

# Custom Authentication in hybrid applications

## Overview

This is a continuation of Custom Authentication (../).

## Creating client-side authentication components

The application consists of two main *div* elements:

The *AppDiv* element is used to display the application content.

The *AuthDiv* element is used for authentication forms.

When authentication is required, the application hides *AppDiv* and shows *AuthDiv*. When authentication is complete, it does the opposite.

### AppDiv

```
<div id="AppDiv">
  <input type="button" id="getSecretDataButton" value="Call protected adapter proc" onclick="getSecret
Data()" />
  <input type="button" class="appButton" value="Logout" onclick="WL.Client.logout('CustomAuthenticato
rRealm',{onSuccess: WL.Client.reloadApp})" />
  <div id="ResponseDiv"></div>
</div>
```

Buttons are used to call the *getSecretData* procedure and to log out.

### AuthDiv

```
<div id="AuthDiv" style="display: none"
<p id="AuthInfo"></p>
<div id="loginForm">
  <input type="text" id="AuthUsername" placeholder="Enter username" />
  <br/>
  <br/>
  <input type="password" id="AuthPassword" placeholder="Enter password" />
  <br/>
  <input type="button" id="AuthSubmitButton" class="formButton" value="Login" />
  <input type="button" id="AuthCancelButton" class="formButton" value="Cancel" /
>
</div>
</div>
```

*AuthDiv* is styled with *display:none* because it must not be displayed before the server requests the authentication.

## Challenge Handler

Use `WL.Client.createChallengeHandler` to create a challenge handler object. Supply a realm name as a parameter.

```
var customAuthenticatorRealmChallengeHandler = WL.Client.createChallengeHandler("CustomAuthenticatorRealm");
```

The `isCustomResponse` function of the challenge handler is called each time a response is received from the server.

It is used to detect whether the response contains data that is related to this challenge handler. It must return **true** or **false**.

```
customAuthenticatorRealmChallengeHandler.isCustomResponse = function(response) {}
```

If `isCustomResponse` returns true, the framework calls the `handleChallenge` function. This function is used to perform required actions, such as hide application screen and show login screen.

```
customAuthenticatorRealmChallengeHandler.handleChallenge = function(response){}
```

In addition to the methods that the developer must implement, the challenge handler contains functionality that the developer might want to use:

- `submitLoginForm` to send collected credentials to a specific URL. The developer can also specify request parameters, headers, and callback.
- `submitSuccess` to notify the framework that the authentication finished successfully. The framework then automatically issues the original request that triggered the authentication.
- `submitFailure` to notify the framework that the authentication completed with a failure. The framework then disposes of the original request that triggered the authentication

Note: Attach each of these functions to its object. For example: `myChallengeHandler.submitSuccess()`

## isCustomResponse

If the challenge JSON block contains the `authStatus` property, return `true`, otherwise return `false`.

```
customAuthenticatorRealmChallengeHandler.isCustomResponse = function(response) {  
    if (!response || !response.responseJSON) {  
        return false;  
    }  
    if (response.responseJSON.authStatus) {  
        return true;  
    }  
    else {  
        return false;  
    }  
};
```

## handleChallenge

If the `authStatus` property equals "required", show the login form, clean up the password input field, and

display the error message if applicable.

if *authStatus* equals “complete”, hide the login screen, return to the application, and notify the framework that authentication completed successfully.

```
customAuthenticatorRealmChallengeHandler.handleChallenge = function(response){  
  var authStatus = response.responseJSON.authStatus;  
  if (authStatus == "required"){  
    $('#AppDiv').hide();  
    $('#AuthDiv').show();  
    $('#AuthInfo').empty();  
    $('#AuthPassword').val("");  
    if (response.responseJSON.errorMessage){  
      $('#AuthInfo').html(response.responseJSON.errorMessage);  
    }  
  } else if (authStatus == "complete"){  
    $('#AppDiv').show();  
    $('#AuthDiv').hide();  
    customAuthenticatorRealmChallengeHandler.submitSuccess();  
  }  
};
```



Clicking the **login** button triggers the function that collects the user name and password from HTML input fields and submits them to server. You can set request headers here and specify callback functions.

```
$('#AuthSubmitButton').bind('click', function () {  
  var reqURL = '/my_custom_auth_request_url';  
  var options = {};  
  options.parameters = {  
    username : $('#AuthUsername').val(),  
    password : $('#AuthPassword').val()  
  };  
  options.headers = {};  
  customAuthenticatorRealmChallengeHandler.submitLoginForm(reqURL, options, customAuthenticator  
  RealmChallengeHandler.submitLoginFormCallback);  
});
```

Clicking the **cancel** button hides *AuthDiv*, shows *AppDiv* and notifies the framework that authentication failed.

```
$('#AuthCancelButton').bind('click', function () {  
  $('#AppDiv').show();  
  $('#AuthDiv').hide();  
  customAuthenticatorRealmChallengeHandler.submitFailure()  
};
```

The **submitLoginFormCallback** function checks the response for the containing server challenge once again. If the challenge is found, the *handleChallenge* function is called again.

```
customAuthenticatorRealmChallengeHandler.submitLoginFormCallback = function(response) {  
    var isLoginFormResponse = customAuthenticatorRealmChallengeHandler.isCustomResponse(response);  
    if (isLoginFormResponse){  
        customAuthenticatorRealmChallengeHandler.handleChallenge(response);  
    }  
};
```

## Worklight Protocol

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

- Create the challenge handler using `WL.Client.createWLChallengeHandler` instead of `WL.Client.createChallengeHandler`. Note the `WL` in the middle.
- 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/](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/tree/release71>) the MobileFirst project.

