

HOW TO SET UP AN ANDROID SMART PHONE FOR A SENS SURVEY

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I. Background

In the last years, due to the increased availability, many operations opt for purchasing new mobile phones directly in their country. In parallel, it has also become more common to use Android smart phones to collect data for the Standardized Expanded Nutrition Survey (SENS). It can therefore be more advantageous to stock Android smart phones throughout the year especially for operations with nutrition programs covering many locations in several regions.

→ In 2016, 94% of the operations undertaking the SENS Survey have done so by utilizing mobile phones.

II. Content of this guide

This is a short step-by-step tutorial that serves as a guide on how to set up your smart phones for first use.

You can also find detailed settings for [OpenDataKit \(ODK\)](#), the application used for the data collection, on the [SENS webpage](#).

⚠ Overview pictures and detailed instructions are based on the LG 3Gs (LG-D722), and the Xperia Aqua, both still used by various operations. New ODK collect updates have been done using a smart phone emulator running Android 4.4.2. The design or the wording on your phones might vary slightly but should follow the same principle.

III. Phone setup

General Settings: (SD Cards, Battery, Wi-Fi connection, Language, Time, Protection code, etc.)

First, you need to perform the following steps:

- If you have already purchased external SD cards, insert them in the appropriate slot (*Purchasing SD cards is good practice especially for larger surveys and/or if you expect to take photographs*).
- Insert the battery
- Load the battery by plugging the charger to the phone

If you have already made provisions for permanent protection screens and casings, you need to:

- Remove the clear plastic covers on the phone screen and its back
- Switch on the smart phone using the power button, they can be located on the back, top or on either side, refer to your quick guide if you cannot find it immediately
- Set up the phone language

Phones still packed and straight from the factory typically come with a quick guide. Also, most phones will start the setup process upon first switching on. This process often includes:

- Connect to a WIFI network
- Setup a Gmail account through direct enter or "Tap and Go"
- Create a protection code (pin, tap pattern, fingerprint...)

However, for a regular survey phone you only need to complete the following:

- **Enter a working WIFI connection**

You can enter the Local Area Network connection you will use for the survey later, when connected to the Internet, settings such as Time and Date can be set automatically which will save you time.

- Set the time zone to your correct time zone
- Set up a protection code (depending on phone this can be a pin code, tap pattern, fingerprint or any combination of it) only if you think the phones need to be secured. Ensure you write down the codes (*LG opts for knock codes, they can be difficult to remove once set up*).
- Communicate the codes to Admin or anyone else who will be responsible for safeguarding the devices when not used for surveys

💡 If you have a smart phone that is regularly used for surveys and isn't personalized or equipped with a SIM card, **it's not advisable** to enter a private Gmail account. If you think that you'll need to connect to Google Play, or any other service requiring an account, **it's recommended** creating a project email account instead.

Home Screen Configuration

The smart phone comes with a preset home screen that can be customized.

In most circumstances, the smart phone will not be equipped with a SIM Card so it cannot be used for to make phone calls. The person in charge of conducting the survey (an enumerator or you as a survey coordinator) can remove everything that is not used or choose which buttons/widgets he/she wants to easily have access to on the home screen. You can:

- ➔ Remove all unnecessary widgets and buttons from the home screen by touching them until they vibrate and become moveable. You can then drop them in the recycling bin.
- ➔ Add the buttons/widgets you will need more often, like *Settings* and *File Explorer* by touching them until they vibrate and become moveable, then place them wherever you think is convenient.

💡 On certain smart phone models, it makes sense to add widgets by switching to *Airplane/Wi-Fi* and changing *brightness*. However, on many newer smart phones these aspects are already integrated in the top menu bar and can be accessed by sliding it down.



