ATTACHMENT MANAGEMENT USING AZURE BLOB STORAGE

A Solution to help optimizes Dynamics 365 CRM storage by automatically saving file attachments to Azure Blob Storage

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Overview

The Attachment Management Solution is an add-on feature to Dynamics 365 CRM to manage note and email attachments using Azure Blob storage, enabling users to create and maintain files stored on Azure Blob through the D365 CRM application. This solution benefits organizations with large amounts of file attachments by storing the files in Azure Storage rather than the CRM database, reducing the cost of storage since Azure Storage is significantly less expensive than additional Dynamics 365 Storage.

Attachment Management benefits:

- Azure Blob stores all attachments
- Optimizes the use of Dynamics 365 storage

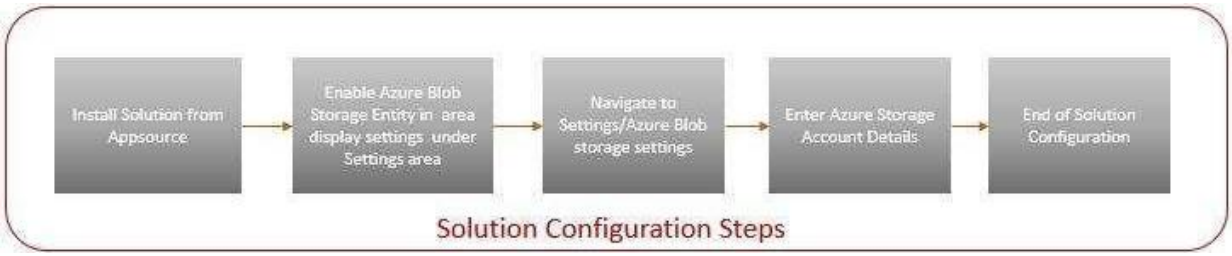
- On-Demand Attachment retrieval
- Optional upload/download control of multi-attachments
- Drag/Drop
- One-Click download of selected attachments
- Attachment Preview

This solution, built on Dynamics 365, seamlessly works with Dynamics CRM 2016 and later.

Attachment Management Configuration

The Attachment Management solution can be used for any Dynamics 365 system or custom entity that uses Notes and Attachments. This section outlines the steps to be performed by a System Administrator to make Solution available to the end users.

The below diagram summarizes the configuration and usage of Attachment Management solution, and the processes that runs in the backend.

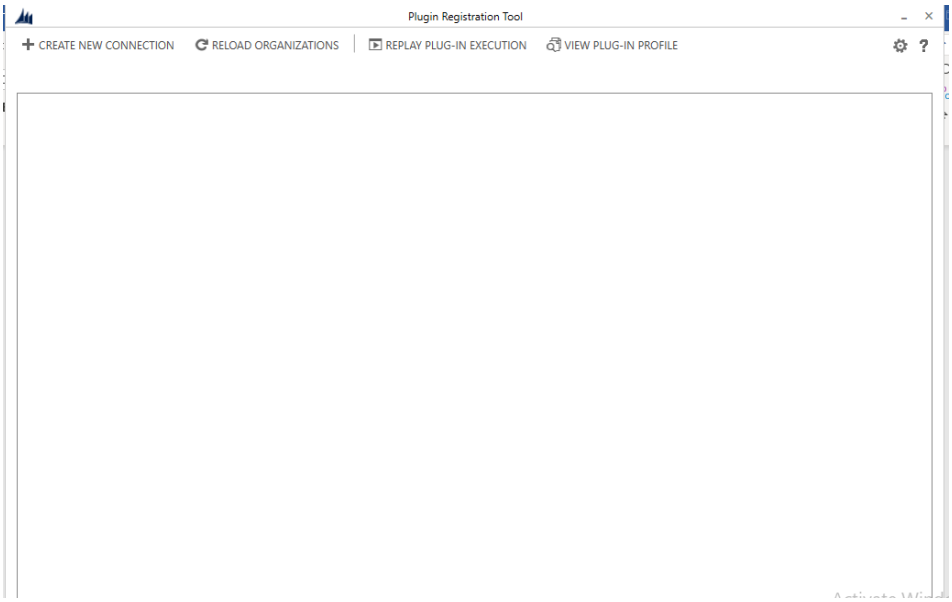


Pre-requisites:

1. Valid Windows Azure Subscription and Storage Account (Blob) created
2. **If the previous version of this solution is already installed in the CRM org, please follow the below steps to upgrade to new version. Ignore the below steps, If it is fresh installation.**

