Resource request from Cordova applications

fork and edit tutorial (https://github.ibm.com/MFPSamples/DevCenter/tree/master/tutorials/en/foundation/8.0/using-the-mfpf-sdk/resource-request-from-cordova-applications/index.md) | report issue (https://github.ibm.com/MFPSamples/DevCenter/issues/new)

Overview

MobileFirst applications can access resources using the `WLResourceRequest` REST API.
The REST API works with all adapters and external resources.

Prerequisites:

- Ensure you have added the MobileFirst Platform SDK (../../adding-the-mfpf-sdk/cordova) to your Cordova application.
- Learn how to create adapters (../../adapters/adapters-overview/).

WLResourceRequest

The `WLResourceRequest` class handles resource requests to adapters or external resources.

Create a `WLResourceRequest` object and specify the path to the resource and the HTTP method.
Available methods are: `WLHttpMethodGet`, `WLHttpMethodPost`, `WLHttpMethodPut` and `WLHttpMethodDelete`.

```
var resourceRequest = new WLResourceRequest(
    "/adapters/JavaAdapter/users",
    WLResourceRequest.GET
);
```

- For **JavaScript adapters**, use `/adapters/{AdapterName}/{procedureName}`
- For **Java adapters**, use `/adapters/{AdapterName}/{path}`. The `path` depends on how you defined your `@Path` annotations in your Java code. This would also include any `@PathParam` you used.
- To access resources outside of the project, use the full URL as per the requirements of the external server.
- **timeout**: Optional, request timeout in milliseconds

Sending the request

Request the resource by using the `send()` method.
The `send()` method takes an optional parameter to set a body to the HTTP request, which could be a JSON object or a simple string.

```
resourceRequest.send().then(
    onSuccess,
    onFailure
)
```

Using JavaScript **promises**, you can define `onSuccess` and `onFailure` functions.

setQueryParameter

By using the `setQueryParameter` method, you can include query (URL) parameters in the REST request.

- In JavaScript adapters, which use ordered nameless parameters, pass an array of parameters with the name `params`:

```
resourceRequest.setQueryParameter("params", "['param1', 'param2']");
```

- In Java adapters or external resources, use `setQueryParameter` for each parameter:

```
resourceRequest.setQueryParameter("param1", "value1");
resourceRequest.setQueryParameter("param2", "value2");
```

setHeader

By using the `setHeader` method, you can set a new HTTP header or replace an existing header with the same name in the REST request.

```
resourceRequest.setHeader("Header-Name","value");
```

sendFormParameters(json)

To send URL-encoded form parameters, use the `sendFormParameters(json)` method instead. This method converts the JSON to a URL encoded string, sets the `content-type` to `application/x-www-form-urlencoded`, and sets it as the HTTP body.

> For more information about `WLResourceRequest`, see the API reference in the user documentation.

The response

Both the `onSuccess` and `onFailure` callbacks receive a `response` object. The `response` object contains the response data and you can use its properties to retrieve the required information. Commonly used properties are `responseText`, `responseJSON` (JSON object, if the response is in JSON) and `status` (the HTTP status of the response).

In case of request failure, the `response` object also cotains a `errorMsg` property.
Depending if using a Java or JavaScript adapter, the response may contain other properties such as `responseHeaders`, `responseTime`, `statusCode`, `statusReason`, and `totalTime`.

```
{
  "responseHeaders": {
    "Content-Type": "application/json",
    "X-Powered-By": "Servlet/3.1",
    "Content-Length": "86",
    "Date": "Mon, 15 Feb 2016 21:12:08 GMT"
  },
  "status": 200,
  "responseText": "{\"height\":\"184\",\"last\":\"Doe\",\"Date\":\"1984-12-12\",\"age\":31,\"middle\":\"C\",\"first\"
:\"John\"}",
  "responseJSON": {
    "height": "184",
    "last": "Doe",
    "Date": "1984-12-12",
    "age": 31,
    "middle": "C",
    "first": "John"
  },
  "invocationContext": null
}
```


Handling the response

The response object is received by the `onSuccess` and `onFailure` callback functions.
For example:

```
onSuccess: function(response) {
    resultText = "Successfully called the resource: " + response.responseText;
},

onFailure: function(response) {
    resultText = "Failed to call the resource:" + response.errorMsg;
}
```

For more information

> For more information about WLResourceRequest, refer to the user documentation.

Sample application

The ResourceRequestCordova project contains a Cordova application that makes a resource request using a Java adapter.
The adapter Maven project contains the Java adapter to be used during the resource request call.

Click to download (https://github.com/MobileFirst-Platform-Developer-Center/ResourceRequestCordova/tree/release80) the Cordova project.
Click to download (https://github.com/MobileFirst-Platform-Developer-Center/Adapters/tree/release80) the adapter Maven project.

Sample usage

1. From the command line, navigate to the project's root folder.
2. Ensure the sample is registered in the MobileFirst Server by running the command: `mfpdev app register`.
3. Add a platform by running the `cordova platform add` command.
4. The sample uses the `JavaAdapter` contained in the Adapters Maven project. Use either Maven or MobileFirst Developer CLI to build and deploy the adapter (../../adapters/creating-adapters/).
5. To test or debug an adapter, see the testing and debugging adapters (../../adapters/testing-and-debugging-adapters) tutorial.
6. Run the Cordova application by running the `cordova run` command.