

Android end-to-end demonstration

Overview

The purpose of this demonstration is to experience an end-to-end flow:

1. A sample application that is pre-bundled with the MobileFirst client SDK is registered and downloaded from the MobileFirst Operations Console.
2. A new or provided adapter is deployed to the MobileFirst Operations Console.
3. The application logic is changed to make a resource request.

End result:

- Successfully ping the MobileFirst Server.
- Successfully retrieving data using a MobileFirst Adapter.

Prerequisites:

- Android Studio
- *Optional.* MobileFirst CLI (download
(file:///home/travis/build/MFPSamples/DevCenter/_site/downloads))
- *Optional.* Stand-alone MobileFirst Server (download
(file:///home/travis/build/MFPSamples/DevCenter/_site/downloads))

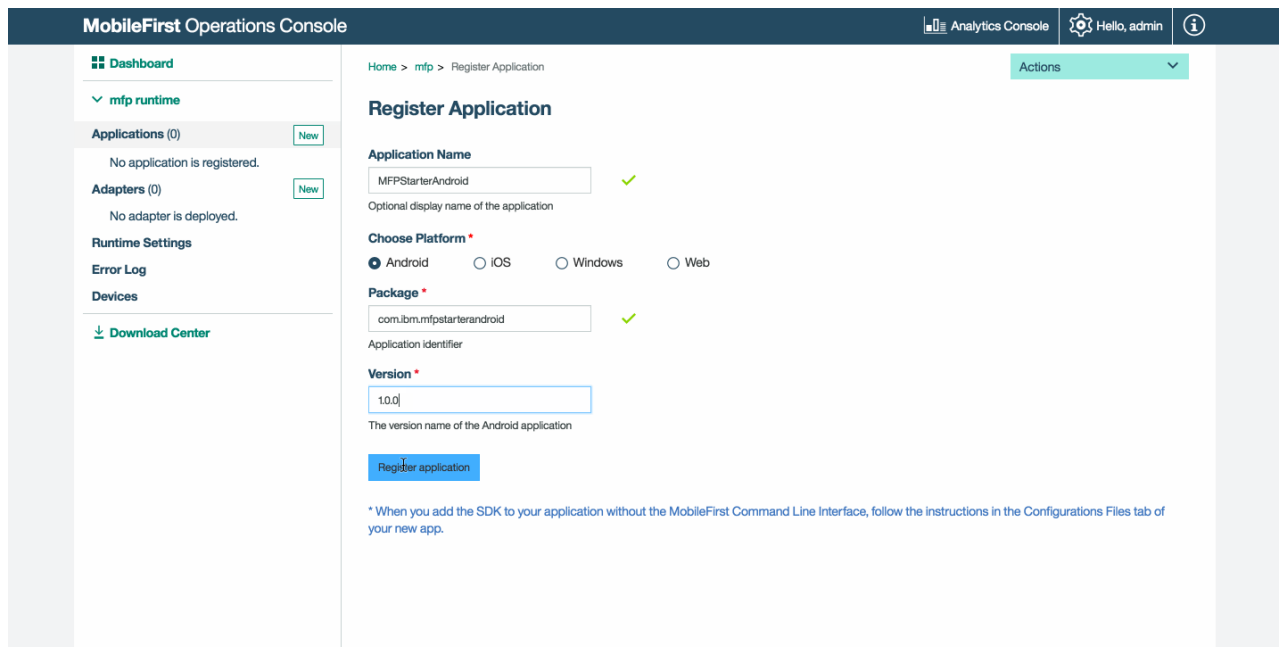
1. Starting the MobileFirst Server

Make sure you have created a Mobile Foundation instance (../../bluemix/using-mobile-foundation), or If using the MobileFirst Foundation Development Kit (../../installation-configuration/development/mobilefirst), navigate to the server's folder and run the command: `./run.sh` in Mac and Linux or `run.cmd` in Windows.

