PRODUCT DEFINTION

# Columbus M3 CE AP Automation Connector

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# Version history

| Version | Date | Created by | Description |
|---|---|---|---|
| 1.0 | 2021-01-08 | Fredrika Ståhl | First version |
| 2.0 | 2021-02-10 | Fredrika Ståhl | Master data imported through Data lake |
| 3.0 | 2021-05-05 | Fredrika Ståhl | Data lake for initial load and APIs for delta data |
| 4.0 | 2022-01-17 | Moa Sandström | Updated M3 limitations |
| 5.0 | 2022-02-09 | Moa Sandström | Updated required tables M3 |

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# 1. Introduction

This document covers the Medius Accounts Payable Automation Multi-Tenant Cloud M3 integration interface. This document will give an overview of the integration as well as some technical descriptions. All descriptions are based on the integration for Infor M3 Cloud/Infor OS.

## 1.1. System overview

This chapter will give a brief description of the system on a high level.

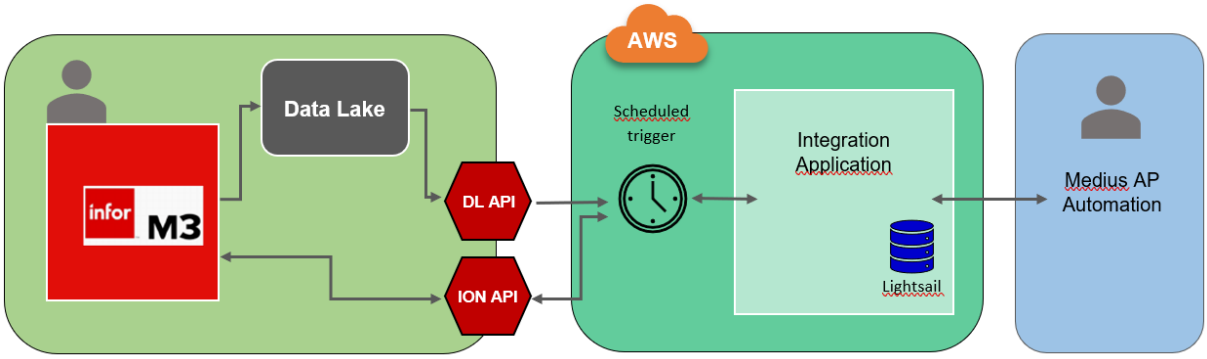



*Image 1. System overview*

The integration service runs within Amazon Web Services (AWS) on an EC2 server. This virtual server ensures scalability and security. The integration service is always active however, all the data flows are run by a schedule set in the service.

# 2. Solution overview

The integration service consists of three interfaces in Amazon web services (AWS). The communication is done in both directions but objects in the M3 standard are never changed. Invoices are updated through APS450MI.

A short description of the interfaces:

- Master data, sends formatted data from M3 to Medius AP Automation (Medius APA).
- Invoice posting, sends invoice data from Medius APA to M3.
- Invoice verification, sends verification in the form of the voucher number from M3 to Medius APA of the posted invoice.

## 2.1. Master data

This interface is responsible for synchronizing master data from M3 to Medius APA. The initial load is done through Data Lake. The synchronization is performed in a set order: Units, Currencies, Currency rates, Dimension values, Dimension restrictions, VAT codes, Payment terms, Suppliers, Items and Purchase orders. This is done to make sure that the later objects, for instance purchase orders, have all the data needed to function. Below entities are processed through this interface.

Once all data has been loaded, a flag is changed in the configuration enabling retrieval of delta data and new objects through EXPORTMI and standard APIs (specified in section 2.4.4). The interface is run by a schedule with a frequency interval based on type of master data.

