



# DYNAMICS 365 DATA TAGGING & OBFUSCATION

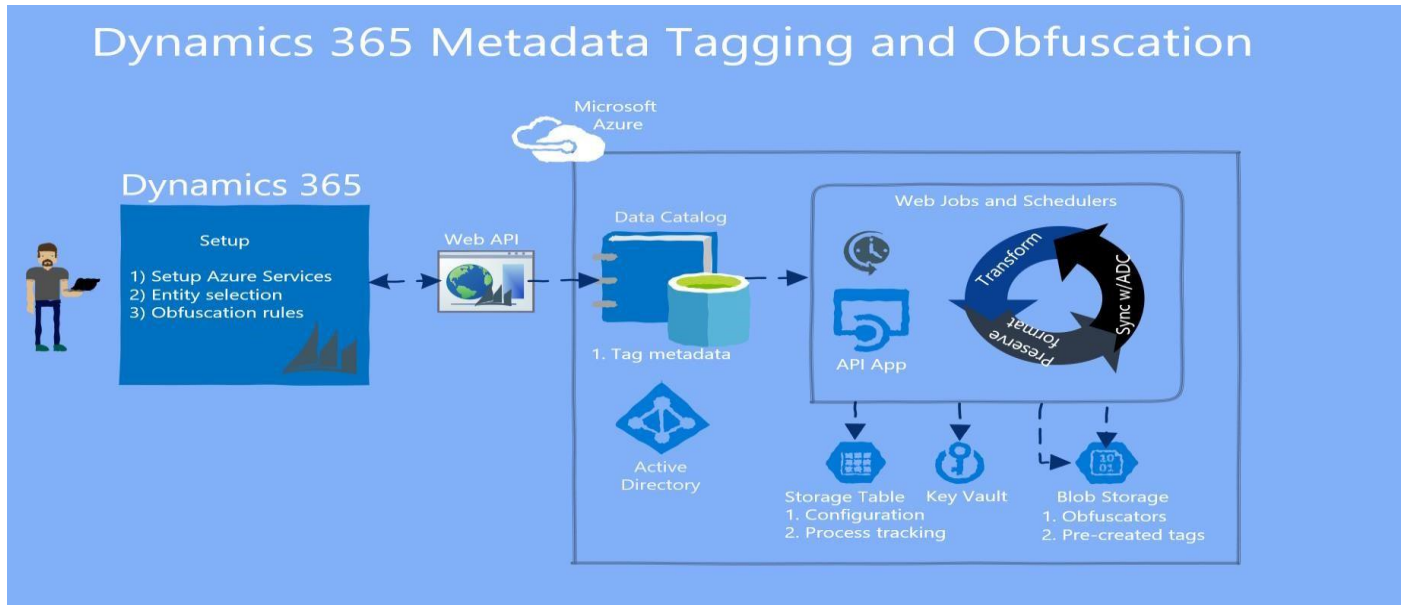
A tool to add entity into CRM, obfuscate the entity and sync Glossary with Azure table storage and give them a weightage.

## Contents

Introduction .....	2
Verify Solution Installation .....	2
Obfuscation Set-up .....	3
Dynamics 365 Azure setup .....	3
Template Deployment.....	4
Changes to Web App.....	8
Grant Permissions .....	9
Change Manifest Settings.....	9
Storage SAS Token .....	10
Add CORS.....	10
Add Tables .....	11
AzureFunctionURL .....	11
Key Vault Manual Steps.....	12
Obfuscation Configuration in CRM.....	12
Adding Entity for Obfuscation .....	12
Glossary Term Execution Order .....	16
Adding a new Glossary – Obfuscation Agent.....	17
Edit a Glossary term – Obfuscation Agent combination.....	18
Least Permissions required to access Obfuscation area .....	19
End User Experience .....	20

# Introduction

Microsoft Dynamics 365 provides several tools for managing data. This tool is for data obfuscation, It look for all available entities in CRM and Obfuscate entity fields based on tagging at Azure Data Catalog and weightage configured in CRM...



# Verify Solution Installation

Once install the solution from AppSource. Go to **Settings | Solutions** and Check for the solution.

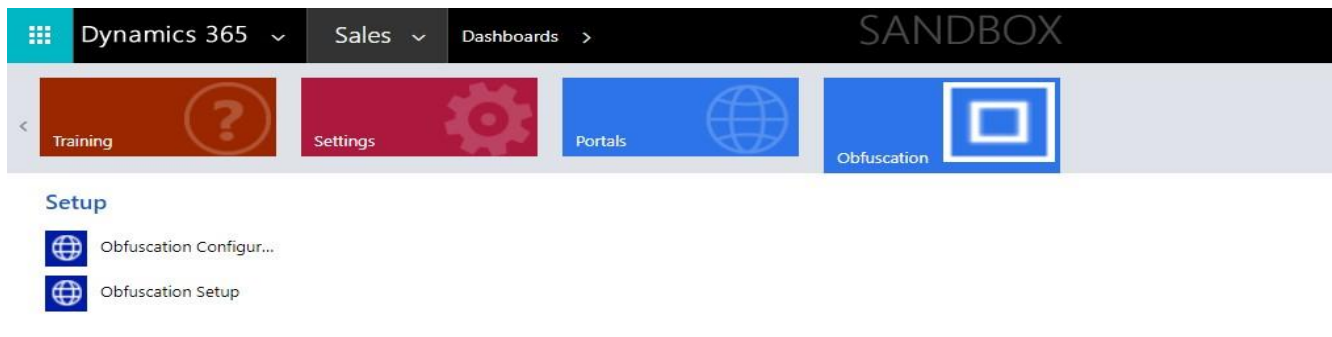
All Solutions ▾

🔍 📄 📅 📊 📌 📁 📧 📧 📧 📧 📧 More Actions ▾

Name	Display Name	Version	Installed On ▾	Package Type	Publisher
CRMDDataObfuscation	CRM Data Obfuscation	1.0.0.0	4/2/2018	Managed	Microsoft Dynamics

Go to Data Obfuscation Site Map Menu Check for Sub menu option

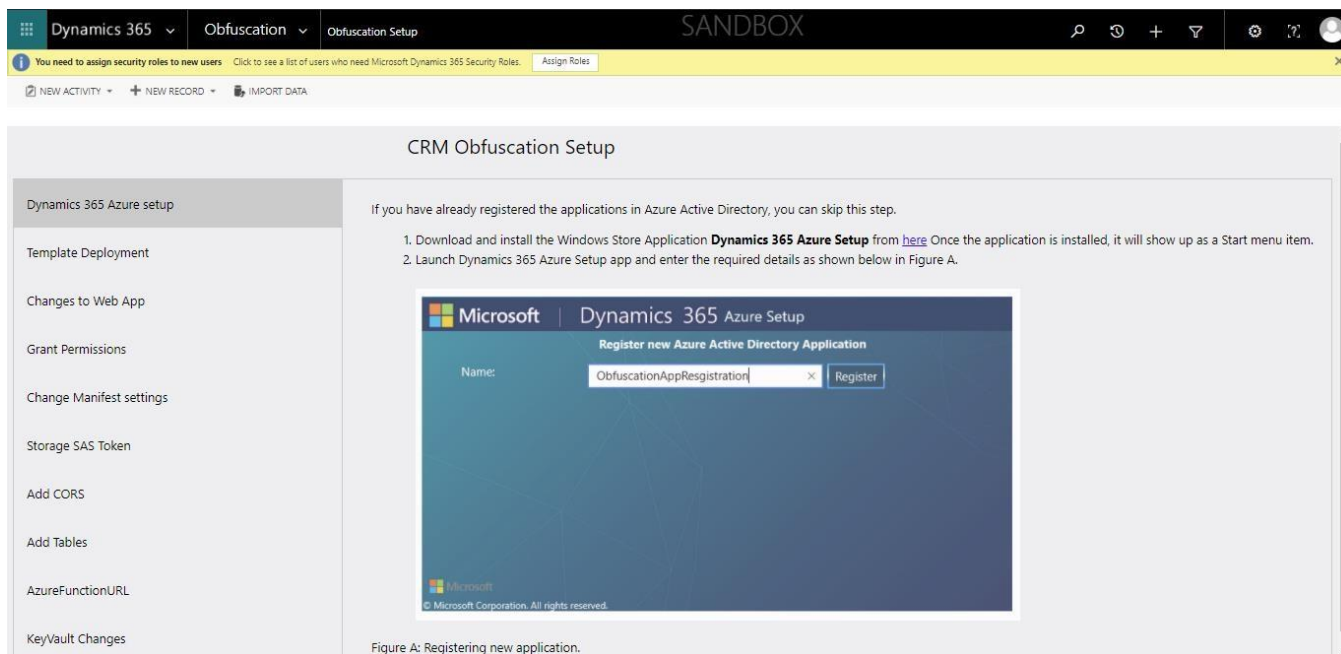
- Obfuscation Configuration
- Obfuscation Setup



