1 Tap **Manage** under the **Favorite Applications** or **Favorite Documents** list. If the **Manage** bar is not visible, tap the chevron (>) next to **Favorite Applications** or **Favorite Documents**. 2 In the favorites list, touch and hold the handle on the left side of the application or file name and drag the favorite up or down the list.

Note To use the Unity Touch feature with View 5.3.x desktops, the Remote Experience Agent must be installed on the desktops. If you have the Remote Experience Agent installed but want to turn off this feature, you can set a registry value on the remote desktop.

If users have a floating desktop, users' favorite applications and files can be saved only if Windows roaming user profiles are configured for the desktop. Administrators can create a default **Favorite Applications** list that end users see the first time the sidebar appears.

For Connection Server 5.3.x servers, see the *View Feature Pack Installation and Administration* document. For Connection Server 6.0 and later servers, see the *Setting Up Desktop and Application Pools in View* document.

Using the Unity Touch Sidebar with a Remote Application

You can quickly navigate to a remote application from a Unity Touch sidebar. From this sidebar, you can launch applications, switch between running applications, and minimize, maximize, restore, or close remote applications. You can also switch to a remote desktop.

When you access a remote application, the Unity Touch sidebar appears on the left side of the screen. If the Unity Touch sidebar is closed, a tab appears on the left side of the screen. You can swipe this tab to the right to reopen the sidebar. You can also slide the tab up or down.

Note You can use remote applications only if you are connected to Connection Server 6.0 or later.

Figure 4-3. Unity Touch Sidebar for a Remote Application on a Mobile Device

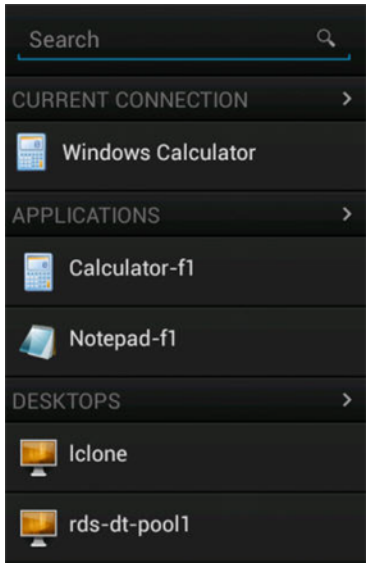
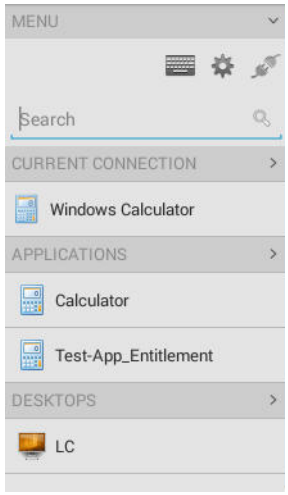


Figure 4-4. Unity Touch Sidebar for a Remote Application on a Thin Client



From the Unity Touch sidebar, you can perform many actions on a remote application.

Table 4-5. Unity Touch Sidebar Actions for a Remote Application

Action	Procedure
Show or hide the onscreen keyboard	(Thin client only) Select the **Keyboard** icon.
Modify Horizon Client settings	(Thin client only) Select the **Settings** icon.
Disconnect from the application	(Thin client only) Select the **Disconnect** icon.
Show the sidebar	Swipe the tab to the right to open the sidebar. When the sidebar is open, you cannot perform actions on the application screen.
Hide the sidebar	Swipe the tab to the left to close the sidebar. When the sidebar is open, you cannot perform actions on the application screen.
Switch between running applications	Tap the application under **Current Connection**.
Open an application	Tap the name of the application under **Applications** in the sidebar. The application starts and the sidebar closes.
Close a running application	1 Touch and hold the application name under **Current Connection** until the context menu appears. 2 Tap **Close**.
Minimize a running application	1 Touch and hold the application name under **Current Connection** until the context menu appears. 2 Tap **Minimize**.
Maximize a running application	1 Touch and hold the application name under **Current Connection** until the context menu appears. 2 Tap **Maximize**.
Restore a running application	1 Touch and hold the application name under **Current Connection** until the context menu appears. 2 Tap **Restore**.
Switch to a remote desktop	Tap the desktop name under **Desktops**.

