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RFgen Client
Install and Upgrade Guide
for Android

All Editions
RFgen 5.2

RFgen

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RFgen Client Software Overview

The **RFgen** Client software enables mobile devices to:

- Communicate with the RFgen server so you can deploy a Profile (a file containing the collection of applications, server settings, access permissions etc) to the device.

- Configure the RFgen clients' profiles through the RFgen Configuration tool (included when you install the RFgen client).

- Communication with 3rd party, mobile device management tools (for deployment of client software on a mass basis).

The four basic device platforms are Android, Apple iOS (but not Macintosh or Apple computer platforms), Windows desktop systems, and the compact embedded, Windows CE.

This guide describes covers:

- Where to obtain the RFgen Client software
- Which OS versions are supported
- Instructions for customized installations (i.e. Android)
- How to connect the client to the server after its been installed to the device
- The possible dialog or error messages you might see and what they mean

For details on installing or transferring the RFgen Client software to your physical device, refer to your manufacturer's documentation and the documentation for the version of the operating system of the platform.

Supported Versions and Downloads

Supported Versions

RFgen 5.2.x supports Android device versions 5.0 (Lollipop) and later.

Installation Options

The ***RFgen Mobile Client*** can be downloaded from the Google Play Store application.

If you don't have access to the Google Play Store, you can download the RFgen Mobile Client (the apk file) from the RFgen portal and then transfer it to your Android device.

RFgen Portal Download

a. Go to https://www.rfgen.com/product-portal

b. Follow the prompts to log in. If you do not have a Product Portal user account, please register.

c. Select **Product Portal > Product Downloads.**

d. Select **RFgen 5.2**.

e. Select the **Android Client**.

f. This will download the **RFAC_520.apk** file.

For more details, see the example for [installing the Android client using the apk file](#).

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Android RFAC Install Example

Use this option to transfer the RFgen Android Client (RFAC_520.apk file) to your Android device from a Windows system in the event you cannot use GooglePlay to install the RFgen client.

To download the RFAC_520.apk file from the RFgen product portal to your Windows desktop

1. Go to www.rfgen.com

2. Register and log-in. (The Product Portal will not display under the Resources menu until you are logged in.)

3. Select Resources > Product Portal from the menu, then select the Product Downloads tile on the web page.

4. From the RFgen versions, select the version running on the server, then select the RFAC.apk file and download it.

Sideload/Install the RFAC.apk

The following steps are general guidelines and may be different for your version of the Android OS running on your device.

1. Connect your Android device to your PC with a USB connector. The Android device displays your PC's desktop.

2. On your Android screen, tap its Home button.

3. Slide your finger from top to bottom of the Android screen to view Android system options.

4. Select the "Connected Devices Tab on USB" or "USB Charging This Device. Tap for more options" panel.

5. A dialog with "Use USB to: Charge the device; Transfer files to another device; Transfer photos" displays.

6. Select "Transfer Files". This activates the connection between the PC/Desktop and your Android device.

Transfer the file from PC to Android

1. Open your PC's file explorer and copy the RFAC_520.apk to your Android device.
 For example, Internal Storage > Download. You can also copy it to your SD card (if it exists) > Download.

2. On your Android device, open the File Browser and navigate to the location where you just copied the file. For example, `/sdcard/Download/RFAC_520.apk.`

3. Tap the RFAC_520.apk.

4. The question: **"Do you want to install this application? It will get access to . . ."** displays.

5. Select **Yes**.

Or, your version of Android may require you to turn on **"Allow unknown sources"** then run the APK.

Scroll down until you see the "Install" and tap on "Install." The Android device will begin installing the client software.

6. Continue with **Connect to Server (Host)** process.

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RFgen Client Connection Process Overview

How it Works

1. The **RFgen Client software** enables communication between the server and client.

2. After its installed a screen prompts you enter the RFgen server IP (or host name) so the client may connect to the RFgen server.

3. Upon connection, a screen prompts you to select a profile. A profile is a collection of configuration settings that defines the behavior of the client. The administrator or end-user selects the profile contains information on device connection for download of mobile application, user-controlled parameters (i.e. ability to take pictures, print barcodes etc, use unique keypads etc), and change which language is used if the application was translated into other languages.

   Profiles names are customized by the developer. They are typically categorized as "Thin" or "Fat" clients, where Thin clients require a live connection to the server to process a transaction; Fat enables transactions to process while disconnected from the RFgen server and stores the changes until the user reconnects to the RFgen server.

4. Once the profile is received by the client, the user should be able to login, select an application from their menu, and work unless the administrator implemented the Authorized Devices feature.

   Note: If the user is unable to connect with the server, oftentimes the issue stems from a network/Wi-FI setup. Fat/Batch client require install of a license on the client to ensure it can be used.

Related Topics

[Profiles Overview](#)

[To create a profile](#)

 [Profiles - To select an app](#) in the Mobile Development Studio.

Connect RFgen Client to Server (Host)

Before you start, make sure your RFgen Server Services are up and running, its licensed for client connections, your network is configured to allow communication between the server and the client, and your [client profile](#) on the RFgen Mobile Development Server is ready for deployment. If you plan on restricting which devices may connect, review [Device Authorizations](#). If you have your Mobile Development Studio and Mobile Unity Platform on the same server, and you want to test a single connection, you can turn on the services running on the Mobile Unity Platform server and simply test a remote connection between the client and the Mobile Development Studio.

