

# Resource request from hybrid client applications

## Overview

MobileFirst applications can access resources using the `WLResourceRequest` REST API. The REST API works with all adapters and external resources (`../authentication-security/using-mobilefirst-server-authenticate-external-resources/`), and is supported in the following hybrid environments: iOS, Android, Windows Phone 8, and Windows 8.

If your application supports other hybrid environments such as BlackBerry, Mobile Web, or Desktop Browser, see the tutorial for IBM MobileFirst Platform Foundation 6.3 (`file:///home/travis/build/MFPSamples/DevCenter/_site/tutorials/en/foundation/6.3/server-side-development/invoking-adapter-procedures-hybrid-client-applications/`).

This tutorial explains how to use the `WLResourceRequest` API with an HTTP adapter.

## WLResourceRequest

```
var resourceRequest = new WLResourceRequest(
    "/adapters/RSSReader/getFeedFiltered",
    WLResourceRequest.GET
);
```

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

The parameters for the constructor are:

- **request URL:** To access an adapter within the same project, the URL should be `/adapters/AdapterName/procedureName`.  
To access resources outside of the project, use the full URL.
- **HTTP method:** Most commonly `WLResourceRequest.GET` or `WLResourceRequest.POST`
- **timeout:** optional, request timeout in milliseconds

## setQueryParameter

```
resourceRequest.setQueryParameter("params", ["MobileFirst_Platform"]);
```

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

- In MobileFirst JavaScript adapters, which use ordered nameless parameters, pass an array of parameters with the name `params`.
- In Java adapters or external resources, use `setQueryParameter` for each parameter.

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

## send(body)

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

The `send()` method triggers the request.

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

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.

## 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.

## Results

Both the `onSuccess` and `onFailure` callbacks receive a `response` object, which typically contains the following properties:

- **status**: The HTTP response status
- **responseJSON**: An object that contains the data that is returned by the invoked procedure, and additional information about the procedure invocation.

The object is returned to a corresponding success/failure handler.

```
{
  "errors": [],
  "info": [],
  "warnings": [],
  "isSuccessful": true,
  "responseHeaders": {
    "Cache-Control": "no-cache, must-revalidate, post-check=0, pre-check=0"
  },
  "responseTime": 491,
  "statusCode": 200,
  "statusReason": "OK",
  "totalTime": 592,
  "Items": [{
    "creator": "Jon Fingas",
    "link": "http://www.engadget.com/2014/11/10/harvard-used-cameras-to-check-attendance/?ncid=rss_truncated",
    "pubDate": "Mon, 10 Nov 2014 02:21:00 -0500",
    "title": "Harvard used cameras to track attendance without telling students"
  }, {
    "creator": "Jon Fingas",
    "link": "http://www.engadget.com/2014/11/10/bmw-ev-charging-street-lights/?ncid=rss_truncated",
    "pubDate": "Mon, 10 Nov 2014 00:10:00 -0500",
    "title": "BMW's new street lights will charge your electric car"
  }, {
    "creator": "Daniel Cooper",
    "link": "http://www.engadget.com/2014/11/09/hwyc-lumia-925/?ncid=rss_truncated",
    "pubDate": "Sun, 09 Nov 2014 22:43:00 -0500",
    "title": "How would you change Nokia's Lumia 925?"
  }
]}
}
```

- `errors`, `info`, and `warnings` are optional arrays of strings that contain messages.
- The `isSuccessful` property is set to `true` if the procedure invocation succeeded (even if no data was retrieved), or to `false` otherwise.
- The response can contain other metadata such as `responseHeaders`, `responseTime`, `statusCode`, `statusReason`, and `totalTime`.

## Handling the result

The rest of the invocation result depends on what was retrieved from the back-end system. In this example, the `Items` element is a JSON representation of the XML code that was received from the back end, after the rules in the XSL file were applied.

```
function loadFeedsSuccess(result){
  WL.Logger.debug("Feed retrieve success");
  if (result.responseJSON.Items.length > 0)
    displayFeeds(result.responseJSON.Items)
;
}
```

## Sample application

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

The sample uses the HTTP adapter created in the HTTP Adapter tutorial ([../javascript-adapters/js-http-adapter](#)).

RSS Reader	
Connecting Securely to On-Premise Backends from MobileFirst on IBM Bluemix containers	Thu, 27 Aug 2015 11:09:24 +0000
ATS and Bitcode in iOS 9	Mon, 24 Aug 2015 07:45:20 +0000
First lab series for MFP 7.1 has been released	Sun, 23 Aug 2015 22:24:20 +0000
Integrating IBM MobileFirst on Bluemix Containers with Bluemix Services	Fri, 21 Aug 2015 07:26:27 +0000
Importing Visual studio Cordova project with Ionic and AngularJS into MobileFirst Platform	Thu, 20 Aug 2015 06:12:36 +0000
Handling binary responses in native Android using Java adapters	Wed, 19 Aug 2015 11:06:49 +0000
Try on Bluemix and migrate to on-prem MobileFirst Platform	Wed, 19 Aug 2015 10:36:51 +0000
Come chat with us!	Wed, 19 Aug 2015 05:38:49 +0000
Xamarin SDK for IBM MobileFirst 7.1 is live	Mon, 17 Aug 2015 04:19:06 +0000
Debugging a MFP Sliverlight and Windows 8.1 Universal Apps	Fri, 14 Aug 2015 19:13:44 +0000