Horizon Client Tools on a Mobile Device

On a mobile device, the Horizon Client Tools include buttons for displaying the onscreen keyboard, virtual touchpad, configuration settings, and a virtual keypad for arrow keys and function keys.

When you use a remote desktop or application in full-screen mode, the Horizon Client Tools radial menu icon appears at the right edge of the screen. You can drag the radial menu icon to relocate it. Tap to expand the radial menu and display icons for each tool, which you can tap to select. Tap outside the tool icons to collapse the icons back into the radial menu icon.

If the remote desktop or application is not in full-screen mode, a toolbar appears on the right side of the menu bar at the top of the screen. You can tap the **Full Screen** icon on the toolbar to enter full-screen mode. When you are in full-screen mode, you can tap a similar icon in the radial menu to exit full-screen mode.

The radial menu includes several tools.

Table 4-6. Radial Menu Icons

Icon	Description
	Horizon Client Tools radial menu
	Disconnect
	Onscreen keyboard (toggles to show or hide)
	Settings
	Navigation keys
	Virtual touchpad
	Gesture help

Onscreen Keyboard

The onscreen keyboard has more keys than the standard onscreen keyboard, for example, Control keys and function keys are available. To display the onscreen keyboard, tap the screen with three fingers at the same time or tap the **Keyboard** icon.

If you are using a remote desktop or application in full-screen mode, the **Keyboard** icon is in the Horizon Client Tools radial menu. If you are not using full-screen mode, the **Keyboard** icon is on the Horizon Client toolbar.

You can also use the feature that displays the onscreen keyboard whenever you tap a text field, such as in a note or new contact. If you then tap in an area that is not a text field, the keyboard is dismissed.

To turn this feature on or off, use the **Keyboard popup** and **Keyboard dismiss** options. To display these options when you are using a remote desktop or application in full-screen mode, tap the Horizon Client Tools radial menu icon, tap the gear icon, and tap **Keyboard**. If you are not using full-screen mode, **Settings** is in the menu in the upper-right corner of the Horizon Client toolbar. If you are not connected to a remote desktop or application, tap the gear icon in the upper right corner of the Horizon Client screen.

Note On Kindle Fire tablets, tapping with three fingers does not display the onscreen keyboard. You can instead tap the **Keyboard** icon on the Horizon Client toolbar to display the onscreen keyboard.

Even if you use an external keyboard, a one-row onscreen keyboard might still appear, which contains function keys, and the Ctrl, Alt, Win, and arrow keys. Some external keyboards do not have all these keys.

Sending a String of Characters

From the onscreen keyboard, tap the pen icon on the left side of the Ctrl key to display the local input buffer. Text that you type into this text box is not sent to an application until you tap **Send.** For example, if you open an application such as Notepad and tap the pen icon, the text that you type does not appear in the Notepad application until you tap **Send.**

Use this feature if you have a poor network connection. That is, use this feature if, when you type a character, the character does not immediately appear in the application. With this feature, you can quickly type up to 1,000 characters and then either tap **Send** or tap **Return** to have all 1,000 characters appear at once in the application.

Navigation Keys

Tap the **Ctrl/Page** icon in the Horizon Client Tools or onscreen keyboard to display the navigation keys. These keys include Page Up, Page Down, arrow keys, function keys, and other keys that you often use in Windows environments, such as Alt, Del, Shift, Ctrl, Win, and Esc. You can press and hold arrow keys for continuous key strokes. For a picture of the Ctrl/Page icon, see the table at the beginning of this topic.

Use the Shift key on this keypad when you need to use key combinations that include the Shift key, such as Ctrl+Shift. To tap a combination of these keys, such as Ctrl+Alt+Del, first tap the onscreen Ctrl key. After the Ctrl key turns blue, tap the onscreen Alt key. After the Alt key turns blue, tap the Del key.

Onscreen Touchpad and Full Screen Touchpad

The virtual touchpad can be either regular-size, to resemble a touchpad on a laptop computer, or full screen, so that the entire device screen is a touchpad.