1. Launch the RFgen Client from your screen.

2. The Set an RFgen Server screen displays.
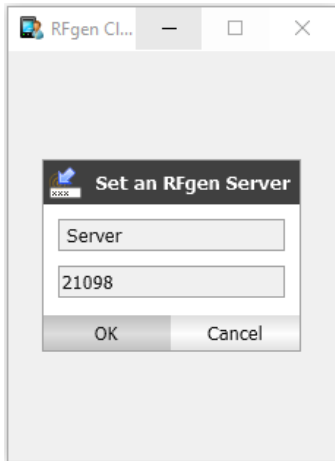

3. Enter the host name (DNS name) of the system that is hosting the RFgen server in the Server box. This should match the name setup in the RFgen Mobile Development Studio > Solution Explorer > Profiles > [name of the profile] > RFgen Service Group: Instance Name/Address.
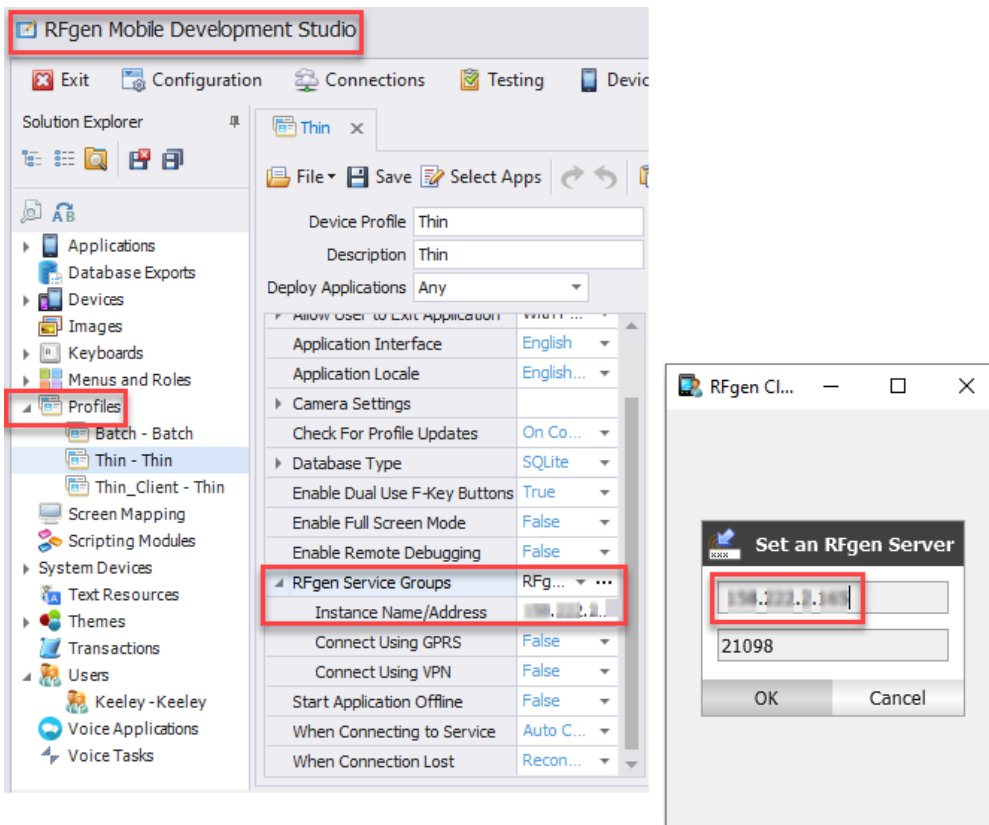
Left: Where you enter the Server Name/IP on server
Right: Where you enter the server name/IP on client

4. Port 21098 is the default for communication between the RFgen Client and Server. Leave this as "21098" unless its is already in use which case an alternate port number will need to be assigned. (Remember to configure the port number on the system where the RFgen Desktop Client is running.) Click **OK**.

5. A **Select Profile** screen displays if the client is able to connect with the server. (Your profile names may look different than the example shown below.)
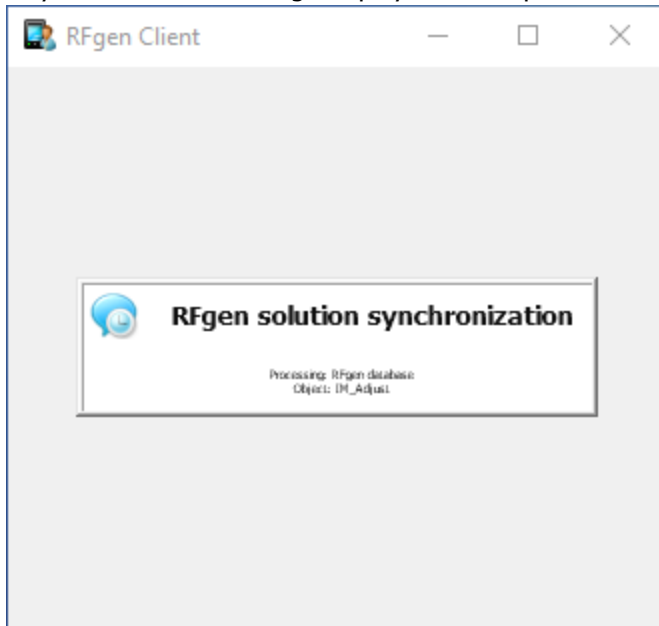
    Select the profile to be installed to the client.
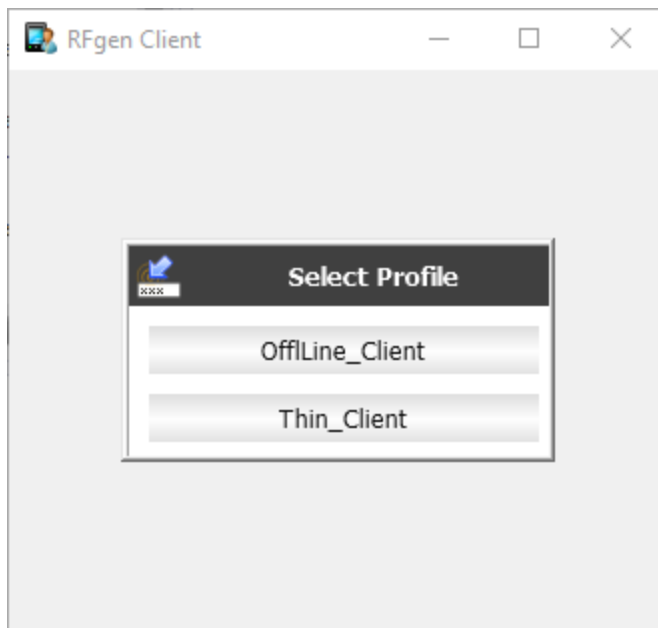
    Note: If you instead see a message:

