

Implementing the challenge handler in JavaScript (Cordova, Web) applications

fork and edit tutorial (<https://github.ibm.com/MFPSamples/DevCenter/tree/master/tutorials/en/foundation/8.0/authentication-and-security/user-authentication/javascript/index.md>) | report issue (<https://github.ibm.com/MFPSamples/DevCenter/issues/new>)

Overview

Prerequisite: Make sure to read the **CredentialsValidationSecurityCheck**'s challenge handler implementation ([../credentials-validation/javascript](#)) tutorial.

The challenge handler will demonstrate a few additional features (APIs) such as the preemptive `login`, `logout` and `obtainAccessToken`.

Login

In this example, `UserLogin` expects *key:values* called `username` and `password`. Optionally, it also accepts a boolean `rememberMe` key that will tell the security check to remember this user for a longer period. In the sample application, this is collected using a boolean value from a checkbox in the login form.

```
userLoginChallengeHandler.submitChallengeAnswer({'username':username, 'password':password, rememberMe: rememberMeState});
```

You may also want to login a user without any challenge being received. For example, showing a login screen as the first screen of the application, or showing a login screen after a logout, or a login failure. We call those scenarios **preemptive logins**.

You cannot call the `submitChallengeAnswer` API if there is no challenge to answer. For those scenarios, the MobileFirst Foundation SDK includes the `login` API:

```
WLAuthorizationManager.login(securityCheckName,{'username':username, 'password':password, rememberMe: rememberMeState}).then(  
  function () {  
    WL.Logger.debug("login onSuccess");  
  },  
  function (response) {  
    WL.Logger.debug("login onFailure: " + JSON.stringify(response));  
  });
```

If the credentials are wrong, the security check will send back a **challenge**.

It is the developer's responsibility to know when to use `login` vs `submitChallengeAnswer` based on the application's needs. One way to achieve this is to define a boolean flag, for example `isChallenged`, and set it to `true` when reaching `handleChallenge` or set it to `false` in any other cases (failure, success, initializing, etc).

When the user clicks the **Login** button, you can dynamically choose which API to use:

```

if (isChallenged){
    userLoginChallengeHandler.submitChallengeAnswer({'username':username, 'password':password, rememberMe: rememberMeState});
} else {
    WLAuthorizationManager.login(securityCheckName,{ 'username':username, 'password':password, rememberMe: rememberMeState}).then(
//...
    );
}

```

Note: `WLAuthorizationManager`'s `login()` API has its own `onSuccess` and `onFailure` methods, the relevant challenge handler's `processSuccess` or `handleFailure` will **also** be called.

Obtaining an access token

Since this security check supports *remember me* functionality, it would be useful to check if the client is currently logged in, during the application startup.

The MobileFirst Foundation SDK provides the `obtainAccessToken` API to ask the server for a valid token:

```

WLAuthorizationManager.obtainAccessToken(userLoginChallengeHandler.securityCheckName).then(
    function (accessToken) {
        WL.Logger.debug("obtainAccessToken onSuccess");
        showProtectedDiv();
    },
    function (response) {
        WL.Logger.debug("obtainAccessToken onFailure: " + JSON.stringify(response));
        showLoginDiv();
    });

```

Note: `WLAuthorizationManager`'s `obtainAccessToken()` API has its own `onSuccess` and `onFailure` methods, the relevant challenge handler's `handleSuccess` or `handleFailure` will **also** be called.

If the client is already logged-in or is in the *remembered* state, the API will trigger a success. If the client is not logged in, the security check will send back a challenge.

The `obtainAccessToken` API takes in a **scope**. The scope can be the name of your **security check**.