| Master data entity | M3 table | Purpose | Frequency |
|---|---|---|---|
| Units | CSYTAB | Get units | One time/day |
| Currencies | CCURRA | Get currencies | One time/day |
| Currency rates | CCURRA | Get currency rates | One time/day |
| Dimension values | FCHACC | Get dimensions | One time/hour |
| Dimension restrictions | FCHACC | Get restrictions | One time/hour |
| Dimension intervalls | FCHCHK | Cross-account checking | (under development) |
| VAT code incl. rates | CSYTAB + CVATPC | Get vat codes incl rates | One time/day |

| | | | |
|---|---|---|---|
| Payment terms | CSYTAB | Get payment terms | One time/day |
| Suppliers | CIDMAS | Get suppliers | One time/hour |
| Suppliers | CSUDIV | Get supplier exceptions | One time/hour |
| Suppliers | CIDVEN | Get supplier finance | One time/hour |
| Suppliers | CSYTAB | Get system table | One time/hour |
| Suppliers | CBANAC | Get bank account information | One time/hour |
| Suppliers | CIDADR | Get supplier address | One time/hour |
| Items | MITMAS | Get item | One time/hour |
| Items | MITPOP | Get supplier item | One time/hour |
| Purchase orders | MPHEAD | Get order heads | One time/hour |
| Purchase orders | MPLINE | Get order lines | One time/hour |
| Purchase orders | MPOEXP | Get order charge lines | One time/hour |
| Purchase orders | FGRECL | Get delivery lines | One time/hour |
| Purchase orders | FGRPCL | Get delivery charge lines | One time/hour |
| Purchase orders | CMNUSR | Get user definition | One time/hour |
| Purchase orders | MITAUN | Get alternative unit of measure | One time/hour |

*Table 1. Master data tables*

## 2.2. Invoices

This flow contains two interfaces, Invoice posting and Invoice verification. Before this flow can be run Medius APA must have been populated with master data. Once the master data is in place an invoice is created in Medius APA. The invoice posting interface then formats and adds the data to M3 through APS450 via APIs.

## 2.3. Purchase Orders

The purpose of the purchase order flow is to sync purchase orders and changes that occur on the orders. These changes include changes on lines such as quantities, addition/removal of items as well as deliveries of goods on the purchase order.

The default behavior can be described as follows:
Initially, when the purchase order is created, it is not synced to Medius APA. It is only synced when there has been a recent delivery of goods on the order (status 70 to 80). The data from the calls will be joined and enriched before it is sent to Medius APA.

# 3. Installation

## 3.1. Configuration in Medius APA

This chapter will describe the setup needed in Medius AP Automation. Once you have navigated to “Client application”. Fill out the form as stated in *Image* 2. M3 integration. Scope is set to Integration.Erp, see *Image 3*. Scope. To be setup by Medius Application consultant.


*Image* 2. M3 integration


*Image 3*. Scope

## 3.2. Configuration in Infor OS (M3)

This chapter will describe the setup needed in Infor OS. The general procedure is to setup an integration user (AD user) to run the integration. The integration user needs to be setup in MNS150 with access to APIs and tables listed below. With this user a backend service can be created in ION API (*Image 4*. Backend Service). When the service is created credentials can be downloaded, creating

a service account associated with the credentials (*Image 5*. Download Credentials). To be setup by M3 technical consultant.