    Set an RFgen Server
    Cannot Connect to RFgen Server

    See Set an RFgen Server Unable to Connect for a list of possible causes.

6. A synchronization message display while the profile downloads.

-   Once the profile is downloaded, your client will proceed in accordance to the values that were set in the profile. For example, if the profile has the "Connect Automatically" enabled, your client may be taken to the login screen.
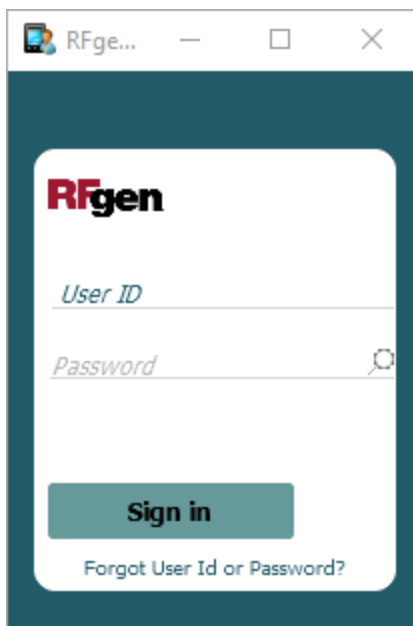
-   Most solutions are setup to start with a Login, but your own client may be different.

- If your organization setup **Device Authorizations**, instead of a Login screen you may receive a message:

   "Your Connection Was Rejected by the Server"

   - If your server was setup for Device Authorizations, see the topic on Device Authorizations to allow the device to be connected.
   - If your server was not setup for Device Authorizations, see the Connection Was Rejected topic for a list of possible reasons.

Using the Mobile Client

RFgen Mobile Clients (also called a "Batch client") are mobile devices that function can collect data, run applications, and store data/updates while disconnected from the network. The resources for functioning when not connected to a server are stored on the device in a database. The mobile client can be implemented in three ways based on the Startup Mode configured:

1. Connected to the server as in a thin client.

2. Disconnected from the server where everything takes place on the device.

3. Roaming in and out of range of the server where database access is first attempted against the server, but if the client does not have a connection, the local database is used.

When the mobile client is configured to start in a connected state, it is in essence a thin client. The Batch Failover property will allow this mode to either switch over to a disconnected state or remain in a connected state and wait for connectivity to return when wireless coverage is lost.

When a mobile client is configured to start in a disconnected state, all aspects of the data collection operate on the device.

Applications, menus, users and others are loaded from the device, validation data on the local database is used for validation and completed transactions are queued on the device pending an upload to the server. **Only an RFgen server can extract what was stored on the mobile device.**

The one distinction between connected (or Thin Client) and disconnected is that an extra option must be provided to tell the mobile client to upload the data to the server when it is in range. See the Device object methods to accomplish this.

When a mobile client is configured to start in a roaming state, then the Batch Failover option has no effect.

If the client detects connectivity to the RFgen server, database-related commands, embedded procedures and macro calls / queuing are automatically redirected to the server.

If there is no connectivity to the RFgen server, all activity is directed locally just like a disconnected state.

To keep data integrity, it is recommended that the Server.SendQueue command be placed in the RFgen_ OnConnect event.

That way all queued work will go to the server before more transactions can be performed that will automatically go to the server. It is also recommended that the Server.SyncApps command also be placed here to keep the applications, menus, users and others always up to date.

To install the authorization certificate, see ***To Authorize Clients***.

To connect to the server, the device must also be "checked" for authorized connections. Authorized connections apply to both Thin and Mobile Clients. See **Device Management > Device Authorization** for more details.

Configuring the RFgen Client

When configuring the RFgen Client, the RFgen administrator creates the source Profile which is stored and maintained in the Mobile Development Studio > Profiles folder.

Once the Profile is deployed to the client, a copy of it is stored on the client. How often and when its updated depends on the values set in the profile on the client.

In versions of the RFgen 5.2 and higher is a feature where the settings can be locked or unlocked by the RFgen Administrator so the end-user such as the warehouse worker, picker, shipper, or manager can or cannot make any changes to the profile on the client. By default, the profile and ability to change it is locked. The lock is set via the use of a password in the source Profile in Dev Studio.

The options you can set for the client are extensive.

For information on the values that are set in Mobile Development Studio >Profiles see Profile Option Descriptions in the RFgen Users Guide.

