# Custom Authentication in native iOS applications

### **Overview**

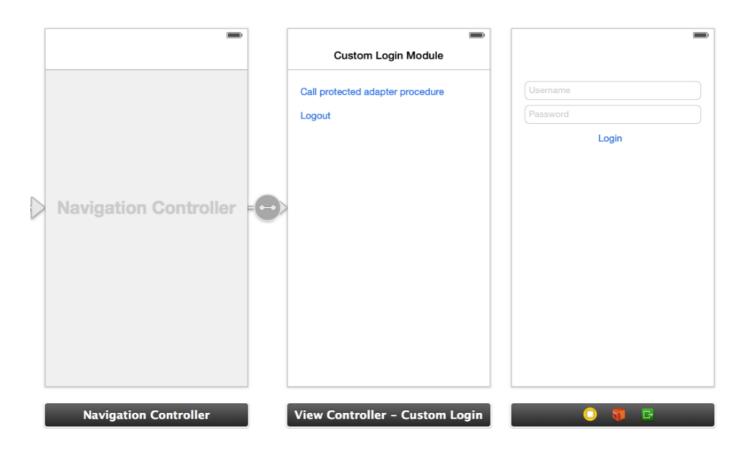
This tutorial explains how to implement the client side of a custom authentication in native iOS. **Prerequisite:** Make sure that you read the Custom Authentication (../) tutorial first.

# Implementing client-side authentication

Create a native iOS application and add the MobileFirst native APIs as explained in the Configuring a native iOS application with the MobileFirst Platform SDK (../../hello-world/configuring-a-native-ios-application-with-the-mfp-sdk/) tutorial.

## **Storyboard**

In your storyboard, add a ViewController that contains a login form.



## Challenge handler

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

@interface MyChallengeHandler : ChallengeHandler

2. Call the initWithRealm method:

```
@implementation MyChallengeHandler
//...
-(id)init:{
    self = [self initWithRealm:@"CustomAuthenticatorRealm"]
;
    return self;
}=
```

- 3. Add the implementation of the following ChallengeHandler methods to handle the custom authenticator and login module 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.

```
-(BOOL) isCustomResponse:(WLResponse *)response {
    if(response & amp; & amp; [response getResponseJson]) {
        if ([[response getResponseJson] objectForKey:@"authStatus"]) {
            NSString* authRequired = (NSString*) [[response getResponseJson] objectForKey:@"authStatus"];
            return ([authRequired compare:@"required"] == NSOrderedSame);
        }
    }
    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.

```
-(void) handleChallenge:(WLResponse *)response {
    NSLog(@"A login form should appear");
    LoginViewController* loginController = [self.vc.storyboard instantiateViewController
    WithIdentifier:@"LoginViewController"];
    loginController.challengeHandler = self;
    [self.vc.navigationController pushViewController:loginController animated:YES];
}
```

#### 3. onSuccess and onFailure methods:

At the end of the authentication flow, calls to the onSuccess or onFailure methods are triggered.

 Call the submitSuccess method to inform the framework that the authentication process completed successfully, so that the onSuccess handler of the invocation is called. ■ Call the submitFailure method to inform the framework that the authentication process failed, so that the onFailure handler of the invocation is called.

```
-(void) onSuccess:(WLResponse *)response {
    NSLog(@"Challenge succeeded");
    [self.vc.navigationController popViewControllerAnimated:YES]
;
    [self submitSuccess:response];
}
-(void) onFailure:(WLFailResponse *)response {
    NSLog(@"Challenge failed");
    [self submitFailure:response];
}
```

## submitLoginForm

In your login View Controller, when the user types to submit the credentials, call the submitLoginForm method to send the credentials to the MobileFirst Server.

## The Main ViewController

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:

```
MyConnectListener *connectListener = [[MyConnectListener alloc] init];
[[WLClient sharedInstance] wlConnectWithDelegate:connectListener]
;
```

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

```
[[WLClient sharedInstance] registerChallengeHandler:[[MyChallengeHandler alloc] initWit hViewController:self] ];<br/>
```

Invoke the protected adapter procedure:

```
NSURL* url = [NSURL URLWithString:@"/adapters/AuthAdapter/getSecretData"];
WLResourceRequest* request = [WLResourceRequest requestWithURL:url method:WLHttp
MethodGet];
[request sendWithCompletionHandler:^(WLResponse *response, NSError *error) {
...
}];
```

# **Worklight Protocol**

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

- You can subclass your challenge handler by using WLChallengeHandler instead of ChallengeHandler. Note the WL.
- You no longer need to implement isCustomResponse because the challenge handler automatically checks that the realm name matches.
- The handleChallenge method receives the challenge as a parameter, not the entire response object.
- Instead of submitLoginForm, use submitChallengeAnswer to send your challenge response as a JSON object.
- You do not need to call submitSuccess or submitFailure because 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/CustomAuthObjC) the Objective-C project.

Click to download (https://github.com/MobileFirst-Platform-Developer-Center/CustomAuthSwift) the Swift project.

- The CustomAuth project contains a MobileFirst native API that you can deploy to your MobileFirst server.
- The CustomAuthObjC and CustomAuthSwift projects contains a native iOS 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.

