

# iOS end-to-end demonstration

fork and edit tutorial (<https://github.ibm.com/MFPSamples/DevCenter/tree/master/tutorials/en/foundation/8.0/quick-start/ios/index.md>) | report issue (<https://github.ibm.com/MFPSamples/DevCenter/issues/new>)

## Overview

The purpose of this demonstration is to experience an end-to-end flow where an application and an adapter are registered using the MobileFirst Operations Console, an "skeleton" Xcode project is downloaded and edited to call the adapter, and the result is printed to the log - verifying a successful connection with the MobileFirst Server.

### Prerequisites:

- Xcode
- MobileFirst Developer CLI (download ([file:///home/travis/build/MFPSamples/DevCenter/\\_site/downloads](file:///home/travis/build/MFPSamples/DevCenter/_site/downloads)))
- *Optional.* Stand-alone MobileFirst Server (download ([file:///home/travis/build/MFPSamples/DevCenter/\\_site/downloads](file:///home/travis/build/MFPSamples/DevCenter/_site/downloads)))

## 1. Starting the MobileFirst Server

If a remote server was already set-up, skip this step.

From a **Command-line** window, navigate to the server's folder and run the command: `./run.sh`.

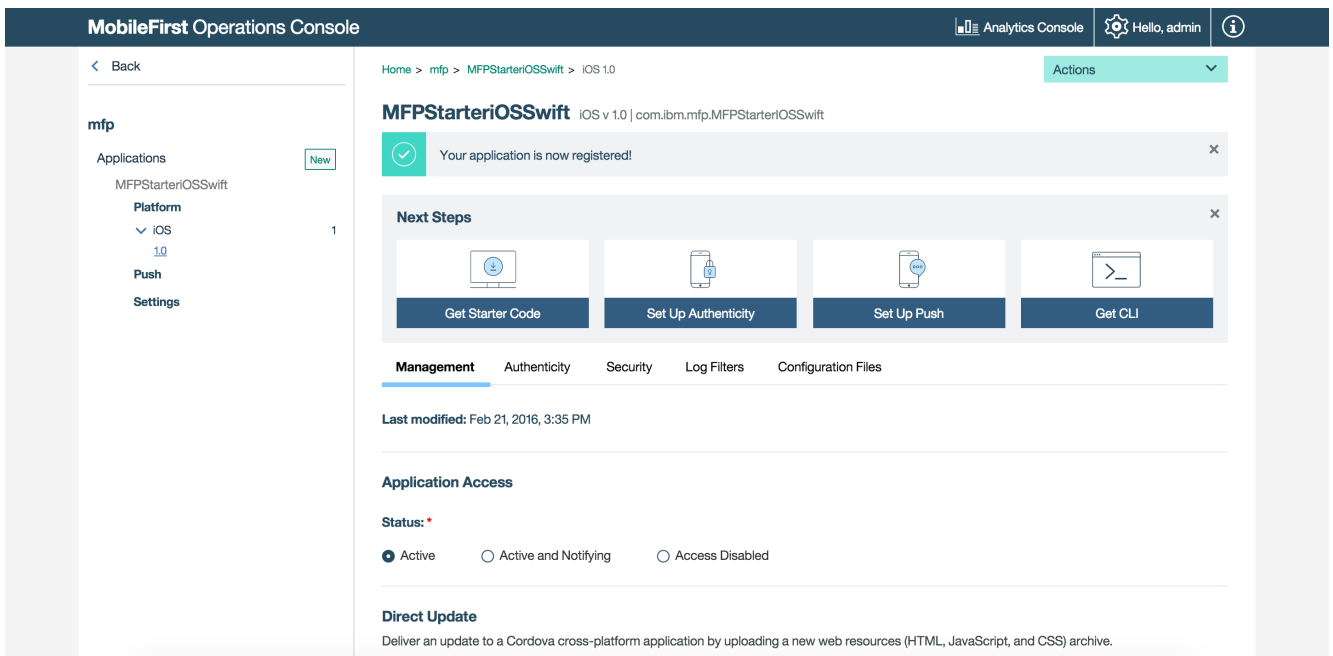
## 2. Creating an application

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 on the "New" button next to **Applications**
  - Select the **iOS** platform
  - Enter **com.ibm.mfp.MFPStarterIOSObjectiveC** or **com.ibm.mfp.MFPStarterIOSSwift** as the **application identifier** (depending on which mobile app scaffold you will download next)
  - Enter **1.0** as the **version** value