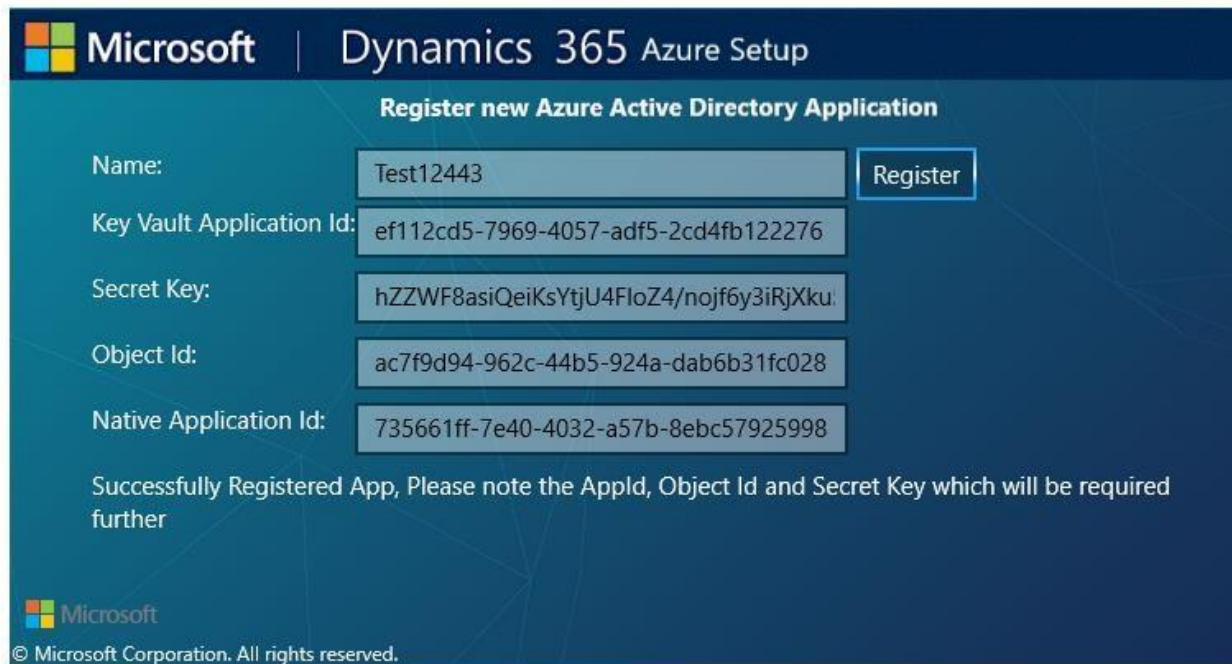
# Obfuscation Set-up

## Dynamics 365 Azure setup

Go to **Obfuscation** | **Obfuscation Setup** | **Dynamics 365 Azure setup**



After Register the application, below is the snap shot for Keys



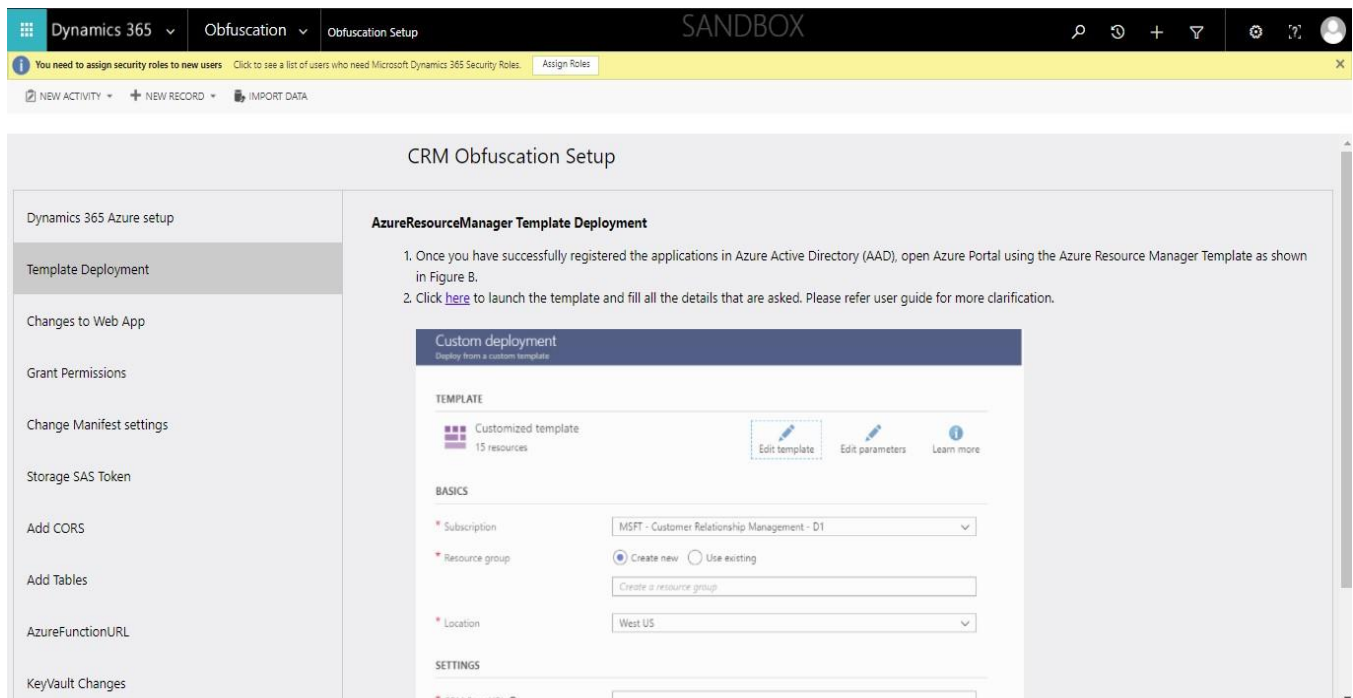
The screenshot shows a window titled "Microsoft | Dynamics 365 Azure Setup". Inside, the heading is "Register new Azure Active Directory Application". The form contains the following fields and values:

Field	Value
Name:	Test12443
Key Vault Application Id:	ef112cd5-7969-4057-adf5-2cd4fb122276
Secret Key:	hZZWF8asiQeiKsYtjU4FloZ4/nojf6y3iRjXku!
Object Id:	ac7f9d94-962c-44b5-924a-dab6b31fc028
Native Application Id:	735661ff-7e40-4032-a57b-8ebc57925998

Below the fields, a message states: "Successfully Registered App, Please note the Appld, Object Id and Secret Key which will be required further". At the bottom left, the Microsoft logo and copyright notice "© Microsoft Corporation. All rights reserved." are visible.

## Template Deployment

Go to **Sales|Obfuscation|Obfuscation Setup |Template Deployment**



## Filling Custom Deployment Template:

Launch the custom deployment template and fill the details:

**BASICS**

\*

Subscription

MSFT - CUSTOMER RELATIONSHIP MANAGEMENT - D3

\*

Resource group

Create new

Use existing

Create a resource group

\*

Location

Central US

**SETTINGS**

\*

CRM Base URL ⓘ

https://ocepoc.crm.dynamics.com

✓

\*

CRM Username ⓘ

\*\*\*\*\*

✓

\*

CRM Password ⓘ

\*\*\*\*\*

✓

\*

Web API Client Id ⓘ

\*

Web API Secret ⓘ

---

* Web API Object Id ⓘ	<input type="text"/>
* Native Client Id ⓘ	<input type="text"/>
* Data Catalog Client Id ⓘ	<input type="text"/>
* Data Catalog Name ⓘ	<input type="text"/>
* Data Catalog Secret ⓘ	<input type="text"/>
* Data Catalog Tenant Id ⓘ	<input type="text"/>
* Stakeholder Object Ids ⓘ	<input type="text"/>
* Stakeholder Upns ⓘ	<input type="text"/>
Web Site Name ⓘ	<input type="text" value="ObfuscationWebApp"/>
Key Vault Name ⓘ	<input type="text" value="obskeyvault"/>
Storage Account Name ⓘ	<input type="text" value="obfuscationstorageacc"/>
Storage Account Type ⓘ	<input type="text" value="Standard_LRS"/>

---

Function App Name ⓘ	<input type="text" value="ObfuscationFunctionApp"/>
Hosting Plan Name ⓘ	<input type="text" value="ObfuscationAppServicePlan"/>
Sku Name ⓘ	<input type="text" value="S3"/>
Sku Capacity ⓘ	<input type="text" value="1"/>
CRMAPI Version ⓘ	<input type="text" value="v8.2"/>

---

**TERMS AND CONDITIONS**

[Azure Marketplace Terms](#) | [Azure Marketplace](#)

By clicking "Purchase," I (a) agree to the applicable legal terms associated with the offering; (b) authorize Microsoft to charge or bill my current payment method for the fees associated the offering(s), including applicable taxes, with the same billing frequency as my Azure subscription, until I discontinue use of the offering(s); and (c) agree that, if the deployment involves 3rd party offerings, Microsoft may share my contact information and other details of such deployment with the publisher of that offering.

☐ I agree to the terms and conditions stated above

---

☐ Pin to dashboard

**Purchase**

## Azure Resource Manager Template Properties

- **Subscription:** Select the correct subscription from the dropdown list.

- **Resource Group:** Please note the following option choices...
  - **First Time setup:** Be sure to select **Create new** option and add a unique resource group name. **Important:** Save the resource group name for future references.
  - **for any upgrades:** Select the **Use existing** option to use the existing resource group name.
- **Location:** Select the correct location from the dropdown list.
- **CRM Base URL:** CRM instance URL
- **CRM Username:** Use the CRM logged in user name (email address) with Admin privileges.
- **CRM Password:** Implied.
- **Web API Client Id:** Paste the existing Key Vault Application Id
- **Web API Secret Id:** Paste the existing Secret Id
- **Web API Object Id:** Paste the existing Object Id
- **Native Client Id:** Paste the existing Native Application Client Id
- **Data Catalog Client Id:** Get the Data Client Id from Azure Data catalog
- **Data Catalog Name:** Get from Azure data catalog
- **Data Catalog Secret:** Get from Azure data catalog
- **Data Catalog Tenant Id:** Get from Azure data catalog
- **Stake Holder Object Id:** Get from Azure data catalog
- **Stake Holder Upns:** Get from Azure data catalog
- **Web Site Name:** Any unique website name with contiguous characters.
- **Key Vault Name:** Any unique KV name. **Important:** Please use contiguous lowercase letters only.
- **Database Account Name:** Alphanumeric Cosmos account name.
- **Storage Account Name:** Alphanumeric storage account name.
- **Storage account Type:** Select the correct value from the dropdown list.
- **Function App Name:**
- **Hosting Plan Name:** Use only unique contiguous lowercase characters.
- **Sku Name:** Select the correct value from the dropdown list.
- **Sku Capacity:** Suggest using the Default value of 1.
- **CRM Web APIVersion:** Select the correct value from the dropdown list.
- 

Agree the **Terms and Conditions** and click on the **Purchase** button.

Once the deployment Completed Below are the Azure components





## Grant Permissions

Go to **Sales|Obfuscation|Obfuscation Setup |Grant Permissions** and check the necessary setting for granting permission.