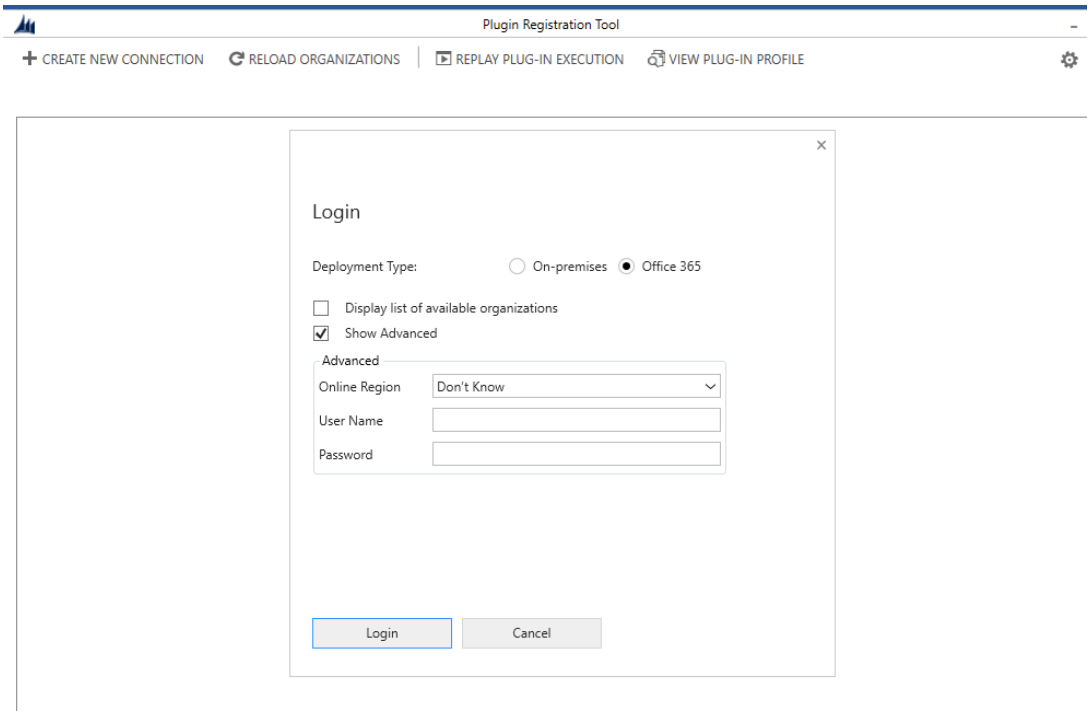
Unregister the Plugin Step

i. Connect to **Plugin Registration tool**, using **Dynamics SDK 365**.



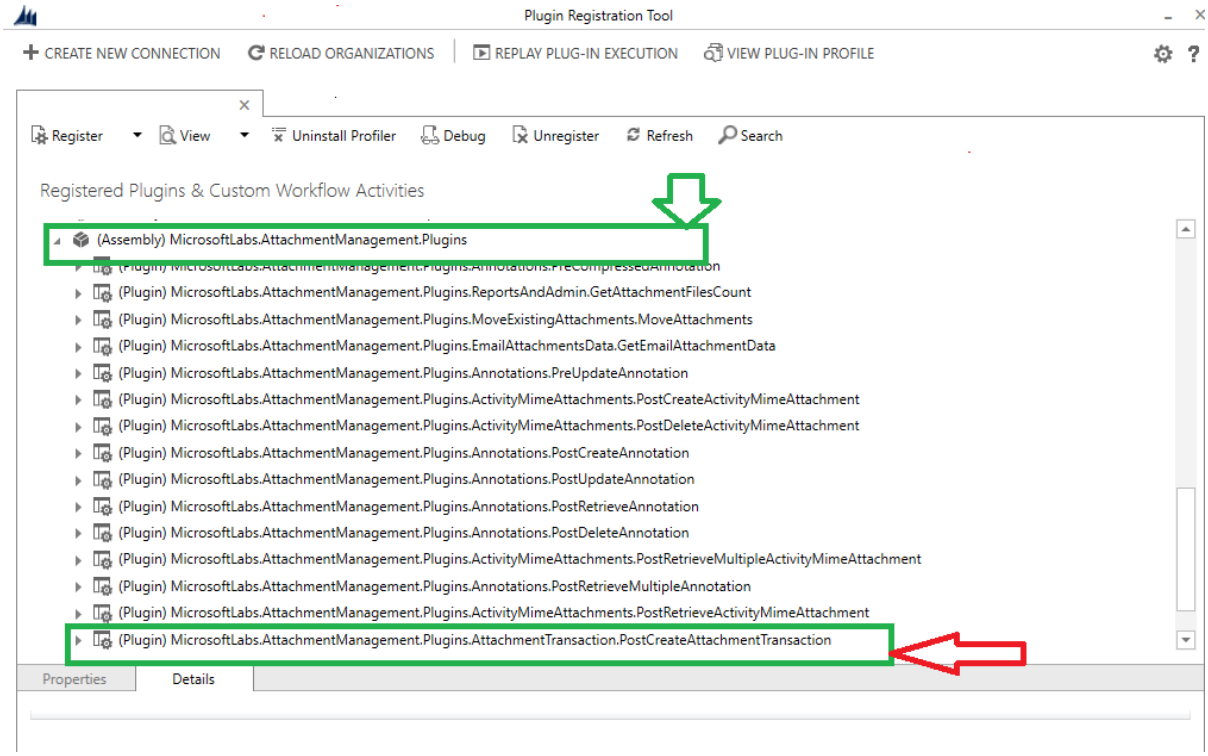
ii. Click on "**Create New connection**" to Login the Organization.

iii. Provide the **User ID** and **Password** to Connect to CRM Org.