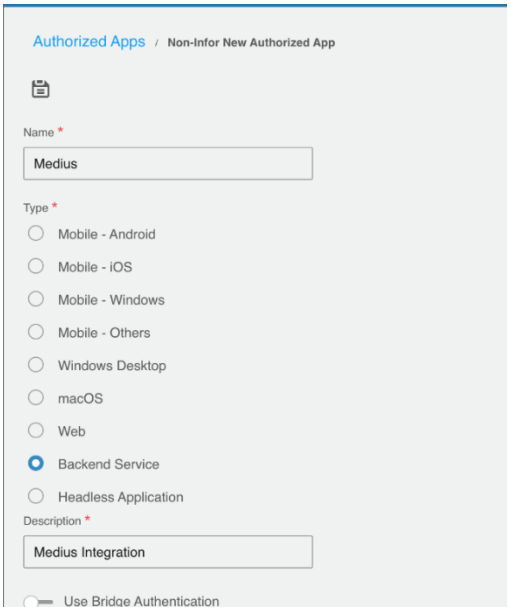



*Image 4*. Backend Service

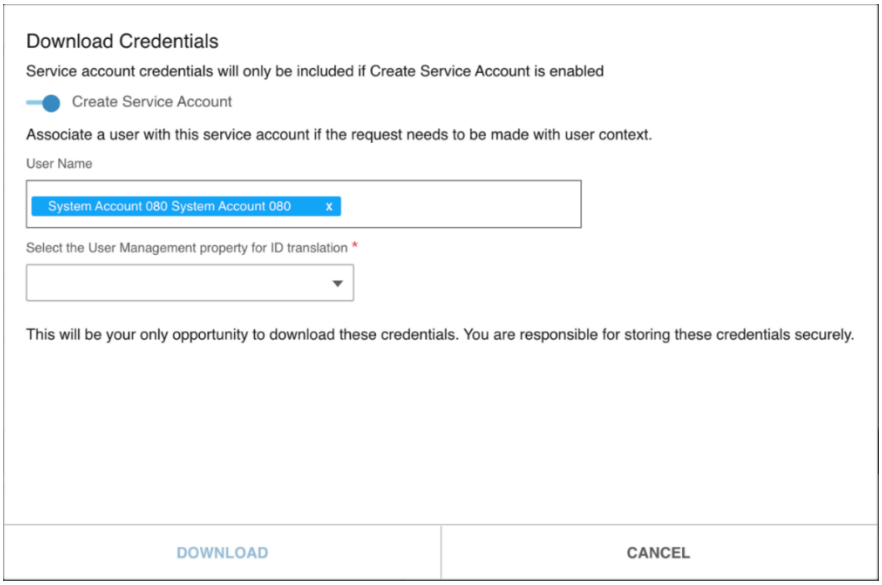



*Image 5*. Download Credentials

## 3.3. Integration configuration file

The integration service is hosted on an EC2 server within Amazon Web Services (AWS). A new company is added through an interface for the integration service. A new config file is then automatically created in the Nitrite database (embedded no-sql db). The configuration needs to include authentication information for both M3 (Infor OS) and Medius APA. Authentication is done via OAUTH2 and requires both an M3 user and a Medius user. When a new customer has been added, timestamps can be set in the config file to determine how far back we want to check for master and transactional data. To be setup by Integration consultant.

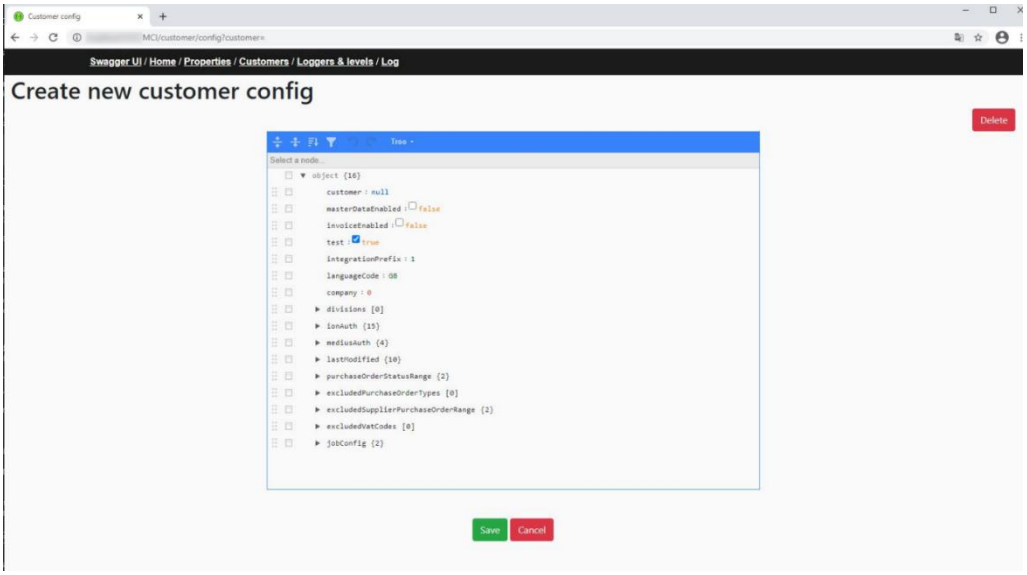



*Image 6. Create a new customer config*

## 3.4. Infor Data Lake – Initial load

Data Lake is Infor's data warehouse exposing access to copies of M3 tables in csv format. Data access is provided by Data Lake's own setup of rest APIs. Details of the setup can be found in Appendix 1: Data Lake setup guide. To be setup by M3 technical consultant.