Figure 1: Before removal of widgets and buttons

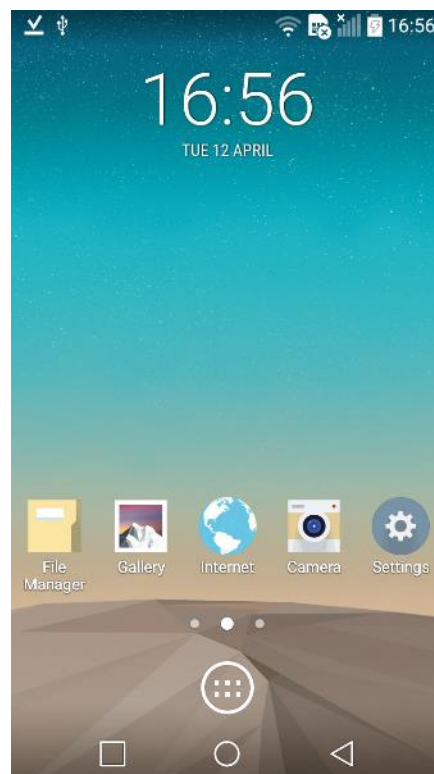


Figure 2: After removal and adding useful buttons

IV. Installation of Apps

⚠️ If the phone is regularly used on the Internet, it is advised to install Antivirus Apps such as the free [AVG Antivirus app](#) or [AVAST](#). This guideline doesn't look further into security apps since it is not usually of high priority for smart phones dedicated for mobile data collection. More information on general phone security and useful

tips can be found on the [Mobile Data Collection Tool Kit](#), co-created with Terre des hommes.

The following applications need to be installed on the phones:

- [ODK Collect](#), it's the application required to enter records, store your data and sync them to your server. **Installing this app is mandatory.**

Good to have, although not often needed for the standard SENS, the following apps can help in specific settings:

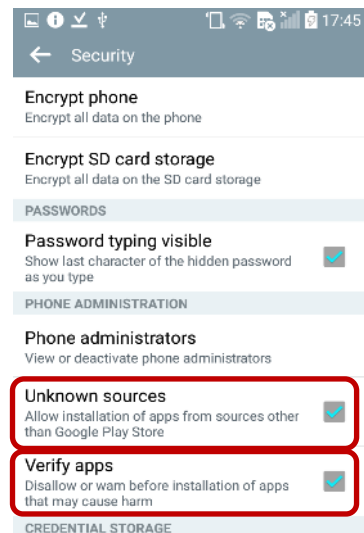
- [AndExplorer](#), some native File Managers do not allow access to all files, you can check first after installing ODK if you can access a folder called odk on *All files*.
- [Barcode Scanner](#), in case you are using more complex household ID's in your sampling and would like to ensure enumerators use them correctly.
- [GPS Test](#), if you plan to take GPS coordinates in your SENS survey. The app locks your coordinates when at a new site. For more information on how to gather GPS data, please refer to the [GPS Coordinates in SENS Survey](#) tutorial.

If your phone is new, has not yet been personalized and consequently does not have Google Play Market set up with a personal account, installing apps for the SENS will require some extra steps: the phone needs to be set up to accept installations of apps from unknown sources.

To enable this, you need to:

- Go to *Settings/General/Security*
- Tick the box *Unknown sources Allow installations of apps from sources other than Google Play Store*
- Keep the box *Verify apps* ticked, to ensure that apps will always be verified before they are installed

Now you can start installing the apps you need for the SENS. You have two options to install the necessary apps, depending on whether you have access to a Wi-Fi network (option 1), or you don't have Wi-Fi access (option 2).



Option 1:

If you are connected to the Internet, you can go directly to the [ODK webpage](#), and go to the GitHub [ODK Collect link](#) where you will find the latest version of the app. The download section will lead you to Github. [Zxing](#) is also stored on github. Check the release notes before you download.

- In your phone's web browser, tap the [ODK Collect GitHub link](#) and download ODK Collect .apk file

- ➔ After the file has downloaded, you can either slide down the top menu notification bar and tap on the new file; or use your file explorer to navigate to your Download folder and tap here on the apk
- ➔ Follow the instructions needed for the installation process.

