

# Adapter-based authentication in native iOS applications

## Overview

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

**Prerequisite:** Make sure that you read the Adapter-based authentication (../) tutorial first.

## Implementing the 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 view controller containing a login form.



## Challenge Handler

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

```
@interface MyChallengeHandler : ChallengeHandler
```

- Call the `initWithRealm` method:

### @implementation MyChallengeHandler

//...

```
-(id)init{
    self = [self initWithRealm:@"AuthRealm"]
;
    return self;
}
```

- Add implementation of the following ChallengeHandler methods to handle the adapter-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`.

```
-(BOOL) isCustomResponse:(WLResponse *)response {
    if(response && response.responseJSON){
        if ([response.responseJSON objectForKey:@"authStatus"] != nil)
        {
            return true;
        }
    }
    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 {
    NSString* authStatus = (NSString*) [response.responseJSON objectForKey:@"authStatus"];
    if([authStatus isEqualToString:@"complete"]){
        [self.navigationController popViewControllerAnimated:YES];
        [self submitSuccess:response];
    }
    else{
        // Check if login form is already visible />
        if([self.navigationController.visibleViewController isKindOfClass:[LoginViewController class]]){>
            dispatch_async(dispatch_get_main_queue(), ^(void){
                LoginViewController* loginController = (LoginViewController*) self.navigationController.visibleViewController;
                loginController.errorMsg.hidden = NO;
            });
        }
        else{
            [self.navigationController performSegueWithIdentifier:@"showLogin" sender:self];
            dispatch_async(dispatch_get_main_queue(), ^(void){
                LoginViewController* loginController = (LoginViewController*) self.navigationController.visibleViewController;
                loginController.challengeHandler = self;
                loginController.errorMsg.hidden = YES;
            });
        }
    }
}

```

### 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.

```

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

```

In your login View Controller, when the user taps to submit the credentials, call the `submitAdapterAuthentication` method to send the credentials to the adapter procedure.

```
@implementation LoginViewController
//...
- (IBAction)login:(id)sender {
    WLProcedureInvocationData *myInvocationData = [[WLProcedureInvocationData alloc]
    <
        initWithAdapterName:@"AuthAdapter"
        procedureName:@"submitAuthentication"];
    myInvocationData.parameters = @[self.username.text, self.password.text];
    [self.challengeHandler submitAdapterAuthentication:myInvocationData options:nil];
}
```

## 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] initWithViewController:self] ];
```

- Invoke the protected adapter procedure:

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

## Sample application

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

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

Objective-C project.

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

- The AdapterBasedAuth project contains a MobileFirst native API that you can deploy to your MobileFirst server.
- The AdapterBasedAuthObjC and AdapterBasedAuthSwift 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.

