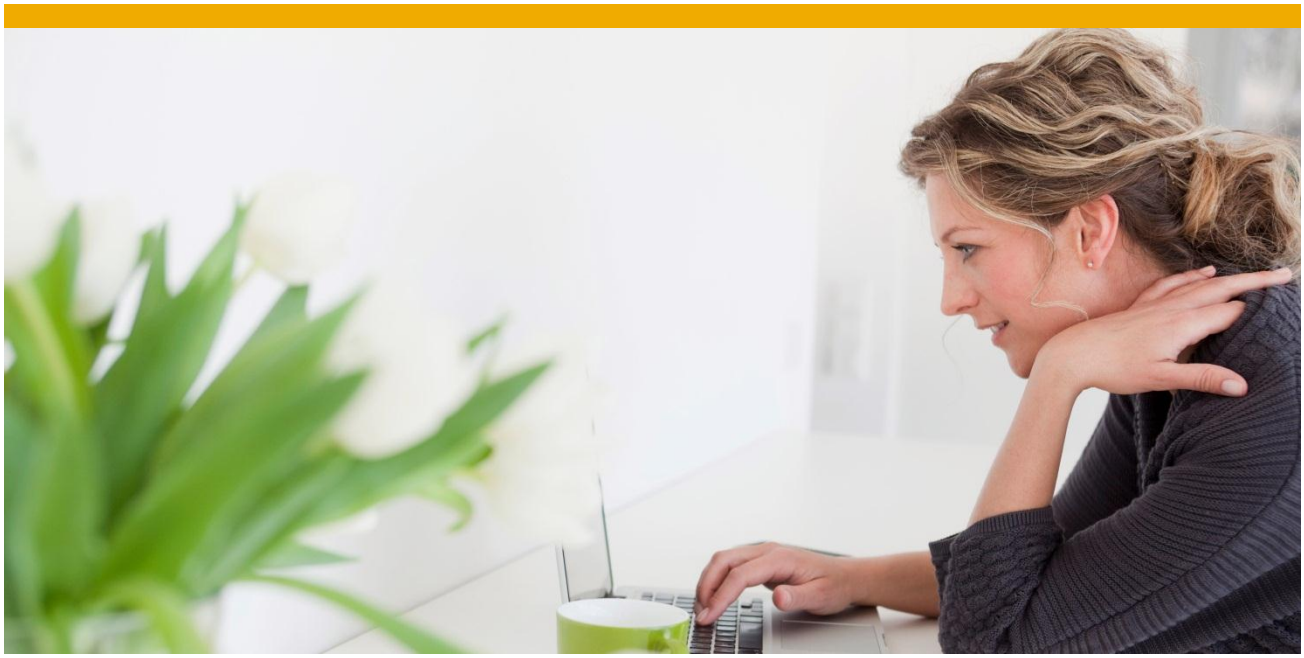

SUP OData Client SDK – OData Parser Simplified

This document aims at simplifying the use of SDM Parser by using the c-style macro calls that reduce the number of code lines to perform the same operation.

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INTRODUCTION

The target audience for this document are the iOS application developers who are using the SUP OData client library.

The OData SDK client on iOS consists of 3 major libraries apart from the **SUPProxyClient** library, which will be used for connectivity via the SUP. They are:-

- SDMConnectivity
- SDMParser
- SDMSupportability

SDMConnectivity is used for direct gateway connectivity bypassing the SUP infrastructure, which requires the enterprise to setup its own reverse proxy to filter the incoming requests.

SDMSupportability is used to log and trace the application requests for easier support during erroneous behavior.

SDMParser is used to parse the OData payload in case the client is connecting to an OData provider back-end. The SDMParser has a basic set of API (Objective-C styled), which we normally use to parse the service document, meta-data and the data document. This document highlights another API set which are written in C-style to simplify the application by reducing the code lines.