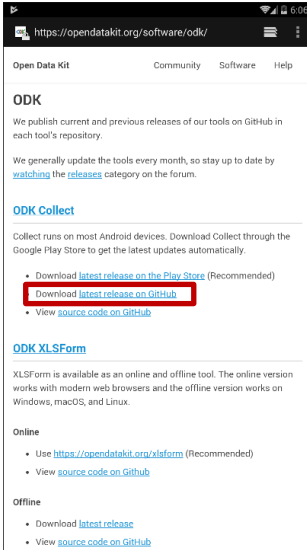


Figure 3: Navigating with Internet browser and download ODK Collect APK

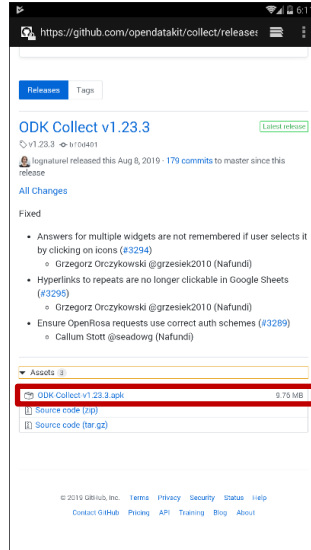


Figure 4: Download from Github, click on the option .apk and Download

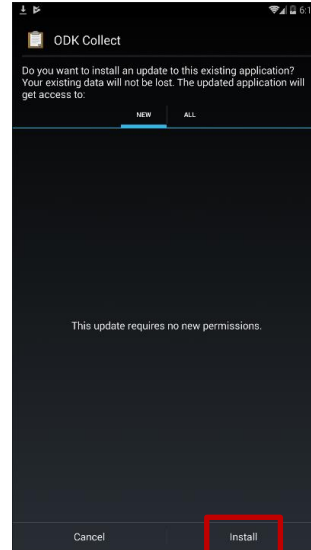


Figure 5: Slide down the top bar after download to tap on the download notification/Follow the prompts

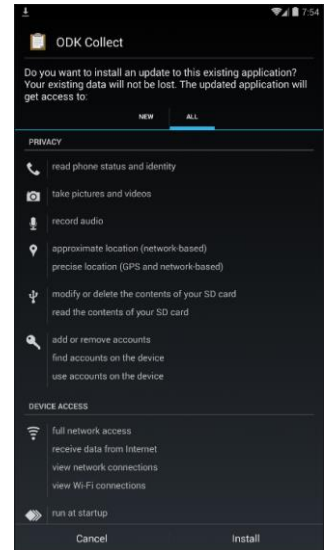


Figure 6: Starting the installation process

Option 2:

If you are either not connected to a Wi-Fi network or you want to save time and have assembled all necessary .apk (file extension for Android apps) files in one place on your computer, you should follow the instructions down below¹:

- ➔ Connect your phone to your computer with a USB cable and install your phone's driver if necessary

How do I know if I need to install a driver?
 Most new phones are plug and play devices, where correct drivers are automatically installed if given the permission. If for some reason either your phone or your computer's operating system doesn't support self-installation, you will need to download the phone's driver from the manufacturer or download and install the firmware that most brands provide to let the phone connect with a desktop computer:

For Sony Xperia: [driver](#)

¹ There is a folder on the PHS Dropbox MDC Repository: <https://www.dropbox.com/sh/71obpjeydw72qsq/AADXw3DGhCm0DT0U-Ffli0Hwa?dl=0>

For LG: *driver*

If you did not need to install a driver or if the driver installation has been completed successfully, your phone will most likely already mount as Media Transfer Protocol²(MTP) device, allowing you to access the phone’s file directory without any additional steps.

If you still do not have access the phone’s file, you need to perform the following steps:

- Slide down the top bar, tap on *USB options* and choose *Media device (MTP)*.
- Your phone should now be accessible like any external USB device.
- Copy the .apk files from your computer in the *Download* folder on your phone.
- Disconnect the phone, navigate to the *Download* folder (use the native file manager app) and proceed with the installation of the .apk by tapping on the file. If you have many files on your Download folder, you can either sort them by date or search for .apk.

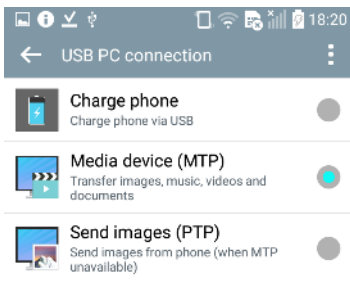


Figure 7: Select MTP mode after connecting the phone.