For more information on setting options and descriptions that are on the Client, see Client Configuration Settings topic.

Client Configuration Settings
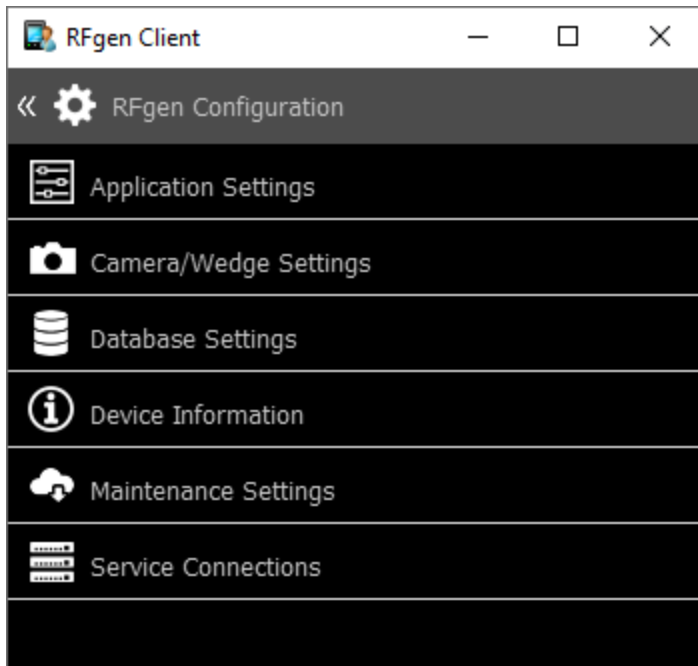
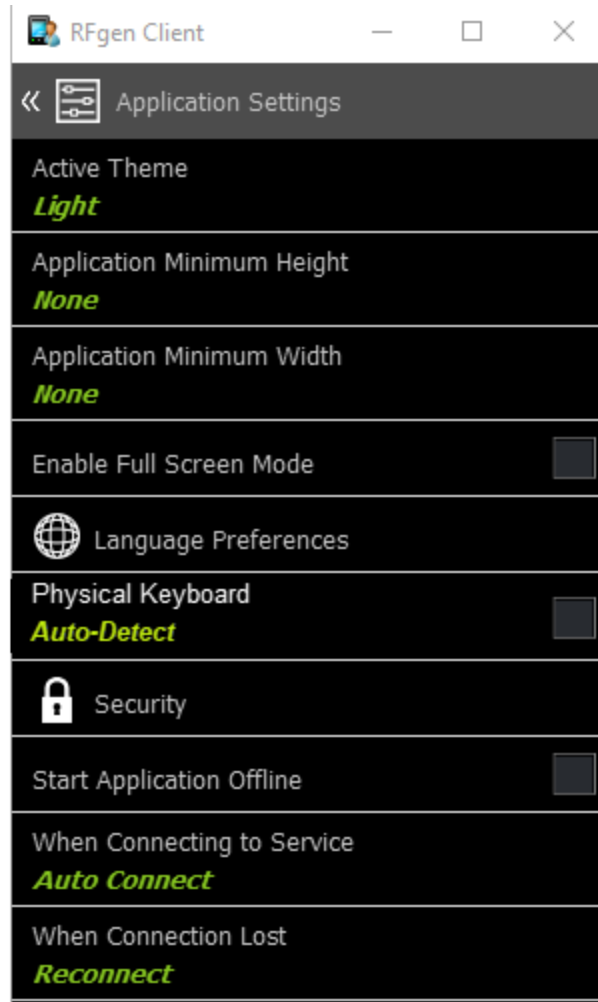**RFgen Configuration** is a collection of status and settings that are used to change how a mobile client (Android, iOS, Windows Desktop, or Windows Mobile/CE) starts up, receives updates, and displays your application screens.

For more information, see the specific topics on Application Settings, Camera Settings, Database Settings, Device Information, Maintenance Settings, or Service Connections.

Client Configuration - Application Settings

Active Theme

This is the theme resource to be used on the device. It contains all the look-and-feel display options.

Application Minimum Height

This applies to the Desktop Client only. It is not present on Android, iOS, or Windows CE systems. An Application Minimum Height value helps restricts the screen from being resized below the values set here so the applications isn't "lost" because its too small to find. All values are in pixels.

Application Minimum Width

This applies to the Desktop Client only. It is not present on Android, iOS, or Windows CE systems. An Application Width value helps restricts the screen from being resized below the values set here so the applications isn't "lost" because its too small to find. All values are in pixels.

Enable Full Screen Mode

This option determines if the display on the mobile device is in a window (smaller) or if the application is maximized for the screen (larger). If checked, it will display at the maximum size.

Language Preferences

The default is English. Any language may be chosen from this menu.

Application Interface allows the user to change the configuration user interface from English into Arabic, Chinese, French, German, or Spanish. After a disconnect, the user interface reverts back to English.

Application Locale allows the user to change the mobile application into any of the locales listed in the list. If the application was developed with localized / translated terms, these will be presented in the mobile application. Otherwise the application will default to the language it was developed in (i.e English).

Physical Keyboard

If this is checked, the client will automatically check first if the device has a physical keyboard instead of displaying a virtual, soft keyboard.

Security

- *Allow Configuration* allows the user to change the configuration on the client.
- *Allow Exit Session* allows the user to control when to exist a session with the server.
- *Allow Screen Capture* (available only for Android, not Windows Desktop, iOS or WinCE) - If checked, the device can be used to capture an application screen while in Thin or Batch mode. Refer to your device manufacturer's instructions for snapping a screen capture. (i.e. Holding the Volume button and Lock Button down).

