

# Form-based authentication in native Android applications

## Overview

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

**Prerequisite:** Make sure that you read the Form-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`.

The default login form that returns from the MobileFirst Server contains the `j_security_check` string. If the response contains the string, the challenge handler returns `true`.

```
public boolean isCustomResponse(WLResponse response) {
    if (response == null || response.getResponseText() == null ||
        response.getResponseText().indexOf("j_security_check") == -1)
    {
        return false;
    }
    return true;
}
```

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){
    if (!isCustomResponse(response)) {
        submitSuccess(response);
    } else {
        cachedResponse = response;
        Intent login = new Intent(parentActivity, LoginFormBasedAuth.class)
        ;
        parentActivity.startActivityForResult(login, 1);
    }
}
```

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, you need to call the submitLoginForm method in order to send the j\_security\_check string and the credentials to the MobileFirst Server. 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 {
        HashMap<String, String> params = new HashMap<String, String>();
        params.put("j_username", userName);
        params.put("j_password", password);
        submitLoginForm("/j_security_check", params, null, 0, "post");
    }
}

```

## 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/FormBasedAuth>) the MobileFirst project.

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

- The FormBasedAuth project contains a MobileFirst native API that you can deploy to your MobileFirst server.
- The FormBasedAuthAndroid project contains a native Android application that uses a MobileFirst native API library.
- Make sure to update the `wlclient.properties` file in the native project with the relevant server settings.