## 3.5. The service user

The service user running the integration needs access to the tables listed under section 2.1 and the APIs below. To be setup by M3 technical consultant.

| API |
| --- |
| CRS075MI |
| APS450MI |
| APS455MI |
| APS110MI |
| CRS630MI |
| GLS200MI |
| GLS470MI |
| MMS200MI |
| EXPORTMI |

*Table 3. M3 tables and APIs*

# 4. Prerequisites in M3

Standard Implementation Accelerator settings are not fully compatible with the required setup for Medius APA. The customer (in extension the company implementing the IA) is responsible for validating and adjusting setup in CRS630, CRS395 and APS905. Besides this, the following setup is required:

| Setup | Comment |
|---|---|
| FAM function AP50 in CRS405 | |
| APS900 Tolerance levels | |
| PPS280 Costing elements | Just as long as the workaround for manual coding line on purchase order based invoices is used (currently ongoing development). |

*Table 4. Prerequisites in M3*

## 4.1. Known limitations

In the following chapter, known limitations are listed divided by technical/business limitations.

### 4.1.1 Technical limitations

Updates are handled synchronously, which means that there might be a small delay between updates in M3 or Medius APA and when they are sent to Medius APA or M3 respectively. This is by design to minimize the number of requests and reduce the risk of bottlenecks.

### 4.1.2 Business limitations

Updates and additions of new functionality are tightly connected with Infor's development of M3 programs and corresponding APIs. The rest of this section lists the known business limitations in the integration to this day.

| Master data import | Supported | Current status |
|---|---|---|
| Payment date | Not supported | Development ongoing, APIs available. Planned to be released Q1/Q2 2022. |

| | | |
|---|---|---|
| Payment information | Not supported | Development ongoing, APIs available. Planned to be released Q1/Q2 2022. |

| **Invoice transactions** | **Supported** | **Current status** |
|---|---|---|
| Coding line on order based invoice (if preliminary booking is not used) | Not supported | Not supported by Infor |
| Booking of deviations when quantity deviations occur | Workaround in progress | Not supported by Infor |
| Head level match when not a perfect match between PO and GR. | Head level match not recommended | Not supported by Infor/Later workaround possible in M3 |
| External charges | Supported with limitations | Must be in the same currency and not third-party charge. |
| Manual update of GR or PO in M3 (APS370, PPS200, PPS330) | Not supported | Development ongoing. Planned to be released Q1/Q2 2022. |
| Accounting identity interval restrictions | Not supported | Development ongoing. Planned to be released Q1/Q2 2022. |

*Table 5. Known limitations in M3 regarding master data and invoice transactions*