The screenshot shows the 'CRM Obfuscation Setup' interface. On the left, a sidebar lists various setup steps: Dynamics 365 Azure setup, Template Deployment, Changes to Web App, Grant Permissions (highlighted), Change Manifest settings, Storage SAS Token, Add CORS, Add Tables, AzureFunctionURL, and KeyVault Changes. The main content area displays the 'Grant Permissions' step with the following instructions:

1. Go to Azure Portal -> Choose NativeApp -> Click Settings -> Required Permissions
2. Click "Grant Permissions"

Two screenshots are included to illustrate the steps:

- The first screenshot shows the 'Obfuscation-Demo-Web-API' settings in the Azure Portal. The 'Settings' tab is selected, and the 'Required permissions' link under the 'API ACCESS' section is highlighted with a red box.
- The second screenshot shows the 'Required permissions' dialog box. The 'Grant Permissions' button is highlighted with a red box.

## Change Manifest Settings

Go to **Sales|Obfuscation|Obfuscation Setup |Check Manifest Settings** and check the necessary manifest settings.

The screenshot shows the 'CRM Obfuscation Setup' interface. On the left, a sidebar lists various setup steps: Dynamics 365 Azure setup, Template Deployment, Changes to Web App, Grant Permissions, Change Manifest settings (highlighted), Storage SAS Token, Add CORS, Add Tables, AzureFunctionURL, and KeyVault Changes. The main content area displays the 'Check Manifest Settings' step with the following instructions:

1. Go to Azure Portal -> Choose the WebApp -> Click Manifest
2. Change the "oauth2AllowImplicitFlow" to true

Two screenshots are included to illustrate the steps:

- The first screenshot shows the 'Obfuscation-Demo-Web-API' settings in the Azure Portal. The 'Manifest' tab is selected and highlighted with a red box.
- The second screenshot shows the 'Edit manifest' dialog box. The 'oauth2AllowImplicitFlow' property is highlighted with a red box, and its value is set to 'true'.

## Storage SAS Token

Go to **Sales|Obfuscation|Obfuscation Setup |Storage SAS Token** and generate the SAS token of Azure storage.

The screenshot shows the 'CRM Obfuscation Setup' interface. On the left, a sidebar lists various setup options: Dynamics 365 Azure setup, Template Deployment, Changes to Web App, Grant Permissions, Change Manifest settings, **Storage SAS Token** (highlighted), Add CORS, Add Tables, AzureFunctionURL, and KeyVault Changes. The main area is titled 'Generate SAS Token' and includes a numbered instruction: '1. Go to Azure Portal -> Choose the corresponding Storage Account -> click "Shared Access Signature"'. Below this, a screenshot of the Azure Portal 'Storage accounts' page is shown. In the Azure Portal screenshot, the 'sqlauditeus' storage account is selected, and the 'Shared access signatures' blade is open, displaying a list of storage accounts and their associated keys.

## Add CORS

Go to **Sales|Obfuscation|Obfuscation Setup |Add CORS** to create CORS rules.

The screenshot shows the 'CRM Obfuscation Setup' interface. On the left, the sidebar lists various setup options: Dynamics 365 Azure setup, Template Deployment, Changes to Web App, Grant Permissions, Change Manifest settings, Storage SAS Token, **Add CORS** (highlighted), Add Tables, AzureFunctionURL, and KeyVault Changes. The main area is titled 'Add CORS' and includes a numbered instruction: '1. Go to Azure Portal -> Choose the corresponding Storage Account -> click "CORS" in BLOB SERVICE section'. Below this, a screenshot of the Azure Portal 'Storage accounts' page is shown. In the Azure Portal screenshot, the 'obfuscationstorageacc' storage account is selected, and the 'BLOB SERVICE' blade is open, displaying a list of services. The 'CORS' service is highlighted with a red box.

## Add Tables

Go to **Sales|Obfuscation|Obfuscation Setup |Add Tables** and create tables.

Dynamics 365

Obfuscation

Obfuscation Setup

SANDBOX

You need to assign security roles to new users. Click to see a list of users who need Microsoft Dynamics 365 Security Roles. Assign Roles

NEW ACTIVITYNEW RECORDIMPORT DATA

CRM Obfuscation Setup

Dynamics 365 Azure setup

Template Deployment

Changes to Web App

Grant Permissions

Change Manifest settings

Storage SAS Token

Add CORS

Add Tables

AzureFunctionURL

KeyVault Changes

1. Go to Azure Portal -> Choose the corresponding Storage Account -> click "Tables Service"

Storage accounts

obfuscationstorageacc

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Storage Explorer (preview)

Access keys

Configuration

Encryption

Shared access signature

Resource group

ObfuscationTesting

Status

Primary Available

Location

West US

Subscription name

MSFT - CUSTOMER RELATIONSHIP MANAGEMENT - DS

Subscription ID

66c7a9b9-3d7e-4b2a-af8d-9c37a77b594a

Services

Table

REST-based object storage for unstructured data

Configure CORS rules

Setup custom domain

Tables

Tabular data storage

2. Create All below listed tables in Table Service

. ObfuscationAgent

. ObfuscationTag

## AzureFunctionURL

Go to **Sales|Obfuscation|Obfuscation Setup |AzureFunctionURL** to create and save the azure function URL.

Dynamics 365

Obfuscation

Obfuscation Setup

SANDBOX

You need to assign security roles to new users. Click to see a list of users who need Microsoft Dynamics 365 Security Roles. Assign Roles

NEW ACTIVITYNEW RECORDIMPORT DATA

CRM Obfuscation Setup

Dynamics 365 Azure setup

Template Deployment

Changes to Web App

Grant Permissions

Change Manifest settings

Storage SAS Token

Add CORS

Add Tables

AzureFunctionURL

KeyVault Changes

1. Go to Resource Group -> Click on Corresponding Function App

Resource groups

ObfuscationTesting

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Resource costs

Deployments

Policies

Properties

Locks

Subscription (tenant)