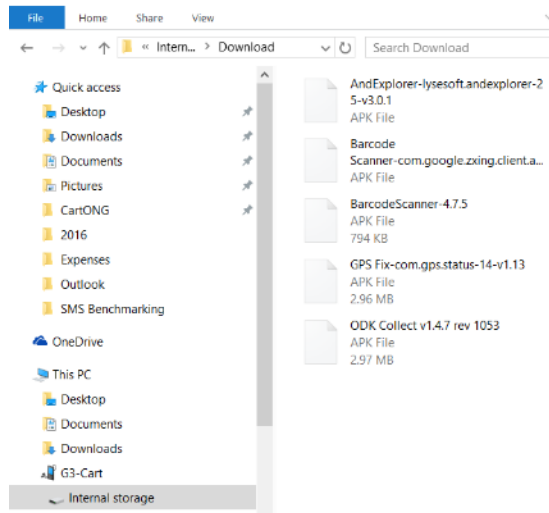


Figure 8: Copy files in the Download folder

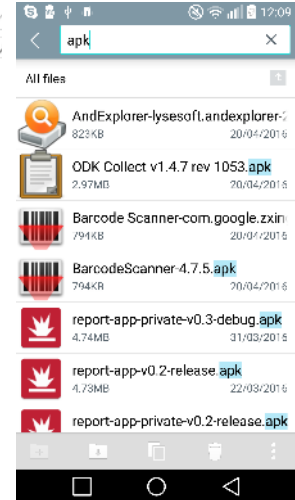



Figure 9: Use the native file explorer to access the Download folder

Last but not least, to make it easier for your enumerators to find the apps, you can drop a shortcut on the home screen. To enable this, you need to:

- Enter the app menu (in the LG as well as the Xperia Aqua, this is the button with the six dots in the middle ) and touch the ODK button until it vibrates and becomes moveable.
- Now drop the icon on the home screen by sliding to the left.

² Media Transfer Protocol: https://en.wikipedia.org/wiki/Media_Transfer_Protocol

- Alternatively, touch the home screen until the option to add apps and widgets appear. On the LG as well as the Xperia Aqua you can now select an app you'd like to add to wherever you want on the home screen.



Figure 10: Sliding the icon of the highlighted app on the home screen



Figure 11: Adding icon through widgets after tapping on the home screen

V. Setting up ODK Collect on multiple tablets.

The latest ODK Collect version (v1.23.3) allows supervisors to set up tablets by scanning a QR code within the app. When preparing multiple devices for a survey deployment, this functionality lets you customize menus and set up the logging credentials (server, user ID and password) for all devices at once.

In this section we'll cover how to customize the Main Menu, how to setup the server connection, how to protect the configuration behind an admin password and finally, how to export the app setup to other tablets using the QR code.

For more detailed information on how to set up ODK Collect, please review the [ODK website](#) and [documentation](#).

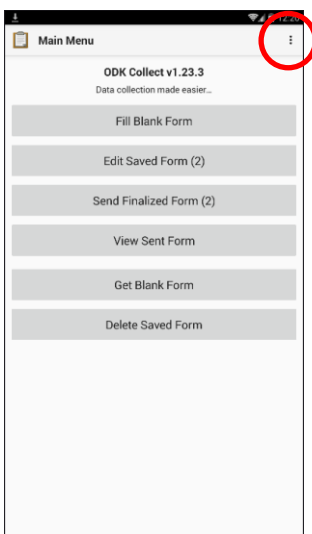
⚠ Note that the following instructions assume that you have already installed ODK Collect in all of your devices.

Customize menus

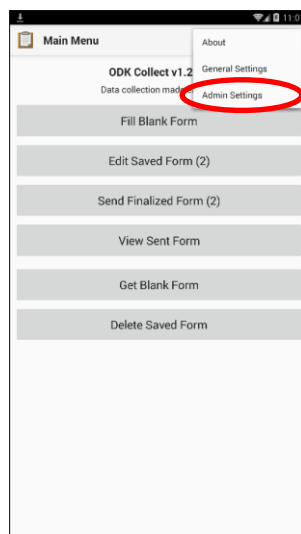
In certain survey situations, supervisors might want to simplify the ODK Collect interface by limiting the number of options and menus available to enumerators.

By default, the Main Menu comes with 6 options as seen in the screenshot below. To change these:

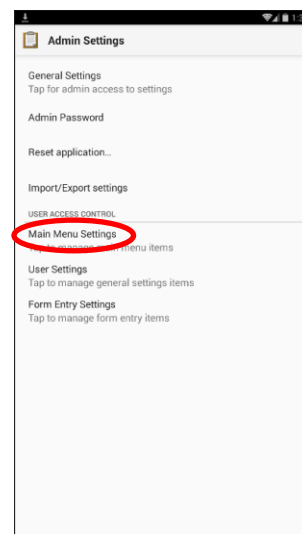
- On the **Main Menu**, tap on the 3 dots on the top right corner of your screen and select **Admin Settings**
- Under **User Access Control**, tap on **Main Menu Settings**
- Tap to deactivate the options that you don't want enumerators to have access to. For example, you can deactivate the function to delete saved forms and options to get new blank forms, which will reduce the number of buttons the enumerator will see and use
- Go back to the main menu and verify the results