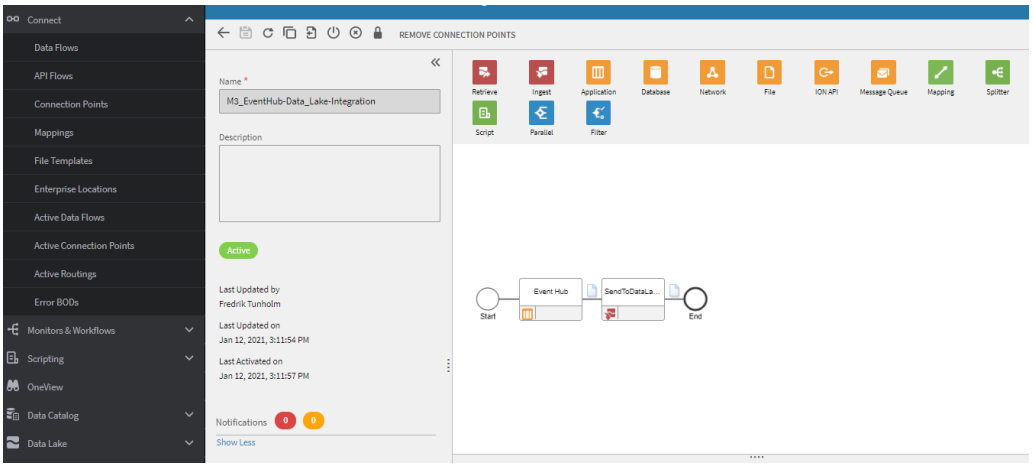
# 5. Appendix 1: Data Lake Setup Guide

## 5.1. Required Data Lake tables

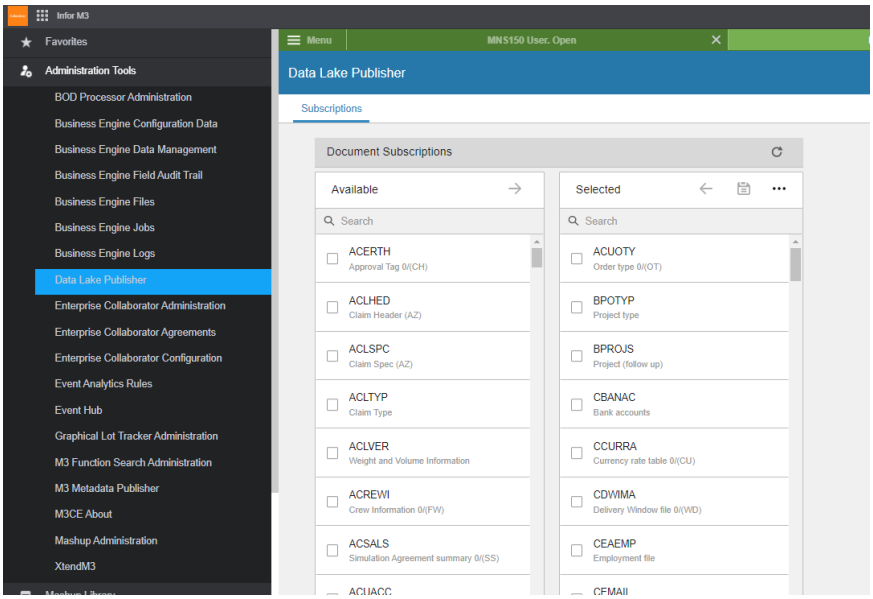
See full list of tables required under section 2.1.

## 5.2. ION Preparations

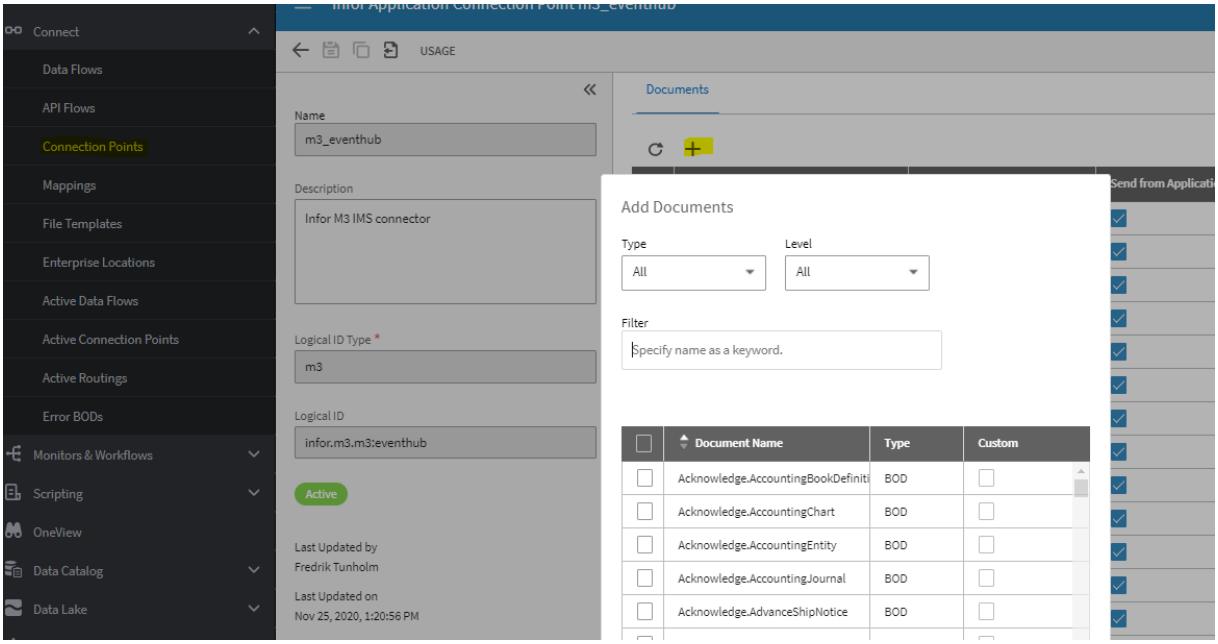
Create a Data Flow that will capture events from Event Hub and send them to Data Lake via the Ingest step.



