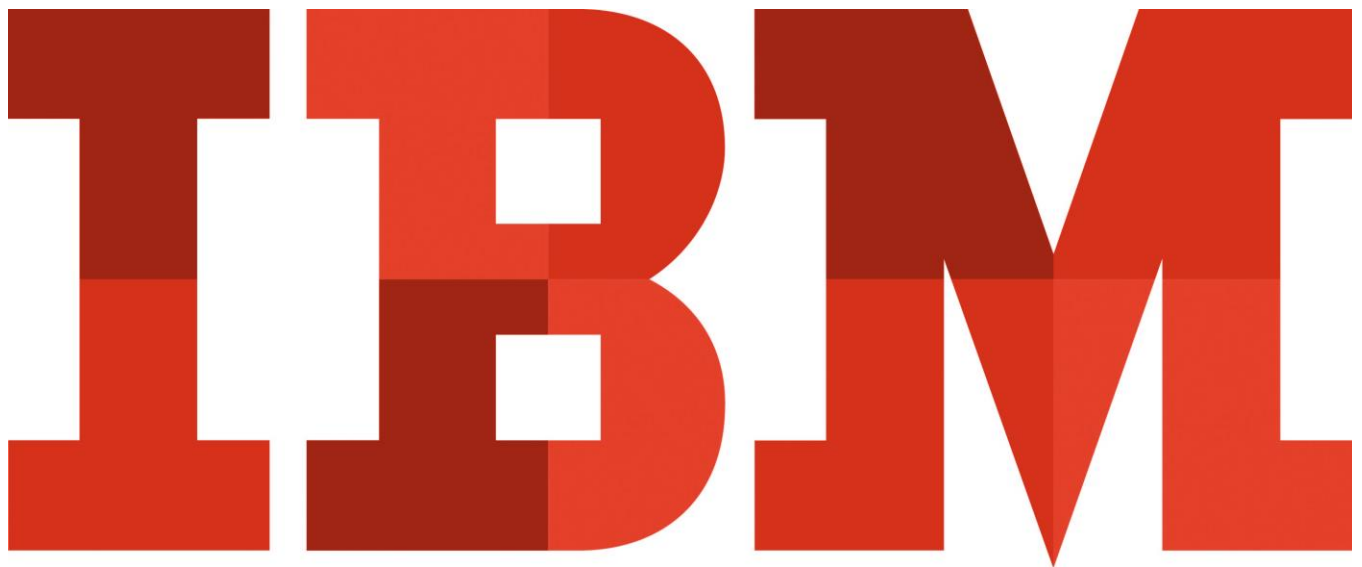


Mobile and IBM Bluemix for Hackathons

A guide for hackers

Lennart Frantzell alf@us.ibm.com, Steve Curtis, scurtis@us.ibm.com

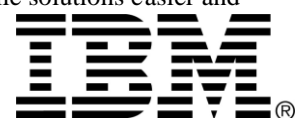
12/1/2016



A digital copy of this lab and code snippets can be found at: <https://ibm.biz/Bds2QM>

Quick Introduction

When we attend Hackathons we are often asked to recommend an IBM mobile solution that will allow a team of hackers to quickly create a cool mobile app. With this brief guide we hope to make the choice between a number of IBM mobile solutions easier and faster. The choices are introduced in order of functionality. Enjoy.

