
Lab 1.1 - Instrument an Ionic application for custom analytics & Bluemix Analytics Service

IBM MobileFirst Foundation 8.0 capabilities are now available on Bluemix as a service called Mobile Foundation. Mobile Foundation service provides you with all the capabilities that you need to build secure mobile apps using any technology of your choice for all the popular mobile OSs.

A new experimental Bluemix service was launched in April, called Mobile Analytics. Mobile Analytics provides the developer valuable insights into the runtime of the app. It also provides you with app analytics, such as how many devices have connected, what is the OS breakdown, crash reports etc. etc. My personal favorite - client side developer logs.

In this lab we are going to learn how you can configure a MobileFirst foundation service to send analytics data to the Bluemix Mobile Analytics service.

Note: For this lab there are snippets files included in the **/snippets** folder of your workspace which can be used to quickly copy/paste the large source code changes in the lab steps below.

Source code for labs

In order to get the latest code for the ionic application, run the following git command:

```
git clone https://github.com/eliranbi/MFAnalyticsBMXLab
```

The command above will download the latest documentation and code snippets.

General Steps:

1. Adds a new remote bluemix server definition to your local CLI.
2. Deploy the IBMEmployeeApp to the remote MFF server on blueMix.
3. Create new Analytics Service on bluemix.
4. Configure a MobileFirst foundation service to send analytics data to the Bluemix Mobile Analytics service.
5. Instrument your application to send analytics to MFF.

Steps:

1. Change context into the MobileFirst project.

```
$ cd IBMEmployeeApp
```

2. **Add** new server definition to the CLI , run the following command cordova platform add android

```
$ mfpdev server add
```

```
[Elirans-MacBook-Pro:IBMEmployeeApp eliran_pro$ mfpdev server add  
? Enter the name of the new server profile: ]
```

3. **Enter** the following settings:

- Enter the name of the new server profile: **MFF8ServiceBMX**
- Enter the fully qualified URL of this server: **https://SERVER_DOMAIN:443**

Note: should be in the following format : **https://mffibmemmployee-server.mybluemix.net:443**

- Enter the MobileFirst Server administrator login ID: **admin**
- Enter the MobileFirst Server administrator password: **ADMIN_PASSWORD**
- Save the administrator password for this server?: **Yes**
- Enter the context root of the MobileFirst administration services: **mfpadmin**
- Enter the MobileFirst Server connection timeout in seconds: **30**
- Make this server the default?: **No**

```
[? Enter the fully qualified URL of this server: https://mffibmemmployee-server.mybluemix.net:443  
[? Enter the MobileFirst Server administrator login ID: admin  
[? Enter the MobileFirst Server administrator password: *****  
[? Save the administrator password for this server?: Yes  
[? Enter the context root of the MobileFirst administration services: mfpadmin  
[? Enter the MobileFirst Server connection timeout in seconds: 30  
[? Make this server the default?: No  
Verifying server configuration...  
The following runtimes are currently installed on this server: mfp  
Server profile 'MFF8ServiceBMX' added successfully.  
Elirans-MacBook-Pro:MFPushNotificationLab eliran_pro$
```

4. **Run** the following command to view the server information:

```
$ mfpdev server info
```

```
[Elirans-MacBook-Pro:MFPushNotificationLab eliran_pro$ mfpdev server info]

Name          URL
-----
local         http://localhost:9080          [Default]
MFF8ServiceBMX https://mffibmemployee-server.mybluemix.net:443
-----
```