By default, when you tap the touchpad icon, you can touch anywhere on the screen to move the mouse pointer. The screen becomes a full-screen touchpad.

- Moving your finger around the touchpad creates a mouse pointer that moves around the remote desktop or application.
- You can use the regular-size and full screen virtual touchpad for single-clicking and double-clicking.
- The regular touchpad also contains left-click and right-click buttons.
- You can tap with two fingers and then drag to scroll vertically.

You can drag the regular-size virtual touchpad to the side of the device so that you can use your thumb to operate the touchpad while you are holding the device.

You can make the virtual touchpad resemble the touchpad on a laptop, including right-click and left-click buttons, by setting the **Full screen touchpad** setting to off. If you are using the remote desktop or application in full-screen mode, tap the Horizon Client Tools radial menu icon, tap the gear icon, tap **Touch**, and deselect the **Full screen touchpad** setting.

To adjust how quickly the pointer moves when you use the touchpad, adjust the **Touchpad sensitivity** option. If you are using the remote desktop or application in full-screen mode, tap the Horizon Client Tools radial menu icon, tap the gear icon, tap **Touch**, tap **Touchpad sensitivity**, and drag the slider.

If you are not using full-screen mode, **Settings** is in the menu in the upper-right corner of the Horizon Client toolbar. If you are not connected to a remote desktop or application, tap the gear icon in the upper right corner of the Horizon Client screen.

Gestures

VMware has created user interaction aids to help you navigate conventional Windows user interface elements on a non-Windows device.

Clicking

As in other applications, you tap to click a user interface element.

Right-Clicking

The following options are available for right-clicking:

- Use the Horizon Client Tools to display the regular virtual touchpad and use the touchpad's right-click button.
- On a touch screen, tap with two fingers at nearly the same time. The right-click occurs where the first finger tapped.
- On some devices, you can use an external mouse, such as a USB or Bluetooth mouse, to right-click.

Scrolling and Scrollbars

The following options are available for vertical scrolling.

- On a touch screen, tap with one or two fingers and then drag to scroll. The text under your fingers moves in the same direction as your fingers.

  Important Scrolling with one finger has the following limitations: It does not work if you have zoomed in, or when the onscreen keyboard is displayed, or when you are using the full screen touchpad.

- Use the Horizon Client Tools to display the touchpad, tap the touchpad with two fingers, and then drag to scroll.
- Use the onscreen touchpad to move the mouse pointer and click scroll bars.

Zooming In and Out

As in other applications, pinch your fingers together or apart to zoom on a touch screen.

Window Resizing

If you use the full-screen touchpad to resize a window, touch and hold one finger at the corner or side of the window and drag to resize.

If you use the regular-size virtual touchpad, touch and hold the left-click button while dragging the corner or side of a window.

Sound, Music, and Video

If sound is turned on for your device, you can play audio in a remote desktop.

Using a Thin Client

How you interact with Windows user interface elements when Horizon Client is installed on a thin client depends on your thin client model and the external input device you are using with your thin client. For more information, see "Using Horizon Client on a Thin Client," on page 14.

Multitasking

You can switch between Horizon Client and other apps without losing a remote desktop or application connection.

In a WiFi network, by default Horizon Client runs in the background indefinitely. In a 3G network, Horizon Client suspends data transmission when you switch to another app. Data transmission resumes when you switch back to Horizon Client.

The Horizon Client icon appears in the status bar when the app is running in the background and there is a connection to a remote desktop. To switch back to Horizon Client, tap the icon in the status bar.

You can copy and paste plain text between an Android device application and a remote desktop or between two remote desktops. Formatting information is not copied.

- Text that you copy to your Android device's clipboard is automatically copied to your remote desktop's clipboard when you log in to the remote desktop.
- If you are logged in to a remote desktop, text that you copy to the remote desktop's clipboard is copied to your Android device's clipboard when you press the **Home** button or switch to the background.

By default, you can copy and paste plain text between an Android device application and a remote application. The clipboard can accommodate up to 64K characters for copy and paste operations.