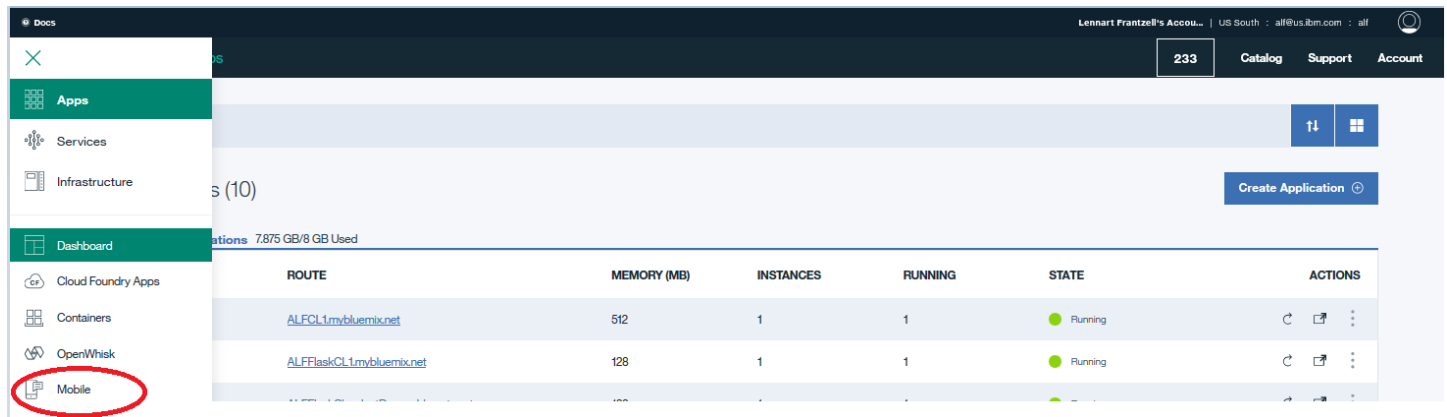


Bluemix Mobile Dashboard and Code Starters

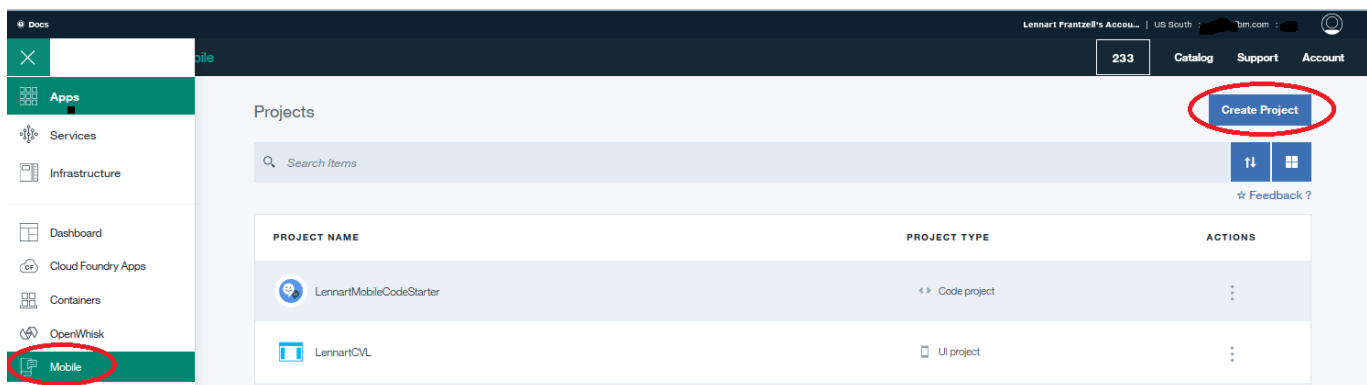
Use Case: If you want to write a quick mobile app from a set of templates without coding and then add mobile services such as Watson Visual Recognition or Tone Analysis, or why not Cloudant Sync, then this is the choice for you.

Developers can use UI Starters to create mobile apps from templates. UI Starters is useful for sketching an idea or when you need to quickly prototype a mobile experience. UI Starters requires little programming knowledge or mobile development for you to be productive quickly.

You generate code from the templates which you can import into a development environment like Android Studio or Xcode. You can then edit the code and generate an APK file, which you can load on your mobile device.