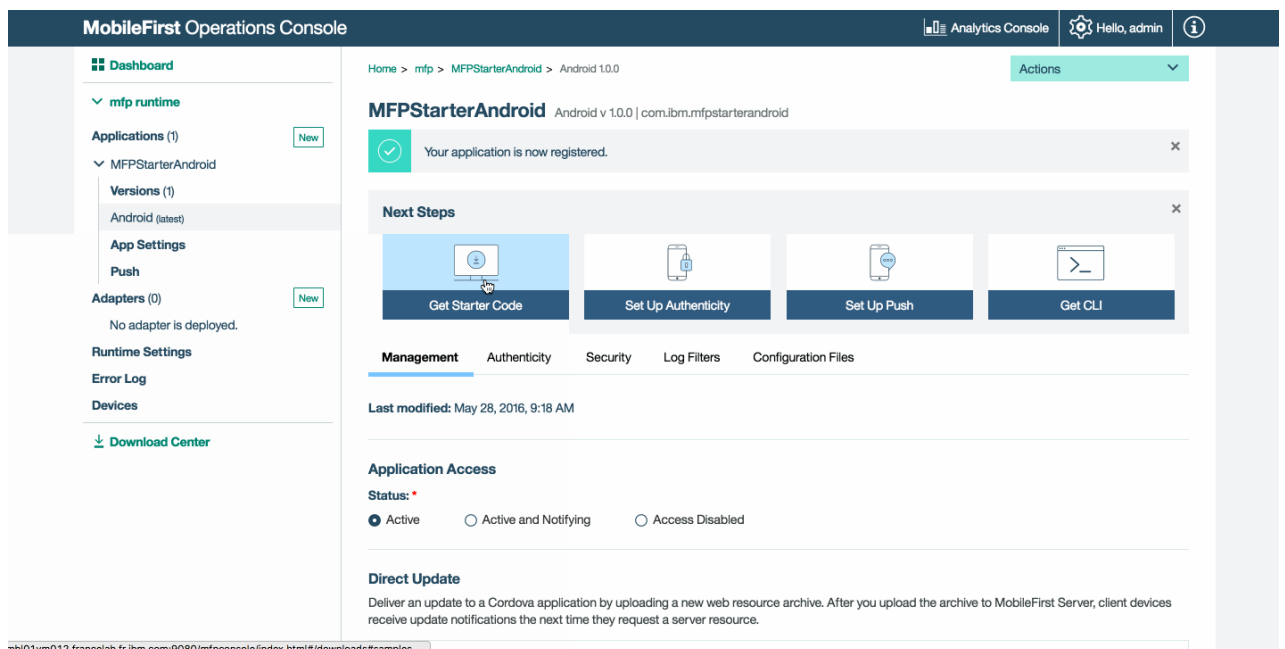
2. Creating an application

In a browser window, open the MobileFirst Operations Console by loading the URL: `http://your-server-host:server-port/mfpconsole`. If running locally, use: `http://localhost:9080/mfpconsole` (`http://localhost:9080/mfpconsole`). The username/password are *admin/admin*.

1. Click the **New** button next to **Applications**
 - Select the **Android** platform
 - Enter **com.ibm.mfpstarterandroid** as the **application identifier**
 - Enter **1.0** as the **version** value
 - Click on **Register application**



2. Click on the **Get Starter Code** tile and select to download the Android sample application.



3. Editing application logic

1. Open the Android Studio project and import the project.
2. From the **Project** sidebar menu, select the **app** → **java** → **com.ibm.mfpstarterandroid** → **ServerConnectActivity.java** file and:

- Add the following imports:

```
import java.net.URI;
import java.net.URISyntaxException;
import android.util.Log;
```