The screenshot shows the MobileFirst Operations Console interface. The top navigation bar includes 'Analytics Console', 'Hello, admin', and a user icon. The left sidebar contains a 'Dashboard' menu with options: 'Runtimes', 'Applications' (with a 'New' button), 'Adapters' (with a 'New' button), 'Settings', 'Devices', and 'Error Log'. The main content area is titled 'Register an Application' and contains the following fields: 'Application Name' (text input), 'Optional display name of the Application' (text input), 'Choose Platform' (radio buttons for Android, iOS (selected), and Windows), 'Bundle ID' (text input, labeled 'Application Identifier; case sensitive'), and 'Version' (text input, labeled 'Application Version'). A 'Register application' button is at the bottom.

2. Click on the **Get Starter Code** tile and select to download the iOS Objective-C or Swift mobile app scaffold.



### 3. Editing application logic

1. Open the Xcode project project by double-clicking the **.xcworkspace** file.
2. Select the **[project-root]/ViewController.m/swift** file and paste the following code snippet, replacing the existing `viewDidLoad()` function:

In Objective-C:

```
- (void)viewDidLoad {
    [super viewDidLoad];

    NSURL* url = [NSURL URLWithString:@"~/adapters/javaAdapter/users/world"];
    WLResourceRequest* request = [WLResourceRequest requestWithURL:url method:WLHttpMethodGet];

    [request sendWithCompletionHandler:^(WLResponse *response, NSError *error) {
        if (error != nil){
            NSLog(@"Failure: %@",error.description);
        }
        else if (response != nil){
            // Will print "Hello world" in the Xcode Console.
            NSLog(@"Success: %@",response.responseText);
        }
    }];
}
```

In Swift:

```
override func viewDidLoad() {
    super.viewDidLoad()

    let url = NSURL(string: "~/adapters/javaAdapter/users/world")
    let request = WLResourceRequest(URL: url, method: WLHttpMethodGet)

    request.sendWithCompletionHandler { (WLResponse response, NSError error) -> Void in
        if (error != nil){
            NSLog("Failure: " + error.description)
        }
        else if (response != nil){
            NSLog("Success: " + response.responseText)
        }
    }
}
```

### 4. Creating an adapter

Click on the "New" button next to **Adapters**

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

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

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

```
mfpdev adapter build
```

mfpdev adapter build

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.

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

MobileFirst Operations Console

Analytics Console

Hello, admin

Dashboard

Runtimes

mfp

Applications

MFPStarterOSSwift

Adapters

No adapter deployed

Settings

Devices

Error Log

Create a new Adapter

Actions

Deploy Adapter

Create a new Adapter

Adapters are used to securely connect back-end systems to client applications and cloud services. Adapters are built as Maven projects and can be written in JavaScript or Java.

Follow these steps to create an adapter.

1

Set up your development environment.

2

Create

There are three ways to start developing adapter projects:

Console

CLI

Maven

Start with one of the packaged [sample projects](#)

3

Develop

4

Build

5

Deploy

## 5. Testing the application

- In Xcode, select the **mfpclient.plist** file and edit the **host** property with the IP address of the MobileFirst Server. Press the **Play** button.

## Results

- Clicking on the **Test Server Connection** button will display **Obtained Access Token Successfully**.  
If the application was able to connect to the MobileFirst Server, a resource request call using the Java adapter will take place.

