# Invoking adapter procedures from hybrid client applications

### **Overview**

MobileFirst applications can adapt procedures to communicate with any data source without being subjected to sameorigin constraints.

### **Basic API**

Adapter procedures can be called from the client-side JavaScript:

```
WL.Client.invokeProcedure(invocationData, options);
```

#### invocationData

The first step to invoke an adapter procedure in JavaScript is to create an invocationData object. The invocationData object is used to provide invocation configuration and procedure parameters. It consists of a JSON block of properties.

```
var invocationData = {
   adapter : 'RSSReader',
   procedure : 'getFeedsFiltered'
,
   parameters : []
};
```

The properties are:

- adapter (mandatory): A string that contains the name of the adapter as specified in the adapter XML file.
- procedure (mandatory): The procedure name as defined in the XML file.
- parameters (mandatory): An array of parameters that are passed to the back-end JavaScript<sup>™</sup> procedure. Leave
  this property empty if no parameters are required.

## **Options**

The second step is to define failure and success behaviors in the options object.

```
var options = {
  onSuccess : loadFeedsSuccess
,
  onFailure : loadFeedsFailure,
  invocationContext: {}
};
```

The options object must be passed for all asynchronous calls to MobileFirst Server.

#### onSuccess

The onSuccess function is to be invoked on successful completion of the asynchronous call.

The response typically contains the following properties:

• invocationContext : The invocationContext object that was originally passed in the options object, or

undefined if no invocationContext object was passed

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

#### onFailure

The onFailure function is to be invoked on failure.

It includes both server-side and client-side errors (such as server connection failure or timed out calls).

The response typically contains the following properties:

- **invocationContext**: The invocationContext object that was originally passed in the options object, or undefined if no invocationContext object was passed.
- **status**: The HTTP response status
- **invocationResult**: An object that contains the data that is returned by the invoked procedure, and additional information about the procedure invocation.

#### invocationContext

invocationContext is an optional parameter. It is an object that is returned to the success and failure handlers.

The invocationContext object is used to preserve the context of the calling asynchronous service upon return from the service.

### **Invocation Results**

invocationResult is a JSON object that is returned. It contains the data and more 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), to false otherwise.

The response can contain other metadata such as responseHeaders, responseTime, statusCode, statusReason, and totalTime.

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 applying the rules in the XSL file.

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

## Sample application

Click to download

(http://public.dhe.ibm.com/software/products/en/MobileFirstPlatform/docs/v630/InvokingAdapterProceduresHybridProject.zip) the Studio project.

The attached sample uses the HTTP adapter created in the HTTP Adapter tutorial (../http-adapter-communicating-http-back-end-systems/).

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