- Paste the following code snippet, replacing the call to `WLAAuthorizationManager.getInstance().obtainAccessToken`:

```

WLAuthorizationManager.getInstance().obtainAccessToken("", new WLAccessTokenListener() {
    @Override
    public void onSuccess(AccessToken token) {
        System.out.println("Received the following access token value: " + token);
        runOnUiThread(new Runnable() {
            @Override
            public void run() {
                titleLabel.setText("Yay!");
                connectionStatusLabel.setText("Connected to MobileFirst Server");
            }
        });

        URI adapterPath = null;
        try {
            adapterPath = new URI("/adapters/javaAdapter/resource/greet");
        } catch (URISyntaxException e) {
            e.printStackTrace();
        }

        WLResourceRequest request = new WLResourceRequest(adapterPath, WLResourceRequest.GET);

        request.setQueryParameter("name", "world");
        request.send(new WLResponseListener() {
            @Override
            public void onSuccess(WLResponse wlResponse) {
                // Will print "Hello world" in LogCat.
                Log.i("MobileFirst Quick Start", "Success: " + wlResponse.getResponseText());
            }

            @Override
            public void onFailure(WLFailResponse wlFailResponse) {
                Log.i("MobileFirst Quick Start", "Failure: " + wlFailResponse.getErrorMsg());
            }
        });

        @Override
        public void onFailure(WLFailResponse wlFailResponse) {
            System.out.println("Did not receive an access token from server: " + wlFailResponse.getErrorMsg());
            runOnUiThread(new Runnable() {
                @Override
                public void run() {
                    titleLabel.setText("Bummer...");
                    connectionStatusLabel.setText("Failed to connect to MobileFirst Server");
                }
            });
        }
    });
}

```

4. Deploy an adapter

Download this prepared .adapter artifact (../javaAdapter.adapter) and deploy it from the MobileFirst Operations Console using the **Actions → Deploy adapter** action.

Alternatively, click the **New** button next to **Adapters**.

1. Select the **Actions → Download sample** option. Download the "Hello World" **Java** adapter sample.

If Maven and MobileFirst CLI are not installed, follow the on-screen **Set up your development environment** instructions.

2. From a **Command-line** window, navigate to the adapter's Maven project root folder and run the command:

```
mfpdev adapter build
```

3. When the build finishes, deploy it from the MobileFirst Operations Console using the **Actions → Deploy adapter** action. The adapter can be found in the **[adapter]/target** folder.

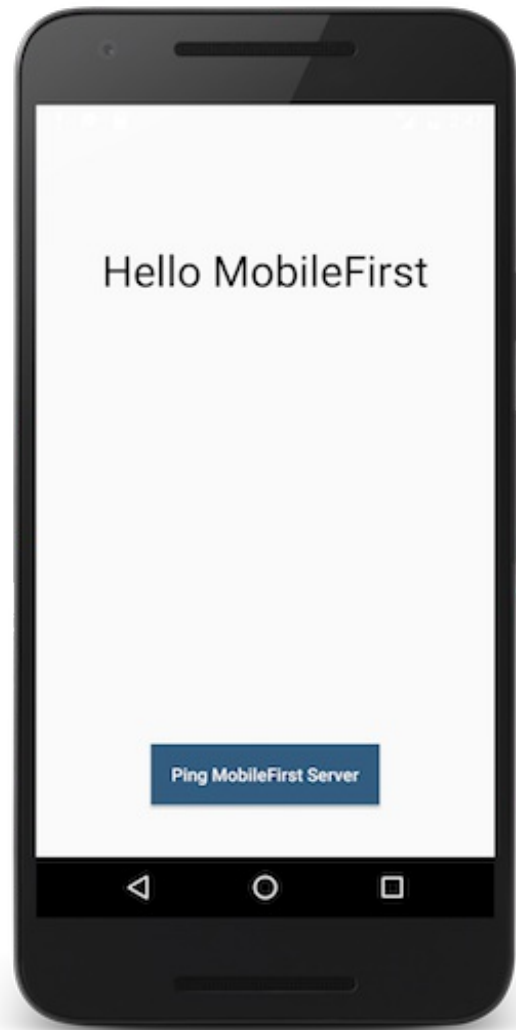
The screenshot displays the MobileFirst Operations Console interface. The top navigation bar includes the 'MobileFirst Operations Console' title, an 'Analytics Console' link, a user profile 'Hello, admin', and an information icon. The left sidebar contains a 'Dashboard' menu and a 'mfp runtime' section with 'Applications (0)' and 'Adapters (1)'. The 'Adapters (1)' section lists 'javaAdapter' with a 'New' button. Below this are links for 'Runtime Settings', 'Error Log', and 'Devices', and a 'Download Center' link. The main content area shows the 'javaAdapter' details page. At the top, a green checkmark icon and a message state: 'The 'javaAdapter' adapter was successfully deployed.' Below this, there are tabs for 'Configurations', 'Resources', and 'Configuration Files'. The 'Configurations' tab is active, showing 'Last deployed: May 27, 2016, 4:13 PM' and a section titled 'Configurations' with the text: 'Dynamic adapter configuration that overrides the defaults set in the adapter-descriptor XML file.' A message box states: 'javaAdapter has no configuration information.' and includes a tip: 'Tip: When an adapter has configuration information, it can be edited here.' A circular icon with a document and a plus sign is also present.

