# Adapter-based authentication in native Android applications

This is a continuation of the Adapter-based authentication (../) tutorial.

## Creating the client-side authentication components

Create a native Android application and add the MobileFirst native APIs following the documentation.
Add an Activity, `LoginAdapterBasedAuth`, that will handle and present the login form.
Remember to add this Activity to the `AndroidManifest.xml` file as well.

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

`isCustomResponse` checks every custom response received from MobileFirst Server to see if that's the challenge we are expecting. In the example adapter code a `authRequired` variable is sent for this purpose.

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

`handleChallenge` is called after the `isCustomResponse` method returned true.
Here we use this method to present our login form.

```
public void handleChallenge(WLResponse response){
 cachedResponse = response;
 Intent login = new Intent(parentActivity, LoginAdapterBasedAuth.class);
 parentActivity.startActivityForResult(login, 1);
}
```

In `submitLogin`, if the user asked to abort this action we use the `submitFailure()` method, otherwise we invoke our adapter authentication procedure using the `submitAdapterAuthentication()` method.

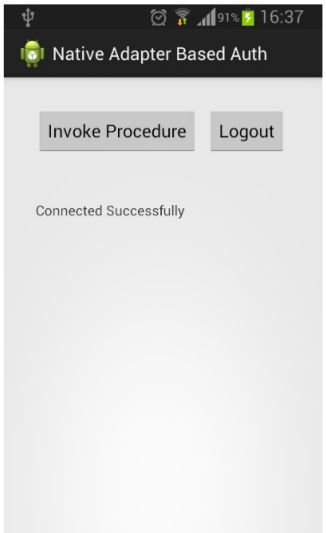
```
public void submitLogin(int resultCode, String userName, String password, boolean back){
 if (resultCode != Activity.RESULT_OK || back) {
  submitFailure(cachedResponse);
 } else {
  Object[] parameters = new Object[]{userName, password};
  WLProcedureInvocationData invocationData = new  WLProcedureInvocationData("NativeAdapterBasedAdapter",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

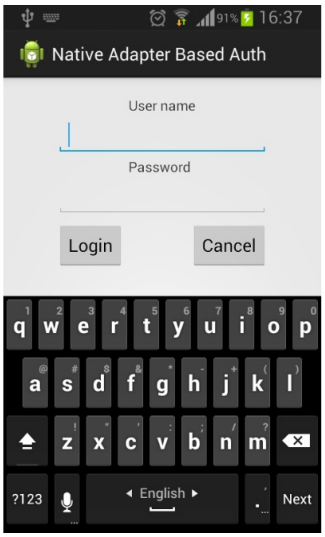
In the Main Activity class, connect to the MobileFirst server, register your `challengeHandler` and invoke the protected adapter procedure.
The procedure invocation will trigger the MobileFirst server to send a challenge that will trigger our `challengeHandler`.

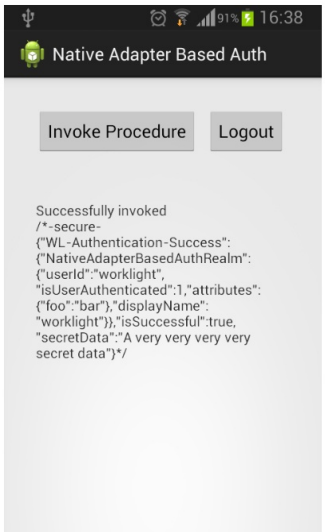
```
final WLClient client = WLClient.createInstance(this);
client.connect(new MyConnectionListener());
challengeHandler = new AndroidChallengeHandler(this, realm);
client.registerChallengeHandler(challengeHandler);
invokeBtn = (Button) findViewById(R.id.invoke);
invokeBtn.setOnClickListener(new View.OnClickListener() {
 @Override
 public void onClick(View v) {
  WLProcedureInvocationData invocationData = new WLProcedureInvocationData("DummyAdapter", "getSecretData")
;
  WLRequestOptions options = new WLRequestOptions();
  options.setTimeout(30000);
  client.invokeProcedure(invocationData, new MyResponseListener(), options);
 }
});
```

## Sample application

Click to download (http://public.dhe.ibm.com/software/products/en/MobileFirstPlatform/docs/v630/NativeAdapterBasedAuthProject.zip) the Studio project.
Click to download (http://public.dhe.ibm.com/software/products/en/MobileFirstPlatform/docs/v630/AndroidNativeAdapterBasedAuthProject.zip) the Native project.


16:37
Native Adapter Based Auth
Invoke Procedure
Logout
Connected Successfully


16:37
Native Adapter Based Auth
User name
Password
Login
Cancel
?123
English
Next


16:38
Native Adapter Based Auth
Invoke Procedure
Logout
Successfully invoked
/*-secure-
{"WL-Authentication-Success":
{"NativeAdapterBasedAuthRealm":
{"userId":"worklight",
"isUserAuthenticated":1,"attributes":
{"foo":"bar"},"displayName":
"worklight"}},"isSuccessful":true,
"secretData":"A very very very very
secret data"}*/