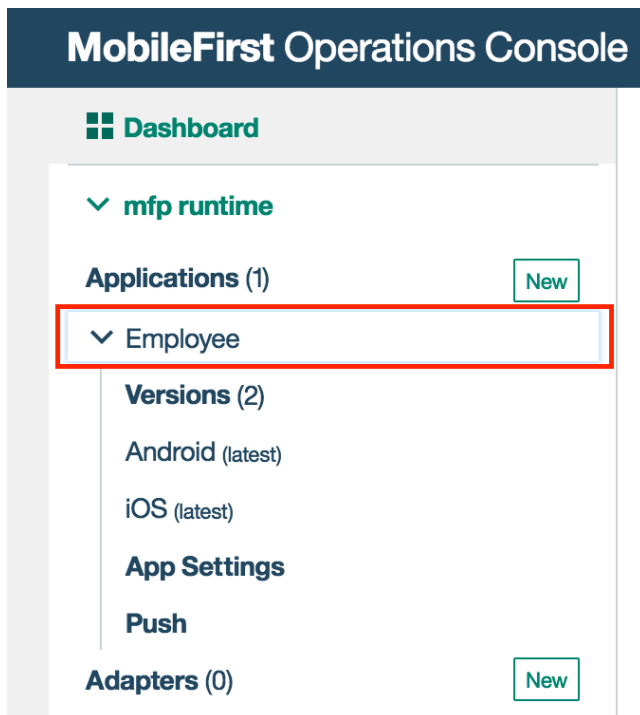
5. **Register** the IBMEmployeeApp with the remote server, run the following command:

```
$ mfpdev app register MFF8ServicesBMX
```

```
[Elirans-MacBook-Pro:IBMEmployeeApp eliran_pro$ mfpdev app register MFF8ServiceBMX]
Verifying server configuration...
Registering to server:'https://mffibmemployee-server.mybluemix.net:443' runtime:'mfp'
Updated config.xml file located at: /Users/eliran_pro/Documents/projects/NATechnicalAcademy2016/MFAnalyticsLab/IBMEmployeeApp/config.xml
Run 'cordova prepare' to propagate changes.
Registered app for platform: android
Registered app for platform: ios
```

Note: Running the add plugin command above will add all the required MFP plugin files from npm. This requires a network connection. For more information on the MFP Cordova Plugin, visit: <https://www.npmjs.com/package/cordova-plugin-mfp>

6. Let's make sure that the application registered with the MFP services on bluemix, refresh the web console you should be able to see your application under the Application