Start Application Offline

If this is checked, the client will start applications when the client is offline, and is disconnected from the server.

When Connecting to Service

 AutoConnect will connect the client to the server that is listed in the RFgen Services group. If however, you have multiple RFgen Servers setup, you can enable the user on the client to choose which server he/she connects with if you select the *Select Service* option. (See details on the RFgen Services Group.)

When Connection Lost

Reconnect will automatically connect the client to the server listed in the RFgen Services group. If the first one on the list doesn't connect, then the client attempts a connection with the next one on the list.

Go Offline is for clients that are licensed to work in batch mode and are licensed to work offline.

Client Configuration - Camera Settings
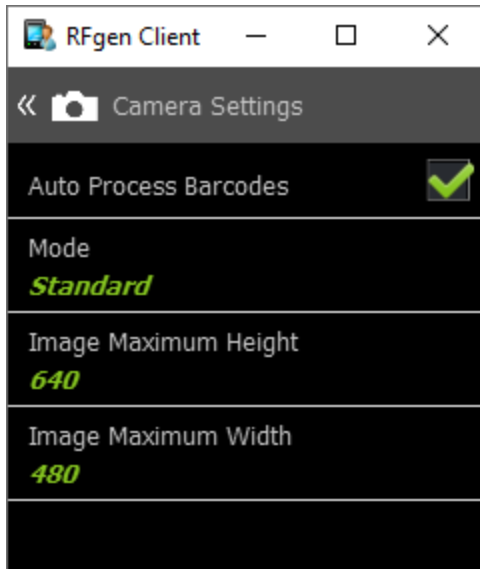
Auto Process Barcodes - In RFgen 5.1, this setting was called "Return After Scan." Set this value to True if you want the cursor to move automatically to the next field after scanning a barcode with your device's camera. For devices with cameras (not scanners), RFgen appends a Return/Enter (post-amble) after the scanned characters. If set to False, the cursor will remain in the same location and the user will need to tap the Return/ Enter key to continue to the next field.

Camera Modes - If Auto Process Barcode is enabled, Native *Native Wedge* will append two Return characters to a scanned transaction. *Standard* will append one Return character to a scanned transaction. *None* - Return is not appended at the end of a scan transaction. (Return is disabled.)

The *Scanner Intent Action* option is available for Android devices ONLY. It provides an alternate method of scanning barcodes when using a Honeywell or Zebra device (Android OS). Ordinarily, the normal scan process with a wedge reads the barcode and converts the scanned images into keystrokes. If however scan data is being omitted or isn't appearing quickly, set the Camera Settings Scanner Intent Action, and use the default value "com.RFgen.OnScan".

Maximum Picture Width and **Maximum Picture Height** These values are preset to a height 640 pixels and a width of 480 pixels. If you are taking pictures, and the device starts to slow down (i.e. its slow when you try to do an upload or the performance is slow), you can reduce the height or the width to reduce the number of pixels used by the picture. You only need to change one or the other as RFgen will scale the picture accordingly.

Client Configuration - Database Settings
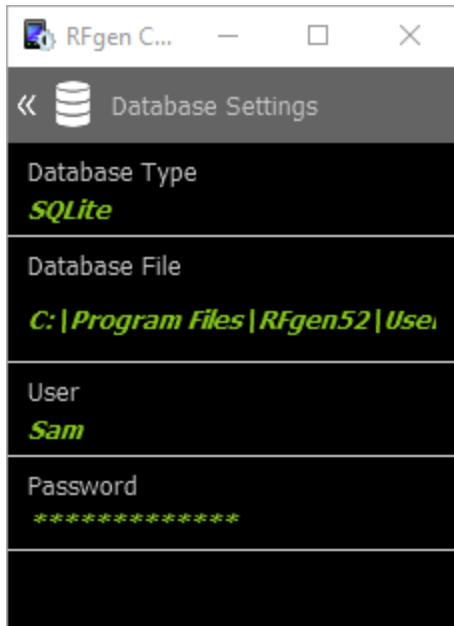
Database Settings is used store data on the client if the Profile had this enabled/setup for the client.

Database Type - If the Profile had included a database, to process data/transactions off-line, select the database type to be used. If the client is to process transactions only when its connected (in a session with the RFgen server), then select None.

Database File (Storage Location) - Enter the storage location (path) for the database. Locations are unique for Android, iOS, Windows desktop/Windows CE).

User - Use this interface to enter the user login information that the database requires for access.

Password - Use this interface to enter the password that the database requires for access.

Client Configuration - Device Information Settings

Device Information is used to help the user see the client-access rights and its graphical user identification on the mobile client (Android, iOS, Windows Desktop, or Windows Mobile/CE).

Authorization

If the device was authorized for connection by the server, its status is "Authorized." If its not, its status is "Unauthorized."

Authorization Code

The authorization code applies to the unique license that is required if the client is used in offline mode. This field is not provided/used if the client profiles is set to only be active when connected to the server.

Identity

The Identity is the graphical user identifier (GUID) generated by the RFgen Client software. When a device connects to the server, each device uses the GUID as its unique identifier. This GUID is visible in the Mobile Unity Management Platform > Device Authorization screen or the Mobile Development Studio Devices > Authorized Devices screen.

**IP Address** - the IP address of the device if its connected to a network.

Operating System Version - The version number of the Android, iOS, Windows CE or Windows operating system.

