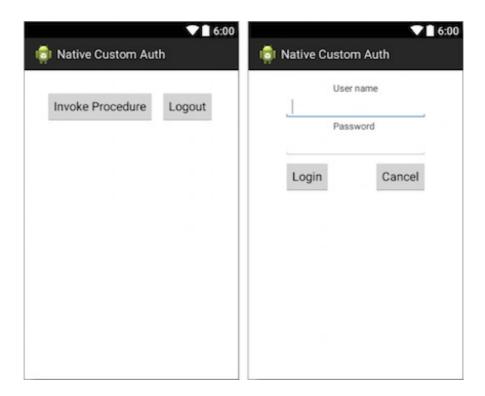
# Custom Authentication in native Android applications

### **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 (../../helloworld/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) {
  if (response == null || response.getResponseJSON() == null) {
    return false;
  }
  if(response.toString().indexOf("authStatus") > -1){
    return true;
  }
  else{
    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){
try {
   if(response.getResponseJSON().getString("authStatus") == "complete"){
    submitSuccess(response);
}
else {
   cachedResponse = response;
   Intent login = new Intent(parentActivity,
   LoginCustomLoginModule.class);
   parentActivity.startActivityForResult(login, 1);
}
catch (JSONException e) {
   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 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("username", userName);
    params.put("password", password);
    submitLoginForm("/my_custom_auth_request_url", 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());

# **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/MFPSamples/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.

