Resource request from iOS applications

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/ios) to your Native iOS project.
- 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`.

Objective-C

```
WLResourceRequest *request = [WLResourceRequest requestWithURL:[NSURL URLWithString:@"/adapters/JavaAdapter/users/"] method:WLHttpM
ethodGet];
```

Swift

```
let request = WLResourceRequest(
    URL: NSURL(string: "/adapters/JavaAdapter/users"),
    method: WLHttpMethodGet
)
```

- 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 `sendWithCompletionHandler` method.
Supply a completion handler to handle the retrieved data:

Objective-C

```
[request sendWithCompletionHandler:^(WLResponse *response, NSError *error) {
    if (error == nil){
        NSLog(@"%@", response.responseText);
    } else {
        NSLog(@"%@", error.description);
    }
}];
```

Swift

```
request.sendWithCompletionHandler { (WLResponse response, NSError error) -> Void in
    if(error == nil){
        NSLog(response.responseText)
    }
    else{
        NSLog(error.description)
    }
}
```

Alternatively, you can use `sendWithDelegate` and provide a delegate that conforms to both the `NSURLConnectionDataDelegate` and `NSURLConnectionDelegate` protocols. This will allow you to handle the response with more granularity, such as handling binary responses.

Parameters

Before sending your request, you may want to add parameters as needed.

Path parameters

As explained above, **path** parameters (`/path/value1/value2`) are set during the creation of the `WLResourceRequest` object.

Query parameters

To send **query** parameters (`/path?param1=value1...`) use the `setQueryParameter` method for each parameter:

Objective-C

```
[request setQueryParameterValue:@"value1" forName:@"param1"];
[request setQueryParameterValue:@"value2" forName:@"param2"];
```

Swift

```
request.setQueryParameterValue("value1", forName: "param1")
request.setQueryParameterValue("value2", forName: "param2")
```

JavaScript adapters

JavaScript adapters use ordered nameless parameters. To pass parameters to a Javascript adapter, set an array of parameters with the name `params`:

Objective-C

```
[request setQueryParameterValue:@"['value1', 'value2']" forName:@"params"];
```

Swift

```
request.setQueryParameterValue("['value1', 'value2']", forName: "params")
```

This should be used with `WLHttpMethodGet`.

Form parameters

To send **form** parameters in the body, use `sendWithFormParameters` instead of `sendWithCompletionHandler`:

Objective-C

```
//@FormParam("height")
NSDictionary *formParams = @{@"height":@"175"};

//Sending the request with Form parameters
[request sendWithFormParameters:formParams completionHandler:^(WLResponse *response, NSError *error) {
    if (error == nil){
        NSLog(@"%@", response.responseText);
    } else {
        NSLog(@"%@", error.description);
    }
}];
```

Swift

```
//@FormParam("height")
let formParams = ["height":"175"]

//Sending the request with Form parameters
request.sendWithFormParameters(formParams) { (response, error) -> Void in
    if(error == nil){
        NSLog(response.responseText)
    }
    else{
        NSLog(error.description)
    }
}
```

JavaScript adapters

JavaScript adapters use ordered nameless parameters. To pass parameters to a Javascript adapter, set an array of parameters with the name `params`:

Objective-C

```
NSDictionary *formParams = @{@"params":@"['value1', 'value2']"};
```

Swift

```
let formParams = ["params":"['value1', 'value2']"]
```

This should be used with `WLHttpMethodPost`.

Header parameters

To send a parameter as an HTTP header use the `setHeaderValue` API:

Objective-C

```
//@HeaderParam("Date")
[request setHeaderValue:@"2015-06-06" forName:@"birthdate"];
```

Swift

```
//@HeaderParam("Date")
request.setHeaderValue("2015-06-06", forName: "birthdate")
```

Other custom body parameters

- `sendWithBody` allows you to set an arbitrary String in the body.
- `sendWithJSON` allows you to set an arbitrary dictionary in the body.
- `sendWithData` allows you to set an arbitrary `NSData` in the body.

The response

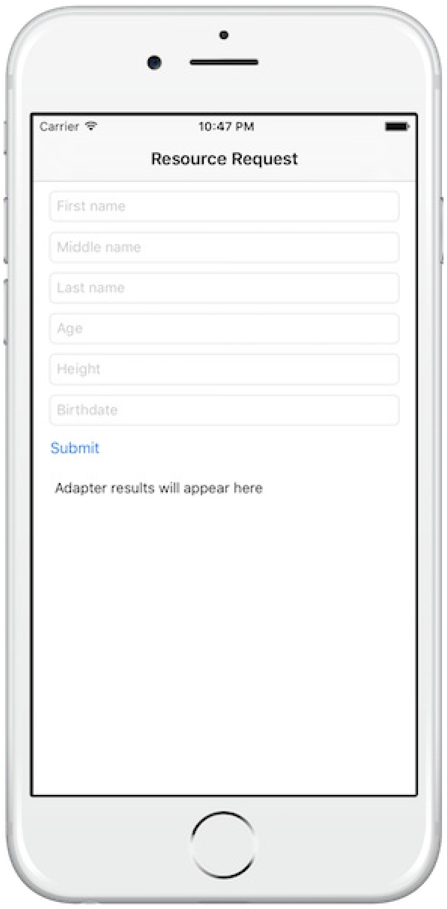
The `response` object contains the response data and you can use its methods and properties to retrieve the required information. Commonly used properties are `responseText` (String), `responseJSON` (Dictionary) (if the response is in JSON) and `status` (Int) (the HTTP status of the response).

Use the `response` and `error` objects to get the data that is retrieved from the adapter.

For more information

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

Sample application



The ResourceRequestSwift project contains an iOS application, implemented in Swift, that makes a resource request using a Java adapter.
The adapter Maven project contains the Java adapter used during the resource request call.

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

Sample usage

1. From a **Command-line** window, navigate to the project's root folder and run the command: `mfpdev app register`.
2. The sample uses the `JavaAdapter` contained in the Adapters Maven project. Use either Maven, MobileFirst CLI or your IDE of choice to build and deploy the adapter (../../../adapters/creating-adapters/).
3. To test or debug an adapter, see the testing and debugging adapters (../../../adapters/testing-and-debugging-adapters) tutorial.
4. Import the project to Xcode, and run the sample by clicking the **Run** button.

Note about iOS 9:

- Xcode 7 enables Application Transport Security (ATS) (https://developer.apple.com/library/ios/releasenotes/General/WhatsNewIniOS/Articles/iOS9.html#//apple_ref/doc/uid/TP40016198-SW14) by default. To complete the tutorial disable ATS (read more (http://iosdevtips.co/post/121756573323/ios-9-xcode-7-http-connect-server-error)).

  1. In Xcode, right-click the **[project]/info.plist file → Open As → Source Code**
  2. Paste the following:

     ```
     <key>NSAppTransportSecurity</key>
     <dict>
        <key>NSAllowsArbitraryLoads</key>
        <true/>
     </dict>
     ```