7. Next lets prepare the applictin by running the follwing command :

```
$ cordova prepare
```

8. Let's run the application on the iOS simulator by running the following command:

```
$ cordova run ios
```



Note: You can also run the application using XCode and look at the console logs

```

2016-07-14 13:18:29.085 Employee[18360:875007] >> ibmApp.ready ...
2016-07-14 13:18:29.087 Employee[18360:875007] Running static_app_props.js...
2016-07-14 13:18:29.126 Employee[18360:875007] Calling WL.Client.init(wlInitOptions);
2016-07-14 13:18:32.078 Employee[18360:875007] >> wlCommonInit() ...
2016-07-14 13:18:32.155 Employee[18360:875007] >> wlCommonInit() - success: https://mffibmemployee-server.mybluemix.net:443/mfp/api
2016-07-14 13:18:32.176 Employee[18360:875007] THREAD WARNING: ['WLAuthorizationManagerPlugin'] took '21.687988' ms. Plugin should
use a background thread.
2016-07-14 13:18:32.500 Employee[18360:875007] Response Content :
2016-07-14 13:18:32.753 Employee[18360:875007] Response Content : {"success":{"clockSynchronization":{"serverTimeStamp":
1468516712489}}}}
2016-07-14 13:18:33.299 Employee[18360:875007] Response Content :
{"access_token":"eyJhbgCiOiJ1SUZlTlNlIi5Imp3ayT6eyJrdHk0iJiSU0EiLlCjIjoiQVFBQjIi5ImpZCI6IjI0TgxNdKYLTVkNjktNDAlNS1mNmMlThkYwJkMjVlZW
U1MSi5I4i0JBTRTEZBDzQWR2NkgteWdmMN3I4c0UNNMZEU0Mkya20NXpnnWREZF9xczchmdm5Z2NRpCvRTVjRfRmQ2T0dHOENUNUNLNDQFTXBjZ2l2MNDwWDLJWm52aHhvw
WLGy0T1YU9LSXfV5Z1sYkEwdPbZJySgHvYjNXVKNL5Z6VLZ2jQ9BZc1FOLW1X5ZbT2Zno1XZsNvLWVZMFVZd1hrU093QkJsMUvOC13Vkr3T2LlZ2JkUdsMEVYc1BaZmt0
WkktSFU0b01pa5u1K3c5MeLjXa01tTHZEMDLOTDV6b3NVTkEXN2CQL00tawDjXcG1TbTJTNjFuRgHlN2DMRW95bURuVEVqUFk1QW9oMmLuS0zNLJHWVZNVVViTzQ2Q3JOVVL
1SW9i72lYbEx6kQloduLDzGZWzhkYwJ3g3c3RLNLDVDOUJiVTRNCXREDrT0hQNNWbVjd0eJfKRGhJUHU4N2S3J9fQ.eJyP3CmI0i1jb2uawJtLm1mcCi5InN1Yi6I7jJi0TgxNdK
YlTVkNjktNDAlNS1mNmMlThkYwJkMjVlZWU1MSi5Imp3ayT6eyJrdHk0iJiSU0EiLlCjI6mNvbS5pYmVubWJjZj0xNDY4NTU1MzE4ZCJyZ29wZS16IjI9.LNopogThJEZJZuc_1230
rn_JfMbIhLPLVQ0Quo_lDyYA4uNLaZQ3ES5NGC6h2j3WT0M5wIh_PyDIAED45vYrWfWSuCsV956mWhe-RpNc3MJKZ596agrC3nLGocvtupVn501suHrk-
qN3J9tz_eRojnNWL59aIvYV1X6Ez_FwCzTVqg725CdmI9zEZTsKtIixP2LkECCFR-
huHfsYsK4zT_OjvY3vLhRlgoQEqGfIilhhj0m86mRkPt43GtUHALGzsJg6an9XR9Az006BmRQYf0G6TL_honf8SJYJ-
Kdgyt2oEt55h34WgdGNFHuYfLQW1v2x10pu1KkPwQ","token_type":"Bearer","expires_in":3599,"scope":""}
2016-07-14 13:18:33.304 Employee[18360:875007] >> Success - Connected to MobileFirst Server

```

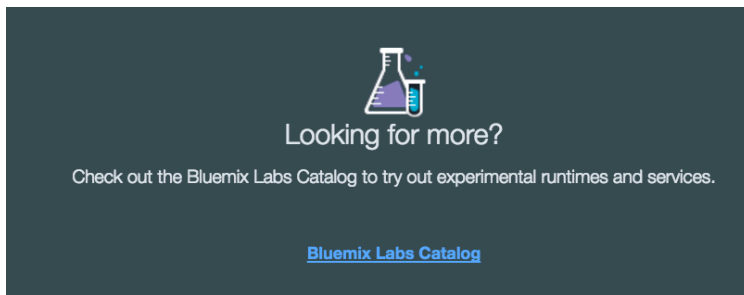
Summary

So far we created new remote server definition and have our application connected to the remote server.

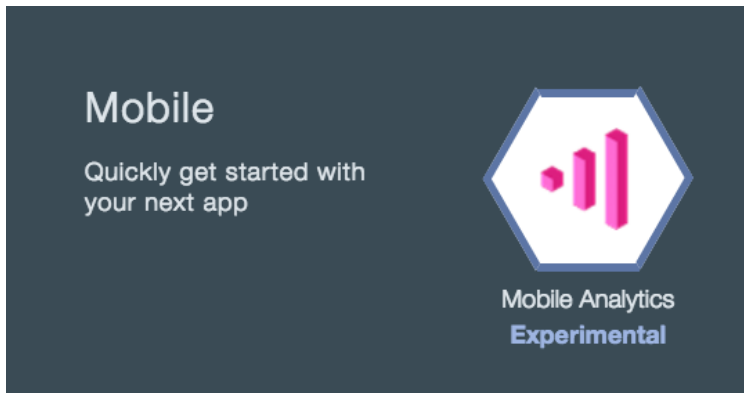
Next

Now we are going to create an Analytics service and configure the MFF server to send analytics data.


