

# Adapter-based authentication in native Android applications

## Overview

This tutorial explains how to implement the client-side of adapter-based authentication in native Android.

**Prerequisite:** Make sure that you read the Adapter-based authentication (../) tutorial first.

## Implementing the client-side authentication

- Create a native Android application and add the MobileFirst native APIs as explained in the Configuring a native Android application with the MobileFirst Platform SDK (../../hello-world/configuring-a-native-android-application-with-the-mfp-sdk/) tutorial.
- Add an activity which handles and presents a login form.



## Challenge Handler

- Create a `MyChallengeHandler` class as a subclass of `ChallengeHandler`.

```
public class AndroidChallengeHandler extends ChallengeHandler
```

- Call the `super` method:

```
public AndroidChallengeHandler(String realm) {  
    super(realm);  
}
```

- Add an implementation of the following `ChallengeHandler` methods to handle the form-based challenge:

1. **`isCustomResponse` method:**

The `isCustomResponse` method is invoked each time a response is received from the MobileFirst Server. It is used to detect whether the response contains data that is related to this challenge handler. It must return either `true` or `false`.

```
public boolean isCustomResponse(WLResponse response) {
    try {
        if(response!= null &&
            response.getResponseJSON()!=null &&
            !response.getResponseJSON().isNull("authStatus") &&
            response.getResponseJSON().getString("authStatus") != "")
        {
            return true;
        }
    } catch (JSONException e) {
        e.printStackTrace();
    }
    return false;
}
```

2. **`handleChallenge` method:**

If `isCustomResponse` returns `true`, the framework calls the `handleChallenge` method. This function is used to perform required actions, such as hiding the application screen and showing the login screen.

```
public void handleChallenge(WLResponse response){
    cachedResponse = response;
    try {
        if(response.getResponseJSON().getString("authStatus").equals("credentialsRequired"))
        {
            MainAdapterBasedAuth.setMainText("handleChallenge->credentialsRequired");
            Intent login = new Intent(parentActivity, LoginAdapterBasedAuth.class);
            parentActivity.startActivityForResult(login, 1);
        }
        else if(response.getResponseJSON().getString("authStatus").equals("complete")){
            submitSuccess(cachedResponse);
        }
    } catch (JSONException e) {
        // TODO Auto-generated catch block
        e.printStackTrace();
    }
}
```

3. **`onSuccess` and `onFailure` methods:**

At the end of the authentication flow, `onSuccess` or `onFailure` will be triggered

Call the `submitSuccess` method in order to inform the framework that the authentication process completed successfully and for the `onSuccess` handler of the invocation to be called.

Call the `submitFailure` method in order to inform the framework that the authentication

process failed and for the `onFailure` handler of the invocation to be called.

```
public void onFailure(WLFailResponse response) {
    submitFailure(response);
}
public void onSuccess(WLResponse response) {
    submitSuccess(response);
}
```

## submitLoginForm

When the user taps to submit the credentials, call the `submitLoginForm` method to send the credentials to the adapter procedure.

For example, in here we implemented a `submitLogin` method that called by the `MainActivity` after the login process is completed.

```
public void submitLogin(int resultCode, String userName, String password, boolean back){
    if (resultCode != Activity.RESULT_OK || back) {
        submitFailure(cachedResponse);
    } else {
        Object[] parameters = new Object[]{userName, password};
        WLProcedureInvocationData invocationData = new WLProcedureInvocationData("AuthAdapter", "submitAuthentication");
        invocationData.setParameters(parameters);
        WLRequestOptions options = new WLRequestOptions();
        options.setTimeout(30000);
        submitAdapterAuthentication(invocationData, options);
    }
}
```

## The Main Activity

In the sample project, in order to trigger the challenge handler we use the `WLClient invokeProcedure` method.

The protected procedure invocation triggers MobileFirst Server to send the challenge.

- Create a `WLClient` instance and use the `connect` method to connect to the MobileFirst Server:

```
final WLClient client = WLClient.createInstance(this);
client.connect(new MyConnectionListener());
```

- In order to listen to incoming challenges, make sure to register the challenge handler by using the `registerChallengeHandler` method:

```
challengeHandler = new AndroidChallengeHandler(this, realm);
client.registerChallengeHandler(challengeHandler);
```

- Invoke the protected adapter procedure:

```
URI adapterPath = new URI("/adapters/AuthAdapter/getSecretData");  
WLResourceRequest request = new WLResourceRequest(adapterPath,WLResourceRequest.GET);  
request.send(new MyResponseListener());
```

## Sample application

Click to download (<https://github.com/MobileFirst-Platform-Developer-Center/AdapterBasedAuth/tree/release71>) the MobileFirst project.

Click to download (<https://github.com/MobileFirst-Platform-Developer-Center/AdapterBasedAuthAndroid/tree/release71>) the Native project.

- The `AdapterBasedAuth` project contains a MobileFirst native API that you can deploy to your MobileFirst server.
- The `AdapterBasedAuthAndroid` project contains a native Android application that uses a MobileFirst native API library.
- Make sure to update the `worklight.plist` file in the native project with the relevant server settings.

