

Course Guide

# IBM Datacap 9.0.1: Mobile

Course code F250 ERC 1.0



## November 2016 edition

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# Course description

## IBM Datacap 9.0.1: Mobile

**Duration: 2.0 hours**

### Purpose

This course provides an introduction to Datacap Mobile client. It shows how to capture images using Datacap Mobile and work with batches and fields. It also shows how to read barcodes, OCR, and save location.

### Audience

- Anyone who needs to know about the IBM Datacap Mobile client.

### Prerequisites

- Familiarity with data capturing concepts

### Objectives

Upon completion of this course, participants learn how to:

- Capture images using Datacap Mobile
- Work with batches and fields
- Read barcodes, OCR, and save location

### Contents

Refer to the “Contents” section (TOC) for course content.

---

# Agenda

**Note**

The following durations are estimates, and might not reflect every class experience.

---

## Day 1

(00:45) Lesson 1 - Introduction to Datacap Mobile

(00:45) Lesson 2 - Work with batches and fields

(00:30) Lesson 3 - Datacap Mobile Architecture and SDK (Optional)

---

# Unit . Datacap Mobile

## Estimated time

02:00

## Overview

This course provides an introduction to Datacap Mobile. It shows how to capture images using Datacap Mobile and work with batches and fields. It also shows how to read barcodes, OCR, and save location.

## How you will check your progress

- Complete Review Questions.

## References

Datacap > Datacap 9.0.1 > Installing > Installing and configuring in a client/server environment > Datacap installation and configuration in a client/server environment > Installation instructions for Datacap server > Datacap Mobile app configuration

[http://www.ibm.com/support/knowledgecenter/SSZRWW\\_9.0.1/com.ibm.dc.install.doc/dcain447.htm](http://www.ibm.com/support/knowledgecenter/SSZRWW_9.0.1/com.ibm.dc.install.doc/dcain447.htm)



## Unit Objectives

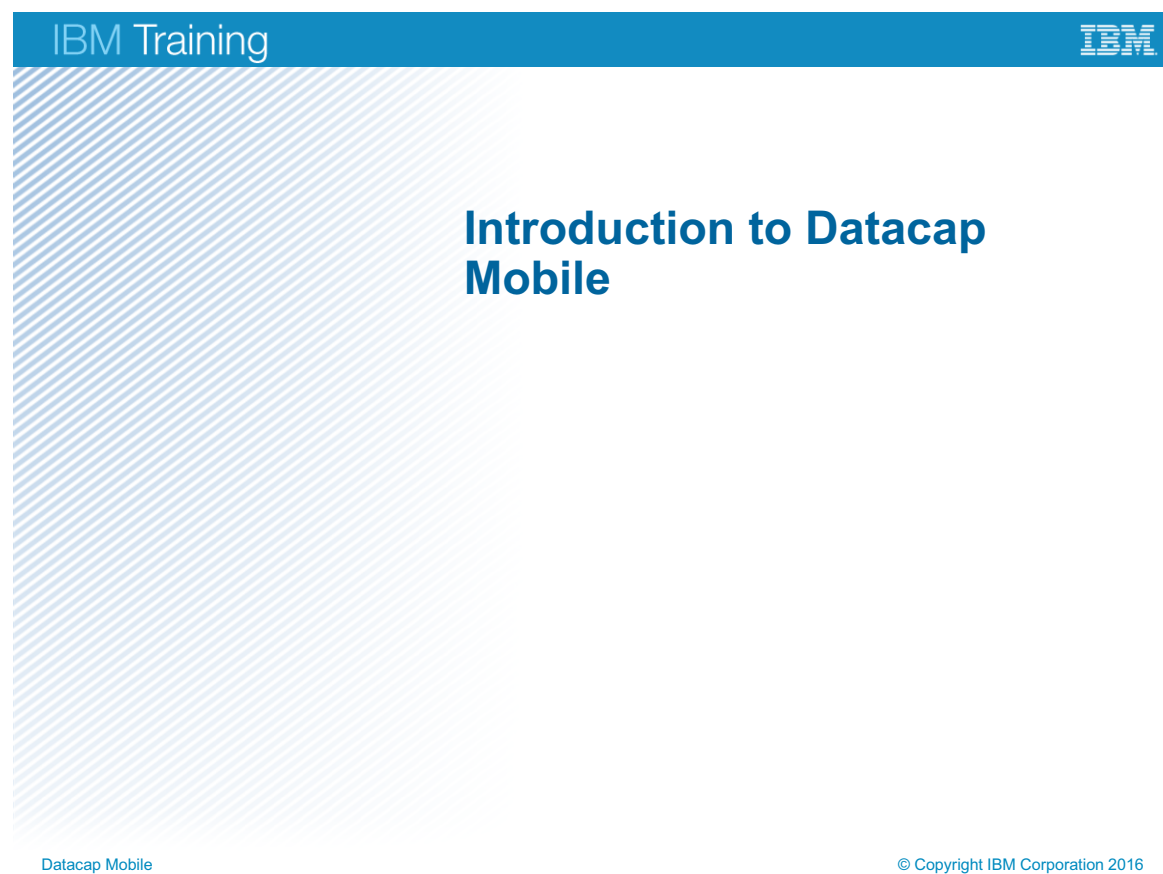
- Capture images using Datacap Mobile
- Work with batches and fields
- Read barcodes, OCR, and save location
- Optional: Introduction to Architecture and SDK

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*Figure -1. Unit Objectives*

# **Lesson .1. Introduction to Datacap Mobile**



*Figure -2. Introduction to Datacap Mobile*

## Lessons

- ▶ Introduction to Datacap Mobile
  - Work with batches and fields
  - Datacap Mobile Architecture and SDK (Optional)

Datacap Mobile

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*Figure -3. Lessons*

## Why is this lesson important to you?

- As a Datacap business user, you capture and upload images using the Datacap Mobile Client.
- To do these tasks effectively, you must be familiar with the Datacap Mobile User interface.

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*Figure -4. Why is this lesson important to you?*

## IBM Training

**Datacap Mobile Capture**

- Capture images
  - From mobile device directly into Datacap application.
  - Auto or manual mode.
- Rich on-device feature set
  - Automatic edge detection, deskew, and snap when quality thresholds met.
  - Crop, contrast/brightness, rotate, and reorder
- On-device classification
- Indexing (data entry)
  - On-device zonal OCR
  - On-device barcode recognition
- Submission of the document to the Datacap server.



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*Figure -5. Datacap Mobile Capture*

IBM Datacap Mobile app captures images into Datacap application at the point of origination. The app processes, and uploads documents to a Datacap server.

