

# InterConnect 2016

The Premier Cloud & Mobile Conference



## Lab 6678

# Mobile App Development Using the IBM MobileFirst Platform Foundation Command Line Interface (MFP-CLI)

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# IBM InterConnect 2016 @Dev Hello World Labs

## 6678 - Mobile App Development Using the IBM MobileFirst Platform Foundation Command Line Interface (MFP-CLI)

### Download

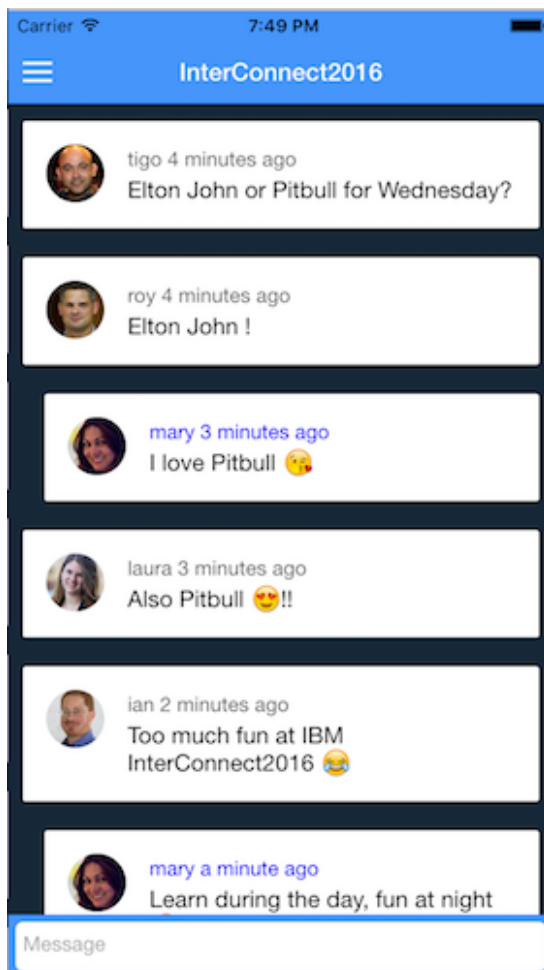
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- Click **Download ZIP** above or click [ibm.biz/lab6678zip](http://ibm.biz/lab6678zip)

### Your Goal!

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- During this Lab you will build a Mobile Chat App that leverages the MFP Server and NodeJS using IBM Bluemix.



# 1. Bluemix NodeJS Server

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## 1.1 Deploy the NodeJS Server for the Chat Service


- Login into <https://blueminx.net> and verify that you have at least 128MB free for Cloud Foundry Apps



- Click this button or visit <http://ibm.biz/lab6678>
- This will deploy the **nodejs** branch
- Select a unique hostname for your new App, like: "**mychat**"
- Your app will be assigned a https unique URL like: <https://mychat.mybluemix.net>

### Deploy this application to Bluemix

Deploying this app will create a private DevOps Services project for you. [Learn more.](#)



**IC2016-MFP-HELLO-LAB**  
GIT URL: <https://github.com/csantanapr/IC2016-MFP-Hello-Lab>  
GIT BRANCH: nodejs

✓

Created project successfully

✓

Cloned repository successfully

✓

Configured pipeline successfully


✓

Deployed to Bluemix successfully

**Success!**

## 1.2 Save the url for your new Chat Service

### VIEW YOUR APP

- Click  to see the chat app running on the browser and verify the URL like <https://mychat.mybluemix.net>
- Leave the browser window open since we are going to need the URL and use the website for testing our mobile App.

## 1.3 MFP-CLI Installation

- Verify that your Lab workstation has the MFP-CLI installed by running the following commands in a Terminal window

```
$ mfp help      $ mfp -v
```

- If you don't have the MFP-CLI installed you can download the MFP-CLI from the [MFP Developer Center](#)

## 2. MFP Server

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### 2.1 Start MFP Server

- Change directory to MFP backend project

```
$ cd MFPBackend
```

- Use the MFP-CLI to start the MFP Server

```
$ mfp start
```

- You can use other MFP-CLI commands to manage the MFP Server

```
$ mfp status    $ mfp stop    $ mfp restart
```