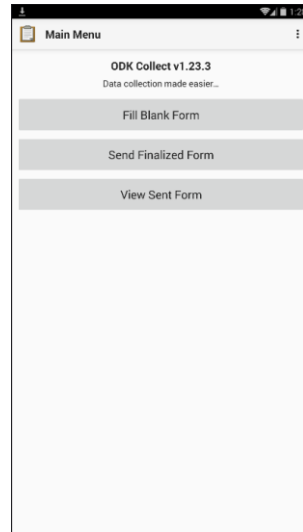
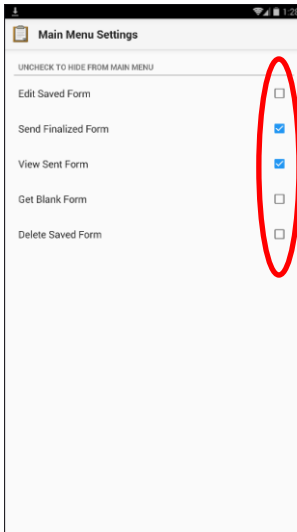
1. Click on the 3 dots at the top right of the screen



2. Select **Admin Settings**



3. Tap on **Main Menu Settings**



4. Tap on the menu items you want to deactivate

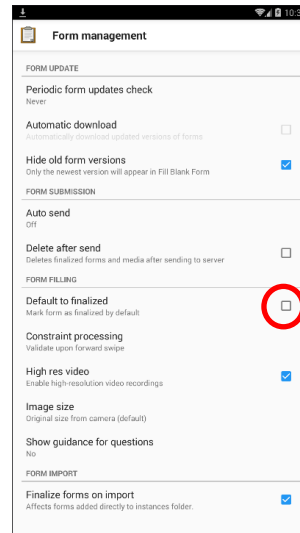
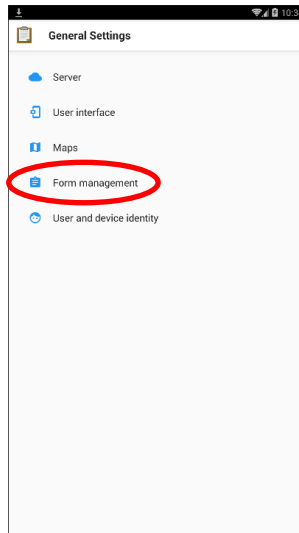
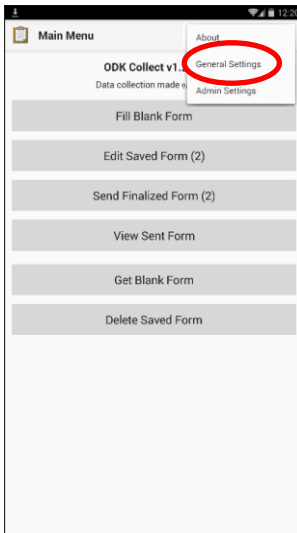
5. Go back to the Main Menu and verify the results. Note that the option **Fill Blank Form** can't be deactivated

Form Entry Settings

The form management menu lets you customize form behavior and options, e.g. auto-send completed forms, deletion of sent forms, among others. One important option in SENS surveys is letting enumerators deliberately mark a form as completed instead of having it marked as completed by default at the end of each interview.

To change these settings:

- ➔ Tap on the 3 dots on the top right corner of your screen and select **General Settings**
- ➔ Select **Form management**. This menu lets you control how, and if, forms are automatically updated, whether completed forms are to be automatically updated and how forms behave when filling them, among others
- ➔ To have supervisors mark a form as finalized only after review, under **Form filling**, untick the option **Default to finalized**.