5. Testing the application

1. In Android Studio, from the **Project** sidebar menu, select the **app** → **src** → **main** → **assets** → **mfpclient.properties** file and edit the **protocol**, **host** and **port** properties with the correct values for your MobileFirst Server.
 - If using a local MobileFirst Server, the values are typically **http**, **localhost** and **9080**.
 - If using a remote MobileFirst Server (on Bluemix), the values are typically **https**, **your-server-address** and **443**.

Alternatively, if you have installed the MobileFirst CLI, then navigate to the project root folder and run the command `mfpdev app register`. If a remote MobileFirst Server is used, run the command `mfpdev server add` (`../../application-development/using-mobilefirst-cli-to-manage-mobilefirst-artifacts/#add-a-new-server-instance`) to add the server, followed by for example: `mfpdev app register myBluemixServer`.

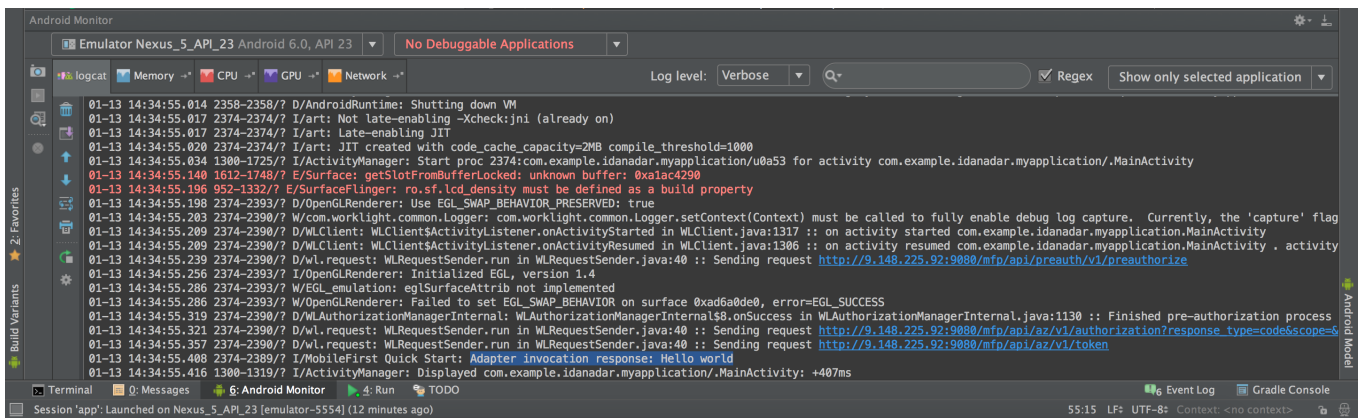
2. Click on the **Run App** button.



Results

- Clicking the **Ping MobileFirst Server** button will display **Connected to MobileFirst Server**.
- If the application was able to connect to the MobileFirst Server, a resource request call using the deployed Java adapter will take place.

The adapter response is then printed in Android Studio's LogCat view.



Next steps

Learn more on using adapters in applications, and how to integrate additional services such as Push Notifications, using the MobileFirst security framework and more:

- Review the Using the MobileFirst Foundation (../application-development/) tutorials
- Review the Adapters development (../adapters/) tutorials
- Review the Authentication and security tutorials (../authentication-and-security/)
- Review the Notifications tutorials (../notifications/)
- Review All Tutorials (../all-tutorials/)