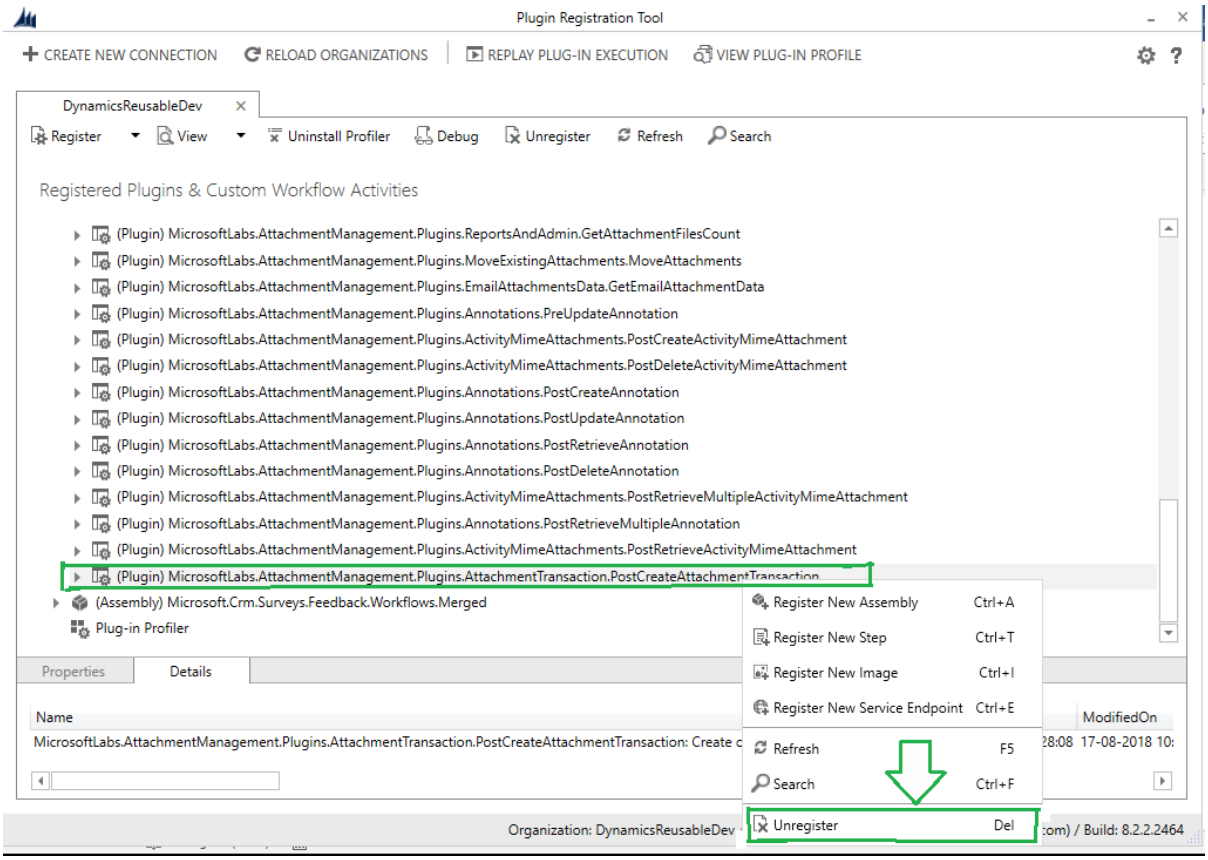


iv. After Successfully connected to CRM Org, look for Plugin Assembly: "**MicrosoftLabs.AttachmentManagement.Plugins**".

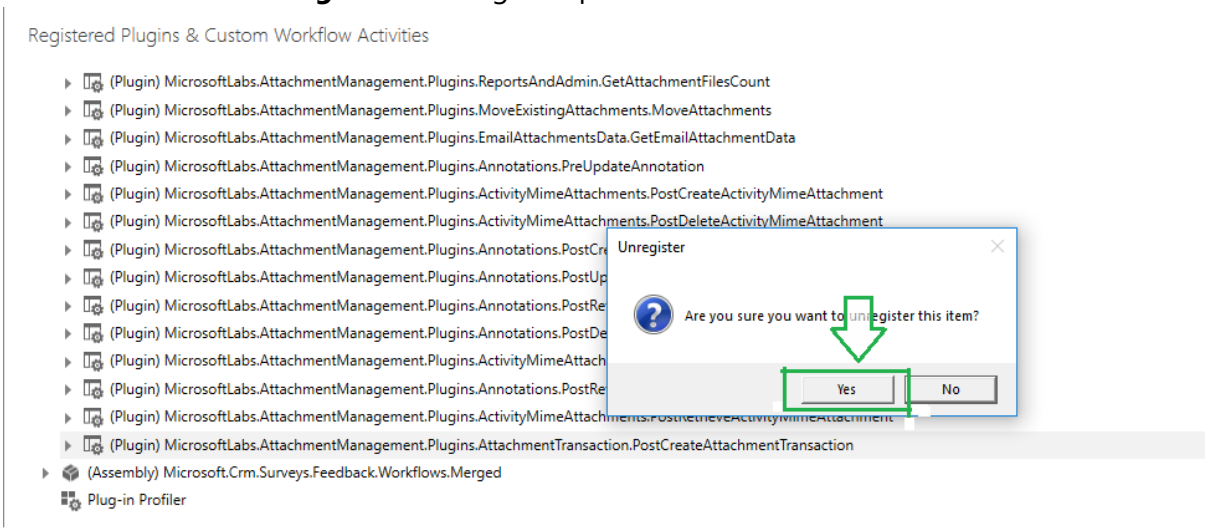
v. Expand and Look for "**PostCreateAttachmentTransaction**" Plugin Step.