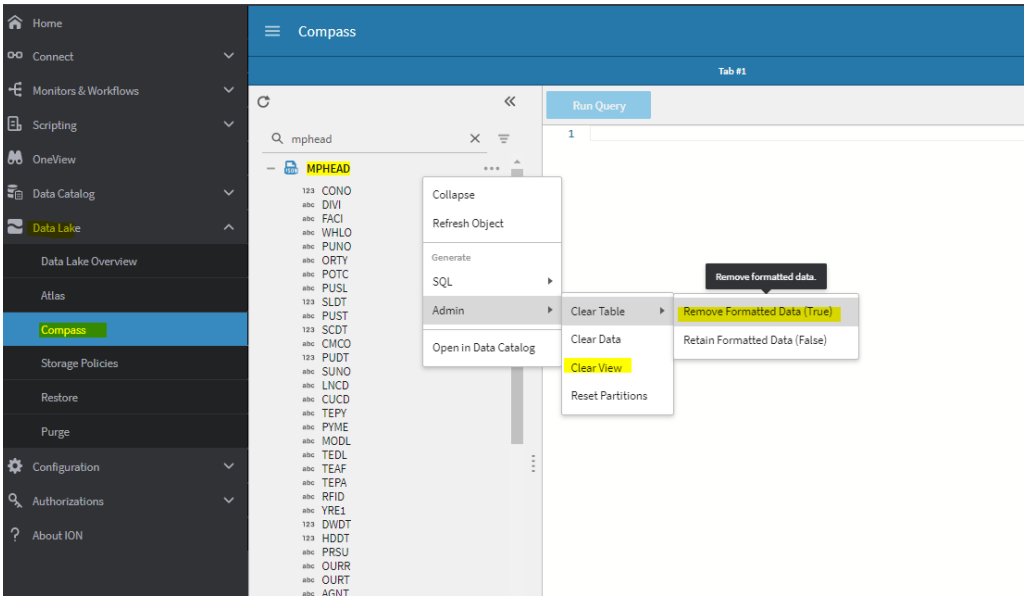

Select all required tables in the Data Lake Publisher



Add the tables in the Event Hub Connection Point. “Send from Application” should be checked.