- Begin by going to the Bluemix homepage <https://console.ng.bluemix.net/>
- Click on the three bars at the upper left hand corner of the action bar.
- Expand the dialog window on the left and click on Mobile at the bottom of the list



- Then Click on Create Project in the upper right hand corner. <https://console.ng.bluemix.net/mobile/create-project/>

Select Starter

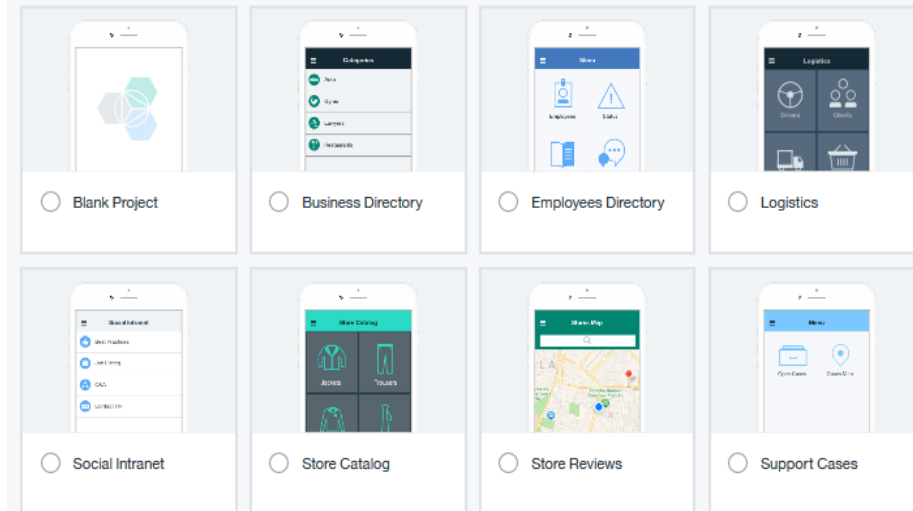
[Help](#)

UI Starters

Code Starters

UI Starter Explanation

Bluemix mobile developers can use UI Starters to create apps using the UI Builder. App views can be bound to data with little programming knowledge, which enables apps to be started and native source code to be generated quickly.

[Create Project](#)

The UI starters ties a screen with backend cloud data which is a great way to visualize a concept or to create a mobile app at a Hackathon.

The tool generates code that you then can use in Android Studio or Apple Xcode with Objective C or Swift to expand and improve your starter code and quickly have a running app. It also generates an APK.

Get Code

To generate your project source code, select the platform and language.

After you have downloaded the project, view the **README.md** file from the downloaded project in a M

Read about [Prerequisite Developer Tools](#) for more information.

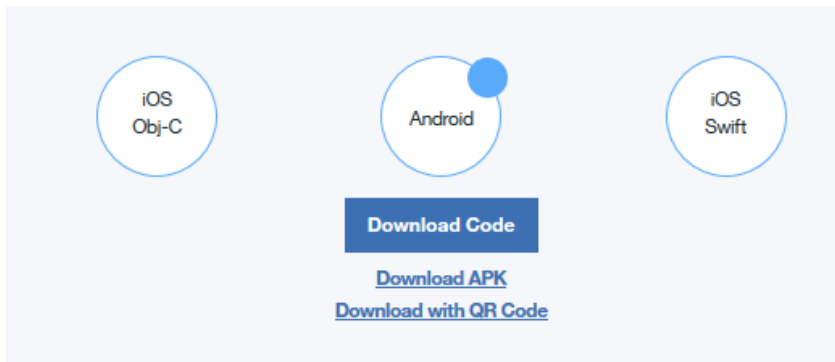
iOS
Obj-C

Android

iOS
Swift[Download Code](#)

Get SDK

At least one service must be associated with the project before SDK information may be generated.



The **UI Starters** templates are matched with **Code Starters** that work the same way.