vi. Right Click on the "**PostCreateAttachmentTransaction**" Plugin Step and click on the "Unregister".



vii. Click on Yes to **Unregister** the Plugin step.



viii. After Successful unregister of the Plugin, Install the Latest Solution From the AppSource.

3. Attachment Management solution installed in the Dynamics 365 organization

CRM Portal Solution Version:

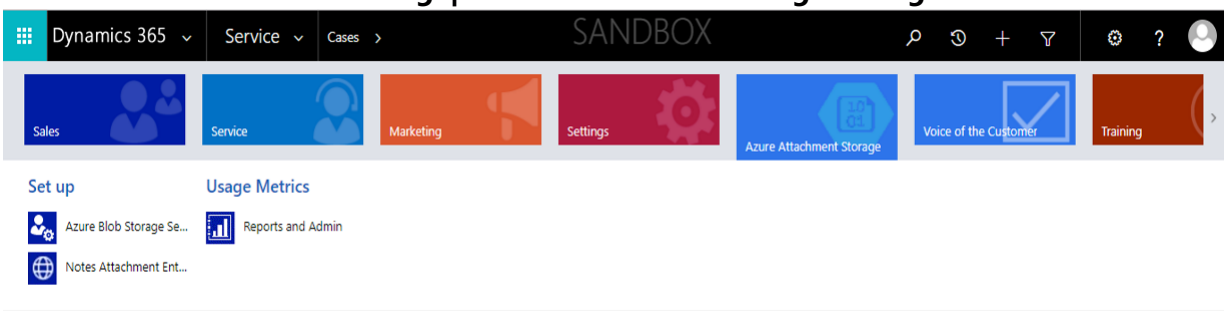
If user want to use this solution for Portals, please click here to download the solution and import into the CRM.

Note:

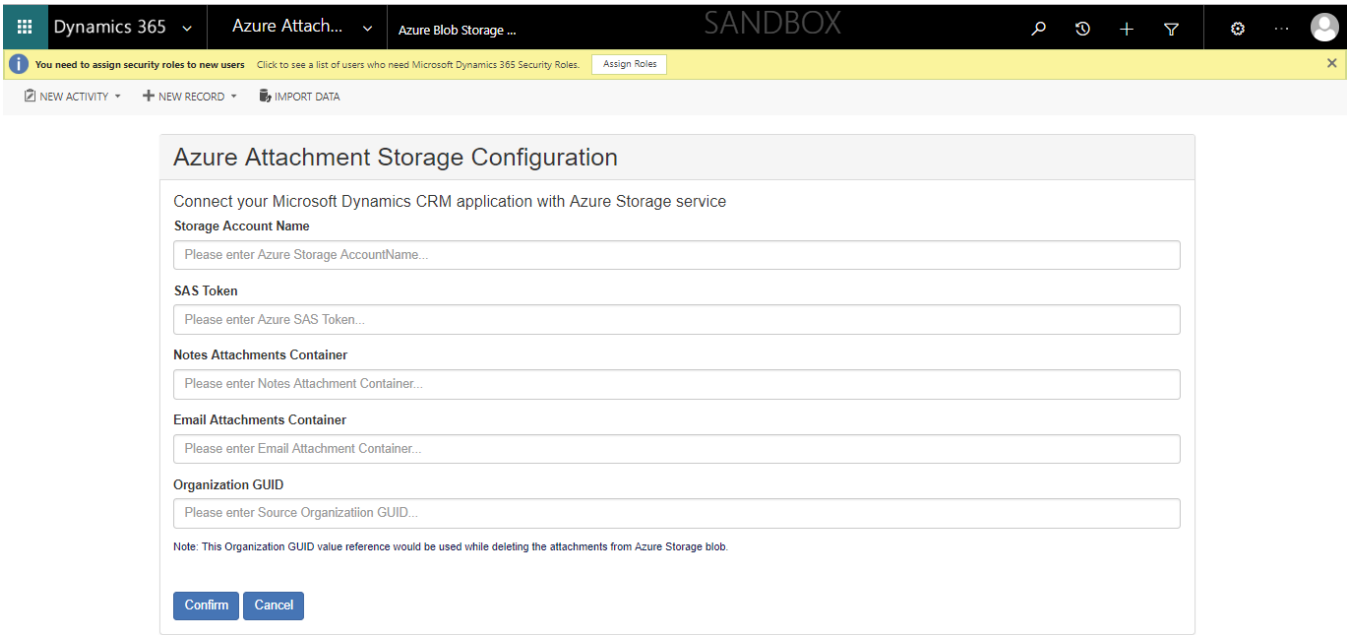
1. Solution web resources msdyn_filesandattachments, msdyn_multiple_uploads will not work for Portals.
2. Rest of the configurations are same as mentioned below

UI Configuration

1. Open Microsoft Dynamics 365
2. Go to **Azure Attachment Storage|Azure Attachment Storage Configuration**



3. Click on **Azure Attachment Storage Configuration** and provide azure storage configuration information.



Name: Azure Storage Account Name.
SAS token: SAS token available in the Storage Account. (Refer to How to Generate SAS Key.)
Note: Please ensure the Start Time and End Times are correctly chosen while generating the SAS

token.