1. Login to your Bluemix account with your bluemix username and password.
2. Press on the "Catalog" tab and scroll all the way down.
3. Click on the "Bluemix Labs Catalog" link in the bottom.




4. Select the Mobile Analytics service.



5. Enter the following settings:
 - Space (leave default) : **dev**
 - App : **Leave unbound**
 - Service name : **MobileAnalyticsMFFEmployee**
 - Credential name : **Credentials-1**
 - Selected Plane : **Lite**



Attention: Experimental Service
This experimental service might not be stable and can change in ways that are not compatible with earlier versions. It is not recommended for use in production environments.



Mobile Analytics
Experimental


PUBLISH DATE
06/23/2016

AUTHOR
IBM

TYPE
Service

[VIEW DOCS](#)

IBM Mobile Analytics for Bluemix provides developers, IT administrators, and business stakeholders insight into how their mobile app is performing and how it is being used. Monitor performance and usage of all your applications from your desktop or tablet. Quickly identify trends and anomalies, drill down to resolve issues, and trigger alerts when key metrics cross critical thresholds. Connect through a MobileFirst Platform server to gain additional insight into backend connections and services.



Pick a plan

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

Plan	Features	Free
✓ Lite	Allows to collect analytics from mobile applications Data is kept for up to 3 days only	

Free plan for experimental service. Data is kept for up to 3 days only.

[TERMS](#)

Add Service

Space:

App:

Service name:

Credential name:

Selected Plan:

[CREATE](#)

6. Your analytics dashboard should look like this:

Back to Dashboard...

MobileAnalyticsMFFEmployee

DOCS

MobileAnalyticsMFFEmployee

Manage

Service Credentials

Service Access Authorization

Plan

APPS USING SERVICE

☒ Dashboard

☐ Apps

Overview | Alert Log | Alert Management

Overview

Yesterday | All Applications | All Versions | [Refresh](#)

Application Usage

No data available

Crashes ☒ Display crash rate ☐ Display total crashes

7. Lets create new Service Credentials for the MFF server instance, press on the **Service Credentials** link on the left side menu.

Service Credentials

Cloud Foundry provides your credentials in JSON format. The JSON snippet lists credentials, such as the API key and secret, as well as connection information for the service.

ADD CREDENTIALS

NAME	Credentials-1	DELETE
SERVICE CREDENTIALS		
<pre>{ "credentials": { "accessKey": "1005c8b7-e81e-487d-9632-764f4b2f61f2" } }</pre>		

8. Name the Credentials "MFFServer" and press the "Add" button.

Service Credentials

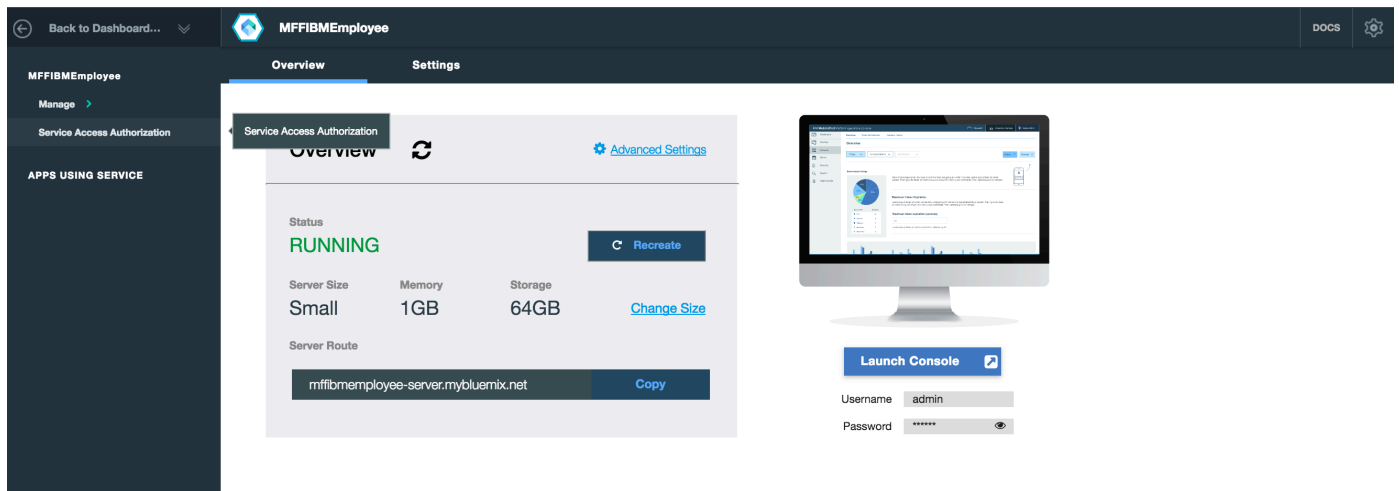
Cloud Foundry provides your credentials in JSON format. The JSON snippet lists credentials, such as the API key and secret, as well as connection information for the service.