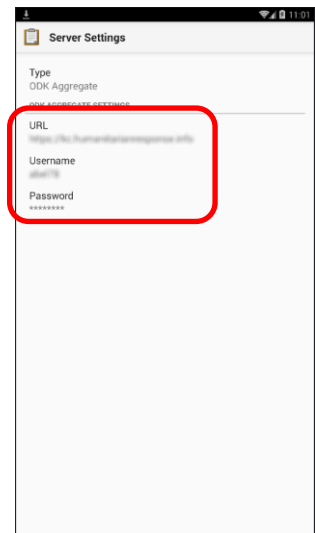
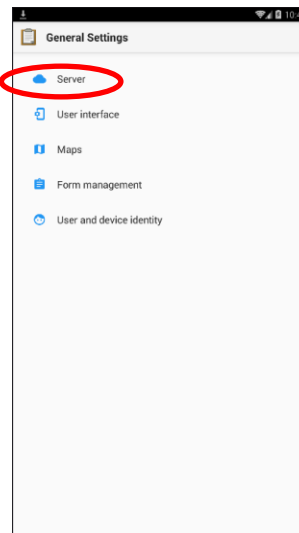
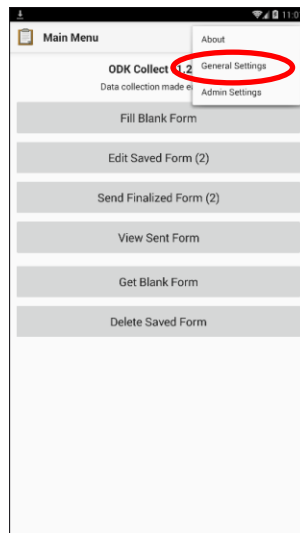
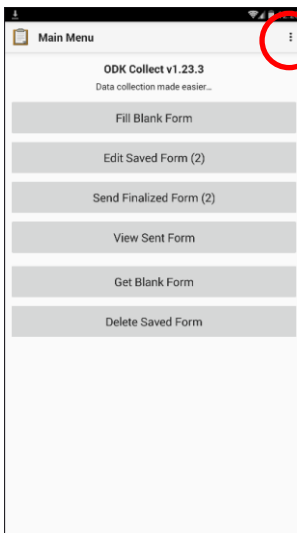
1. Click on the 3 dots at the top right of the screen and select **General Settings**

2. Select **Form management**

3. Untick **Default to finalized**

Server connection

- ➔ On the main menu, tap on the 3 dots at the top right corner of the screen
- ➔ Select General settings and tap on **Server**
- ➔ Enter the logging credentials by tapping on each of the fields: URL, Username and Password. These credentials will apply to all enumerators



1. Click on the 3 dots at the top right of the screen

2. Select **General Settings**

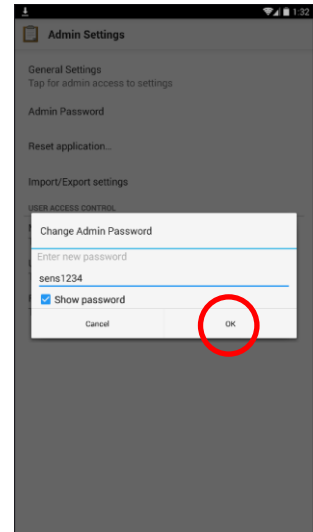
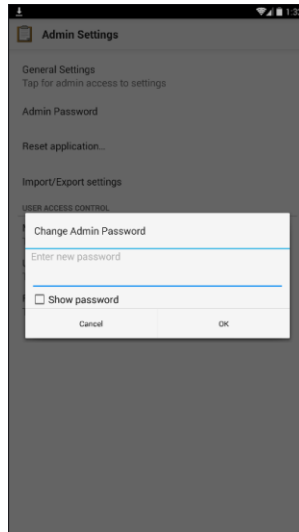
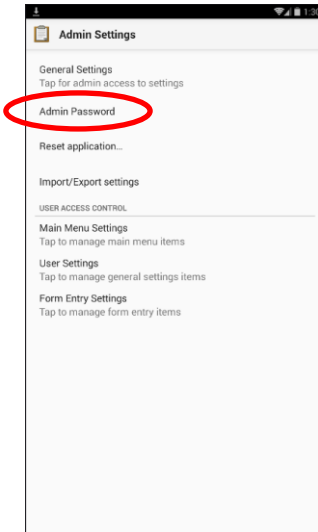
3. Tap on **Server**

4. Type the URL, username and password that will be used by all enumerators

Setting up an admin password

Enabling an admin password restricts access to key application settings. Options like menu settings, servers, the app reset, will be protected so that enumerators can't inadvertently modify them. To set and admin password:

- Go to the **Admin Settings** menu, and tap on **Admin Password**
- Type a password of your choosing making sure you write it down somewhere for later retrieval