Notes attachment Container Name: Container name created for Notes.

Email Attachment Container Name: Name of the container created for the email attachment.



Organization GUID: Organization GUID value, as a reference to validate blob deletion. It's completely an optional configuration and can even leave as blank.

Purpose of Organization GUID: The Organization GUID value provided here would be taken as reference while deleting attachments from blob.

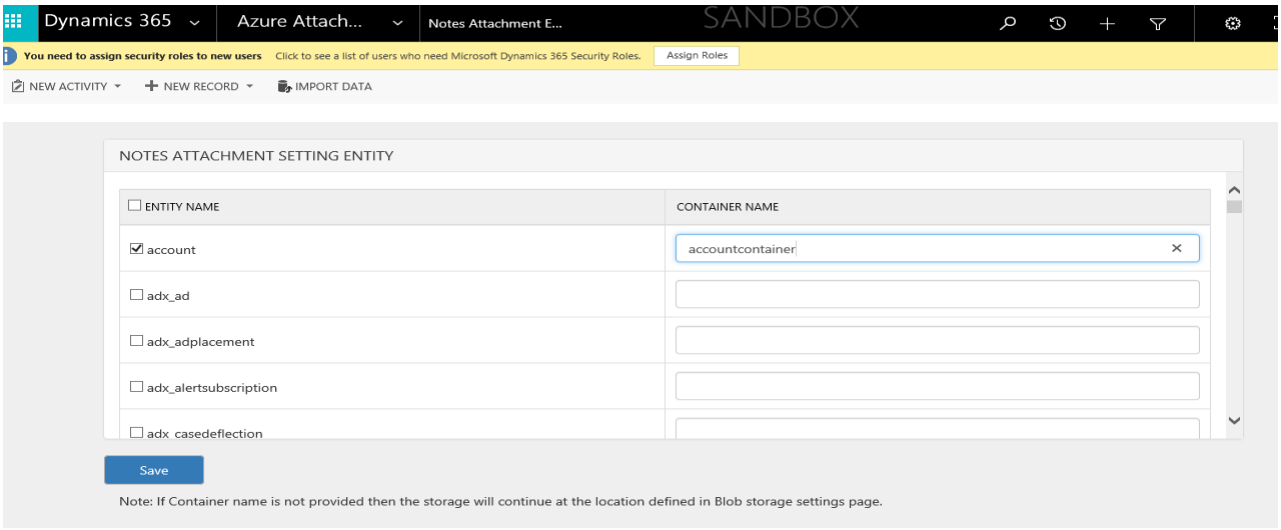
Eg: When a Production CRM instance data is copied and created a sandbox instance (along with Azure Attachment Storage Configuration) automatically the reference between attachments in sandbox CRM, which are already created in Production CRM and Azure blob would remain same. If any user deletes those attachments accidentally, we restrict the deletion of those attachments from blob with the Organization GUID value provided in Azure Attachment Storage Configuration

Notes Attachment Entity Settings

This section provides information on of Notes Attachment Settings.

Go to **Azure Attachment Storage|Setup|Notes Attachment Entity Setting**

NOTES ATTACHMENT SETTING PAGE provides the System Admin with a list of all entities that are mapped with or without associated container names. The name values can be set here as new names, or pulled in from preconfigured Azure Blob storage settings. Selecting the entity and setting the container name effectively maps the attachments to Azure Storage Blob container.



Notes:

1. Entities must be mapped to containers for attachments to be saved in Azure Blob Storage.
2. If any entity is selected without a container name, the default name assigned in Azure Blob Storage Settings will be used.
3. Although the container name can be changed at any time, it should remain unchanged during use for consistency. If the name is changed (thus breaking the mapping), older attachments will no longer be available.
4. **CRM Portal:** All UI modifications to the Portal, such as CSS and Images, should be stored in CRM. Conversely, when selecting entities from the **Notes Attachment Setting Entity** list, do not select (map) the entity called **adx_webfile** to any container because UI changes will not be saved.
5. By default, attachments added to Email/Appointment records gets moved to Azure. "Email" and "Appointments" to be selected only if "Notes" section is enabled on their respective CRM forms.
6. **Attachments greater than 30 MB will not moved by this solution. Plug in will not get triggered when the attachment size is greater than 30 MB**.