**Capture Images**

- Capturing in Auto mode:
  - Is the default configuration for Datacap Mobile.
  - Reduces the learning curve for the user, and to ensure the user gets the best possible results.
- Capturing in Manual mode
  - It is not possible to use automatic mode for all occasions.
  - Manual mode is suitable when there is no notion of a “page” with edges or minimum levels of quality for OCR.  
Example: photographic evidence of property damage.
  - Some content might need to be submitted as evidence along with a main document.  
Example: Receipts.

**Classification, or identification**

It is the process of determining what pages we are working with and how they fit together into a document.

**Indexing**

- It is the final step in preparing the document for submission to the Datacap server is to extract data from the images into designated fields.
- Datacap Mobile supports three types of indexing:
  - Manual
  - On-device OCR
  - On-device Barcode recognition
- Indexing can be done at all levels of document hierarchy. Only page level is exposed in the default app.
- Although indexing can be done on the server-side, Datacap Mobile allows it at the point of capture. The user can ensure that the indexing is done accurately and comprehensively to minimize any errors later in the business process.

**Submission**

Submit the document to the Datacap server for further processing.

## Other IBM Datacap Mobile Features

- Offline mode supports delayed upload
  - Can work off line when spotty cell coverage
  - Upload documents later when online
- Reskinnable
  - Logo and color scheme (in SDK only)
- Designed to interoperate with other ECM mobile apps.
  - Example: Case Manager, Content Navigator Mobile
- Object code SDK plus sample application code
- Native Objective-C, Java (Android)

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*Figure -6. Other IBM Datacap Mobile Features*



## Mobile capture use cases

- Mobile banking:
  - Check processing.
- Remote workers:
  - Company employees who work out in the field might work using paper-based processes.

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*Figure -7. Mobile capture use cases*

## IBM Datacap Mobile app

- Compatible platforms:
  - Apple iOS
  - Google Android
- Compatible software versions:
  - iOS 8.0.0 or later (iPhone or iPad)
  - Android 4.4 or later (Android smartphone or tablet devices)
  - A licensed version of IBM Datacap at version 9.0.0.1 or later
  - Mobile app is available on Apple App Store, iTunes and Google Play
- App developers can customize and extend the mobile app with the Datacap Mobile SDK APIs and documentation.



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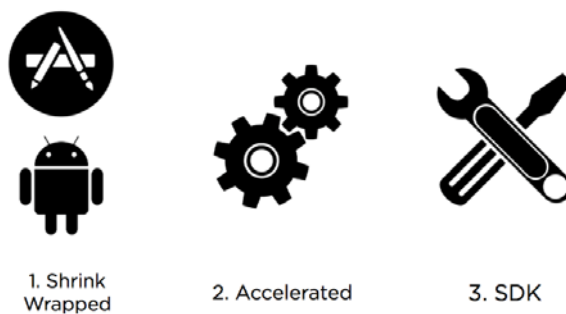
Figure -8. IBM Datacap Mobile app

### Help Path

- Datacap 9.0.1>Installing and configuring in a client/server environment>Datacap installation and configuration in a client/server environment>Installation instructions for Datacap server>Datacap Mobile app configuration  
[http://www-01.ibm.com/support/knowledgecenter/SSZRWW\\_9.0.1/com.ibm.dc.install.doc/dcain447.htm?lang=en](http://www-01.ibm.com/support/knowledgecenter/SSZRWW_9.0.1/com.ibm.dc.install.doc/dcain447.htm?lang=en)

## Datacap Mobile: Deployment options

- Shrink-Wrapped
  - Deploy the mobile application as it is provided without any changes.
- Accelerated
  - Deploy the mobile application with minimal changes.
- SDK
  - Deploy the mobile application with changes using the SDK provided.



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Figure -9. Datacap Mobile: Deployment options

## Server-side configuration for Datacap Mobile

- Install and configure the Datacap Web Service (wTM):
- Include a batch-creation task configured for mobile capture in your workflow or job.
- Modify or add rulesets to
  - Convert images and execute server-side OCR/ICR, locate rules.
  - Process client-side OCR results in properties/fields to server.

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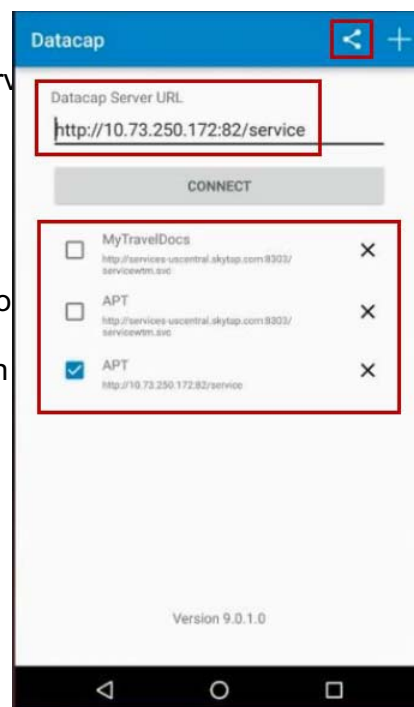
*Figure -10. Server-side configuration for Datacap Mobile*

### Help Path

- Datacap > Datacap 9.0.1 > Installing and configuring in a client/server environment > Datacap Web Services installation steps>Datacap Web Services hosting options  
[http://www-01.ibm.com/support/knowledgecenter/SSZRWW\\_9.0.1/com.ibm.dc.install.doc/dcitws013.htm](http://www-01.ibm.com/support/knowledgecenter/SSZRWW_9.0.1/com.ibm.dc.install.doc/dcitws013.htm)

## Connect Mobile application to a Datacap

- Datacap Server URL
  - URL of the server running Datacap Web Services
  - If it is hosted on IIS server:
    - `http://IP_address:port/ServiceWtm.svc`
  - If it is a Windows Service:
    - `http://IP_address:port/service`
- Multi-Connection Support
  - You can create more than one connection for different applications.
  - A list of connections are shown in the screen
- Share a Connection



Datacap Mobile

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Figure -11. Connect Mobile application to a Datacap

Refer to the "IBM Datacap Mobile App User Guide" for more details.