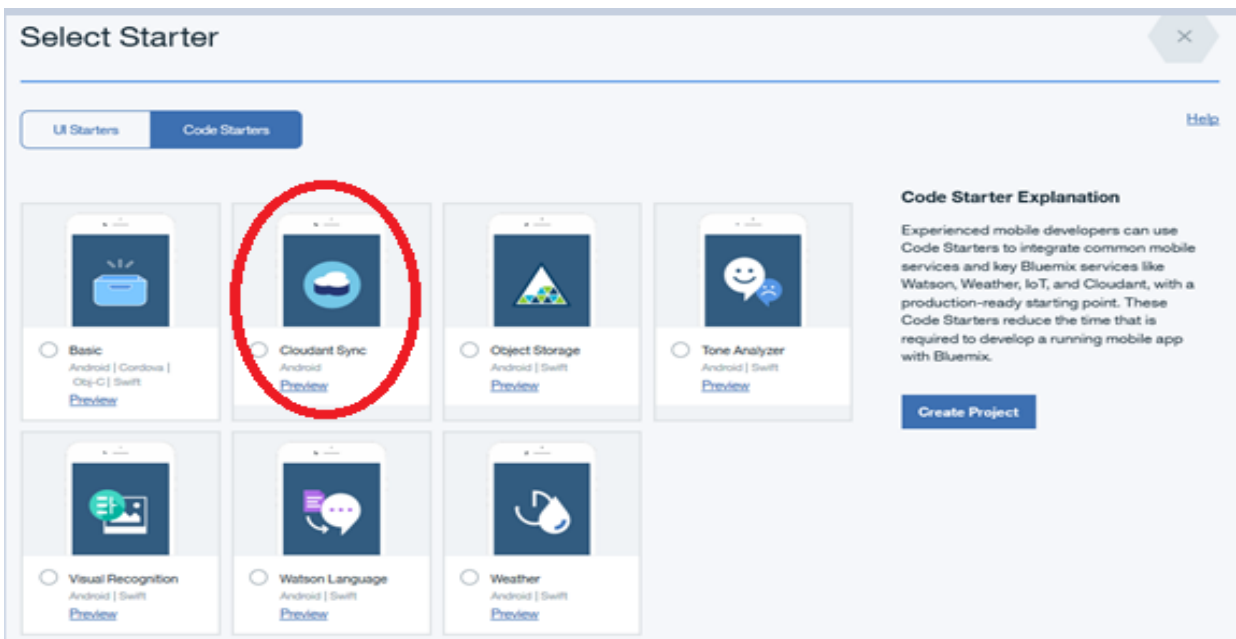
This service uses the Bluemix Mobile services SDKs in order to use the functionality of Mobile Analytics and Push Notifications. It also uses Cloudant Sync to store, index and query local JSON data on a device and to synchronise data between many devices.

Optionally, you may have selected "Deploy to MFP" setting in Bluemix UI Builder, in which case IBM MobileFirstPlatform Foundation iOS SDK will be used for analytics.

The generated app forAndroid has the following components.

analytics	File folder
app	File folder
core	File folder
gradle	File folder
.gitignore	Text Document
build.gradle	GRADLE File
gradle.properties	PROPERTIES File
gradlew	File
gradlew.bat	Windows Batch File
README.md	MD File
settings.gradle	GRADLE File