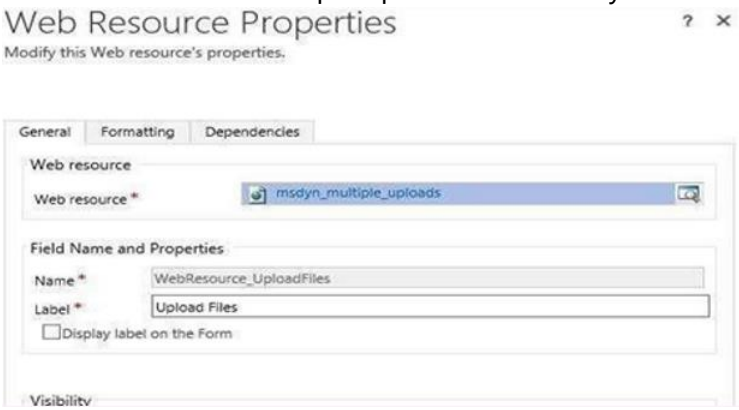
This section describes how to add functionality for uploading multiple Notes and Attachments using the provided web resources listed below.

msdyn_filesandattachments.html: Management of Notes and Attachments is easy within a Grid-style format, allowing for single or multiple selection for download or delete.

msdyn_multiple_uploads.html: This page provides code to upload multiple files, as well as code for saving email attachments using the Email form.

Steps to configure web resources for **multiple file upload** functionality

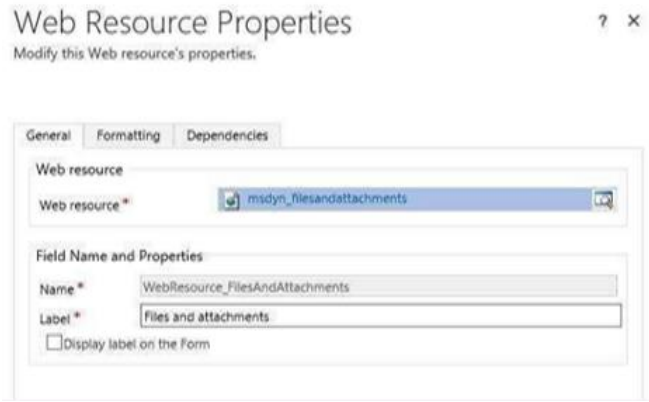
1. Edit the Entity form to create a new tab, and type "**msdyn_multiple_uploads.html**" for the web resource to enable multiple upload functionality for Notes and Attachments.



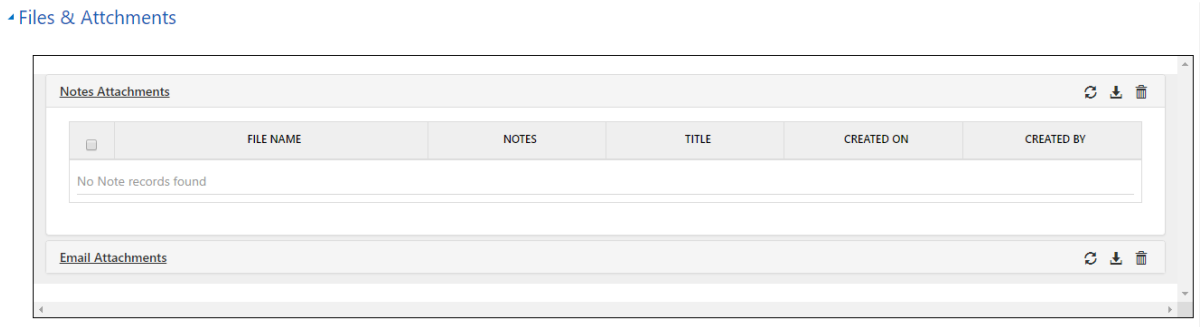
2. Publish all changes, then go to case entity and open case form; User should be able to see the new tab created for uploading Notes and Attachments.



3. Create another Tab and name it "Attachments" to enable download and delete uploaded files, and type "**msdyn_filesandattachments.html**" for the web resource.



4. Publish all changes and go to Case main form; User should then be able to see the new tab on the form.



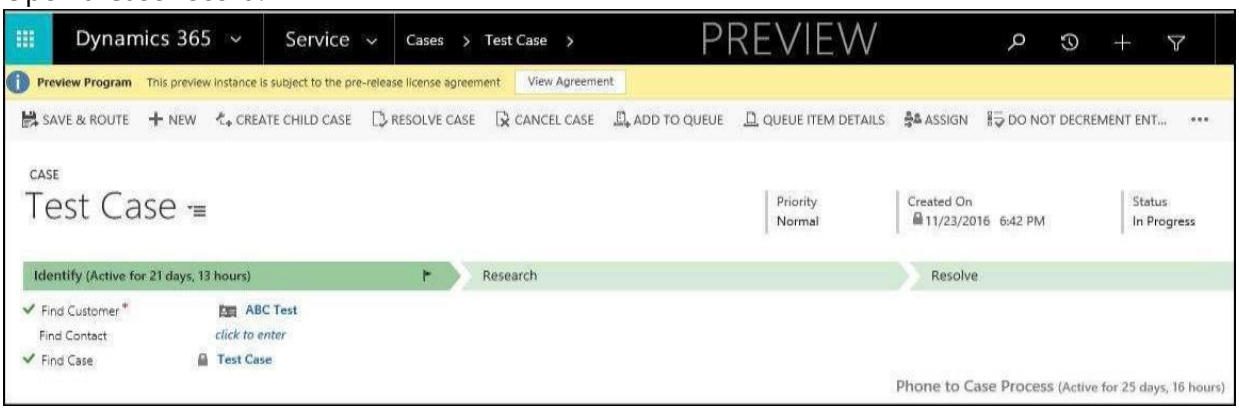
End User Experience

Once the solution is imported and configured in the Dynamics 365 organization, a user can upload and create Notes and store the Attachments in Azure Blob Storage. The steps outlined below illustrate creating a note with attachment and verifying the attachment is stored in Bob Storage.