RFgen Build Number - The RFgen Client software release and build version.

Screen DPI - The dots per inch value used by the client.

Screen Size - The size of the screen used by the client.

Client Configuration - Maintenance Settings
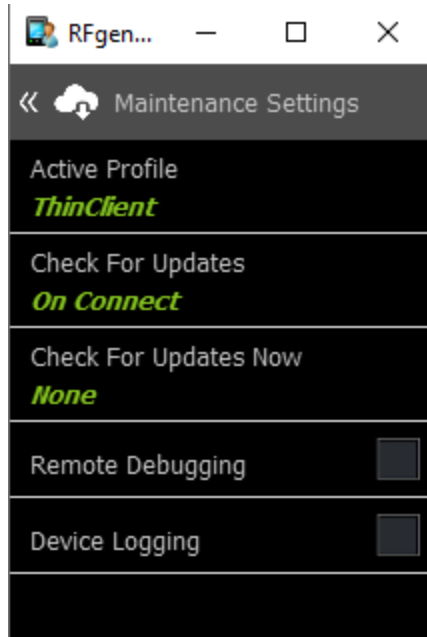
Maintenance Settings is display information a RFgen administrator needs to ensure the client's profile is up-to-date and if needed, debug the client remotely.

Active Profile

Shows which Profile was installed to a client

Check for Updates

This sets the method and how often the client will check the server for a Profile and compare if there are differences. If differences exist, the client profile would be updated. This can be set to *Manual* (when the user requests it), *On Connect* (only checks for profile updates when the client connects to the server), or *Daily* (checks are performed even if the client is never disconnected from the server).

Check for Updates Now

If the Check for Updates is set to Manual, the user can choose to **Reprovision the Device** or **Resynchronize (Resync.) Applications**. Reprovision a device if you want to wipe out the user settings and applications on the device and refresh it with the one from the server. Resync Applications will only refresh the applications on the existing profile with those in the server. To use either, select yes and click on the << Check on Updates Now until you reach the main menu to retrieve the update. Tap **None** if you don't want to make any changes, then tap the << Check for Updates Now to exit this screen.
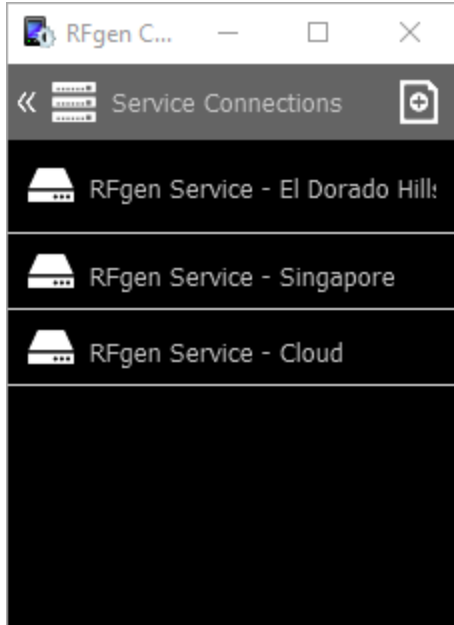
Remote Debugging

This simply enables another RFgen server to initiate a remote session via the port that is listed in the Client Configuration - Maintenance Settings screen.

Device Logging

Creates a log on the device for troubleshooting purposes.

Client Configuration - Service Connections

Service Connections is used to add, delete, and change the information on the RFgen server providing client services.

To add a new service connection, tap the "+" plus icon in the upper right corner. Complete the information in the New Service screen.

To modify an existing service, tap the Service that you want to modify.

To remove a service, tap the service you want to remove. When the Service Description screen displays, tap the name of the service and delete the name from the pop up box and tap **OK**. "None" will display in its place. Tap the << icon at the top to return to the prior screen.

For more details on the properties, see Client Configuration - New Service details.

Client Configuration - New Service
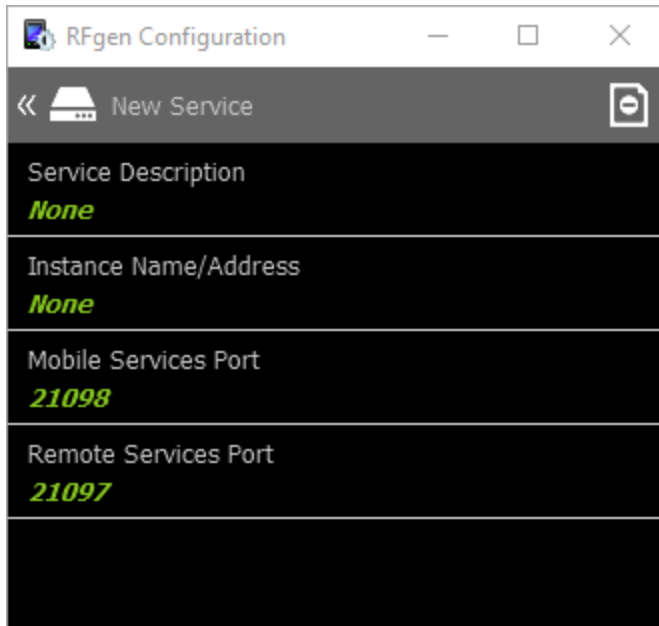
New Service is used to setup a connection to a server, or change the ports for a server, or remove the entire server from the profile. The information here (on the client) should match the server name or IP address described in the source Profile stored in the Mobile Development Studio Profiles folder.

Service Description

Enter the server name of the RFgen server.

