

# 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 {
    WLAAuthorizationManager.login(securityCheckName,{ 'username':username, 'password':password, rememberMe: rememberMeState}).then(
//...
    );
}

```

**Note:** `WLAAuthorizationManager`'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:

```

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

```

**Note:** `WLAAuthorizationManager`'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.