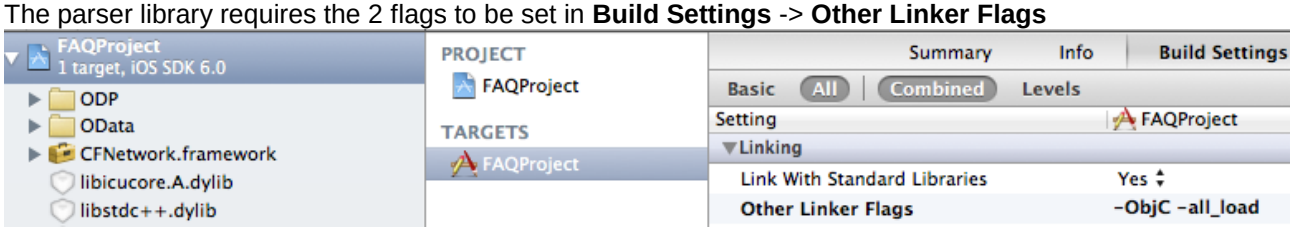
This document gives a comparison of the normal Objective-C method calls an application developer makes to parse the respective documents and the corresponding C-style macros that simplify the application coding. This document explains the process of parsing the data and accessing its properties.

SETTING UP THE PROJECT

Before starting with the application code, this section explains a couple of details that are not to be missed while setting up the project.

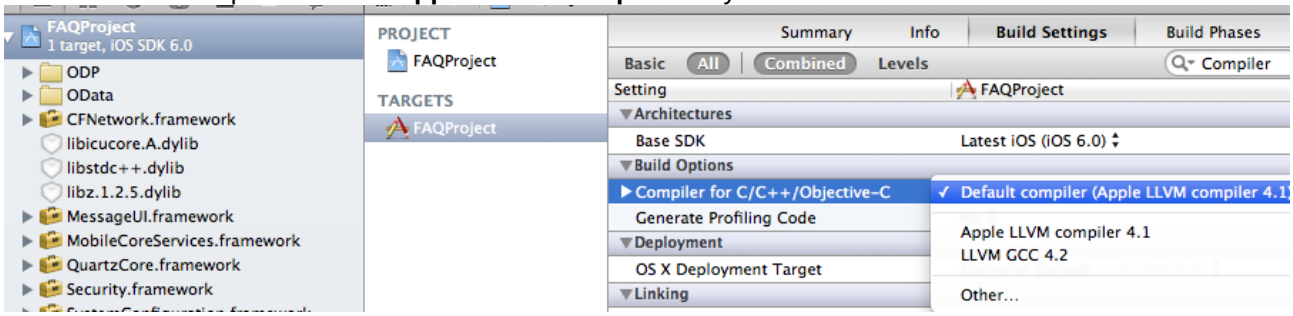
Linker Flags

The parser library requires the 2 flags to be set in **Build Settings** -> **Other Linker Flags**



Compiler

Make sure the compiler is set to **'Apple LLVM Compiler'** only.



PARSING SERVICE DOCUMENT

The parsing begins with the service document without which we will not be able to proceed further. Let us first look at the Objective-C API and then the simplified C-Style macro.

Objective-C Style

First few lines show the necessary header file imports. The code follows afterwards.

```
#import "SDMODataServiceDocumentParser.h"
#import "SDMODataServiceDocument.h"

- (void)parseServiceDocument
{
    NSData* parseableData = [@"response data" dataUsingEncoding:NSUTF8StringEncoding]; // DUMMY : This will hold the actual data to be parsed in NSData* format
    SDMODataServiceDocumentParser* parser = [[SDMODataServiceDocumentParser alloc] init];
    [parser parse:parseableData];
    SDMODataServiceDocument* serviceDocument = [parser.serviceDocument retain];
    [parser release];
}
```

C-Style

Now, instead of the **SDMODataServiceDocumentParser.h** header file, we will import a new header file **SDMParser.h** which encloses the C-style API. The code for the C-style API follows.

```
#import "SDMParser.h"
#import "SDMODataServiceDocument.h"

- (void)parseServiceDocument
{
    NSData* parseableData = [@"response data" dataUsingEncoding:NSUTF8StringEncoding]; // DUMMY : This will hold the actual data to be parsed in NSData* format
    SDMODataServiceDocument* serviceDocument = [sdmParseODataServiceDocumentXML(parseableData) retain];
}
```

One line of code replaces 4-5 lines of code and memory management.