MSFT - CUSTOMER RELATIONSHIP MANA

Subscription ID

66c7a9b9-3d7e-4b2a-af8d-9c37a77b594a

Deployments

1 Successful

Filter by name

All types

All locations

5 items

Show hidden types

NAME

TYPE

ObfuscationAppServicePlan

App Service plan

ObfuscationFunctionApp

App Service

ObfuscationStorageAccount

Storage account

ObfuscationWebApp

App Service

ObfuscationKeyVault

Key vault

2. Click on GetKeyVaultSecrets -> Click on Get function URL -> Click on Copy and Save the URL

ObfuscationFunctionApp - GetKeyVaultSecrets

ObfuscationFunctionApp

MSFT - CUSTOMER RELATIONSHIP MANA

Get function URL

Copy

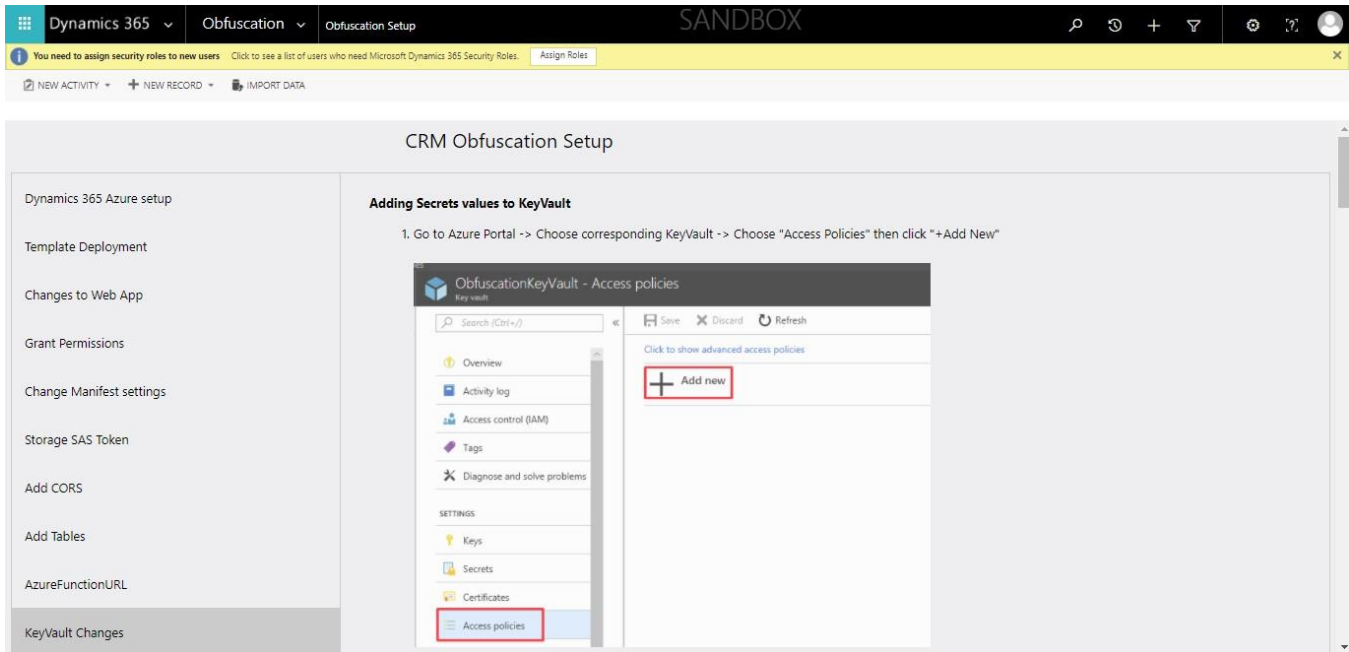
Get function URL

MICROSOFT LABS

PAGE 11

## Key Vault Manual Steps

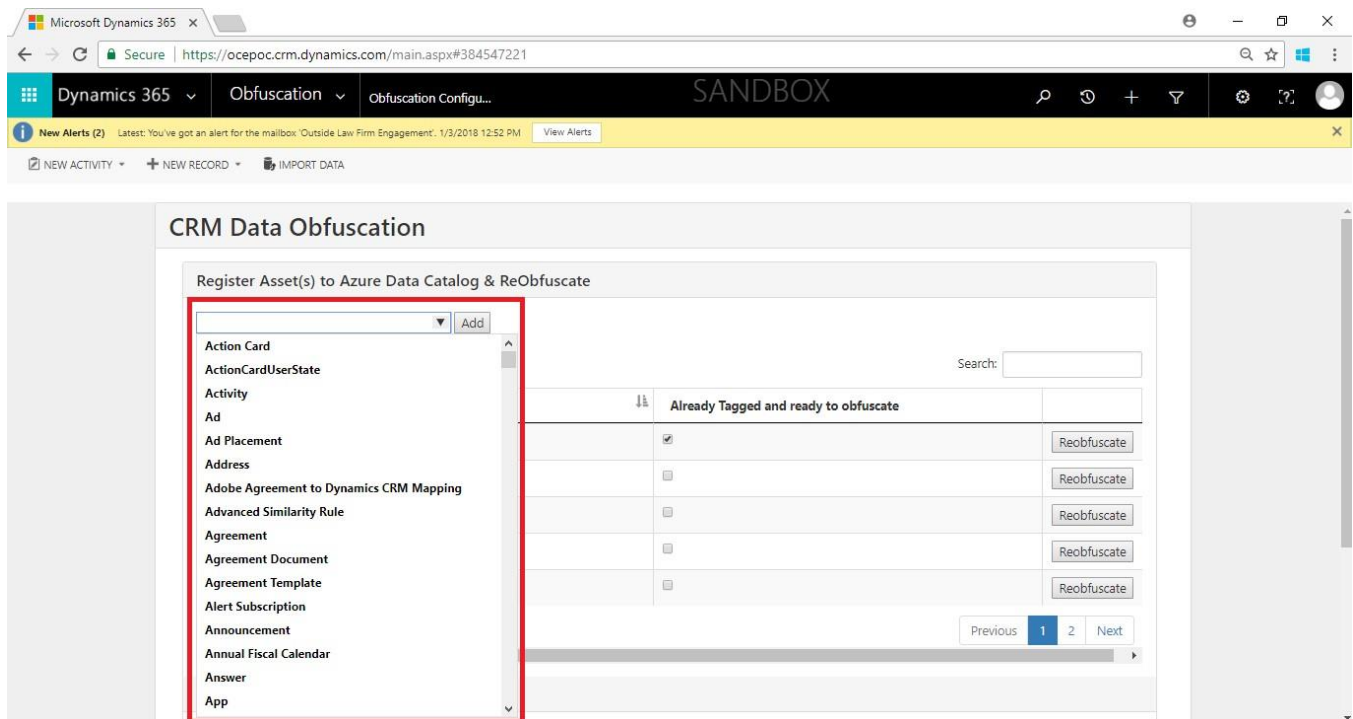
Go to **Sales|Obfuscation|Obfuscation Setup |Key Vault Manual Steps** and add secrets under key vault.



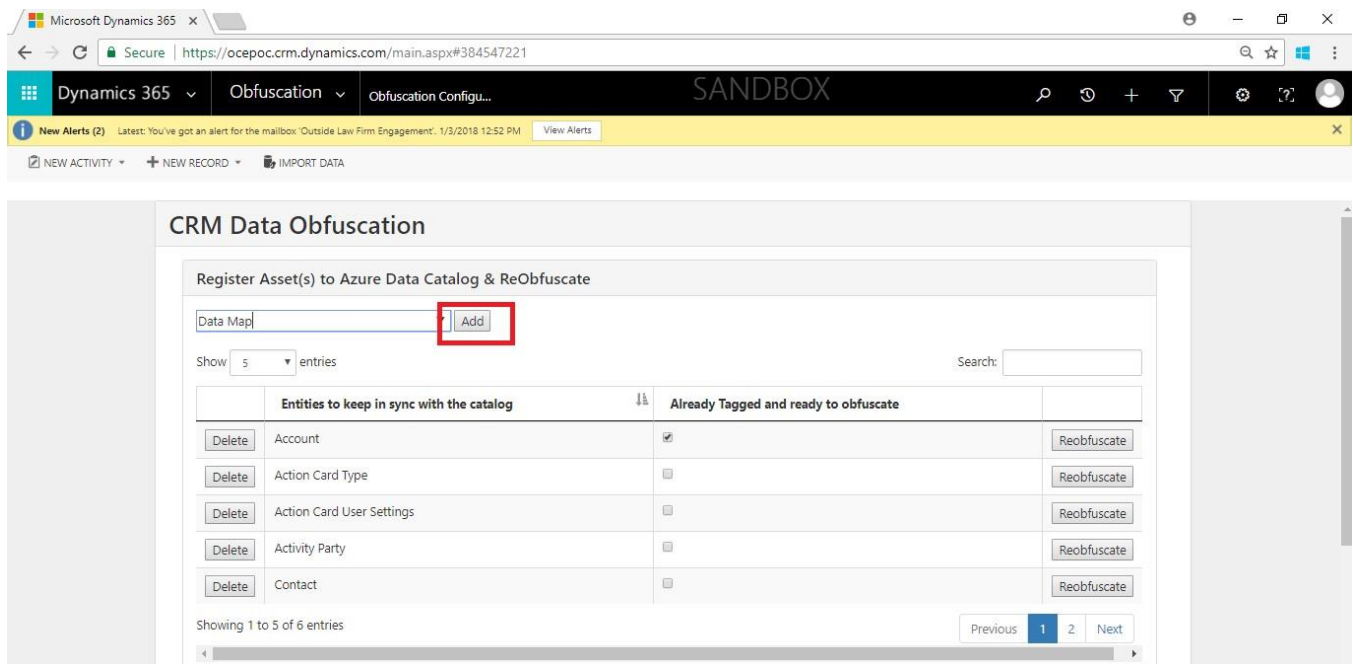
## Obfuscation Configuration in CRM

### Adding Entity for Obfuscation

1. Go to Obfuscation Configuration page and click on the drop down under register Asset(s) to Azure Data Catalog & ReObfuscate. All available entity will appear in the drop down.



2. Click on Entity name which you want to register and Click on Add Button.



3. Selected Entity gets added into the grid. Entity can be deleted or Reobfuscate.

**Delete:** Deletes the entity from the list

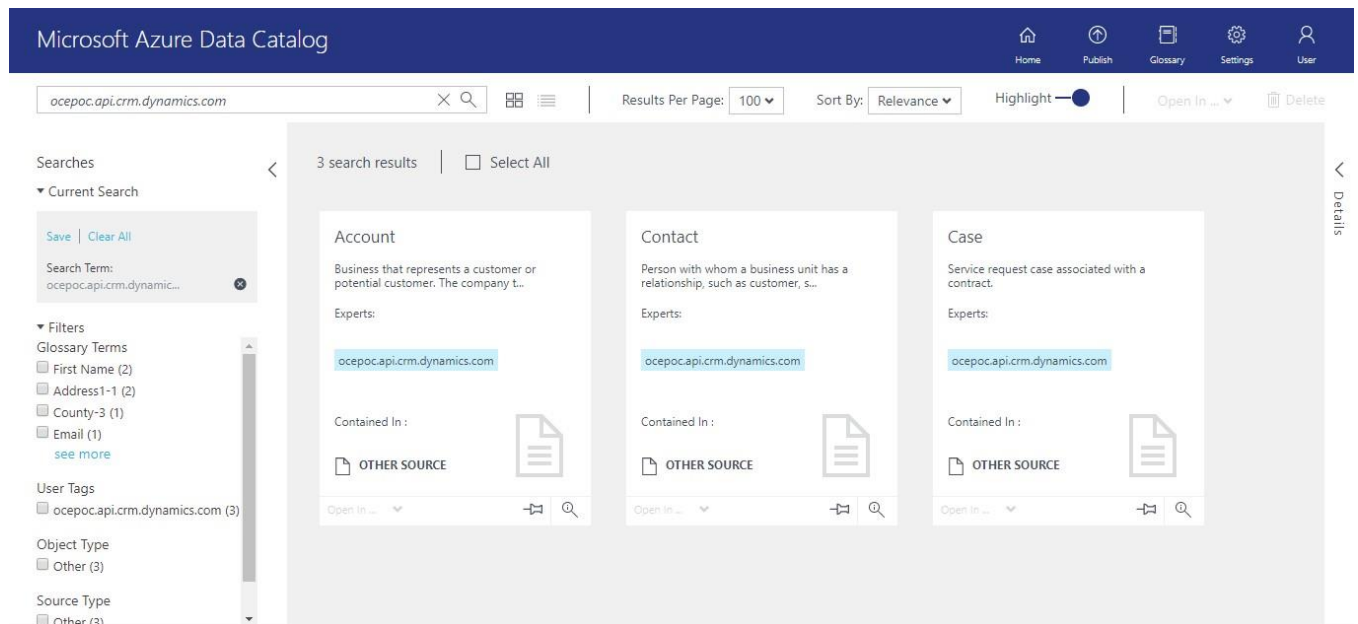
**Reobfuscate:** Clicking on this button will Re-Obfuscate the previously Obfuscated entities.