### Initial Configuration:

1. Download the IBM Datacap Mobile app from either the Apple AppStore or Google Play.
2. Open the app by tapping the **Datacap** icon on the device to launch the application.
3. If this is your first time running the app, you will be asked to configure the Connection properties, including the URL of the server running Datacap Web Services; the Datacap application you want to use; and your login credentials.
  - a. Enter the URL of the server running the Datacap Web Services
    - If it is hosted on IIS server: `http://IP_address:port/ServiceWtm.svc`
    - If it is a Windows Service: `http://IP_address:port/service`
  - b. Select the Datacap application you want to use.
  - c. Enter your username, password, and station ID in the appropriate fields.

**Multi-Connection Support**

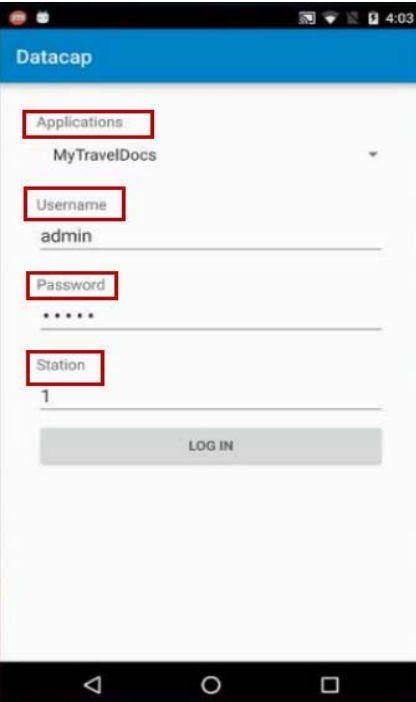
- You can create more than one connection configuration for different servers or different applications.
- Use the Plus icon at the top to create a new connection.
- A list of available connection configurations are shown in the screen capture.
- You can switch back and forth to different servers or different applications.

**Share a Connection**

- You can share the connection URL link with others using the Share icon at the top.
- For example, you can send an email with the link information.

## Log in to the Datacap Mobile application

- Log in
  - Select an Application.
  - Enter username and password.
  - Enter a value for Station.



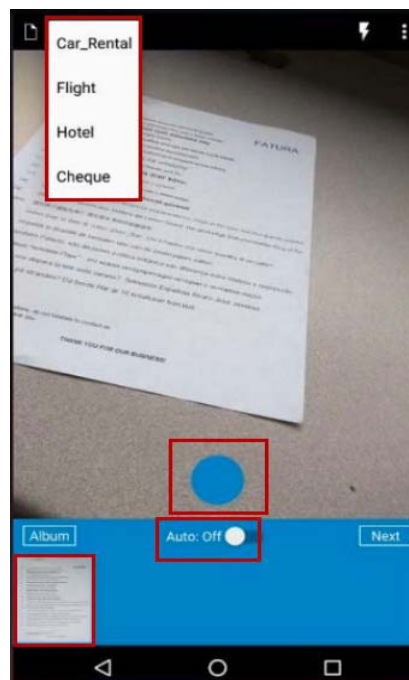
Datacap Mobile

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Figure -12. Log in to the Datacap Mobile application

## Capture images with the camera on the device

- The first view is camera screen.
- Select:
  - Document Type.
  - Auto mode or Manual mode.
- Focus on the image or document to capture.
- A thumbnail of your captured image
  - Shown in the preview area.



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Figure -13. Capture images with the camera on the device

The IBM Datacap mobile app enables you to capture high-quality images with real-time edge detection and image processing.

- When you open the Datacap mobile app, the first view is camera screen.
- Select the Type of document you want to capture from the menu.
- Select the Auto mode or Manual mode.
- Focus on the image or document to capture. Ensure that your document fills the view finder. The Datacap mobile app will monitor image quality. Identify the edges of your document in real time before capturing the image.
- For each capture, a thumbnail of your captured image appears in the preview area.

### Considerations for Mobile image capture

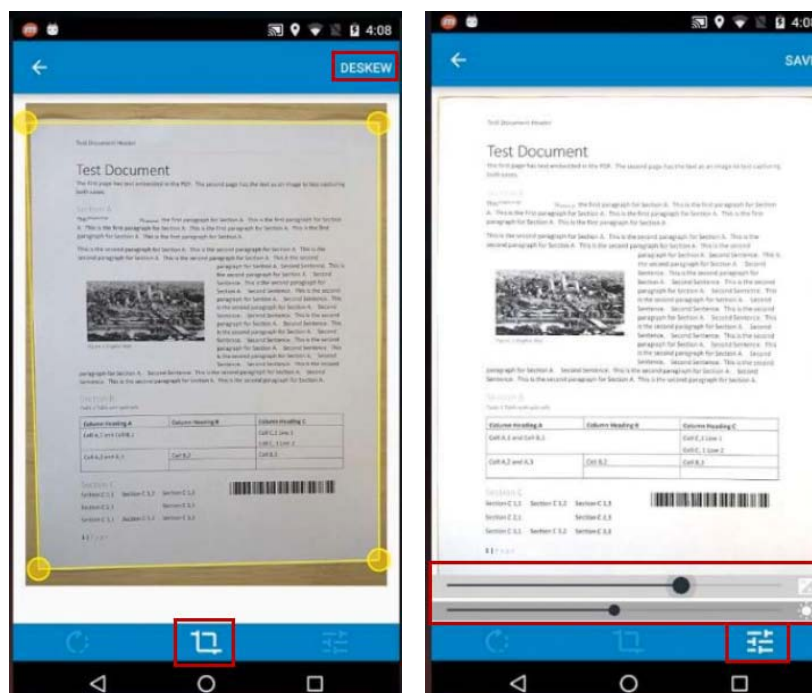
- Exposure is about how much light is let into the camera.
- Angle of capture: If the paper is not aligned to the camera lens, it can appear distorted.
- Image blur: A user operates the mobile device by holding the device in their hand.
- Skewing: Although skewing still occurs on dedicated scanners, it can be more acute on a mobile device.



- Resolution: The image resolution used determines the level of detail used to capture an image.
- Other: Color versus black and white, user, and device

## Edit captured images manually

- Deskew
  - Crop.
- Contrast
- Brightness
- Rotate



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Figure -14. Edit captured images manually

When you disable the automatic capturing, you can edit the image manually. The screen captures show the image editing screen. The following controls are provided at the lower end of the screen.

- Deskew (perspective correction)
- Contrast and Brightness
- Rotate
- Capturing in Manual mode
  - It is not possible to use automatic mode for all occasions.
  - Manual mode is suitable when there is no notion of a “page” with edges or minimum levels of quality for OCR.

Example: photographic evidence of property damage.

## Demonstrations

- Connect to a Datacap server using Datacap Mobile application
- Capture images with Datacap Mobile application



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*Figure -15. Demonstrations*

If you are taking this course as a self-paced virtual course, return to the main course menu to play the pre-recorded demonstrations.