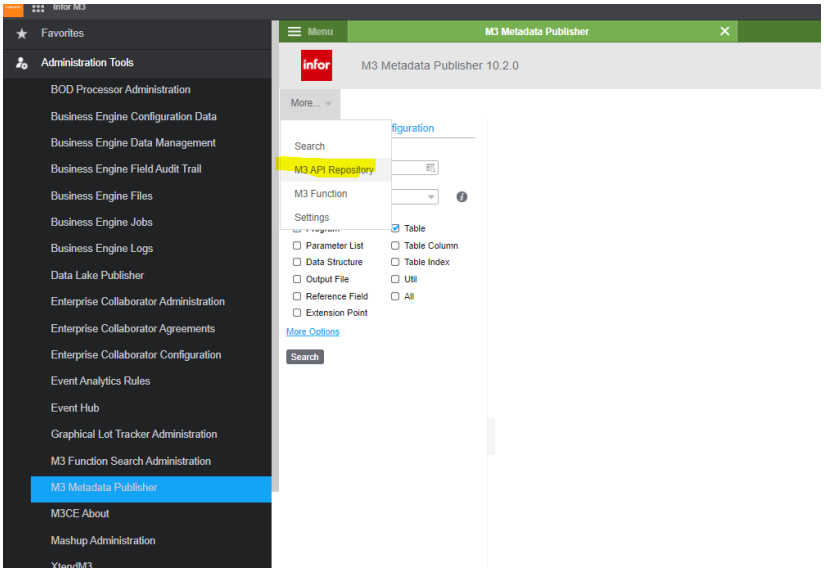



If Infor has introduced changes to the table metadata, then it will be necessary to trigger a metadata refresh. Run “Remove formatted data” and “Clear view” for the tables that require a metadata refresh.

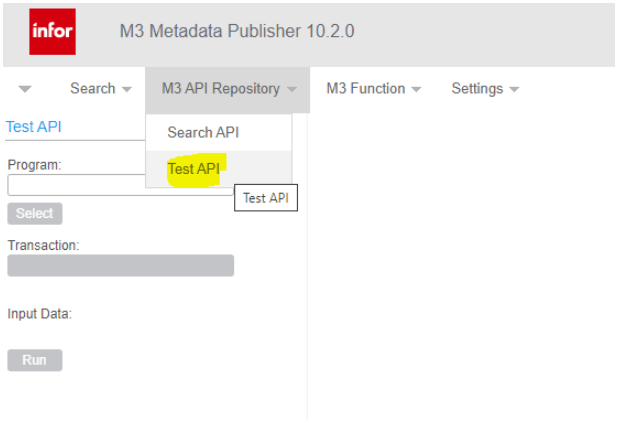


## 5.3. Load data from M3 to Data Lake (Initial Load)

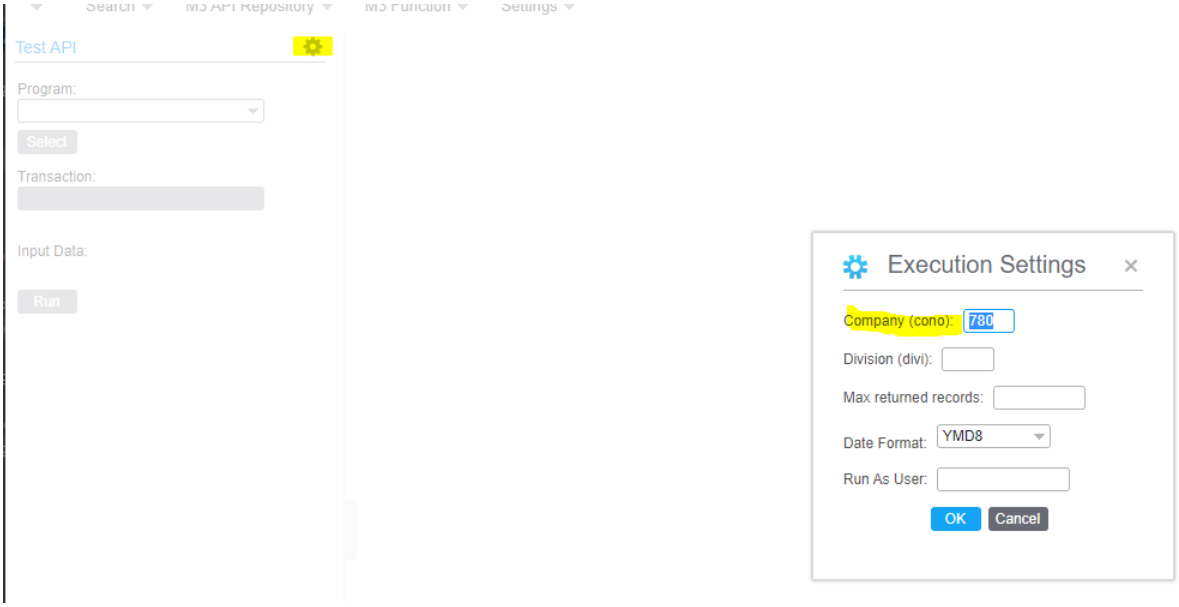
Go to the M3 Metadata Publisher, select “M3 API Repository” (opening this might require a right-click and then “open in new tab”).