4. Navigate to Azure data catalog to add tags to the Selected entity. Enter the org name in the format of '**org.api.crm.dynamics.com**' to find out the listed entities in Azure Catalog. Pls. note that this entity related information must be pushed by the sync job. **By default, Web Job Sync**

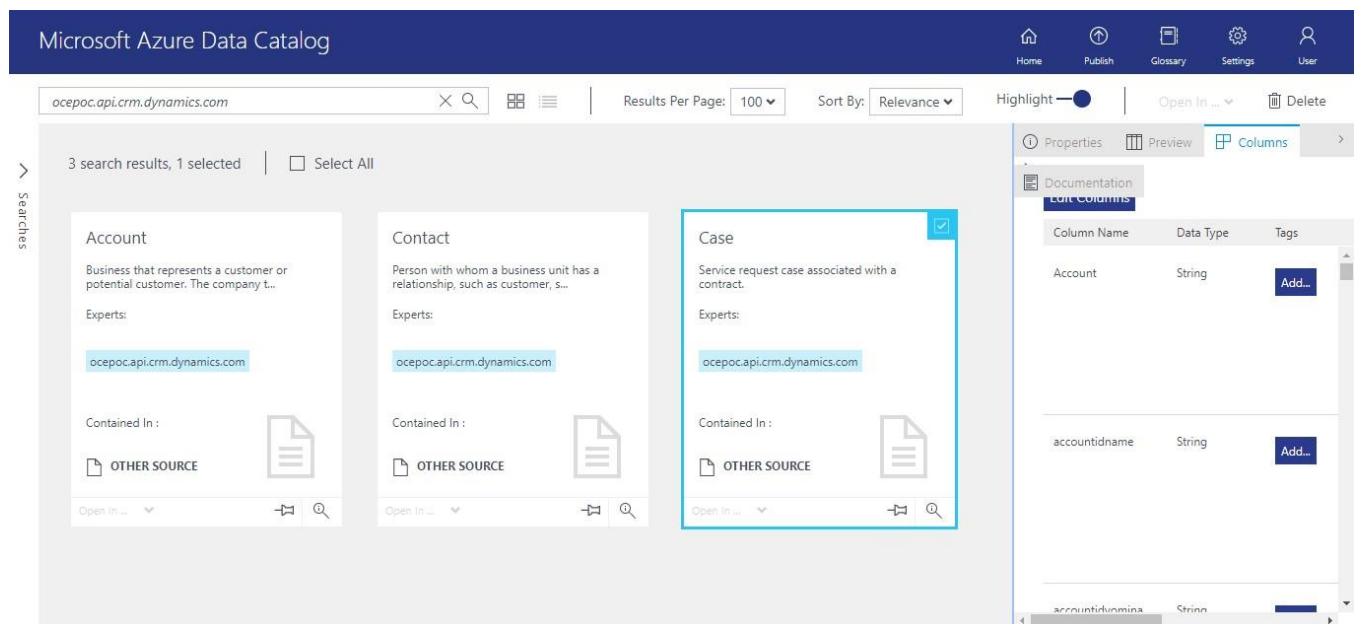
data between Azure Data Catalog and CRM will run on first minute in every hour and web job Obfuscation starts every 30<sup>th</sup> minute of every hour.

**This is configurable in Resource groups | Select the Resource Group | Select App Service | Select App Settings | Change Sync Schedule or Obfuscation schedule (chronic expression)**

Click on the displayed entity to add the tags

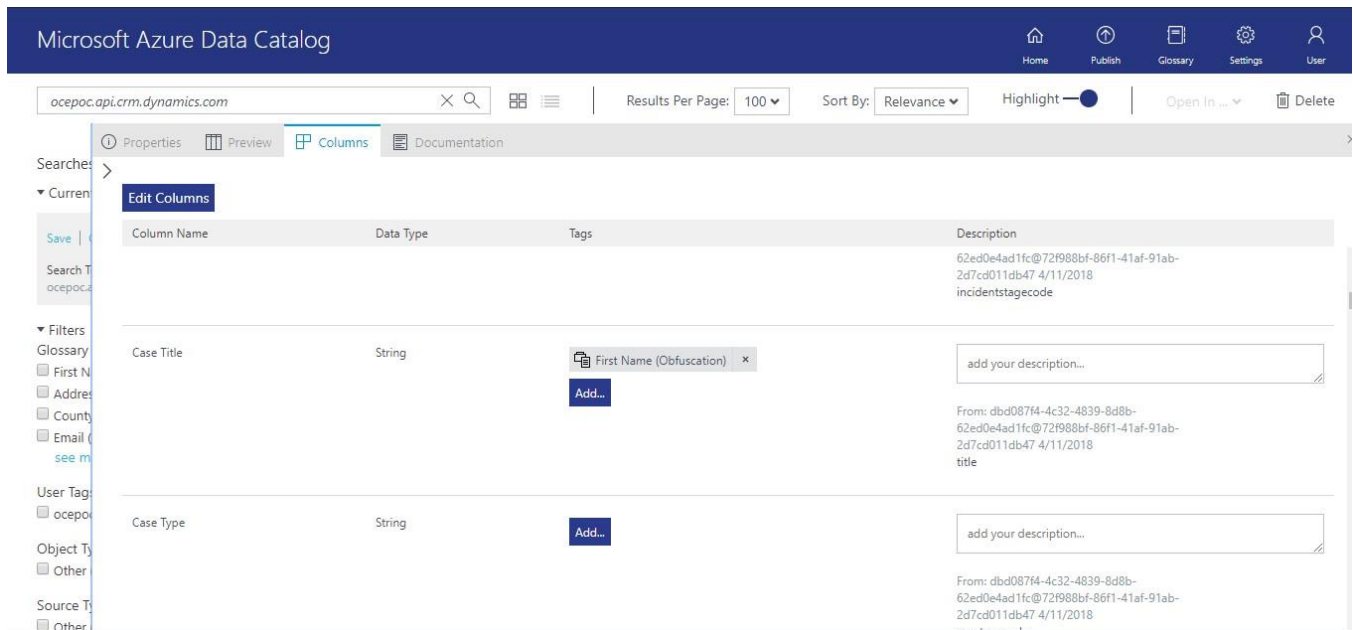


Select the entity and click on right side top 'Columns'



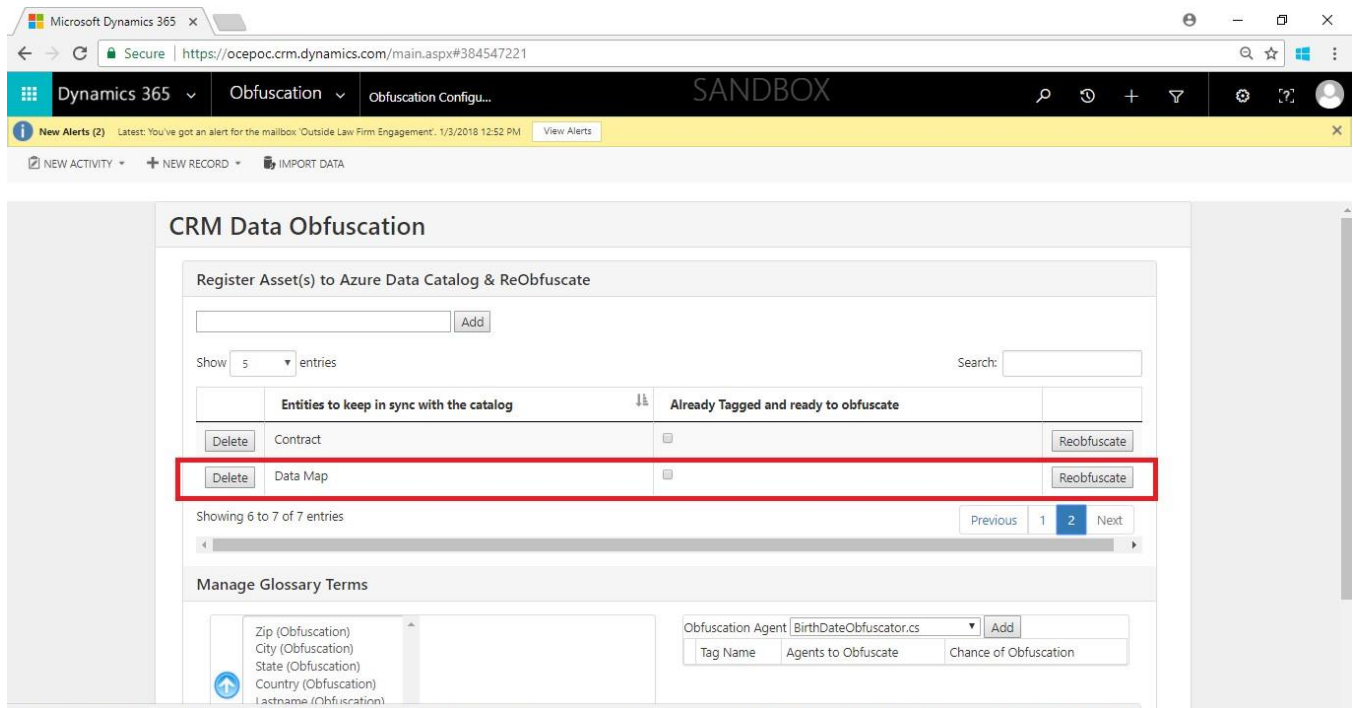


Add the catalog. In the below example We have added First Name Tag to Case Title column of Case entity.