To enable users to copy plain text between a remote application and an Android device application, you must modify the PCoIP or VMware Blast group policy setting called **Configure clipboard redirection** on the RDS host that hosts the remote application pool.

For information about configuring PCoIP and VMware Blast group policy settings, see the *Setting Up Desktop and Application Pools in View* document.

Saving Documents in a Remote Application

With certain remote applications, such as Microsoft Word or WordPad, you can create and save documents. Where these documents are saved depends on your company's network environment. For example, your documents might be saved to a home share mounted on your local computer.

Administrators can use an ADMX template file to set a group policy that specifies where documents are saved. This policy is called "Set Remote Desktop Services User Home Directory." For more information, see the "RDS Profiles Settings" topic in the *Setting Up Desktop and Application Pools in View* document.

Screen Resolutions and Using External Displays

You can use Horizon Client with external displays and you can change screen resolutions.

When you connect your device to an external display or projector, Horizon Client supports certain maximum display resolutions. You can change the screen resolution used on your device to allow scrolling a larger screen resolution.

Enlarging the Screen Resolution for a Remote Desktop

By default, the display resolution is set so that the entire Windows desktop fits inside your device, and the desktop icons and task bar icons are a certain size. If you change the default to a higher resolution, the desktop still fits inside the device, but the desktop and taskbar icons become smaller.

You can pinch your fingers apart to zoom in and make the desktop larger than the device screen. You can then tap and drag to access the edges of the desktop.

Changing the Display Resolution Setting

You can use the **Resolution** setting to set the display resolution to a larger value. If you are using a remote desktop or application in full-screen mode, tap the Horizon Client Tools radial menu icon, tap the gear icon, tap **Display**, and tap **Resolution**. If you are not using full-screen mode, **Settings** is in the menu in the upper-right corner of the Horizon Client toolbar. If you are not connected to a remote desktop or application, tap the gear icon in the upper right corner of the Horizon Client screen.

Screen Resolutions for Using Projectors

You can use the **Resolution** setting to set a larger resolution for projectors.

You can use the **Presentation mode** setting to display the keyboard and an expanded onscreen touchpad on the device while displaying the remote desktop on the projector or attached monitor. The expanded touchpad and keyboard appear when you plug the device into the external monitor. The device detects the maximum resolution provided by the external display. The presentation mode feature is supported only if you have Android 4.2 or later.

You can mirror the entire device display on a projector or attached monitor, including the Unity Touch sidebar, by turning off the **Presentation mode** setting. If you are connected to a remote desktop and the **Presentation Mode** setting is enabled, you can click **Done** to switch to mirror mode.

You can use the **Stay awake** setting to keep the display from turning off after a period of inactivity while in presentation mode.

To configure the **Presentation mode** and **Stay awake** settings if you are using a remote desktop or application in full-screen mode, tap the Horizon Client Tools radial menu icon, tap the gear icon, and tap **Display**. If you are not using full-screen mode, **Settings** is in the menu in the upper-right corner of the Horizon Client toolbar. If you are not connected to a remote desktop or application, tap the gear icon in the upper right corner of the Horizon Client screen.

Do not use an external mouse, such as a Bluetooth mouse, when using the **Presentation mode** setting. Instead, use the large onscreen touchpad on the Android device. If you attempt to use a mouse, the mouse pointer might not be able to move to the bottom or right side of the screen, and when moved to the top of the screen, might conflict with some of the function keys shown on the large onscreen touchpad, rather than the top of the remote desktop.

PCoIP Client-Side Image Cache

PCoIP client-side image caching stores image content on the client to avoid retransmission. This feature reduces bandwidth usage.

The PCoIP image cache captures spatial, as well as temporal, redundancy. For example, when you scroll down through a PDF document, new content appears from the bottom of the window and the oldest content disappears from the top of the window. All the other content remains constant and moves upward. The PCoIP image cache is capable of detecting this spatial and temporal redundancy.

Because during scrolling, the display information sent to the client device is primarily a sequence of cache indices, using the image cache saves a significant amount of bandwidth. This efficient scrolling has benefits both on the LAN and over the WAN.