## Review questions



1. Which of the following three types of indexing that are supported in IBM Datacap Mobile?
  - A. Manual
  - B. On-device OCR
  - C. Barcode recognition
  - D. Field
  
2. True or False:  
The IBM Datacap Mobile app is compatible on Apple iOS and Android platforms.
  
3. True or False:  
Using the IBM Datacap Mobile app, you can capture images, process, and upload documents to a Datacap server.

Figure -16. Review questions

## Review answers



1. Which of the following three types of indexing that are supported in IBM Datacap Mobile?

A. [Manual](#)  
B. [On-device OCR](#)  
C. [Barcode recognition](#)  
D. Field

The answer is [A](#), [B](#) and [C](#).

2. [True](#) or False:

The IBM Datacap Mobile app is compatible on Apple iOS and Android platforms.

The answer is [True](#).

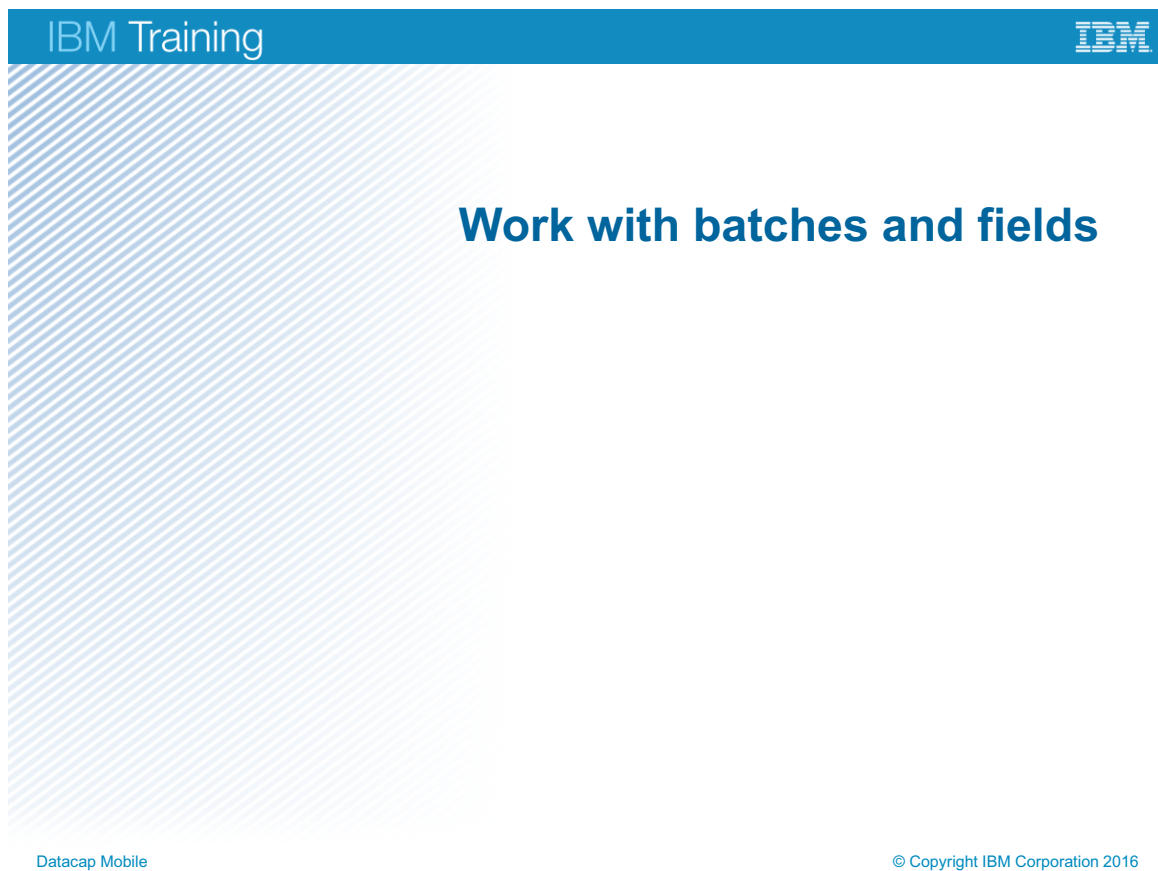
3. [True](#) or False:

Using the IBM Datacap Mobile app, you can capture images, process, and upload documents to a Datacap server.

The answer is [True](#).

Figure -17. Review answers

## **Lesson .2.    Work with batches and fields**



*Figure -18. Work with batches and fields*

## Lessons

- Introduction to Datacap Mobile
- ▶ Work with batches and fields
- Datacap Mobile Architecture and SDK (Optional)

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*Figure -19. Lessons*



## Why is this lesson important to you?

- As a Datacap business user, you capture and process documents in the Datacap Mobile Client.
- To do these tasks effectively, you must be familiar with working with batches and fields in Datacap Mobile. Some of the tasks includes barcode reading, OCR recognition, Save locations, and recognition language settings.

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*Figure -20. Why is this lesson important to you?*

## Process and upload images to the Datacap server

- Edit and save the images.
- Process the image.
  - Run OCR
  - Run Barcode recognition
- Upload images to server from the following sources.
  - Camera roll of the device
  - Other applications on the device
- Work offline
  - Capture images and process offline.
  - Upload the queued images when you are back online.

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Figure -21. Process and upload images to the Datacap server

- **Run OCR**

If a template is defined for running OCR in the Datacap application on the server side, the field values are automatically populated based on the template.

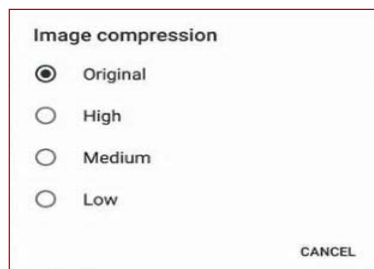
- **Run Barcode recognition**

If the Datacap application is configured with rules to perform automated classification / document separation, the page type is automatically set and documents automatically separated.