Learn more about **scope** in the Authorization concepts ([../authorization-concepts](#)) tutorial

Retrieving the authenticated user

The challenge handler's `handleSuccess` method receives a `data` as a parameter. If the security check sets an `AuthenticatedUser`, this object will contain the user's properties. You can use `handleSuccess` to save the current user:

```

userLoginChallengeHandler.handleSuccess = function(data) {
  WL.Logger.debug("handleSuccess");
  isChallenged = false;
  document.getElementById ("rememberMe").checked = false;
  document.getElementById('username').value = "";
  document.getElementById('password').value = "";
  document.getElementById("helloUser").innerHTML = "Hello, " + data.user.displayName;
  showProtectedDiv();
}

```

Here, `data` has a key called `user` which itself contains a `JSONObject` representing the `AuthenticatedUser`:

```

{
  "user": {
    "id": "john",
    "displayName": "john",
    "authenticatedAt": 1455803338008,
    "authenticatedBy": "UserLogin"
  }
}

```

Logout

The MobileFirst Foundation SDK also provides a `Logout` API to logout from a specific security check:

```

WLAuthorizationManager.logout(securityCheckName).then(
  function () {
    WL.Logger.debug("logout onSuccess");
    location.reload();
  },
  function (response) {
    WL.Logger.debug("logout onFailure: " + JSON.stringify(response));
  });

```

Sample applications

There are two samples associated with this tutorial:

- **PreemptiveLogin**: An application that always starts with a login screen, using the preemptive `login` API.
- **RememberMe**: An application with a *Remember Me* checkbox. The user can bypass the login screen the next time the application is opened.

Both samples use the same `UserLogin` security check from the **SecurityCheckAdapters** adapter Maven project.

- Click to download (<https://github.com/MobileFirst-Platform-Developer-Center/SecurityCheckAdapters/tree/release80>) the SecurityCheckAdapters Maven project.
- Click to download (<https://github.com/MobileFirst-Platform-Developer-Center/RememberMeCordova/tree/release80>) the RememberMe Cordova project.
- Click to download (<https://github.com/MobileFirst-Platform-Developer-Center/PreemptiveLoginCordova/tree/release80>) the PreemptiveLogin Cordova project.

- Click to download (<https://github.com/MobileFirst-Platform-Developer-Center/RememberMeWeb/tree/release80>) the RememberMe Web project.
- Click to download (<https://github.com/MobileFirst-Platform-Developer-Center/PreemptiveLoginWeb/tree/release80>) the PreemptiveLogin Web project.

Web sample usage

Make sure you have Node.js installed.

1. Register the application in the MobileFirst Operations Console.
2. Start the reverse proxy by running the commands: `npm install` followed by: `npm start`.
3. Use either Maven or MobileFirst CLI to build and deploy the available **ResourceAdapter** and **UserLogin** adapters (`../../adapters/creating-adapters/`).
4. In the MobileFirst Console → PreemptiveLoginWeb / RememberMeWeb → Security, map the `accessRestricted` scope to the `UserLogin` security check.
5. In a browser, load the URL `http://localhost:9081/sampleapp` (`http://localhost:9081/sampleapp`).

Cordova Sample usage

1. Use either Maven, MobileFirst CLI or your IDE of choice to build and deploy the available **ResourceAdapter** and **UserLogin** adapters (`../../adapters/creating-adapters/`).
2. From a **Command-line** window, navigate to the project's root folder and:
 - Add a platform by running the `cordova platform add` command.
 - Register the application: `mfpdev app register`.
3. Map the `accessRestricted` scope to the `UserLogin` security check:
 - In the MobileFirst Operations Console, under **Applications** → **[your-application]** → **Security** → **Scope-Elements Mapping**, add a scope mapping from `accessRestricted` to `UserLogin`.
 - Alternatively, from the **Command-line**, navigate to the project's root folder and run the command: `mfpdev app push`.

Learn more about the `mfpdev app push/push` commands in the Using MobileFirst CLI to manage MobileFirst artifacts (`../../using-the-mfpf-sdk/using-mobilefirst-cli-to-manage-mobilefirst-artifacts`).

4. Back in the command-line:
 - Run the Cordova application by running the `cordova run` command.