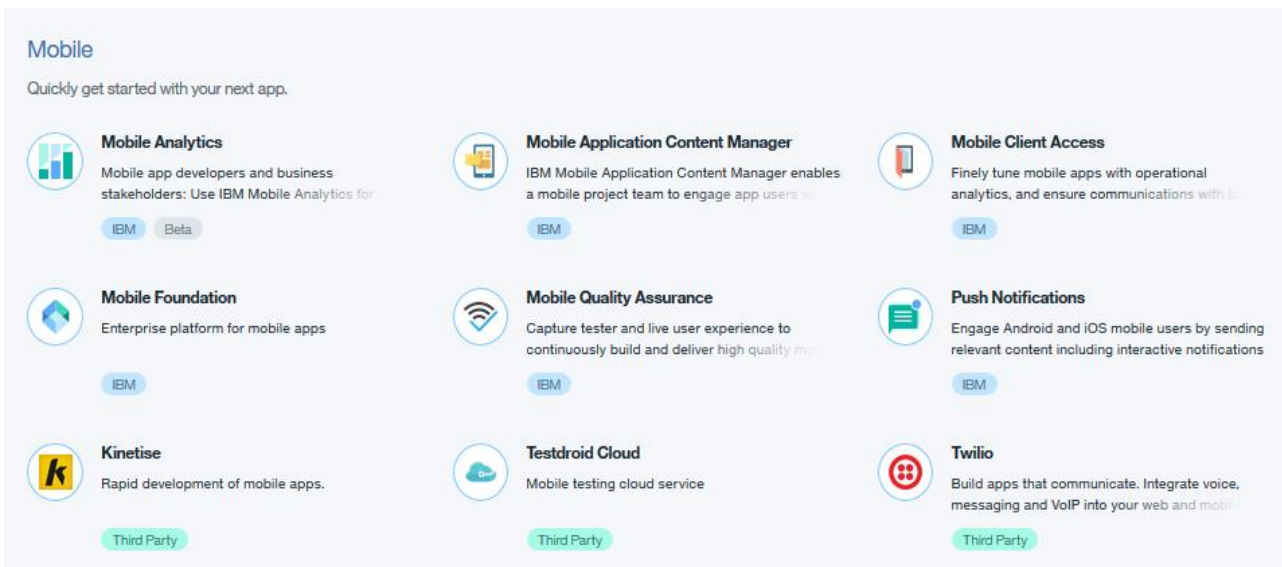
The UI Starters are matched by the Code starters that work in a similar way.



<https://console.ng.bluemix.net/docs/mobile/starters.html>

IBM Bluemix Mobile Services

The IBM Bluemix cloud has a rich set of mobile services listed in the Bluemix Catalog: <https://console.ng.bluemix.net/catalog/>. You can quickly familiarize yourself with them. See picture below



The mobile services can be used individually or as part of a framework, see below.

Use Case:

An important Bluemix service for mobile computing is the Cloudant NoSQL database

<https://console.ng.bluemix.net/catalog/services/cloudant-nosql-db/> with its synchronization feature that allows mobile phones to synchronize with backend data stored in Cloudant; <https://cloudant.com/product/cloudant-features/sync/>



Cloudant is the corner stone of the Bluemix MobileFirst Services Starter Boilerplate that we will cover further down.

Watson Developer Cloud SDKs for Mobile

To simplify mobile development IBM has added two mobile SDKs that you can use to quickly develop mobile apps with Watson services.

Watson Developer Cloud iOS SDK

build **passing** codecov 0% Carthage **compatible** Documentation API CLAs signed 12

Use case: The Watson iOS SDK enables developers to quickly add Watson Cognitive Computing services to their Swift iOS applications.

<https://github.com/watson-developer-cloud/ios-sdk>

IBM developerWorks has an on-line course on how to use the Watson Developer Cloud iOS SDK to Create Swift mobile apps with IBM Watson services <https://ibm.biz/Bds2ws>

IBM Watson Developer Cloud Android SDK **build passing**

Use Case: Android client library to assist with using the Watson Developer Cloud services, a collection of REST APIs and SDKs that use cognitive computing to solve complex problems.

<https://github.com/watson-developer-cloud/android-sdk>

For an example of using the Android SDK to access a Watson service: <https://github.com/blumareks/javaone2016>

Watson Developer Cloud SDKs for Mobile

To simplify mobile development IBM has added two mobile SDKs that you can use to quickly develop mobile apps with Watson services.

Watson Developer Cloud iOS SDK

build **passing** codecov **0%** Carthage **compatible** Documentation **API** CLAs signed **12**

Use Case: The Watson iOS SDK enables developers to quickly add Watson Cognitive Computing services to their Swift iOS applications.