Instance Name/Address

Instance Name/Address Enter the IP address or unique server name. The Instance Name/Address can be the server's name, address, or a substitute Fully Qualified Domain Name (%FQDN%). This is the server(s) including Load Balancing servers that provide the client profiles and services for the mobile client. The %FQDN% can be used in the event the source application database is moved to a different server and will help resolve the client locate the new Name/Address of the server that now has the application database (including profiles) that client needs in order to work.
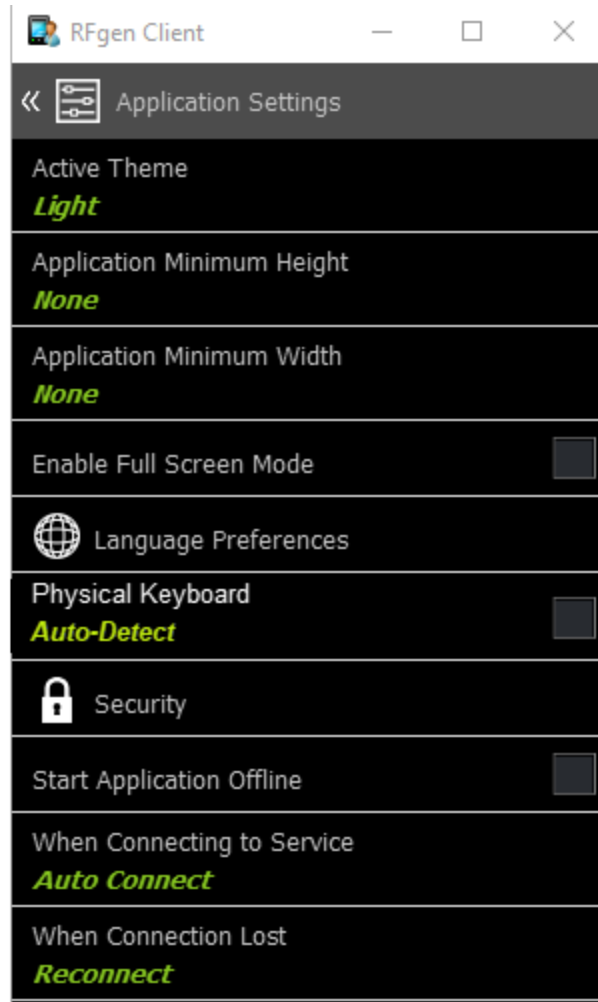
Mobile Services Port

Port 21098 is the default port which is used on the client and on the server for communication purposes. If you cannot use the default port, remember to make the port number (id) must be the same on the client and the server.

Remote Services Port

Port 21097 is the default port that a manager or administrator can use to remotely log onto the client if the user on the client needs help. This can be changed, but will also need to changed on the server as well.

Client Configuration - Application Settings

Active Theme

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Enable Full Screen Mode

RFgen

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When Connecting to Service

 AutoConnect will connect the client to the server that is listed in the RFgen Services group. If however, you have multiple RFgen Servers setup, you can enable the user on the client to choose which server he/she connects with if you select the *Select Service* option. (See details on the RFgen Services Group.)

When Connection Lost

Reconnect will automatically connect the client to the server listed in the RFgen Services group. If the first one on the list doesn't connect, then the client attempts a connection with the next one on the list.

Go Offline is for clients that are licensed to work in batch mode and are licensed to work offline.

RFgen

Updates versus Upgrades

"Updates" refers to the process of updating the solution elements which are deployed by the server (or physical transfer). This may include updates to your mobile applications, mobile profile settings, data etc. once the client software has been installed. As long as your client has the same major version of the server, for example if the client has 5.1.17 installed, and the server has 5.1.17 or higher installed, these versions are compatible, and solution updates are supported.

"Upgrades" refers to the process of installing a newer major version of the RFgen client software or the RFgen server software. For example,if you are moving from RFgen **5.1** and **5.2** this is called a software upgrade.

Version Compatibility With the Server

- If you **upgrade the server**, your client software must also be upgraded. RFgen Server software is not backward compatible with older, <u>major versions</u>. (For example RFgen 5.2.x server is not compatible with a 5.1.x client.)
- The RFgen server does NOT automatically upgrade client software when it connects to the client. You will need to installation the RFgen client software of the same major version as the server to ensure they are compatible.
- If your RFgen client is unable to connect due to a version mismatch, an error message stating an upgrade is needed will display.
- Minor versions between the server and client are supported, as long as the server has the newer version. For example, if the server has 5.1.27 installed, and the client has 5.1.20 installed, the client is supported. If the server is 5.1.17 but the client version was higher (i.e. 5.1.27), this combination would not be a recommended install -- especially if the client is set to download the profile from the server automatically.
- While its possible to have two different major versions of RFgen installed on the same device, **this is not recommended** as the end user won't know which version to launch AND if you were storing data on the client, this could cause issues with the database.

RFgen

Client Dialogs and Messages

Depending on the state of you connection, your RFgen client will display a message in the event it is unable to find and connect to the server, or, was able to find the server but the server rejected its connection, or while connecting to the server, a mismatch in versions was detected. The following topics describe the possible causes for each type of dialog.

Connection Failure Message
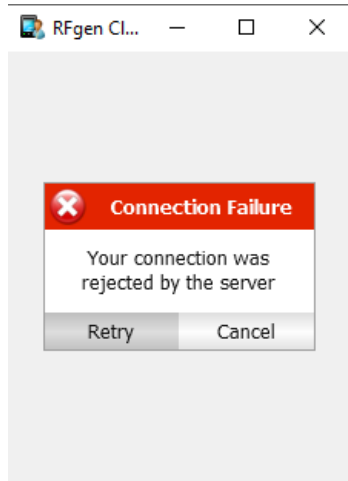
Connection Failure Your connection was rejected by the server

Description The server received the client connection request, but rejected the request for reasons related to device licensing and/or authorization status.