ADD CREDENTIALS

NAME	Credentials-1	DELETE
SERVICE CREDENTIALS		
<pre>{ "credentials": { "accessKey": "1005c8b7-e81e-487d-9632-764f4b2f61f2" } }</pre>		

NAME	MFFServer	DELETE
SERVICE CREDENTIALS		
<pre>{ "credentials": { "accessKey": "a2d80dda-a027-449f-8136-b356a3a6999a" } }</pre>		

9. Now let's configure the MobileFirst server, go back to the Bluemix dashboard and press on the MobileFirst service.



10. Press on the **Settings** tab.

11. Press on the **Server Configuration** tab



JNDI (Java Naming and Directory Interface) Configuration (Optional)

You can add JNDI entries to set MobileFirst server environment properties. To add JNDI environment entries, paste the XML configuration in the space below or customize the sample code provided. You can get a starter sample by clicking on the **Copy from Sample** button.

1	
---	--

12. Press on the **Copy from sample** button

13. Uncomment and modify the JNDI properties for the MobileFirst Analytics server.

14. You can also copy the settings from below :


```

<!-- Declare the JNDI properties for the MobileFirst Analytics server. -->

<jndiEntryjndiName="${env.MFPF_RUNTIME_ROOT}/mfp.analytics.console.url" value=" https://mobile-analytics-dashboard.ng.bluemix.net/analytics/console/dashboard?instanceId=<your instance id>" />

<jndiEntryjndiName="${env.MFPF_RUNTIME_ROOT}/mfp.analytics.url" value="https://mobile-analytics-dashboard.ng.bluemix.net/analytics-service/rest" />

<!-- If the mfp.analytics.url is to Bluemix Mobile Analytics service, uncomment the following and enter the correct value -->

<jndiEntryjndiName="${env.MFPF_RUNTIME_ROOT}/bms.analytics.apikey" value="your analytics access key" />

```

15. Replace the following attributes:

- **your instance id** - can be found as part of your url, replace with the uid value (see below) The Instance id can be found in the analytics dashboard url : <https://console.ng.bluemix.net/?direct=classic/#!/resources/serviceGuid=542c136d-c35d-4ee1-a96d-84c52885ff41&orgGuid=aab98f18-fa5d-4348-8247-16f25ae2d8c2&spaceGuid=b1577619-d0ec-44b5-aa07-d4a9f8e56814&panelId=0>
- **your analytics access key** - is the MFFServer credential we created