### 2.2 Configure the MFP Adapter

- Edit MFPBackend/adapters/ChatService/ChatService-impl.js
- Set the variable chatUrl to the url of your new Chat Service deployed in Step 1

```
var chatUrl = 'https://mychat.mybluemix.net';
```

## 2.3 Deploy Adapter changes

- Change directory to the adapter directory

```
$ cd adapters/ChatService/
```

- Use the MFP-CLI to push only the adapter changes

```
$ mfp push
```

- Use the MFP-CLI to open the console and verify adapter is deployed

```
$ mfp console
```

The screenshot displays the MobileFirst Operations Console interface. The top navigation bar includes the title "MobileFirst Operations Console" and a user profile "Hello, admin". The main content area is titled "MFPBackend" and features a tabbed interface with "Adapters (1)" selected. Below the tabs, the "Adapters" section shows a table with one entry: "ChatService" with a "Deploy time" of "Jan 31, 2016, 6:20 PM". The "ChatService" entry is expanded, revealing three sub-sections: "Connectivity", "Procedures", and "URLs".

**Connectivity**

| Name      | Value             |
|-----------|-------------------|
| Type      | HTTP              |
| Protocol  | https             |
| Domain    | developer.ibm.com |
| Port      | 443               |
| Use Proxy | No                |

**Procedures**

| Name               | Security Test |
|--------------------|---------------|
| getChatServiceInfo | None          |

**URLs**

| URL                 | Methods   |
|---------------------|-----------|
| /getChatServiceInfo | GET, POST |

- Test the adapter and verify that returns the correct chat url

```
$ mfp adapter call ChatService/getChatServiceInfo
```

- The command will return a response with the url of your nodejs app

```
Calling GET '/MFPBackend/adapters/ChatService/getChatServiceInfo?params=[]'  
Response: {  
  "isSuccessful": true,  
  "chatUrl": "https://chat-service.mybluemix.net"  
}
```

## 3. MFP App

### 3.1 Setup App

- Change directory to the app directory

```
$ cd ../../../MFPApp
```

- Use the MFP-CLI to add the Cordova Platform iOS

```
$ mfp cordova platform add ios
```

### 3.2 Register App with MFP Server

- Use the MFP-CLI to push the app to the running MFP Server

```
$ mfp push
```

- Use the MFP-CLI to verify that the app is registered on the correct server

```
$ mfp server info local
```

- The command will return a list of adapters and apps

```
Connecting to server 'local'  
Profile name: local  
URL: http://localhost:10080  
MFP version: 7.1.0.00-20160125-0742  
Is default: true  
-----  
Runtime: MFPBackend  
Bound apps  
  IC2016Chat, v1.0.0 - Hybrid (iphone)  
Adapters  
  ChatService  
-----
```

- You can also open the Console and verify that the IC2016Caht app is registered

```
$ mfp console
```

**MobileFirst Operations Console** Hello, admin

**MFPBackend** Add new app or adapter

Applications (1) Adapters (1) Devices (1) Push Notifications Client Log Profiles License Tracking Error Log

**Applications** Sort by: Name ▲

**IC2016Chat** Environments (1)

Last modified on Jan 31, 2016, 10:52 PM

application summary

**Adapters**

| Name ▲      | Deploy time           |
|-------------|-----------------------|
| ChatService | Jan 31, 2016, 6:20 PM |

**Devices**

1 Active Devices

0 Decomissioned Devices

View more...

**Push Notifications**

### 3.3 Running the App

- Preview the App on the Browser

```
$ mfp cordova preview --type browser
```

- Run the App on the Simulator using the MFP-CLI

```
$ mfp cordova emulate
```

- When prompted select an iPhone Simulator from the list



- To run a specific Simulator you can pass --target argument

```
$ mfp cordova emulate --target iPhone-6s-Plus
```