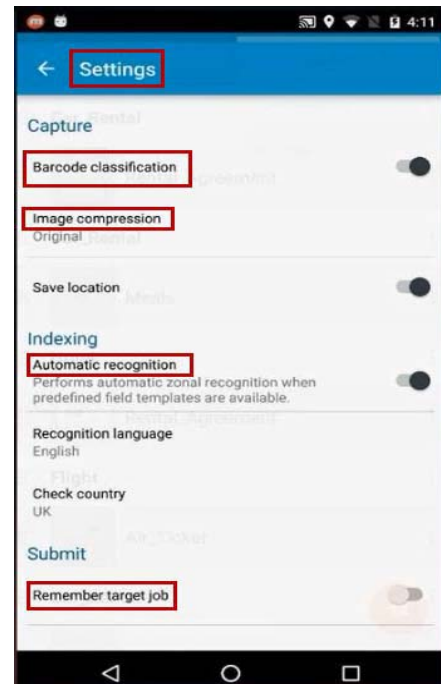
**Note:** Datacap application configurations are covered in detail in other courses.

## Settings available for the Datacap Mobile app

- Capture - Barcode classification
  - Enable or disable.
- Indexing - Automatic zonal recognition
  - Enable or disable.
- Submit - Remember target job.
  - Remember or forget
- Image compression
  - Original, high, medium or low quality.



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Figure -22. Settings available for the Datacap Mobile app

The screen capture shows the settings for the following features:

- **Capture** - Barcode classification (Enable or disable)
- **Image compression** (Original, high, medium, or low quality)
- **Indexing** - Automatic zonal recognition (Enable or disable)

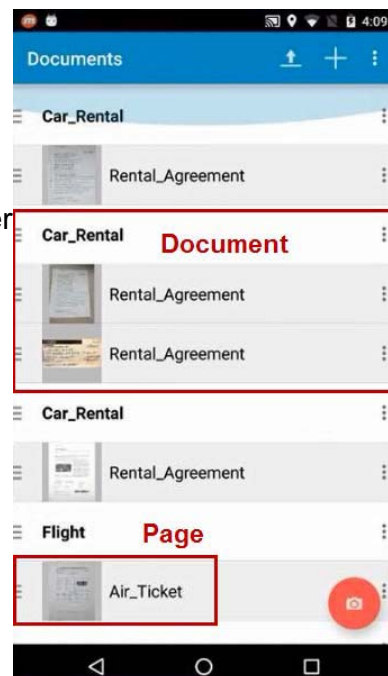
If this feature is enabled, capture does automatic zonal recognition when predefined field templates are available.

- **Submit** - Remember target job (Remember or forget)

**Note:** Some of the features (that are not discussed in this chart) are discussed in other charts.

## Batch view in Datacap Mobile app

- In the batch view
  - There are many sections.
  - Each section is a document.
  - Under a document, each icon is a page.
- Features available
  - Drag a page from one document to another
  - Change the document or page type.
  - Reorder a document.
  - Add a new document.
  - Delete a page or a document.
  - Select a target job and submit the page.



Datacap Mobile

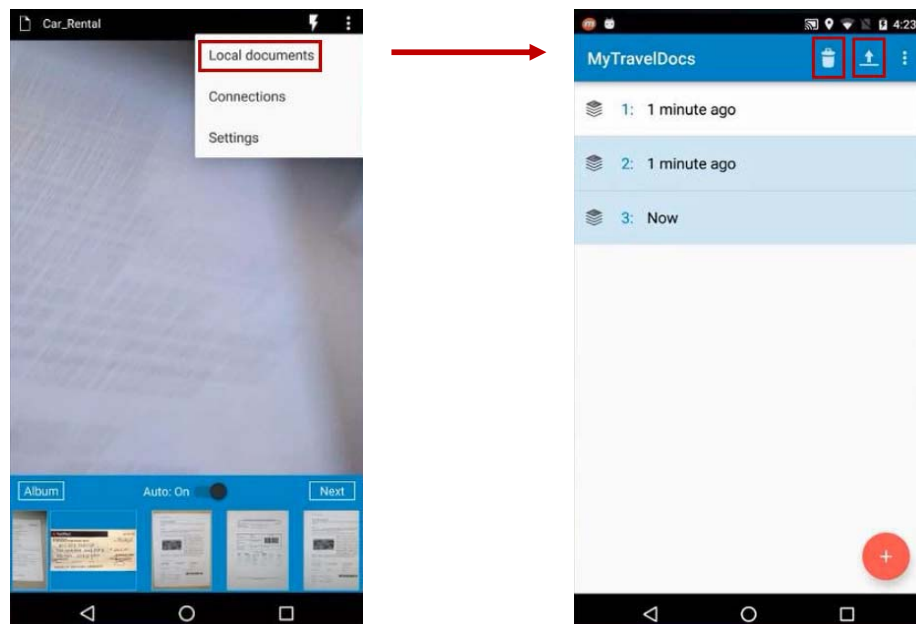
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Figure -23. Batch view in Datacap Mobile app

The screen capture shows the batch view available in the Datacap mobile app.

## Work with local document batches

- Multi-upload or delete the local batches.



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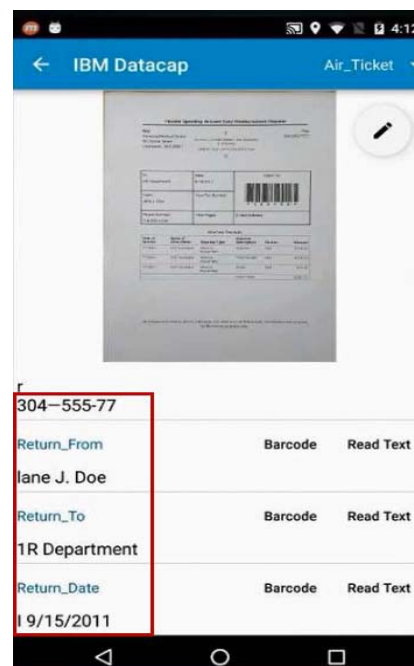
Figure -24. Work with local document batches

The screen capture shows the local batches in the Datacap mobile app.

- You may have a requirement to work offline.
- If you have logged in and accessed the application before, the documents, pages, and fields (DCO) information are locally available.
- You can capture documents and work with multiple batches offline. You can upload all the batches when you are back online.
- You can delete the batches that you don't need.

## Fields view in Datacap Mobile app

- In the fields view
  - Three types of properties are shown.
    - Global
    - Document
    - Page
  - Collapse and expand properties list.
- Features available
  - Change the page type .



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Figure -25. Fields view in Datacap Mobile app

The screen capture shows the fields view in the Datacap mobile app.

On your mobile device, when you select a page, automatic zonal recognition (OCR) is done if the zonal templating is configured for the page and the automatic recognition is enabled. The fields view opens.

**Note:** For Tablets, a split screen with both features are shown. The left side shows the documents and pages view. The right side shows fields view.

In the fields view, three types of properties are shown.

- **Global**

Global Properties stores the batch level information.