1. Navigate to a Business Entity (e.g. Case).



2. Open a Case record.

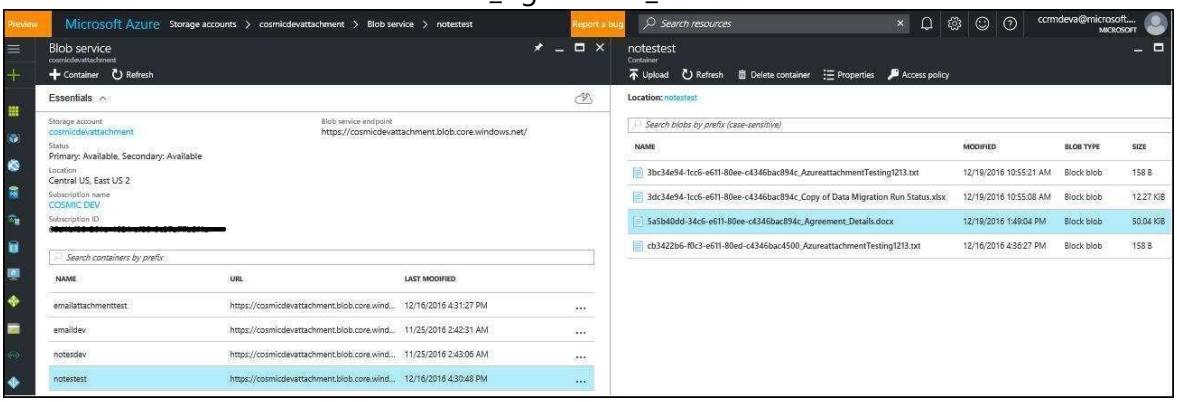


3. Create a note against the case with an attachment.



4. Verify the Notes attachment is stored in Azure Blob storage. The file name is formed by concatenating the parent entity record ID (shown here as Case GUID) and attachment file name (Agreement_Details.docx); example:

5b40dd-34c6-e611-80ee-346bac894c_Agreement_Details.docx

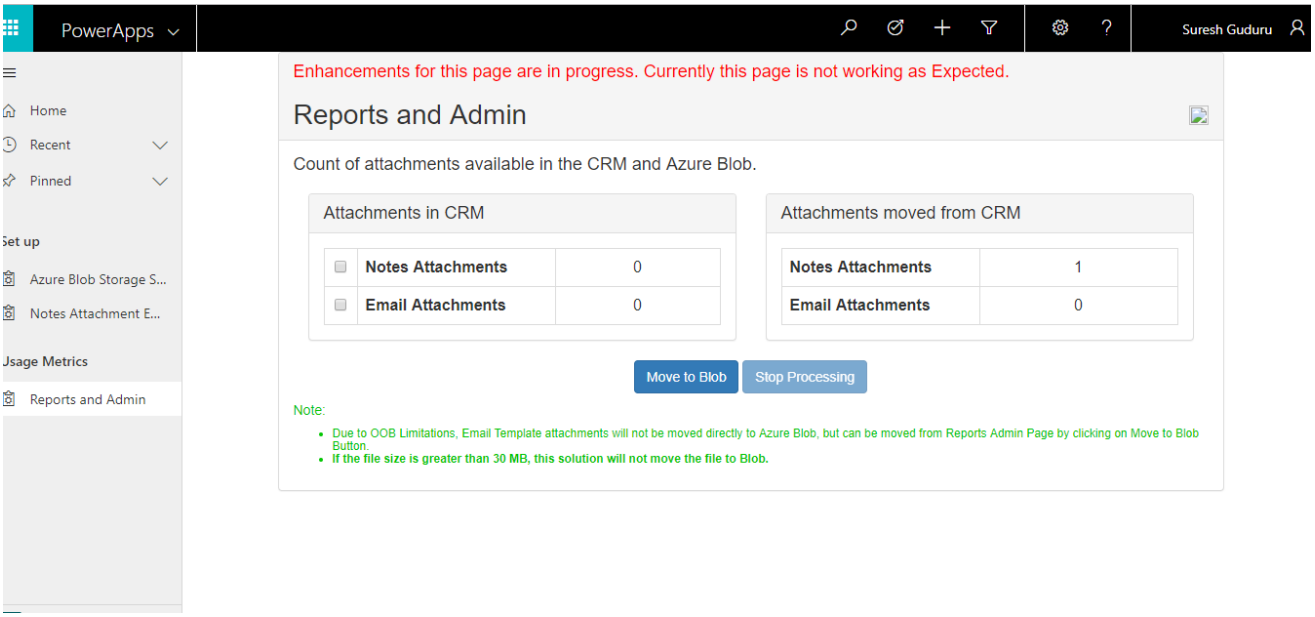


5. If a user deletes a Notes record, any related attachment will be deleted from the Azure Blob Storage.

Reports and Admin

NOTE: Currently this page is under enhancements and not function well as expected due to change in the CRM platform side update. App Source solution team is working on adapt and change the process with respect to the platform team approach.