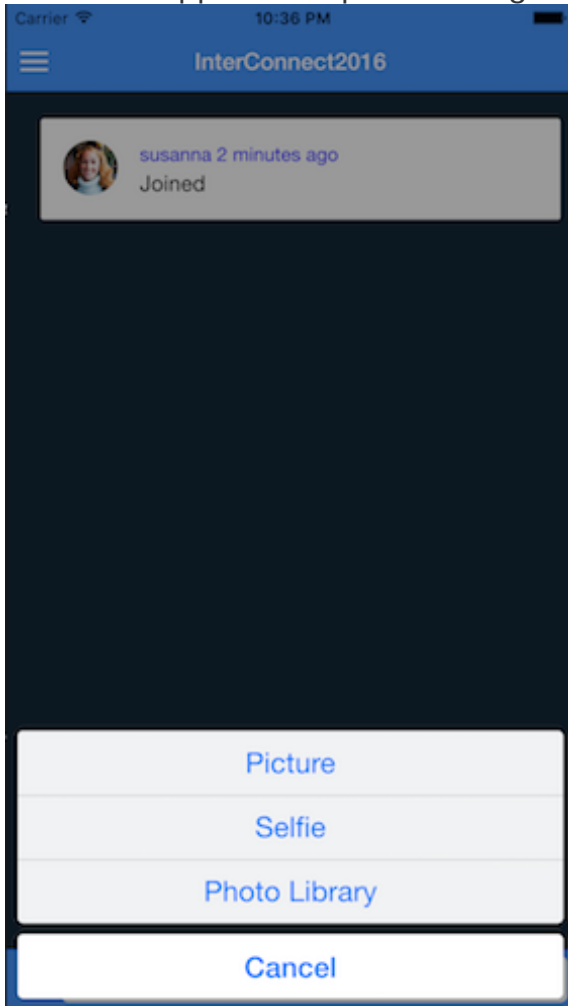
### 3.4 Test the App

- Visit the Chat Service on Bluemix (i.e. <https://mychat.bluemix.net>)
- Now test the chat service between the Browser and the iPhone Simulator
- If the Keyboard doesn't show up in the Simulator, then press Command (⌘) + K
- You can share the Bluemix URL to a friend located in any part of the world and have a conversation.
- This demo App is not configured with Login Authentication, this is something you can easily add using MobileFirst Platform check [MFP Developer Center](#) for more information on security related topics.

## 4. Extra Credit (Camera access)

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- If you finish the Lab in less than 15 minutes you can go ahead and continue
- Enable the App to send photos using the camera or photo library