- **Document**

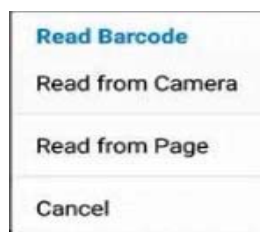
If you enter any values in the Document properties fields, it reflects in all pages for that document.

- **Page**

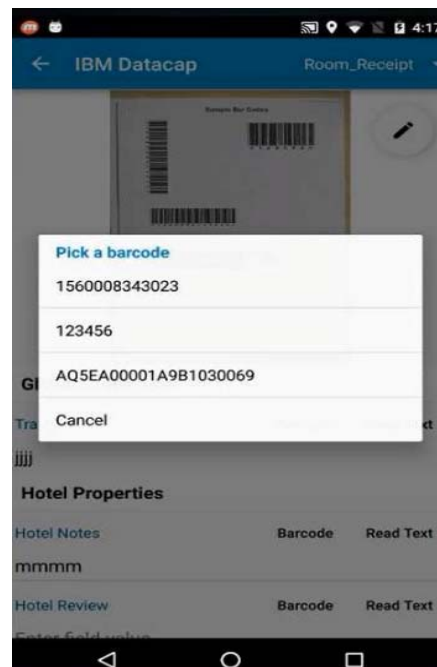
Page (Room receipt) properties provides all the fields on the page.

## Barcode reading

- Barcode reading:
  - Populate a field value from a barcode
  - Read barcode from your camera or from the page.



- You can read multiple barcodes.
  - Select a value from a list of barcodes read.



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Figure -26. Barcode reading

## OCR recognition

- Manual OCR recognition:
  - Populate a field value from text
  - Zone a position by tapping
  - You can zoom-in and zoom-out
  - Handles to resize
  - A widget that will save the coordinates.



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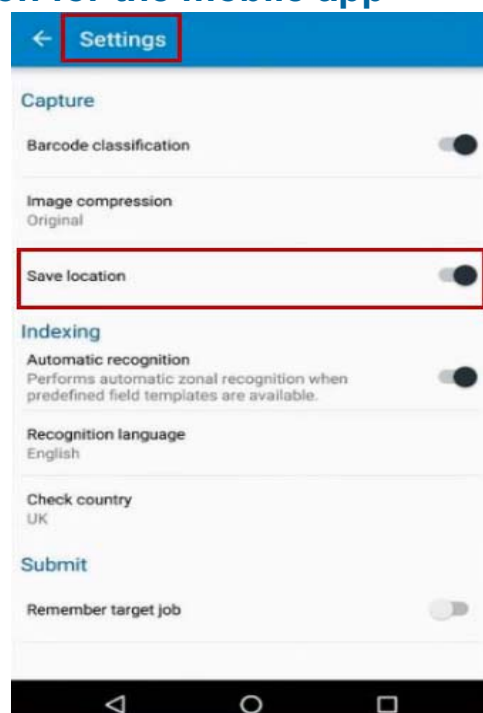
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Figure -27. OCR recognition



## Configure geocoding and location for the mobile app

- Enable or disable geocoding :
  - "Save Location" in application settings.
- GPS information
  - Stored at the page level in the Latitude and Longitude variables.
- Street Address information
  - Stored in the Location field variable.



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Figure -28. Configure geocoding and location for the mobile app

### Help Path

- Datacap 9.0.1>Installing and configuring in a client/server environment>Datacap installation and configuration in a client/server environment>Installation instructions for Datacap server>Datacap Mobile app configuration>Configuring geocoding and location  
[http://www-01.ibm.com/support/knowledgecenter/SSZRWW\\_9.0.1/com.ibm.dc.install.doc/dcain449.htm?lang=en](http://www-01.ibm.com/support/knowledgecenter/SSZRWW_9.0.1/com.ibm.dc.install.doc/dcain449.htm?lang=en)

When you capture images using the Datacap Mobile app, GPS and address information is stored by default in document variables.

- If you create a field on any page in your document hierarchy named "Location", then Datacap will automatically populate the field with the resolved address provided by the Location variable.
- If you do not disable the geocoding feature, but you disable your device's location services, then the Latitude and Longitude variables are recorded with values of 0.0, and the Location variable are set to Unknown.

## Work with Recognition Languages

- Recognition Languages:
  - Change the recognition language in settings to use a different dictionary.



- Tap "Read Text" in the fields view to zone text from different language.



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Figure -29. Work with Recognition Languages

## Demonstrations

- Work with batches in Datacap Mobile app
- Work with fields in Datacap Mobile app



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*Figure -30. Demonstrations*

If you are taking this course as a self-paced virtual course, return to the main course menu to play the pre-recorded demonstrations.

## Review questions



1. True or False:  
When you capture images using the Datacap Mobile app, GPS and address information can also be stored in document variables.
2. True or False:  
If a template is defined for running OCR in the Datacap application on the server side, the field values are automatically populated based on the template.
3. True or False:  
Using the IBM Datacap Mobile app, you can upload images to server only from the Camera roll of the device and not from other applications on the device.

Figure -31. Review questions

## Review answers



1. True or False:

When you capture images using the Datacap Mobile app, GPS and address information can also be stored in document variables.

The answer is True.

2. True or False:

If a template is defined for running OCR in the Datacap application on the server side, the field values are automatically populated based on the template.

The answer is True.