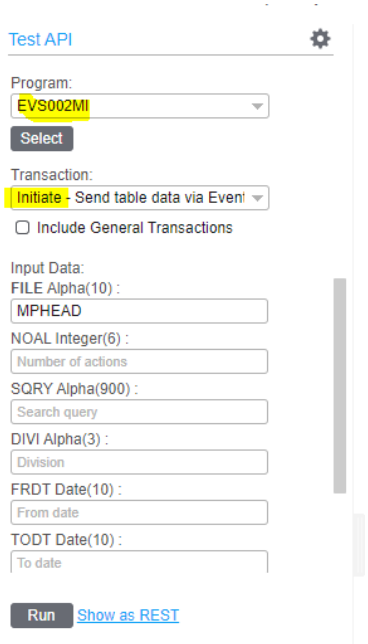

Go to “Test API”



Configure the Test API with the company to do the initial load for (division is optional, leaving it empty will load data for all divisions on selected company).

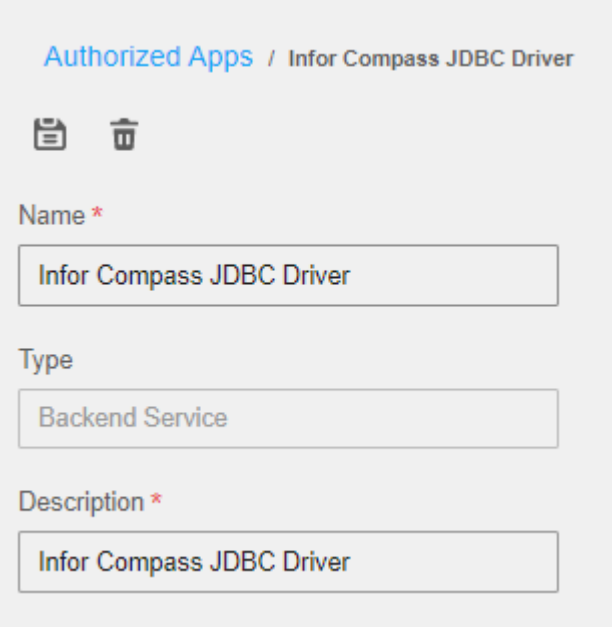


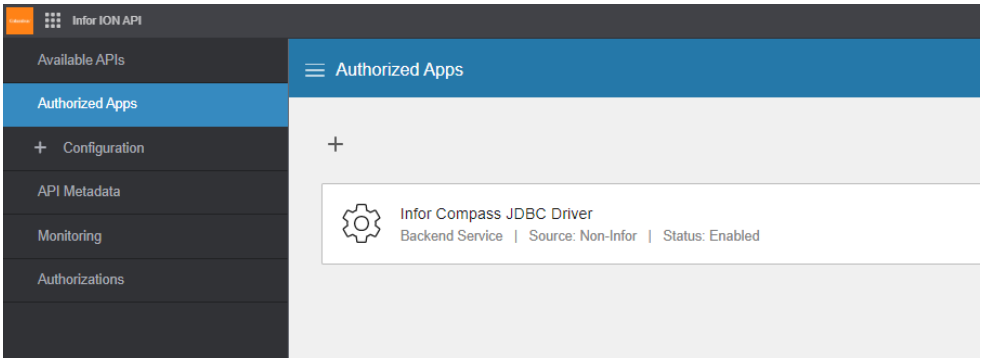

Select the program “EVS002MI” and transaction “Initiate”. Input the table to do the initial load on (FILE). Make sure the field “DTLK” is set to ‘1’ (this means that the data will be sent to Data Lake). Repeat this step for all the required tables.



## 5.4. Data Lake Authorization

Create an authorized app in Infor ION API. The naming of this authorization is important if the usage of external SQL query editors is to be used to query this Data Lake, which might be good for debugging purposes. Make sure “Issue Refresh Tokens” is enabled for this configuration.



After the authorized app is created, download the credentials file. It is important that this set of credentials is setup with the service account to be used for the integration. The generated file is the credentials that will be used by the integration when communicating with both Data Lake and M3 API.