

Custom Authentication in native Android applications

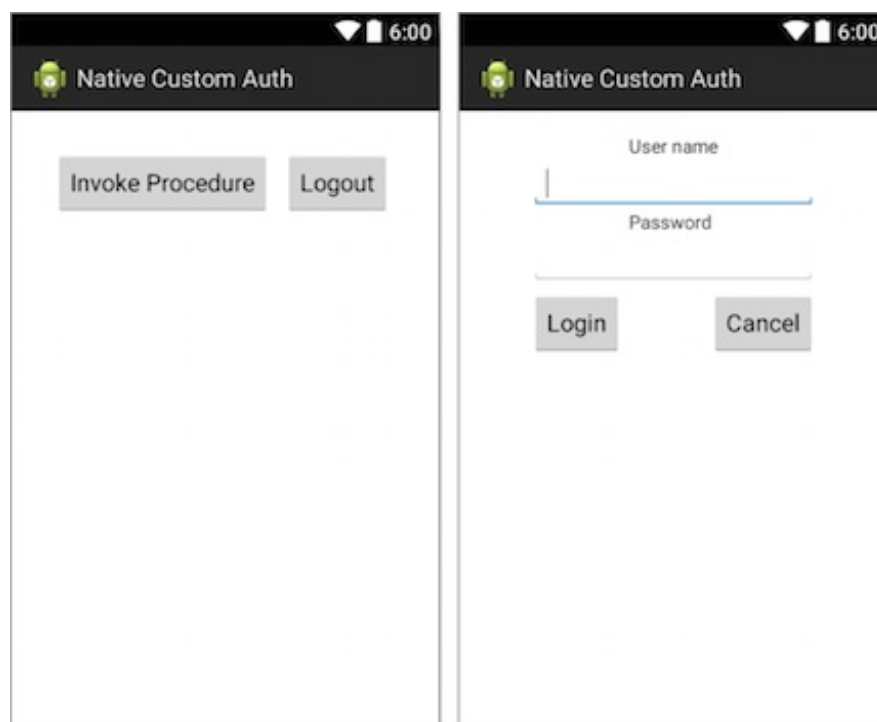
Overview

This tutorial explains how to implement the client side of a custom authentication in native Android.

Prerequisite: Make sure that you read the Custom 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.

```
1 | public class AndroidChallengeHandler extends ChallengeHandler
```

- Call the super method:

```
1 | public AndroidChallengeHandler(String realm) {  
2 |     super(realm);  
3 | }
```

- 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`.

```
1 public boolean isCustomResponse(WLResponse response) {  
2     if (response == null || response.getResponseJSON() == null) {  
3         return false;  
4     }  
5     if(response.toString().indexOf("authStatus") > -1){  
6         return true;  
7     }  
8     else{  
9         return false;  
10    }  
11 }
```

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.

```
1 public void handleChallenge(WLResponse response){  
2     try {  
3         if(response.getResponseJSON().getString("authStatus") == "complete"){  
4             submitSuccess(response);  
5         }  
6         else {  
7             cachedResponse = response;  
8             Intent login = new Intent(parentActivity, LoginCustomLoginModule.class);  
9             parentActivity.startActivityForResult(login, 1);  
10        }  
11    } catch (JSONException e) {  
12        e.printStackTrace();  
13    }  
14 }
```

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.

```

1 | public void onFailure(WLFailResponse response) {
2 |     submitFailure(response);
3 | }
4 | public void onSuccess(WLResponse response) {
5 |     submitSuccess(response);
6 | }

```

submitLoginForm

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

```

1 | public void submitLogin(int resultCode, String userName, String password, boolean back){
2 |     if (resultCode != Activity.RESULT_OK || back) {
3 |         submitFailure(cachedResponse);
4 |     } else {
5 |         HashMap<String, String> params = new HashMap<String, String>();
6 |         params.put("username", userName);
7 |         params.put("password", password);
8 |         submitLoginForm("/my_custom_auth_request_url", params, null, 0, "post");
9 |     }
10 | }

```

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:

```

1 | final WLClient client = WLClient.createInstance(this);
2 | client.connect(new MyConnectionListener());

```

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

```

1 | challengeHandler = new AndroidChallengeHandler(this, realm);
2 | client.registerChallengeHandler(challengeHandler);

```

- Invoke the protected adapter procedure:

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

Worklight Protocol

If your custom authenticator uses `WorklightProtocolAuthenticator`, some simplifications can be made:

- Subclass your challenge handler using `WLChallengeHandler` instead of `ChallengeHandler`. Note the `WL`.
- You no longer need to implement `isCustomResponse` as the challenge handler will automatically check that the realm name matches.
- `handleChallenge` will receive the challenge as a parameter, not the entire response object.
- Instead of `submitLoginForm`, use `submitChallengeAnswer` to send your challenge response as a JSON.
- There is no need to call `submitSuccess` or `submitFailure` as the framework will do it for you.

For an example that uses `WorklightProtocolAuthenticator`, see the [Remember Me \(.../advanced-topics/remember-me/\)](#) tutorial or this video blog post (file:///home/travis/build/MFPSSamples/DevCenter/_site/blog/2015/05/29/ibm-mobilefirst-platform-foundation-custom-authenticators-and-login-modules/).

Sample application

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

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

- The `CustomAuth` project contains a `MobileFirst` native API that you can deploy to your `MobileFirst` server.
- The `CustomAuthAndroid` 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.