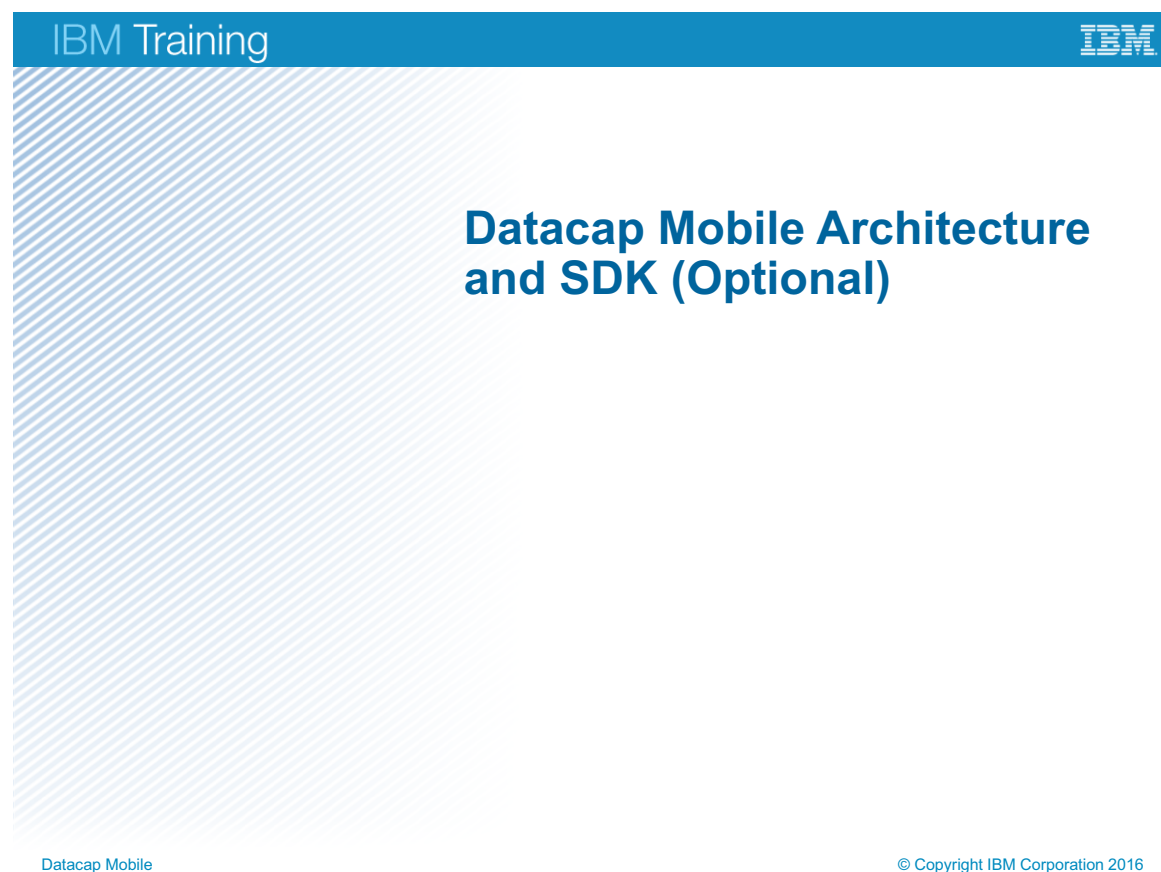
3. True or False:

Using the IBM Datacap Mobile app, you can upload images to server only from the Camera roll of the device and not from other applications on the device.

The answer is False.

Figure -32. Review answers

## **Lesson .3. Datacap Mobile Architecture and SDK (Optional)**



*Figure -33. Datacap Mobile Architecture and SDK (Optional)*

## Lessons

- Introduction to Datacap Mobile
- Work with batches and fields
- ▶ Datacap Mobile Architecture and SDK (Optional)

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*Figure -34. Lessons*



## Why is this lesson important to you?

The following slides provide information on Datacap Mobile:

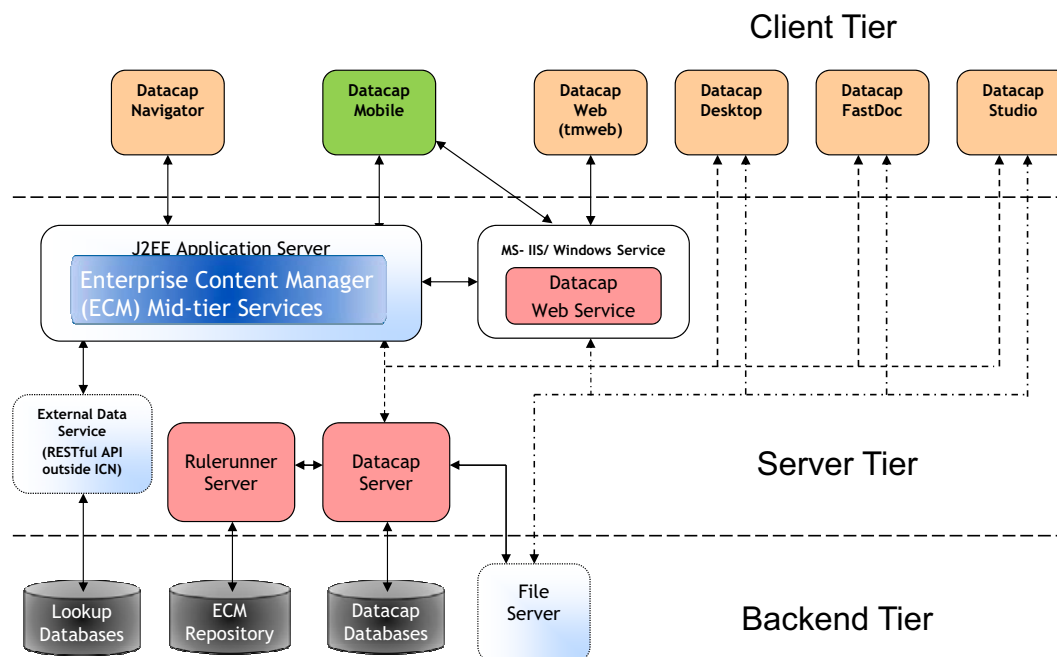
- Architecture
- Datacap Mobile SDK

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*Figure -35. Why is this lesson important to you?*

## Datacap Three Tier Architecture - Datacap Mobile



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Figure -36. Datacap Three Tier Architecture - Datacap Mobile

### Datacap Three Tier Architecture

The Datacap components are designed to operate in a three tier configuration.

#### Client Tier

The client tier consists of all of the components that are hosted on workstations or **mobile devices** where humans interface to the Datacap system.

#### Server Tier

The server tier is where all the Datacap services are provided. This interface is used between the users and the backend storage devices. The main service components are:

- Datacap Service – Authentication, batch task-queuing, database access, and file sharing.
- Rulerunner Service – Background task processing.
- **Web Services – For web and mobile client connection.** RESTful API services for external access to Datacap services and also used by IBM Content Navigator to provide Datacap Navigator and Mobile connectivity.

#### Backend Tier

The backend tier is where storage servers are configured.