- On the LAN, where bandwidth is relatively unconstrained, using client-side image caching delivers significant bandwidth savings.
- Over the WAN, to stay within the available bandwidth constraints, scrolling performance would be degraded without client-side caching. Over the WAN, client-side caching saves bandwidth and ensure a smooth, highly responsive scrolling experience.

With client-side caching, the client stores portions of the display that were previously transmitted. The cache size is 250 MB.

Internationalization and International Keyboards

Both the Horizon Client user interface and the documentation are available in English, Japanese, French, German, Simplified Chinese, Traditional Chinese, and Korean. International keyboards of English-United States, Japanese, French, German, Simplified Chinese, Traditional Chinese, and Korean are supported.

To choose a language for the keyboard or voice, tap the Keyboard Settings key on the onscreen keyboard. The Keyboard Settings key is the left-most key on the bottom row of the onscreen keyboard.

Troubleshooting Horizon Client 5

You can solve most Horizon Client problems by resetting the desktop or reinstalling the app.

You can also enable log collection and send log files to VMware for troubleshooting.

This chapter includes the following topics:

Collecting and Sending Logging Information

You can configure Horizon Client to collect log information and send log files to VMware for troubleshooting.

If Horizon Client quits unexpectedly, Horizon Client immediately prompts you to send log files to VMware. If log collection is enabled, the crash log file contains detailed debug information. If log collection is disabled, only certain exception information is included in the crash log file.

Horizon Client generates three types of log files (`Horizon_View_Client_logs_`*`timestamp`*`.txt`, `libcdk_`*`timestamp`*`.txt`, and `pcoip_client_`*`timestamp`*`.txt`) and keeps the last five log files of each type.

If you choose to send log files to VMware, Horizon Client uses the available email client on your device to create a message. If your email client can send multiple attachments, Horizon Client attaches the last five log files of each type to the message. If your email client cannot send multiple attachments, Horizon Client compresses the last five log files of each type and attaches a ZIP file to the message. The ZIP file name contains a time stamp, for example, `Horizon_View_Client_logs_`*`timestamp`*`.zip`.

You can also manually retrieve and send log files at any time.

Enable Horizon Client Log Collection

When you enable log collection, Horizon Client creates log files that contain information that can help VMware troubleshoot problems with Horizon Client.

Because log collection affects the performance of Horizon Client, enable log collection only if you are experiencing a problem.

Prerequisites

Verify that an email client is available on your device. Horizon Client requires an email client to send log files.

Procedure

1 Open **Settings** and tap **Log collection**.

If you are connected to a remote desktop or application in full-screen mode, tap the Horizon Client Tools radial menu icon and tap the gear icon. If you are not using full-screen mode, **Settings** is in the menu in the upper right corner of the Horizon Client toolbar. If you are not connected to a remote desktop or application, tap the gear icon in the upper right corner of the Horizon Client screen.

2 Tap **Enable log** to select the check box and tap **OK** to confirm your choice.

After log collection is enabled, Horizon Client generates a log file it quits unexpectedly or when it is exited and relaunched.

Manually Retrieve and Send Horizon Client Log Files

When Horizon Client log collection is enabled on your device, you can manually retrieve and send log files at any time.

This procedure shows you how retrieve and send log files through Horizon Client. You can also retrieve log files by using tools that can access app storage space. Horizon Client saves log files in the `Android/data/com.vmware.view.client.android/files` directory.

Prerequisites

- Verify that an email client is available on your device. Horizon Client requires an email client to send log files.
- Enable Horizon Client log collection. See "Enable Horizon Client Log Collection," on page 53.

Procedure

1 Open **Settings** and tap **Log collection**.

If you are connected to a remote desktop or application in full-screen mode, tap the Horizon Client Tools radial menu icon and tap the gear icon. If you are not using full-screen mode, **Settings** is in the menu in the upper right corner of the Horizon Client toolbar. If you are not connected to a remote desktop or application, tap the gear icon in the upper right corner of the Horizon Client screen.