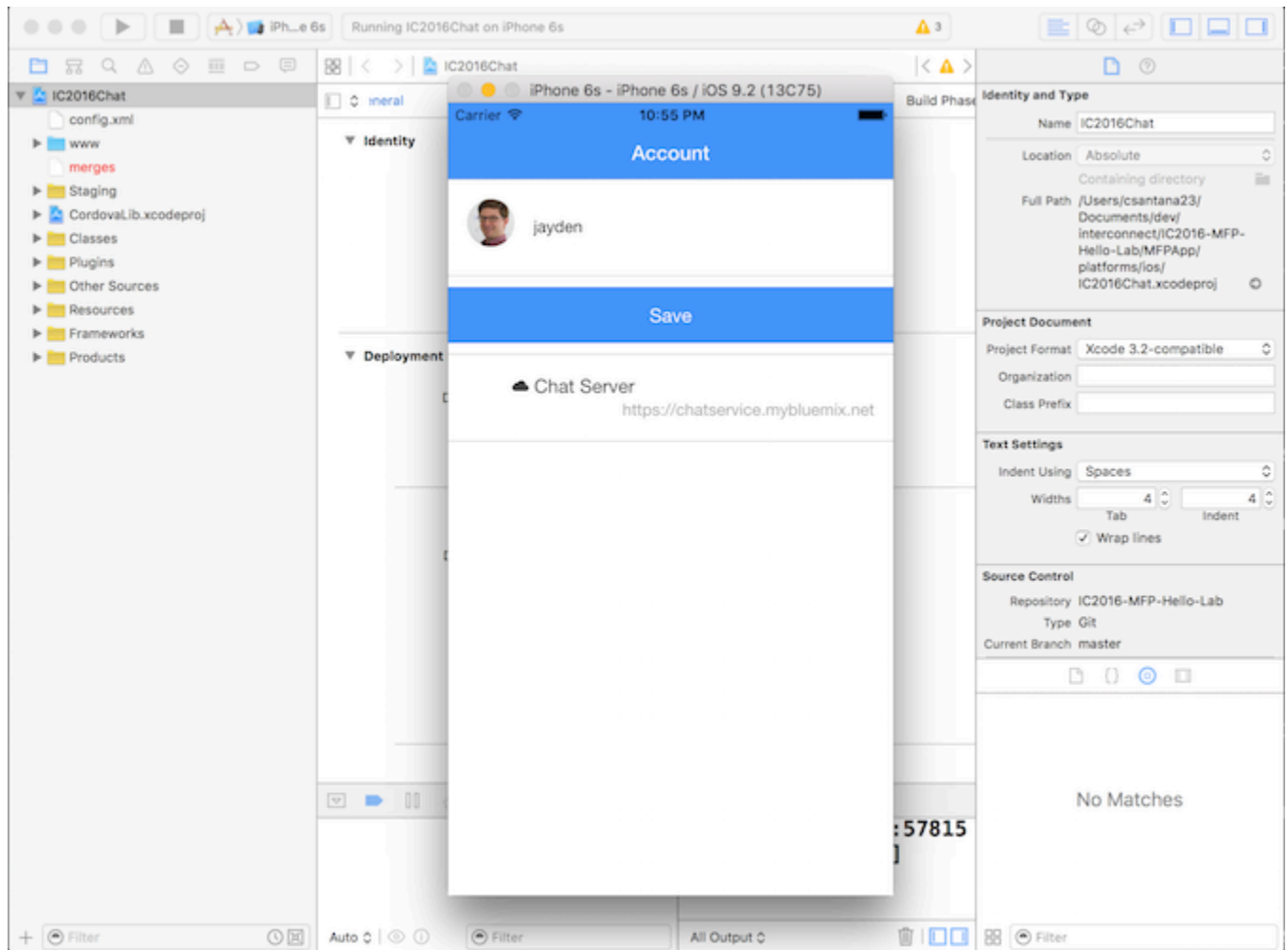


### 4.1 Open XCode project

- Open `MFPApp/platforms/ios/IC2016Chat.xcodeproj`
- You can also open from Terminal

```
$ open platforms/ios/*.xcodeproj
```

- Click Play Button in XCode to run



## 4.2 Add the Cordova Camera Plugin

- Change directory to MFPAApp if not already

```
$ cd MFPAApp
```

- Use the MFP-CLI to add the camera plugin

```
$ mfp cordova plugin add camera
```

## 4.3 Add option to share photo

- Edit MFPAApp/www/templates/chat.html

- Add a camera icon to call Camera Plugin as the first child of the <form id="footer-input">

```
<i class="icon ion-camera" ng-click="takePicture()" ng-show="isWebView"></i>