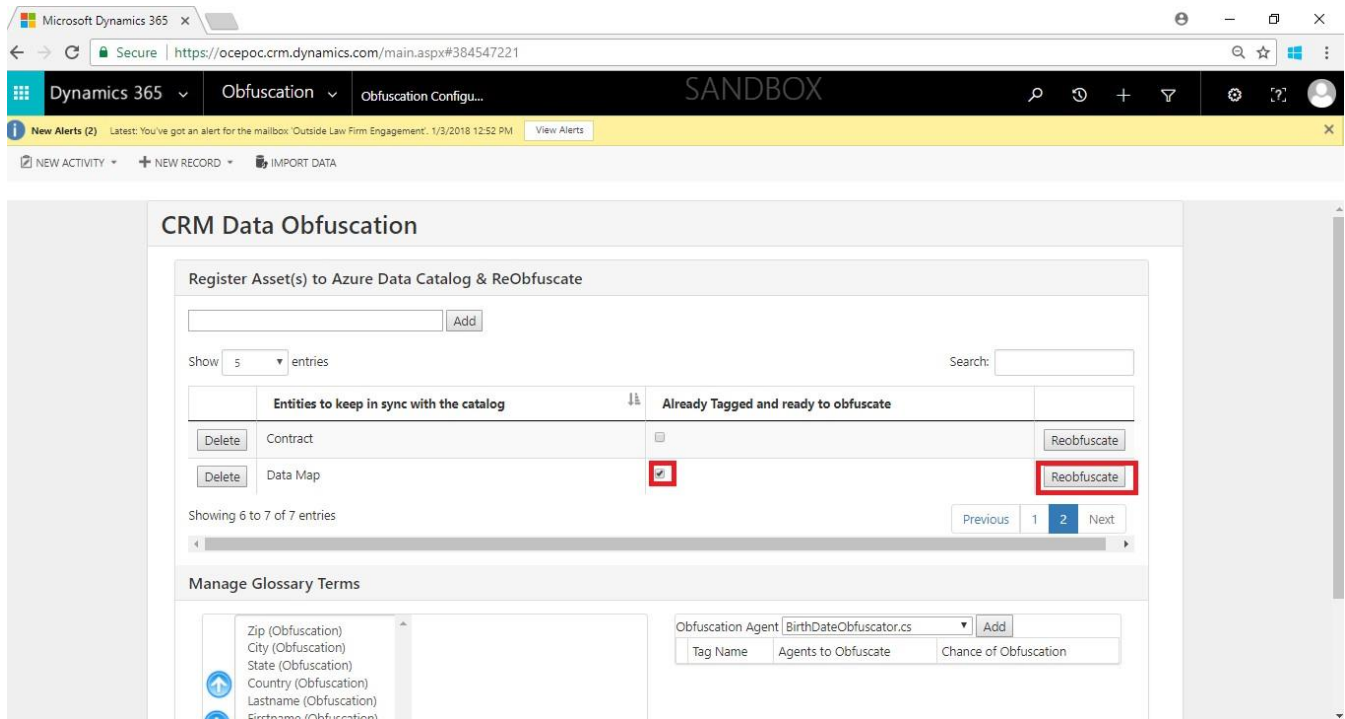


Now Switch back to CRM to select the tag in Manage Glossary Terms.

**Agent.Cs** : These are the actual agents written in C# to use obfuscation on the selected obfuscator column.

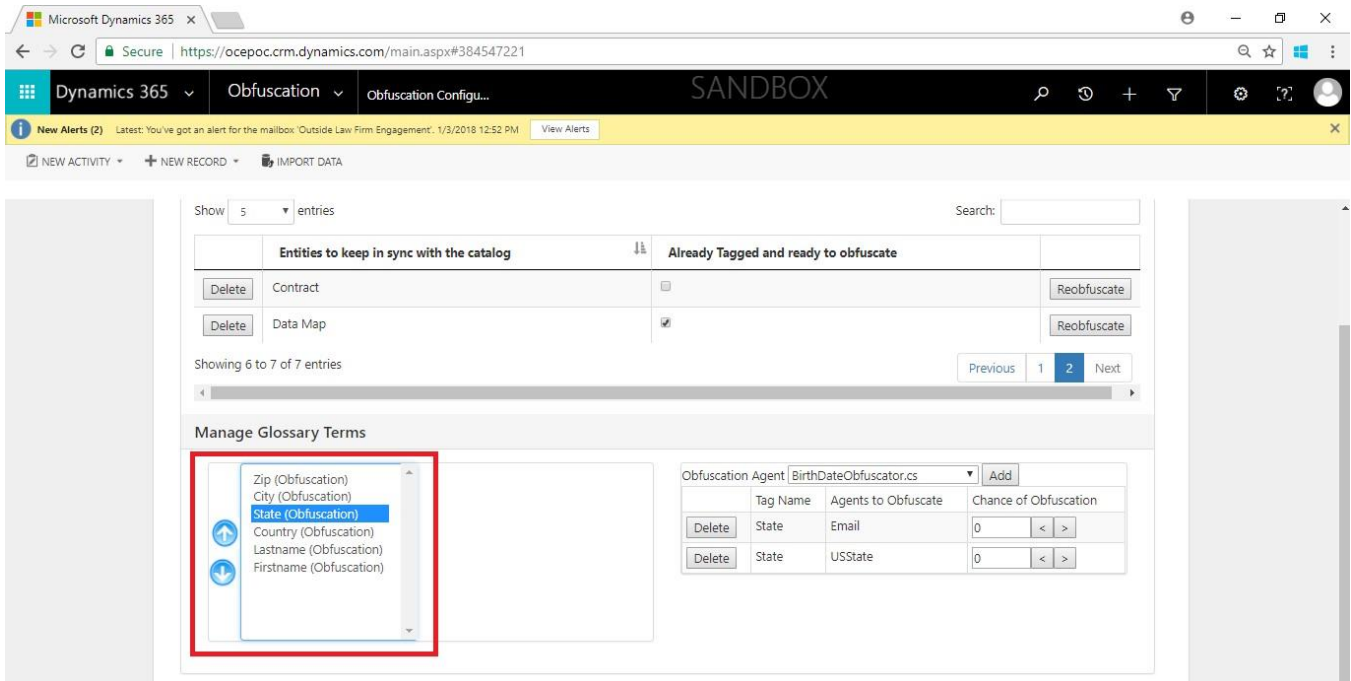


- For ReOfuscation, checked Already Tagged and ready to obfuscate check box and Click on ReObfuscate button.



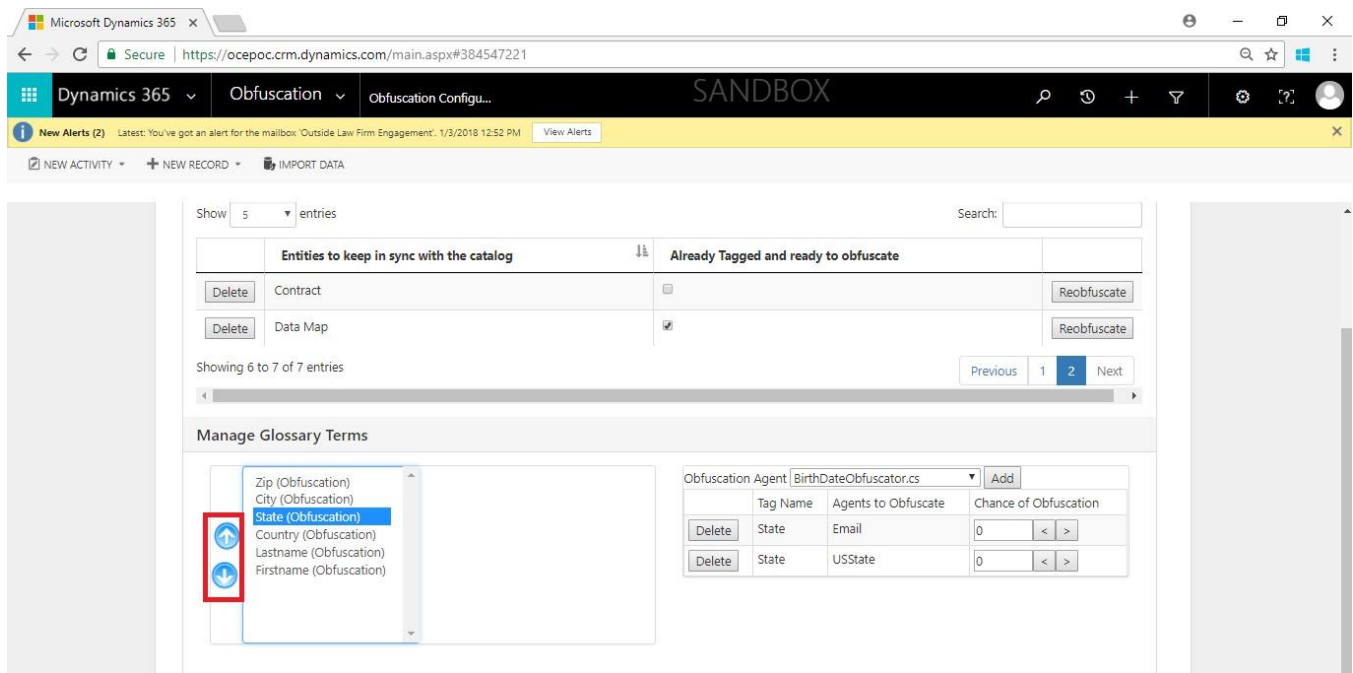
## Glossary Term Execution Order

1. Glossary term combo box appearing under Manage Glossary Term can be set with a sequence number by moving it up or down on a specific position.



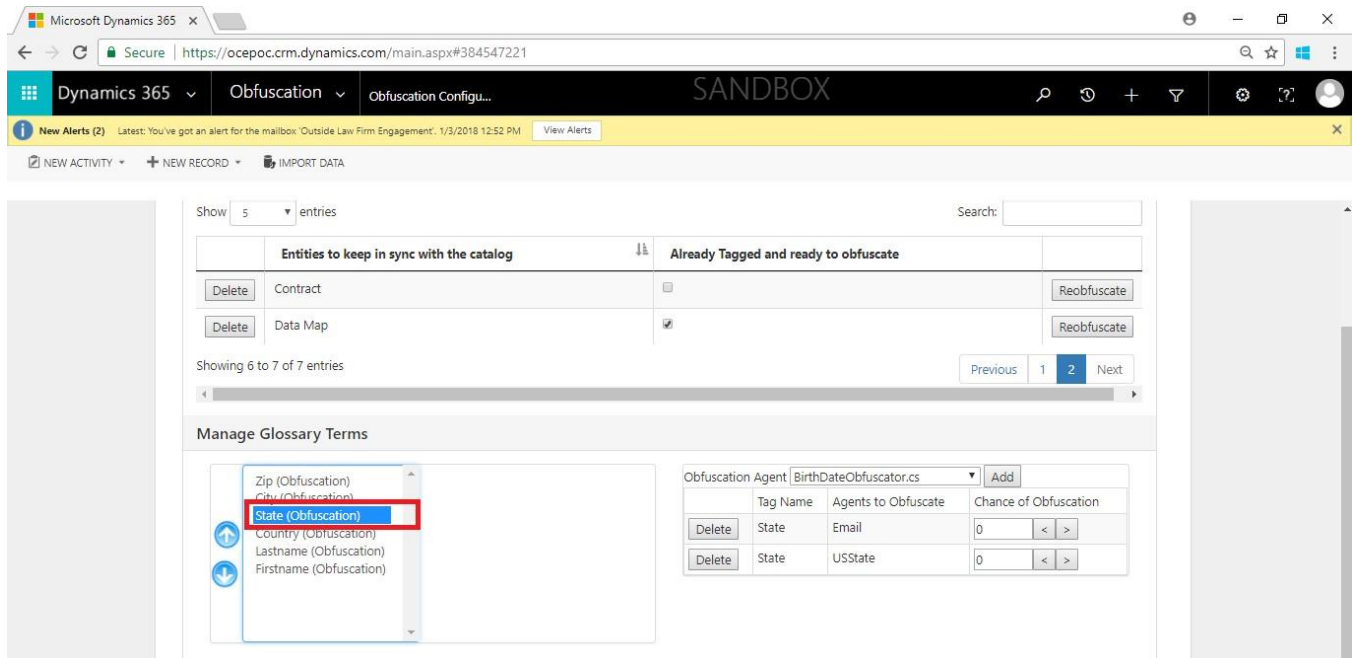
2. Clicking on Move Up or Move down will move up or down the glossary and set the execution order as per the sequence number of combo box.