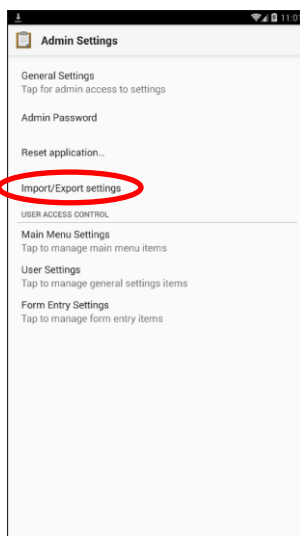


1. Go to **Admin Settings** and select **Admin Password**
2. Type a password making sure you keep track of it
3. Tap **OK** to protected the settings

Exporting the set up to other devices

Next, create a QR code to export those credentials to the other tablets.

- As in the previous steps, on the **Main Menu** tap on the three dots at top right corner of the screen and select **Admin Settings**
- Select **Import/Export settings**. ODK will display a QR code containing the setup of the device
- Leave the QR code open in the tablet.



1. Go to **Admin Settings** and select **Import/Export Settings**
2. The QR code contains your device setup. Leave it open and scan it with the other devices

To import the settings in the other tablets. In each one of the tablets, follow the instructions above to generate a new QR code: **Admin Settings > Import/Export settings**, then:

- Tap on **SCAN CODE FROM OTHER DEVICE**. If asked to, grant ODK Collect access to the device camera.
- Hold the tablet right above the first device and scan the QR code. Make sure to place the code inside the viewfinder rectangle to scan it.
- ODK Collect will immediately set up and you may continue with the next device.

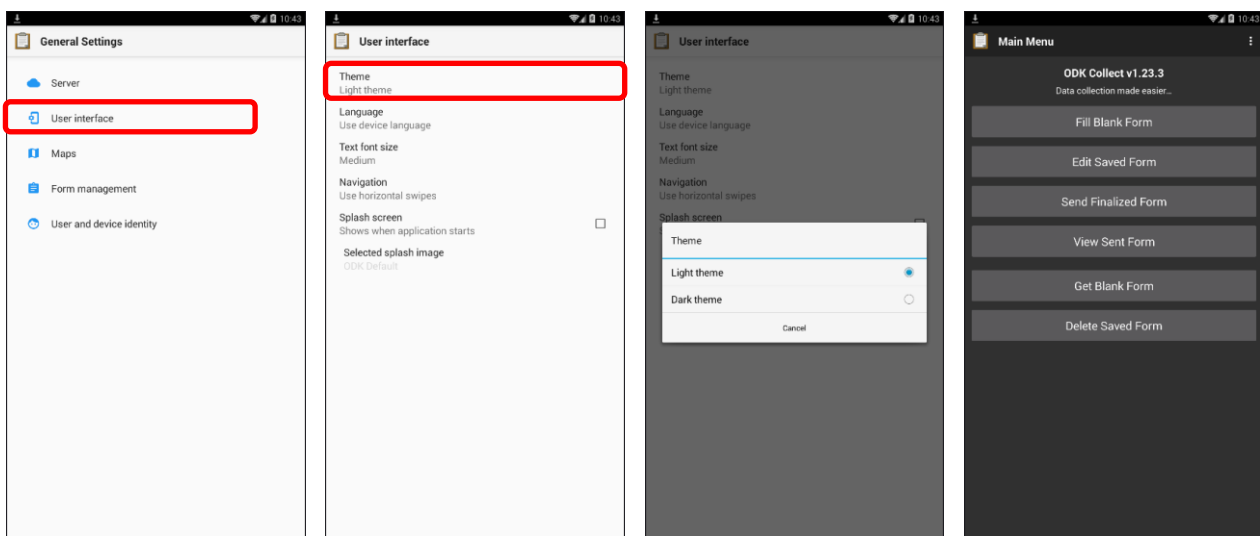


1. Tap on *SCAN CODE FROM OTHER DEVICE* to activate the camera and scan the first code.

Dark theme

The ODK display parameters can now be switched to Dark Theme. This is particularly useful if your devices have OLED screens, as using a dark screen can help you prolong the charge of the batteries.

Regardless of the type of the screen of your devices, the Dark Theme can make viewing the screen easier in low lighting environments. Encourage your enumerators to test this feature and adjust the settings to their preferences and changing lighting environments.



Go to **General Settings > User interface** and click on **Dark Theme**.