2 Tap **Send the log**.

Horizon Client uses the email client on your device to create a message. The body of the message contains information about your device. If your email client can send multiple attachments, Horizon Client attaches the last five log files of each type to the message. If your email client cannot send multiple attachments, Horizon Client compresses the last five log files of each type and attaches a ZIP file to the message.

Disable Horizon Client Log Collection

Because log collection affects the performance of Horizon Client, disable log collection if you are not troubleshooting a problem.

Procedure

1 Open **Settings** and tap **Log collection**.

If you are connected to a remote desktop or application in full-screen mode, tap the Horizon Client Tools radial menu icon and tap the gear icon. If you are not using full-screen mode, **Settings** is in the menu in the upper right corner of the Horizon Client toolbar. If you are not connected to a remote desktop or application, tap the gear icon in the upper right corner of the Horizon Client screen.

2 Tap **Enable log** to clear the check box.

Reset a Remote Desktop or Application

Resetting a remote desktop shuts down and restarts the desktop. Resetting a remote application quits the application. You might need to reset a desktop or application if the desktop operating system or application stops responding.

Resetting a remote desktop is the equivalent of pressing the **Reset** button on a physical PC to force the PC to restart. Any files that are open on the remote desktop will be closed without being saved first.

Resetting a remote application quits all remote applications and logs off all of your remote application sessions. Unsaved changes in remote applications might be lost.

Note A View administrator can disable the reset feature for certain types of desktops. For more information, see the *View Administration* document.

Prerequisites

- Obtain the credentials you need to log in, such as a user name and password, RSA SecurID user name and passcode, RADIUS authentication user name and passcode, or smart card personal identification number (PIN).
- If you have not logged in at least once, become familiar with the procedure "Connect to a Remote Desktop or Application," on page 29.

Procedure

1 On the **Servers** tab, tap the server shortcut to connect to the server.

2 If prompted, supply your RSA user name and passcode, your Active Directory user name and password, or both.

3 Touch and hold the desktop or application name until the context menu appears.

You can perform this step from either the **All** or **Favorites** tab.

4 Tap **Reset** in the context menu.

Reset is available only if the status of the desktop or application is such that the action can be taken.

Uninstall Horizon Client

You can sometimes resolve problems with Horizon Client by uninstalling and reinstalling Horizon Client.

You uninstall Horizon Client just as you would any Android app.

Procedure

1 On your device, go to the **Horizon** app.

2 Touch and hold the app icon until the **Uninstall** (trash can) icon appears on your device.

3 Drag the app to the **Uninstall** (trash can) icon.

Alternatively, you can go to **Apps > Settings** and select **Applications > Manage Applications** to uninstall Horizon Client.

What to do next

Reinstall Horizon Client.

See "Install or Upgrade Horizon Client," on page 13.

Horizon Client Stops Responding or the Remote Desktop Freezes

When the screen freezes, first, try resetting the remote desktop operating system.

Problem

Horizon Client does not work or repeatedly exits unexpectedly or the remote desktop freezes.

Cause

Assuming that View servers are configured properly and that firewalls surrounding them have the correct ports open, other issues usually relate to Horizon Client on the mobile device or to the guest operating system on the remote desktop.

Solution

- If the operating system in the remote desktop freezes, use Horizon Client on the device to reset the desktop.

  This option is available only if the View administrator has enabled this feature.
- Uninstall and reinstall the app on the device.
- If resetting the remote desktop and reinstalling Horizon Client do not help, you can reset the Android device, as described in the user guide for your Android device.
- If you get a connection error when you attempt to connect to the server, you might need to change your proxy settings.

Problem Establishing a Connection When Using a Proxy

Sometimes if you attempt to connect to Connection Server using a proxy while on the LAN, an error occurs.

Problem

If the View environment is set up to use a secure connection from the remote desktop to Connection Server, and if the client device is configured to use an HTTP proxy, you might not be able to connect.

Cause

Unlike Windows Internet Explorer, the client device does not have an Internet option to bypass the proxy for local addresses. When an HTTP proxy is used for browsing external addresses, and you try to connect to Connection Server using an internal address, you might see the error message `Could not establish connection`.

Solution

- Remove the proxy settings so that the device no longer uses a proxy.

Index

R

S

T

U

V

W