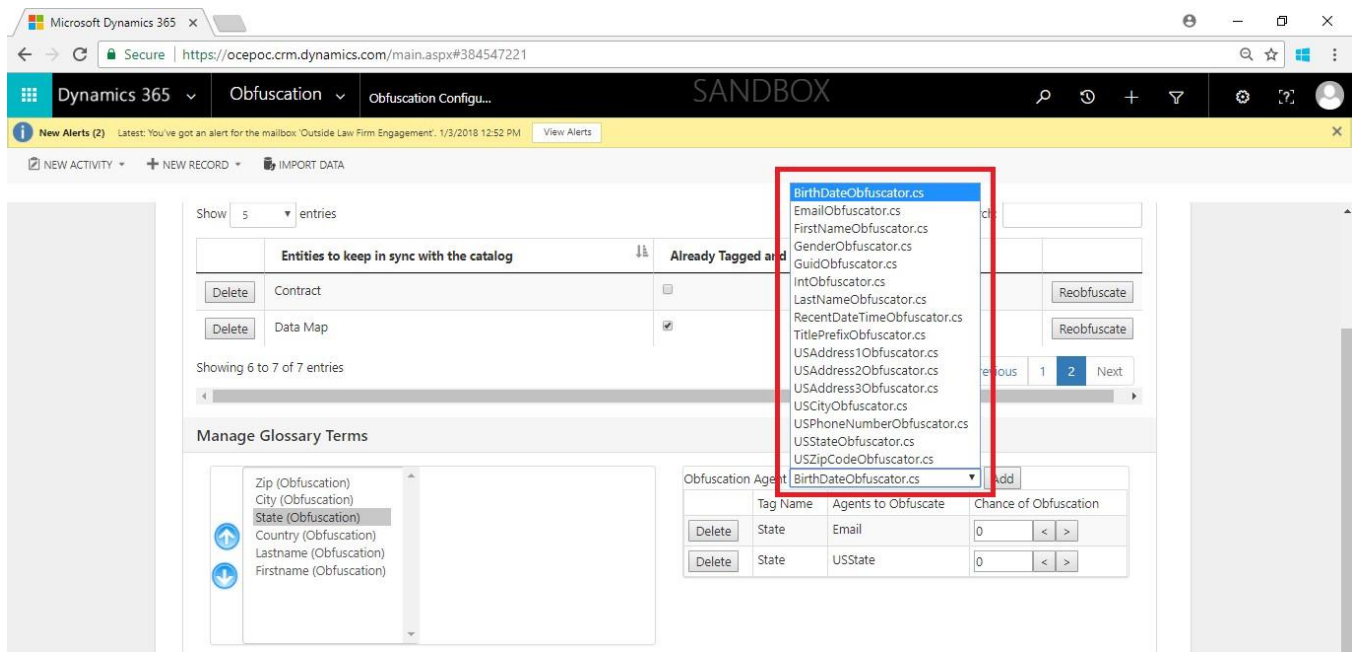


## Adding a new Glossary – Obfuscation Agent

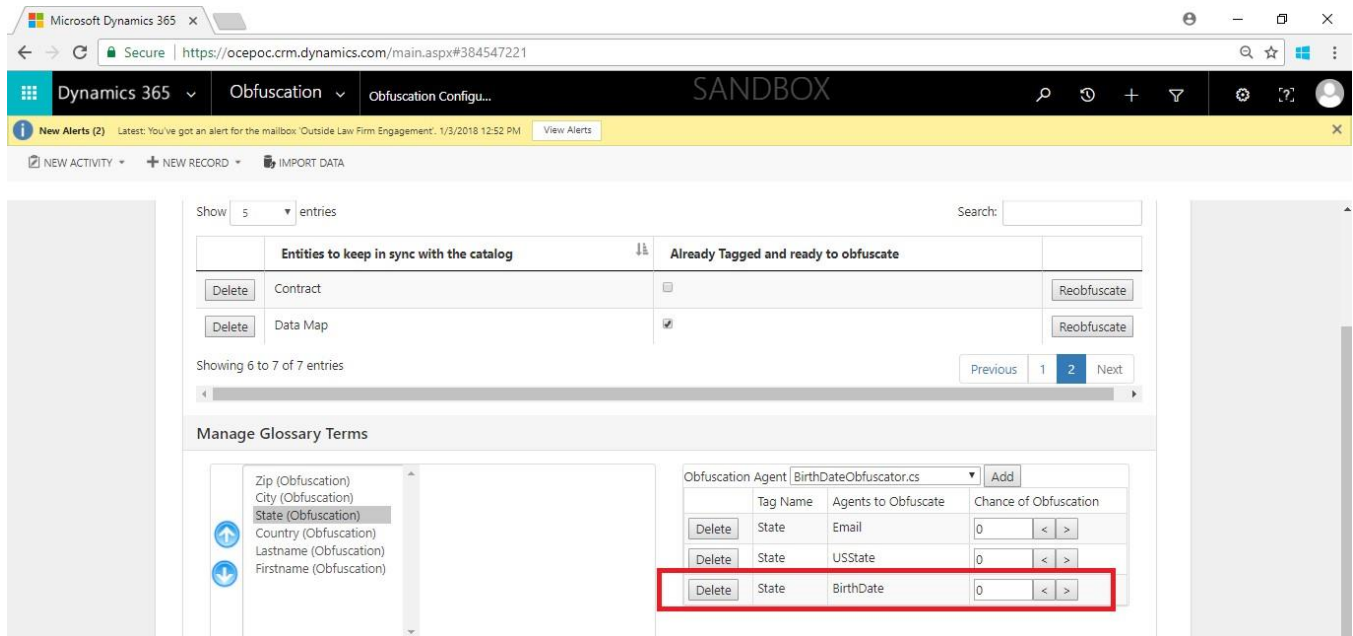
1. Select any Glossary Term.



2. Select any Obfuscation Agent that is not exist in the grid below to Agent drop down. If you try to add the combination which is already exist, it will not allow you to add the same.

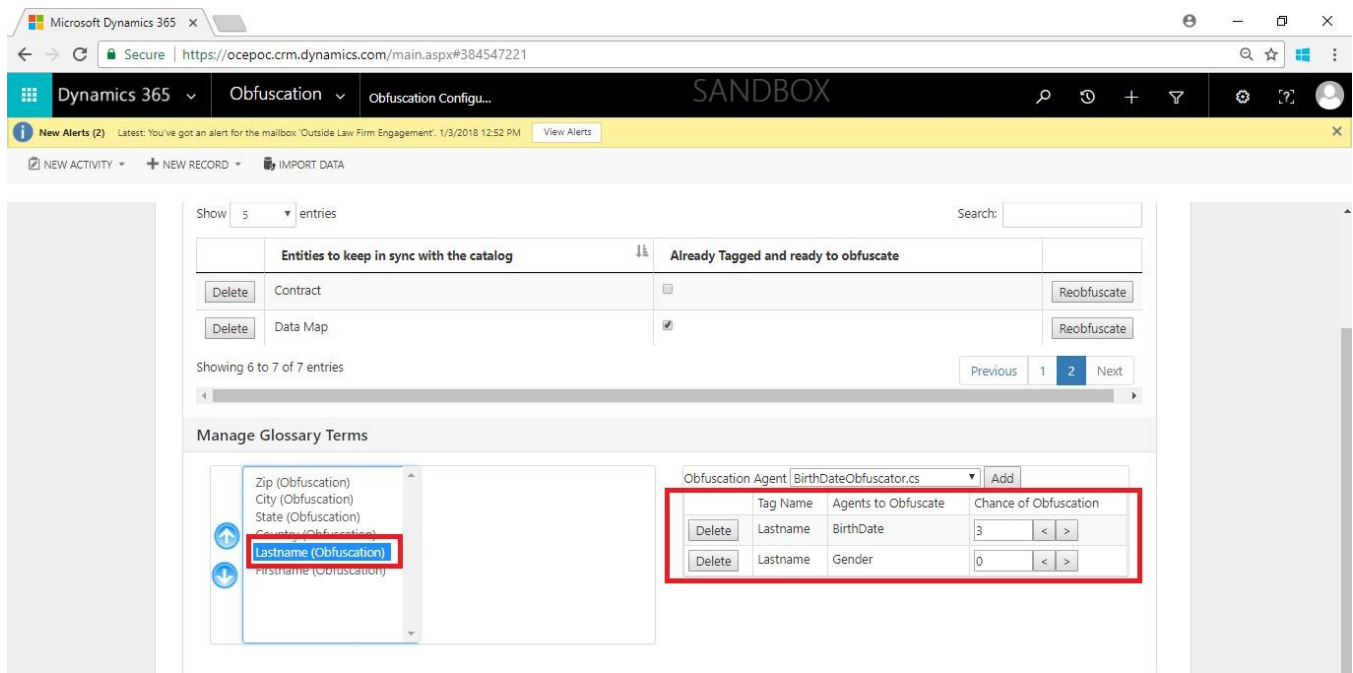


3. Click on the Add button. It will add a new row in the grid with weight as 0.



## Edit a Glossary term – Obfuscation Agent combination

1. Select Glossary term and the grid will start showing all Obfuscation Agent with their respective weight.



2. You can update the weight by increase/decrease it or directly entering into weight textbox. The same can be deleted by clicking on Delete button.  
This means: User have a choice to increase or decrease the obfuscation of the selected column values in the entity. If 100 selected, the agent will obfuscate all the values in the selected columns.