```

## 4.4 Prepare App Changes

- Use the MFP-CLI to prepare your changes

```
$ mfp cordova prepare
```

- Click Play Button in XCode to run Simulator
- Touch the Camera button
- Select Photo Library (Real device supports Selfie and Picture buttons)
- Select a Photo to share
- Check the other clients and see the picture you just share

## 5 Homework (MFP Docker on Bluemix)

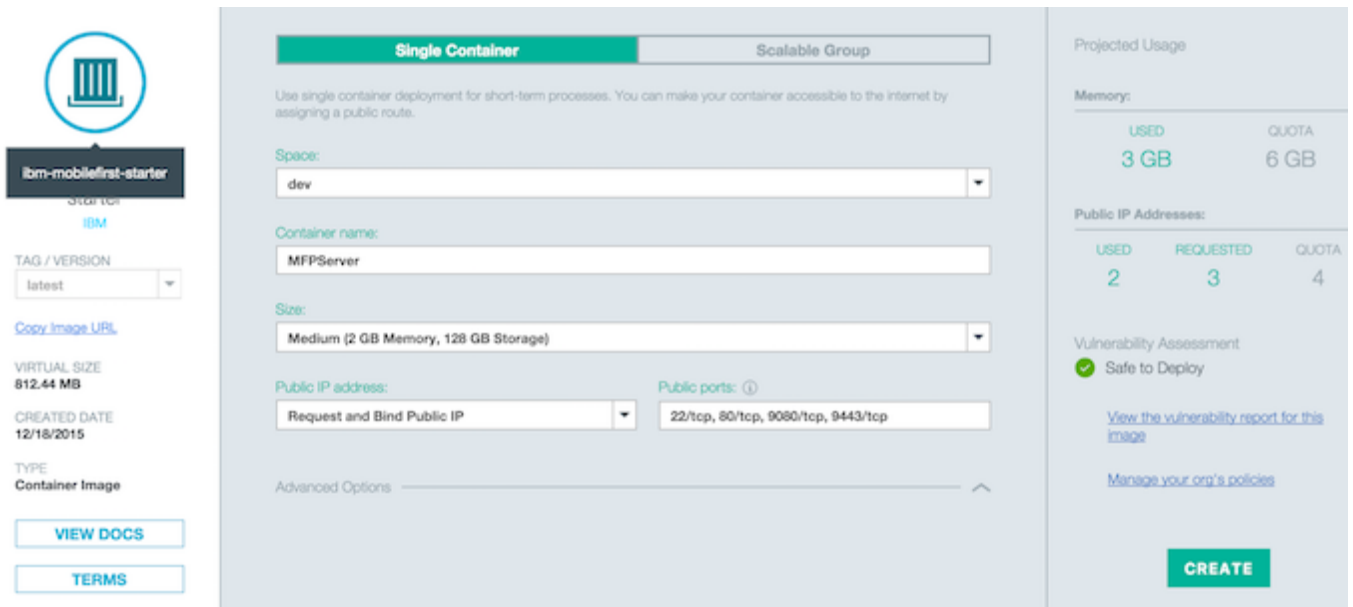
- If you want to be able to run the App on your iPhone and take it for a spin, you will need to deploy the MFP Server on a public IP Address that your iPhone can reach.
- The easiest way to run MFP Server on the Cloud is using Bluemix Containers.