PARSING META DOCUMENT

The next document that needs to be parsed is the metadata document that is obtained by appending $metadata to the service document URL. Like the previous section, we will first look at the normal Objective-C style API first and then the shortened C-Style macro later.

Objective-C Style

We need to import 2 more header files on top of the previously imported header file (refer the previous sections). The code to parse the document follows.

```
#import "SDMODataMetaDocumentParser.h"
#import "SDMODataSchema.h"

- (void)parseMetaData
{
    NSData* parseableData = [@"metadata" dataUsingEncoding:NSUTF8StringEncoding]; // DUMMY : This will hold the meta data to be parsed in NSData* format
    SDMODataMetaDocumentParser* metaParser = [[SDMODataMetaDocumentParser alloc] initWithServiceDocument:serviceDocument]; // Initialize with the previously obtained service documemt
    [metaParser parse:parseableData];
    SDMODataSchema* metaSchema = [metaParser.serviceDocument getSchema];
}
```

C-Style

Since we have already imported the **SDMParser.h** header file, all you need to do is import the **SDMODataSchema.h** header file. The simple version of the code follows.

```
#import "SDMODataSchema.h"

- (void)parseMetaData
{
    NSData* parseableData = [@"metadata" dataUsingEncoding:NSUTF8StringEncoding]; // DUMMY : This will hold the actual data to be parsed in NSData* format
    SDMODataSchema* metaSchema = sdmParseODataSchemaXML(parseableData, serviceDocument); // Pass the service document obtained in the previous section
}
```

PARSING A COLLECTION OF ENTRIES (DATA)

It is to be noted here that before parsing data, it is mandatory that the developer fetches the service document and meta-data, parses them and stores it locally for it to be used by the data parser.

Objective-C style

We need import 2 more header files as shown below. The code with the Objective-C interface follows.

```
#import "SDMODataCollection.h"
#import "SDMODataDataParser.h"

- (void)parseData
{
    NSData* parseableData = [@"data" dataUsingEncoding:NSUTF8StringEncoding]; // DUMMY : This will hold the actual data to be parsed in NSData* format
    SDMODataCollection* collection = [metaSchema getCollectionByName:@"CollectionName"]; // Schema obtained from the previous section. Collection name of your choice
    SDMODataDataParser* dataParser = [[SDMODataDataParser alloc] initWithEntitySchema:collection.entitySchema andServiceDocument:serviceDocument]; // Service document obtained from the first section
    [dataParser parse:parseableData];
    NSMutableArray* entries = dataParser.entries;
}
```

C-Style

```
#import "SDMODataCollection.h"

- (void)parseData
{
    NSData* parseableData = [@"data" dataUsingEncoding:NSUTF8StringEncoding]; // DUMMY : This will hold the actual data to be parsed in NSData* format
    SDMODataCollection* collection = [metaSchema getCollectionByName:@"CollectionName"]; // Schema obtained from the previous section
    NSMutableArray* entries = sdmParseODataEntriesXML(parseableData, collection.entitySchema, serviceDocument);// Service document obtained from the first section
}
```

READING THE PROPERTIES OF AN ENTRY

Once we obtain the array of entries, we need to read the desired propert(y)ies of the entry for further operations. It is to be understood that the array so obtained in the previous section will hold objects of type **SDMODataEntry**. So the application can either choose to extract all the entries by looping on the array OR extract the desired entry if the application is already aware of the position of the entry in the array.

Once an entry is extracted, the code snippet below shows how to read the property. Here let us assume the property name is “NAME”. We need to import a header file **SDMODataEntry.h** in order to work with its methods.

```
#import "SDMODataEntry.h"

   for (SDMODataEntry* entry in entries)  // Entries obtained in the previous section
   {
      SDMODataPropertyValueObject* propValueObj = [entry getPropertyValueByPath:@"NAME"];
      SDMODataPropertyValueString* propValueStr = (SDMODataPropertyValueString *)propValueObj;
      NSString* propValue = [propValueStr getValue];
   }
```

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