## Datacap mobile architecture with remote access

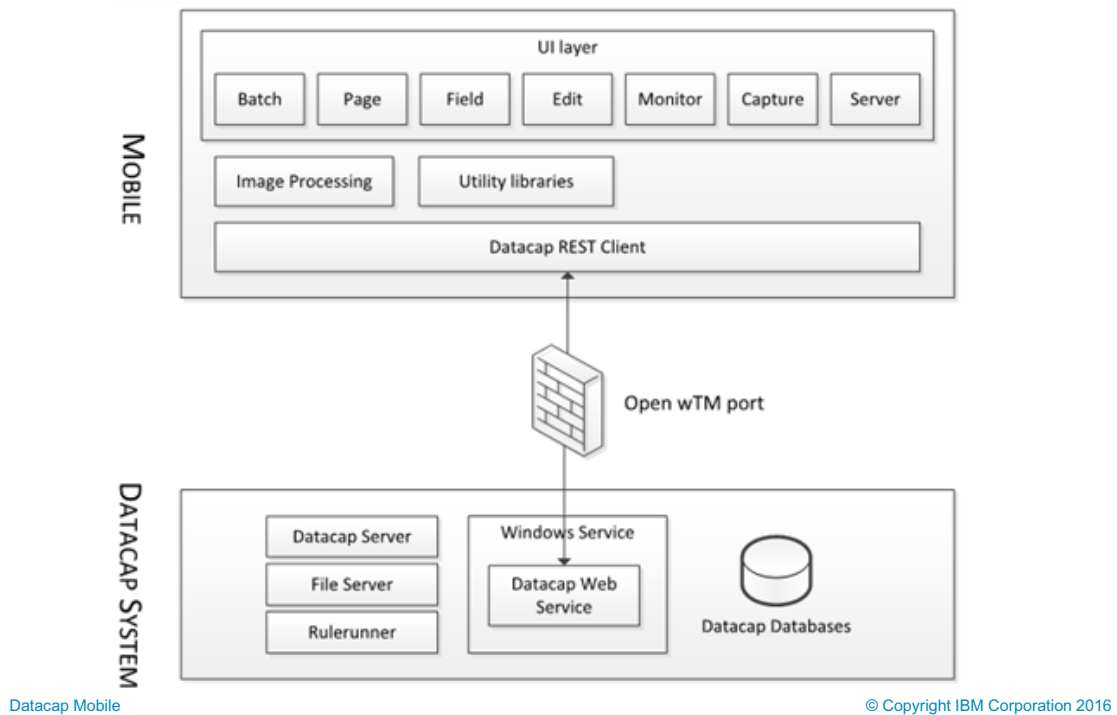


Figure -37. [No title]

### Datacap mobile architecture with remote access

This illustration shown the components of Datacap components that are hosted in a mobile device and how the mobile device connects to the Datacap services.

#### Mobile

- IBM Content Navigator Mobile application with Datacap Document capture.
- Connects to the Datacap System through a firewall protected open Datacap Web Services (wTM) port.

#### Datacap Systems

- Datacap Web Services (IIS)
- Datacap Server
- File Server (applications and batches)
- Rulerunner Server
- Datacap Databases

## IBM Datacap Mobile application - SDK

- Build high quality Capture Apps fast
- Model/Network Framework
- UI widget Framework
- Developer documentation
- Sample App



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Figure -38. IBM Datacap Mobile application - SDK

## Datacap Mobile development SDK Prerequisites

- iOS SDK Prerequisites:
  - IBM Datacap 9.0.0.1 server or later
  - An Apple Mac
  - Mac OS X Yosemite (10.10.0+)
  - Xcode 6.3+
  - A working knowledge of Objective-C or Swift.
- Android SDK Prerequisites:
  - IBM Datacap 9.0.0.1 server or later
  - A working knowledge of Java programming
  - JDK 6 or later (JDK 7 for Android —5 Lollipop— and later)
  - Android Studio IDE and Android SDK (v 22 or later)

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Figure -39. Datacap Mobile development SDK Prerequisites

## Datacap SDK: Features and Common Tasks

- Datacap SDK: Features
  - Persistent object model
  - Download DCO/Profiles
  - Upload jobs
  - Image operations
  - OCR operations
  - Capture Controller UI widget
- Datacap SDK: Common Tasks
  - Change icon
  - Change brand colors
  - Add splash screen
  - Storyboard new screens

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*Figure -40. Datacap SDK: Features and Common Tasks*

## New features for Datacap Mobile in version 9.0.0.3

- New in IBM Datacap Mobile 9.0.0.3:
  - Barcode-based classification
  - Templated zonal OCR
  - OCR confidence levels
  - Audit trails via automated geolocation
  - Import from Box, Dropbox, Drive, etc.

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Figure -41. New features for Datacap Mobile in version 9.0.0.3

### New features for Datacap Mobile in version 9.0.0.3 (PXT)

#### Barcode-based classification

(In previous versions) it has been worked through changes implemented in Datacap Developer tools on the server side. So it is not possible to classify the documents with certain type of barcode and certain type of encoding inside the barcode.

Now users are able to create a regular expression which will match their barcode, and scan the documents with Mobile app and have it automatically recognize. This can work in off-line or in a environment with a few connections because this type of recognition is done on the device.

#### Templated zonal OCR

(In previous versions) Zonal OCR was done in the Datacap Developer tools. We are able to define the Zones in documents which can automatically OCR on the device. Can work off-line or with less connectivity.

#### OCR Confidence levels

This version exposes the OCR engine. Particularly important from the Mobile developers perspective. Because we are shipping an SDK which has this feature. One of the ways, customers are keen to use OCR engine is to adjust (installment of) the confidence levels. To get the proper

OCR, particular type of field, or proper printed text, you need to be able to setup higher or lower threshold in terms of recognition confidence. So it is possible for a developer to set this using SDK.

### **Audit trails via automated geolocation**

This feature is now possible and available. This is mobile only feature. It is possible to get accurate data about where scan is taken. Without having connectivity. When you upload the document to Datacap server, the app memorizes when where it is taken. Customers are focused on certain type of certification of documents where it is scanned for the purpose of reconciliation.

### **Import from Box, Dropbox, and other applications**

It is possible to import documents almost every kind of document supplier. in particular Box fully supported.

The geolocation is optional.

You create a location field at the batch level. If the geolocation is turned off , that field is thrown out, you can still process the batches.



## New features for Datacap Mobile in version 9.0.1

- New in IBM Datacap Mobile 9.0.1: On-device Capabilities
- Offline use (login required 1x)
- Image capture
  - Camera
  - Album or 3rd party source
- Edit images
  - Including perspective correction
- Classification
- Document separation
- Indexing
  - Batch, document, or page fields
- Recognition
  - Barcode
  - Text
- Metadata, multiple-connections, more

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*Figure -42. New features for Datacap Mobile in version 9.0.1*

## Unit summary

- Capture images using Datacap Mobile
- Work with batches and fields
- Read barcodes, OCR, and save location
- Optional: Introduction to Architecture and SDK

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*Figure -43. Unit summary*



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