16. Your code should look like this:

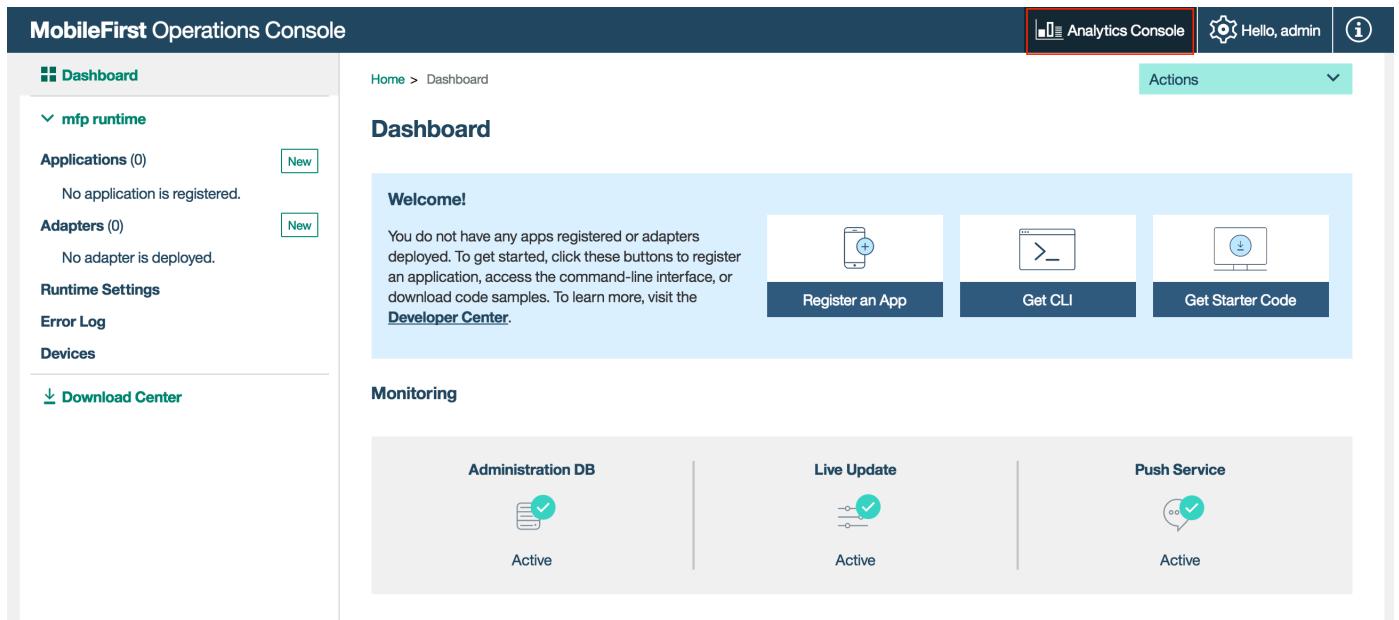
```

18 |
19 | <!-- Declare the JNDI properties for the MobileFirst Analytics server. -->
20 | <jndiEntry jndiName="${env.MFPF_RUNTIME_ROOT}/mfp.analytics.console.url" value=" https://mobile-analytics
    | -dashboard.ng.bluemix.net/analytics/console/dashboard?instanceId=31c861d6-e2e4-42b1-8918-62c541934ee9" />
21 | <jndiEntry jndiName="${env.MFPF_RUNTIME_ROOT}/mfp.analytics.url" value="https://mobile-analytics-dashboard
    | .ng.bluemix.net/analytics-service/rest" />
22 | <!-- If the mfp.analytics.url is to Bluemix Mobile Analytics service, uncomment the following and enter the
    | correct value -->
23 | <jndiEntry jndiName="${env.MFPF_RUNTIME_ROOT}/bms.analytics.apikey" value="a2d80dda-a027-449f-8136
    | -b356a3a6999a" />
24 |

```

17. Scroll down and press the "Update server" button.

18. The server should start again with new configuration, it will take few long minutes but when the server re-start press "Launch Console" button, you should be able to see the "Analytics Console" link on the top right nave bar.



19. Click on the "Analytics Console" you should see the analytics dashboard.

Summary

In this lab, you learned how to configure the MobileFirst Foundation service to send analytics to the Mobile Analytics on Bluemix, next we going to instrument our client application to send analytics to the server and create a custom reports.