## Least Permissions required to access Obfuscation area

This section describes providing minimal security settings permissions required for users to access **Dynamics 365 Data Tagging & Obfuscation**.

Users should be having **Read Permissions** (Least Permissions) on **ObPrivilege** entity to access Dynamics 365 Data Tagging & Obfuscation area in Sitemap. The steps to provide the minimal security settings needed on the custom entity are:

1. Login to CRM and go to **Settings | Security Roles | Select A Role**
2. Go to **"Custom Entities"** tab, **ObPrivilege** Entity, and provide Read Permissions.



### Security Role: Salesperson

Details	Core Records	Marketing	Sales	Service	Business Management	Service Management	Customization	Missing Entities	Business Process Flows	Custom Entities
ObPrivilege						<input checked="" type="radio"/>				
Page										
Page Alert										

# End User Experience

**In this section will obfuscate the Contact entity - First Name.**


**Below are the steps:**


1. Through Advance Find Query, select the Contact entity – First Name values. This can be used to compare after Obfuscation.


Microsoft | Dynamics 365


FILE


ADVANCED FIND


 Query


 Saved Views


 Results


 New


 Save


 Save As


 Edit Columns


 Edit Properties

 Clear

 Group AND

 Group OR

 Details

 Download Fetch XML

Show

View

Query

Debug

Look for: Contacts Use Saved View: [new]

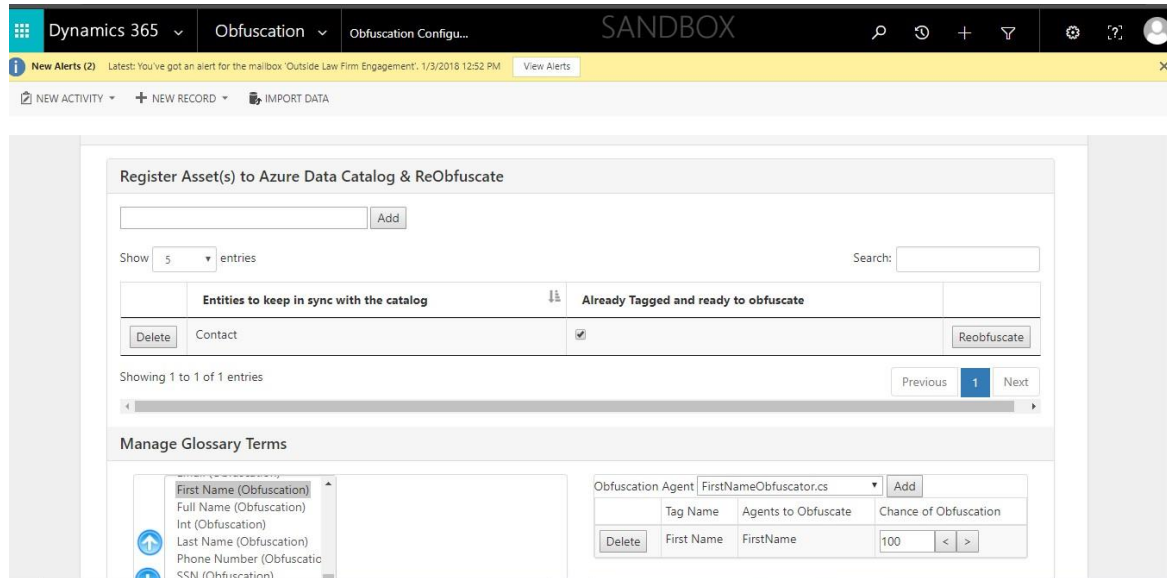
▼ First Name

Contains Data ▼

Select

✓	First Name	Full Name ↑
	Adelaida	Adelaida Easterling
✓	Alden	Alden Kingsberry
	Alden	Alden Lindstedt
	Aleen	Aleen Jest
	Alejandrina	Alejandrina Marchio
	Alfonso	Alfonso Mullahey
	Alfonzo	Alfonzo Denzine
	Ali	Ali Forsell
	Ali	Ali Millerd
	Alphonso	Alphonso Schramek
	Amanda	Amanda Buchner
	Amparo	Amparo Kinkade
	Ana	Ana Villamarin
	Andre	Andre Torra
	Angelique	Angelique Malamud
	Anibal	Anibal Vanstrom

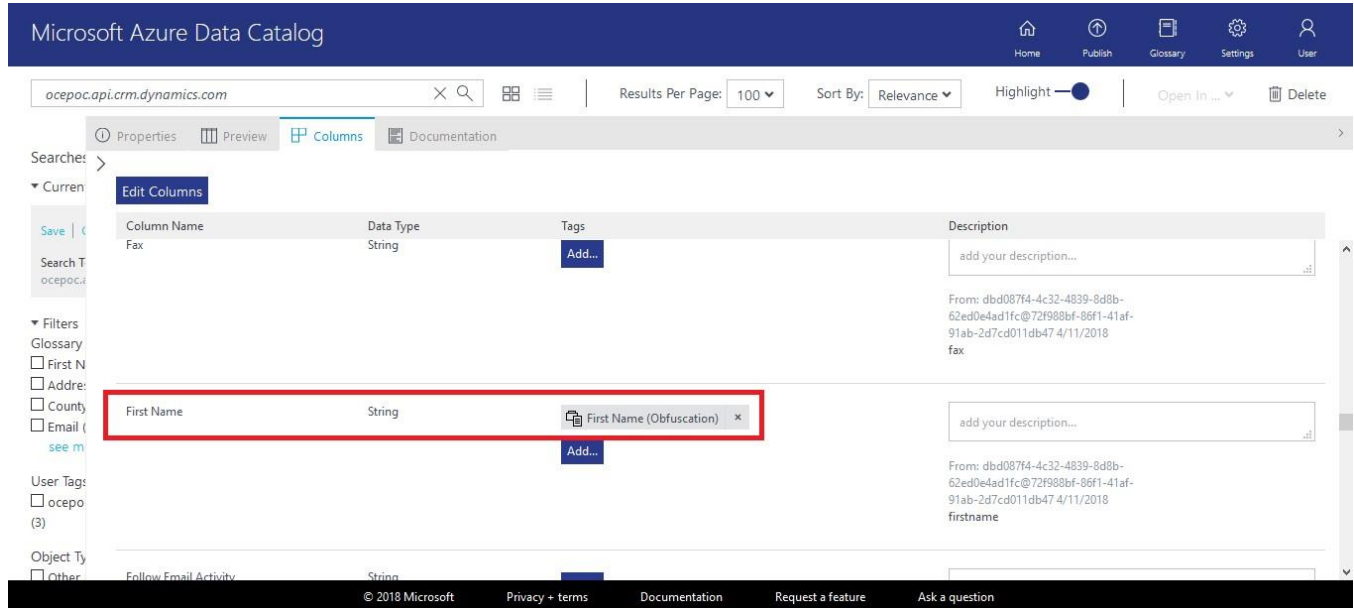
## 2. Add Contact entity in Obfuscation | Configuration page as shown below



## 3. Tag Contact entity | First Name field in Azure Data catalog

Go to Azure Catalog | Type in Org name | Select the Contact entity | Add the 'First Name(Obfuscation)' to First Name column.

**Note:** This column tags will be added only when obfuscation web job runs.



Wait for Obfuscation Web Job to run (Job runs on schedule).

Go to Resource Groups | Select the resource group | Select the Web App

Home > Resource groups > ObfuscationTesting

## ObfuscationTesting

Resource group

Search (Ctrl+/)

- Overview
- Activity log
- Access control (IAM)
- Tags

SETTINGS

- Quickstart
- Resource costs
- Deployments
- Policies
- Properties
- Locks

+ Add Edit columns Delete resource group Refresh Move Assign Tags

Subscription (change) MSFT - CUSTOMER RELATIONSHI... Subscription ID 66d1bf86-261e-4624-af80-9c37a... Deployments 1 Succeeded

Tags (change)  
Click here to add tags

Filter by name... All types All locations No grouping

5 items ☒ Show hidden types

NAME	TYPE	LOCATION
ObfuscationAppServicePlan	App Service plan	West US
ObfuscationFunctionApp	App Service	West US
obfuscationstorageacc	Storage account	West US
ObfuscationWebApp	App Service	West US
obskeyvault	Key vault	West US

Select Web Job to make sure, Job is running

Home > Resource groups > ObfuscationTesting > ObfuscationWebApp - WebJobs

## ObfuscationWebApp - WebJobs

App Service

Search (Ctrl+/)

- Managed service identity
- Backups
- Custom domains
- SSL certificates
- Networking
- Scale up (App Service plan)
- Scale out (App Service plan)
- WebJobs
- Push
- MySQL In App
- Properties

+ Add Refresh Logs Delete Properties

### WebJobs

WebJobs provide an easy way to run scripts or programs as background processes in the context of your app.

NAME	TYPE	STATUS	SCHEDULE
ObfuscationWebJ...	Continuous	Running	n/a

After running the Web job on its own schedule, below are the results with obfuscated contact entity First Name values

✓	First Name	Full Name ↑
	Abram	Abram Gizewski, Ted M (TEDGI)
	Ada	Ada Botner
	Adalberto	Adalberto Shogren
	Adelia	Adelia Ashburn
	Adriene	Adriene Holman, Heidi L (HEIDIH)
	Afton	Afton Galarza Rosario, Nydia R (NYGALARZ)
	Ai	Ai Boxer
	Aida	Aida Pullano
	Ailene	Ailene Benafield
	Aja	Aja Galligan, John W (JOGALLIG)
	Alan	Alan Haniuk, Kathryn L (KATHAN)
	Alana	Alana Kinkade
	Alejandro	Alejandro Hilliard, Michael R (MIHIL)
	Alessandra	Alessandra Garlington
	Ali	Ali Vivo
	Alicia	Alicia Trybala

End of Document