### 5.1 Run MFP Server Docker Image

- Login into Bluemix and make sure you have at least 1GB of memory and 1 Public IP Address for Containers.
- Click Containers on your Dashboard

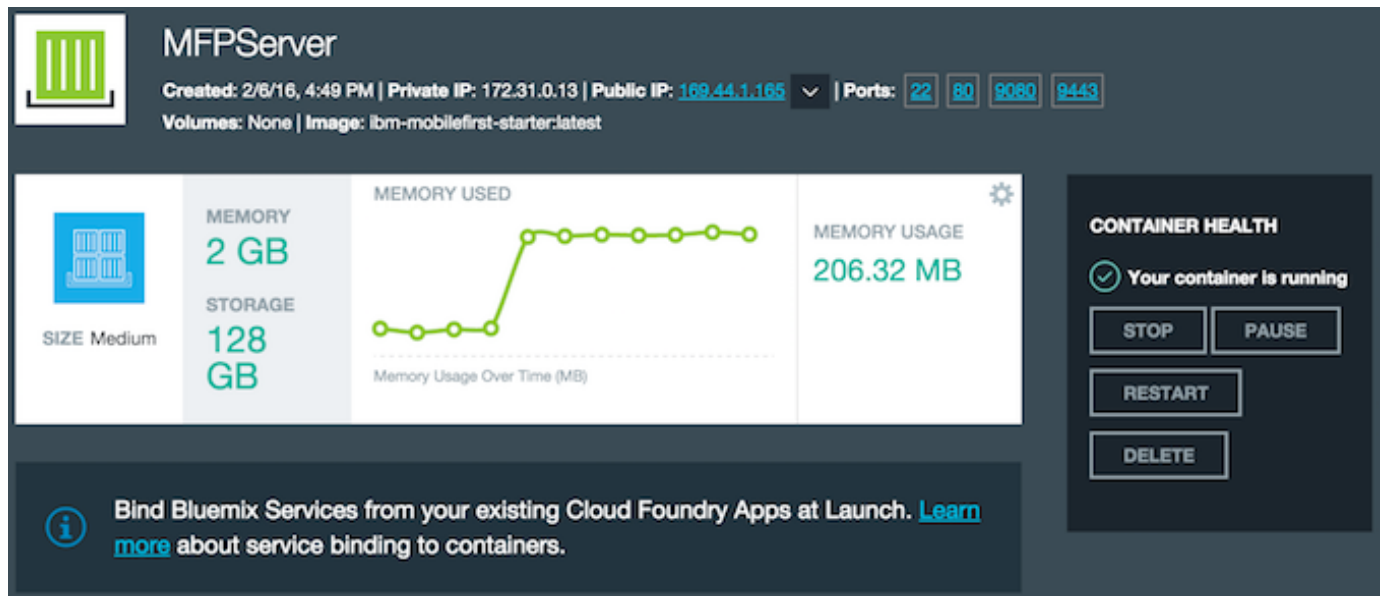


- Select the ibm-mobilefirst-starter docker image



The screenshot shows the 'Single Container' deployment form in IBM Bluemix. On the left, a sidebar displays the 'ibm-mobilefirst-starter' image with details: TAG / VERSION (latest), VIRTUAL SIZE (812.44 MB), CREATED DATE (12/18/2015), and TYPE (Container Image). The main form area has two tabs: 'Single Container' (active) and 'Scalable Group'. Below the tabs, a note states: 'Use single container deployment for short-term processes. You can make your container accessible to the internet by assigning a public route.' The form fields are: Space (dev), Container name (MFPServer), Size (Medium (2 GB Memory, 128 GB Storage)), Public IP address (Request and Bind Public IP), and Public ports (22/tcp, 80/tcp, 9080/tcp, 9443/tcp). On the right, a 'Projected Usage' section shows Memory (USED: 3 GB, QUOTA: 6 GB) and Public IP Addresses (USED: 2, REQUESTED: 3, QUOTA: 4). A 'Vulnerability Assessment' section shows a green checkmark and 'Safe to Deploy'. At the bottom right is a green 'CREATE' button.

- Enter the following minimum information:
  - Container name: *MFPServer*
  - Size: *Medium 2GB*
  - Public IP Address: *Request and Bind IP*
- Click *Create*
- Wait for a public to be assined, and container to be running



The screenshot shows the 'MFPServer' container details page. At the top, it displays the container name 'MFPServer' and metadata: Created: 2/6/16, 4:49 PM | Private IP: 172.31.0.13 | Public IP: 169.44.1.165 | Ports: 22, 80, 9080, 9443. Below this, it shows 'Volumes: None' and 'Image: ibm-mobilefirst-starter:latest'. The main section is divided into three columns: 'SIZE Medium' (with a blue icon), 'MEMORY 2 GB' and 'STORAGE 128 GB' (with a green icon), and 'MEMORY USED' (with a line graph showing memory usage over time). To the right of the graph, it says 'MEMORY USAGE 206.32 MB'. On the far right, a 'CONTAINER HEALTH' section shows a green checkmark and 'Your container is running', with buttons for STOP, PAUSE, RESTART, and DELETE. At the bottom, a blue banner with an information icon says: 'Bind Bluemix Services from your existing Cloud Foundry Apps at Launch. [Learn more](#) about service binding to containers.'

- Click the public IP address to open a new Browser window
- Enter a password to register the user *admin* for example *admin* and click Register



IBM MobileFirst Platform  
Foundation on IBM Containers

### User Registration

User  
admin

Set a password for the user  
[password field]

Confirm password  
[password field]

**Register**

- Save and bookmark the base URL for the MFP Server (i.e. <http://169.x.x.x:9080>)
- Click *Open Console* to open the MFP Server Console

## 5.2 Upload Adapter

- In the MFP Server Console Click *Add new Adapter* button at the top right
- Browse to the location of ChatService.adapter for example *Downloads/IC2016-MFP-Hello-Lab-master/MFPBackend/bin/ChatService.adapter*

MobileFirstStarter

Add new app or adapter

✓ Successfully deployed the 'ChatService.adapter' adapter.

## 5.3 Add Remote MFP Server Profile

- Use the MFP-CLI to add a new server profile with the name *bluemix* located using the public IP address on bluemix, and the *admin* credentials you enter in Step 5.1

```
$ mfp server add bluemix -l admin -p admin -u http://169.x.x.x:9080
```

Notice to replace 169.x.x.x with the correct public IP address of your docker container

- Use the MFP-CLI to verify the list of server profiles

```
$ mfp server info
```

- The *bluemix* profile will show up

| Name    | URL                    | Description                |
|---------|------------------------|----------------------------|
| local   | http://localhost:10080 | Local Dev Server [Default] |
| bluemix | http://169.x.x.x:9080  | Remote Server              |

## 5.4 Register App with Remote MFP Server

- Change directory to MFPApp if not already

```
$ cd MFPApp
```

- Use the MFP-CLI to register the App with the docker container on *bluemix*

```
$ mfp push bluemix
```

Notice that the name of the runtime on the remote MFP Server is *MobileFirstStarter*, This is different from the local runtime *MFPBackend* on the local MFP Server

## 5.5 Run the App on your iPhone

- Plug your iPhone with a USB cable
- Open XCode

```
$ open platforms/ios/*.xcodeproj
```

- In XCode change the target from Simulator to the iPhone device
- Click the Play button