The adapter response is then printed in the Xcode Console.

```
[>] << >> [?] [v] [f] MyApplication
```

```
Date = "Tue, 19 Jan 2016 06:14:40 GMT";  
"Transfer-Encoding" = Identity;  
"X-Powered-By" = "Servlet/3.8"
```

```
} Response Data:  
{  
  "@access_token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpzZW50LmF1dCJ9.e30VQWkiIm14OjBTTBEZD04WRnNktgwtEWNM3S14CWNUZEUTk0kyazt0BNKpnNmREZF9xzhmdmSZzmRpCVRTYjRfNMQZT0TDHOENMMUNULNFOTFXjd3dTMDWEwdOl_3wm52AhhvVmLGy0LTUY9LSXFvZSlySkEdwPldpz  
    VZNVMVtlr2o2q3JOVLl5WSH9t7LYbeXOkLUddOCeGZWHXHUX3gc3RLMDVDUUUtVRNCNErdT0NNMNWvdJePKFRKHJUH4UIwia3RSJojoULNBiwiaw2tkijoyJ2mZDUKmITotLLinyBMQDZLTksZMQWTEteNGRIANGUBOQt3cin9_eyp3CMji0lj3btowAjt1lmMcISinnILYti6IMN  
    IctrcovMYtLskytJCNDAY2bv5OWMKvtEXRJYLRlRNdnysImpf2ICIGisNVb5SpMbubXiwwizXhwijoxmUDMLTGnjgmYALC2v29wsZSiEIj9_r96Ad4UVhxYost_c67cxKd3PVP_NpgswlVNkznJu_Y_BxeIdckIDTJqpNsRzeBiH3ql6BTffHnfuv3vb_wqb9xKoOpNAIXZ  
    ITrcwoVWnoVuGLJPic0vjPi6sgelwPkxiRKnpFalPBzt720H-wMR4zCPBe41kbhyOdKNsGoLD6TiQSocZLP2osqn-q3pvcUKwPSKQogZYiaBBkfTN5_6vEAEMerY8rJ8bmIscIF5Zgb3dbbzE84ZLVlwBkuixy7YngHDJKqKpqIKviym3JDIONdzdc_u  
    y4VKvpj7bNKrs6dxZhKG8dy8HMVGZba77jPNpHX3GS","token_type":"Bearer","expires_in":3599,"scope":""}
```

```
Status code=200  
2016-01-19 08:14:40.410 MyApplication[93738:36590517] +[OCLogger printMessage:withMetaData:andLevelTag:] [Line 1005] [DEBUG] [WL_AFHTTPSessionManagerWrapper.PACKAGE] ~-[WLAFHTTPSessionManagerWrapper start]  
in WLAFHTTPSessionManagerWrapper.m:372 : Starting the request with URL http://:9808/mfp/api/adapters/javaAdapter/users/world  
2016-01-19 08:14:40.440 MyApplication[93738:36590517] +[OCLogger printMessage:withMetaData:andLevelTag:] [Line 1005] [DEBUG] [WL_AFHTTPSessionManagerWrapper.PACKAGE] ~-[WLAFHTTPSessionManagerWrapper  
requestFinished:responseObject:] in WLAFHTTPSessionManagerWrapper.m:388 : Request Success  
2016-01-19 08:14:40.440 MyApplication[93738:36590517] +[OCLogger printMessage:withMetaData:andLevelTag:andPackage:] [Line 1005] [DEBUG] [WL_AFHTTPSessionManagerWrapper.PACKAGE] ~-[WLAFHTTPSessionManagerWrapper  
requestFinished:responseObject:] in WLAFHTTPSessionManagerWrapper.m:391 : Response Status Code : 200  
2016-01-19 08:14:40.440 MyApplication[93738:36590517] ~-[WLAFHTTPSessionManagerWrapper requestFinished:responseObject:] [Line 393] Response Content : Hello world  
2016-01-19 08:14:40.441 MyApplication[93738:36590517] Adapter invocation response: Hello world
```

```
All Output <
```

**Note:** Xcode 7 enables Application Transport Security (ATS)

([https://developer.apple.com/library/ios/releasenotes/General/WhatsNewIniOS/Articles/iOS9.html#//apple\\_ref/doc/uid/TP40016198-SW14](https://developer.apple.com/library/ios/releasenotes/General/WhatsNewIniOS/Articles/iOS9.html#//apple_ref/doc/uid/TP40016198-SW14)) by default.

To complete the tutorial, disable ATS (<http://iosdevtips.co/post/121756573323/ios-9-xcode-7-http-connect-server-error>).

1. In Xcode, right-click the **[project]/info.plist** file → **Open As** → **Source Code**
2. Paste the following:

```
<key>NSAppTransportSecurity</key>
<dict>
  <key>NSAllowsArbitraryLoads</key>
  <true/>
</dict>
```

## 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 Platform Foundation ([../using-the-mfpf-sdk/](#)) 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](#))