- **Insufficient Licenses.**
  Your client has requested a connected to the server, but the server that lacks a sufficient number of licenses to allocate to it, and therefore rejects the client's connection request.
- **Device Not Authorized.**
  Your client has requested a connection to the server, but the server rejected the request because this specific device (tracked by a graphical user identification on the server) is not authorized for connection and therefore rejects the client's connection request.
  For more details on how to authorize a device, click here.

If you have shortage of available device licenses, consider requesting more from your RFgen Sales Representative, or you can release/remove authorized devices that have been assigned a license from Device Management > Access / Authorized Devices > RFgen - Device Authorization to free up a license.

Set an RFgen Server - Unable to connect to the RFgen Server Message
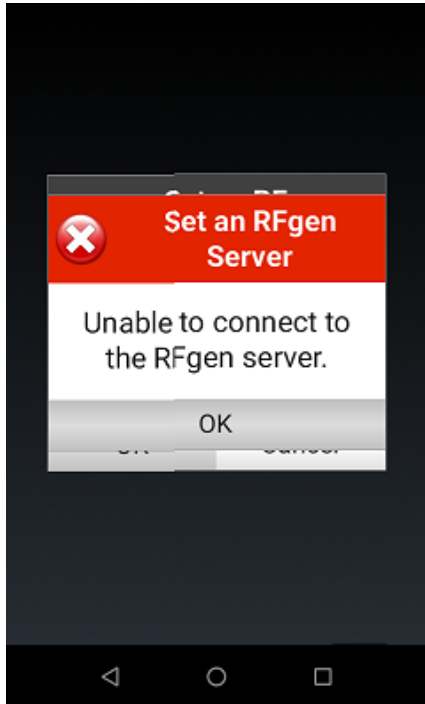
Description: This message displays after you are asked to enter the server (host) name or IP address. If the client is unable to connect using the name or IP address entered, the message "Set an RFgen Server" "Unable to connect to the RFgen server." displays.

Possible Reasons Client is Unable to Connect to the RFgen Server

Security Block

The clients connection request is being clocked by a firewall or virus detection system.

- Check with your network or system administrator on how to enable communication in a secure manner.

Bi-Directional Comm Not Setup Correctly

Either the client network or the server network is not set up for bi-directional communication.

- Check with your network or system administrator to setup bi-directional communication.

Server Services Are Not Running

Server unable to accept connection if services are down.

- Verify if the Server Services (RFSVR510.exe) is running through the Mobile Unity Platform Server console or Windows Task Manager.

Network Connection Disabled

- Make sure the client's wi-fi is on and is on the intended network.
- make sure the server is connected to the network intended for connection to the devices.

Mismatch RFgen Server Name/IP

When setting the RFgen server, make sure the server name and IP address you entered on the client matches the RFgen server name/IP address configured in the RFgen Mobile Development Studio > Profiles [Profile Name] > RFgen Service Groups

Upgrade Required Message
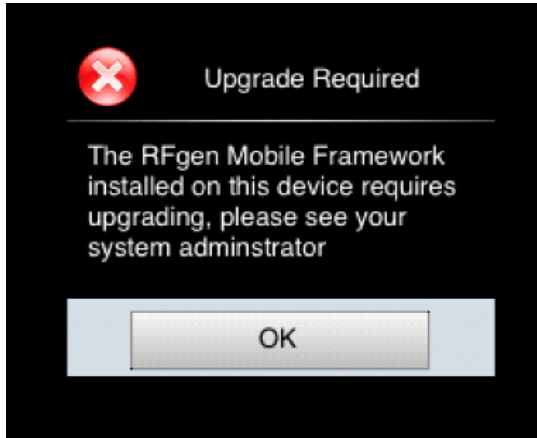
Upgrade Required

The RFgen Mobile Framework installed on this device requires upgrading, please see your system administrator.

What This Message Means

This message displays when there's a major version difference between the version installed on the RFgen Mobile Unity Platform Server and your RFgen Client.

For example if the Server is 5.1.8, the client is supported from 5.1.0 to 5.1.8. But if the server was 5.2 and the client was 5.1 they are not compatible.

You can have multiple versions of the RFgen software client installed on the device, but when you launch the application, the major versions need to match (i.e. 5.2.x to 5.2.x but not 5.1.x to 5.2.x).

You data collection was suspended
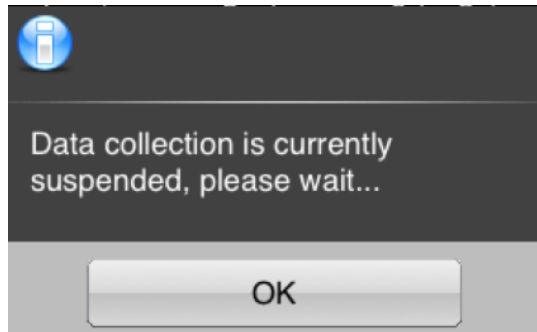
Data collection is currently suspended, please wait.

This message displays on the screens of connected clients (Thin Clients) when the RFgen Server service is suspended.

For example, if the RFgen Administrator is on the RFgen Mobile Unity Management Platform console and clicks the Suspend Services button, this is the message the clients will see.