<https://github.com/watson-developer-cloud/ios-sdk>

Bluemix MobileFirst Services Starter Boilerplate

Use case: If you know your way around mobile programming and want to write a quick mobile app with Push Notification, a backend database and Mobile Client Access, then this “Boilerplate is the choice for you

You will be up and running in a few minutes with a rudimentary GUI and three backend services all running on Bluemix.

You can then create your GUI the way you want and quickly have your app completed.

<https://console.ng.bluemix.net/catalog/starters/mobilefirst-services-starter>

So if you want to use Cloudant for storage, including IoT, and in addition Node.js , Angular, HTML5 and do authentication with Facebook and Google this is for you. .

MobileFirst Services Starter

Start building your next mobile app with mobile services on Bluemix.


IBM

[View Docs](#)


VERSION99

TYPEBoilerplate


REGIONUS South




SDK for Node.js™



Mobile Client Access



Push Notifications



Cloudant NoSQL DB

Develop, deploy, and scale server-side JavaScript® apps with ease. The IBM SDK for Node.js™ provides enhanced performance, security, and serviceability.

Pricing Plans

Monthly prices shown are for country or region: [United States](#)

PLAN	FEATURES	PRICING
<div>✓</div> Default	Run one or more apps free for 30 days (375 GB-hours free).	\$0.07 USD/GB-Hour

This is a service plan for the IBM Bluemix Platform runtime.

Need Help?

[Contact Bluemix Sales](#)

Already have an account?

[Log in](#)

Sign up to Create

The Mobile Foundation Service

The Mobile Foundation service is powered by the market-leading IBM MobileFirst Foundation Platform.

Use Case: For Corporate hackathons

If you want a full-features mobile app by using the front-end framework and tools of your choice to which you easily can add comprehensive security, app lifecycle management, and a back-end logic engine, as well as push and offline sync to your apps by using the cross-platform software developer kit (SDK), then this is the choice for you. This solution is especially suitable if you want to create several app for the same company or organization, which all can be managed by the Mobile Foundation.

[← View All](#)

Mobile Foundation

The Mobile Foundation service is powered by the market-leading IBM MobileFirst Foundation Platform. This service radically simplifies building, managing, and updating your mobile app with a pre-integrated, comprehensive set of mobile application services. Build your app by using the front-end framework and tools of your choice. Easily add comprehensive security, app lifecycle management, and a back-end logic engine. Push and offline sync to your apps by using the cross-platform software developer kit (SDK).

IBM

[View Docs](#)

Features

- Comprehensive Security**
Protect data on the device, APIs, and your brand from hackers and vulnerabilities. You don't need to be a security expert to get started right away with building secure apps. Employ best practices by using samples and templates, and quickly make and roll out changes with a configuration-based approach.
- Backend Logic Engine**
Add a rich back-end logic engine to power your apps. Write your app business logic in Java or Javascript. Expose your code as REST API endpoints, and document in Swagger to promote collaboration and simplify testing.
- Bluemix Deployment**
[The Mobile Foundation service provisions](#)
- App Lifecycle Management**
Adopt a more streamlined and repeatable process for incremental app updates. For example, skip the app store approval by making changes to your app while it's live, with no recompile needed.
- Push and Offline Sync**
Get essential back-end services that every app needs, pre-integrated in one easy-to-use SDK.

Need Help?
[Contact Bluemix Sales](#)

Already have an account?
[Log in](#)

[Sign up to Create](#)

Summing Up

The IBM Bluemix cloud offers several choices for mobile developers:

- 1) Templates for those who want to quickly want to create a mobile app with a Watson service with minimal coding,
- 2) A Mobile Services Boilerplate with embedded mobile services
- 3) An advanced mobile environment for enterprise-grade mobile development
- 4) SDKs for app development with Watson Services

The choice is yours, enjoy.

.