~~This section provides information on Reports and Admin Dashboard, useful to Admins for exact counts and management of attachments stored within CRM and those moved to Azure Storage.~~



~~The buttons below have the following functionality…~~

~~**Move to Blob:** Click the button to initiate the process to move all attachments stored in CRM into Azure Blob.~~

~~*Note: By design, CRM limits this process to 140 attachments per fetch for best performance.*~~

~~**Stop Processing:** Clicking this button will arrest the **Move to Blob** process immediately.~~

Confirmation of Blob Storage

As per the recent platform upgrade below methods will not confirm the end user on File movement to blob. As platform is maintaining File Size data even it is moved to blob. Only the Body is getting updated to NULL once the attachment moved to blob.

Only the way we need to raise a product ticket and get confirmation on the CRM DB size.

How to raise a Ticket with CRM Product team:

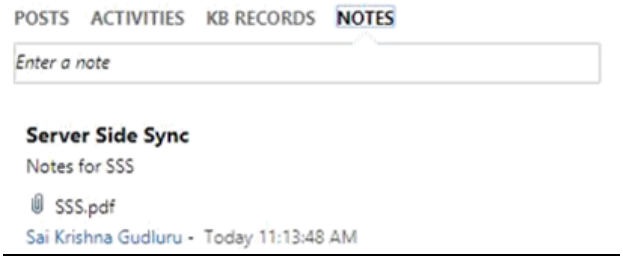
Please click **here** to find out 'how to 'steps to raise a ticket

~~The following methods describe how to ensure files are being stored in Azure Blob.~~

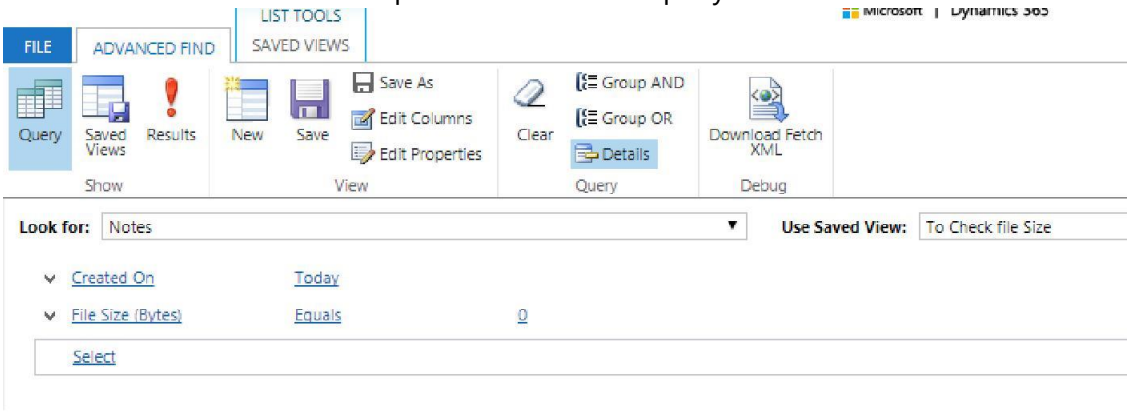
~~For Notes (Annotation)~~

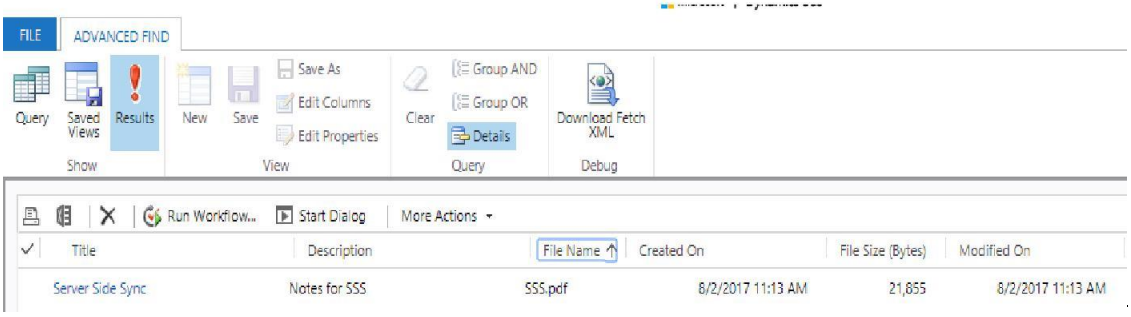
~~Method 1:~~

a. ~~Attach a file to a case record~~



b. ~~Check the file size with the help of Advanced Find query: Where File Size = 0.~~

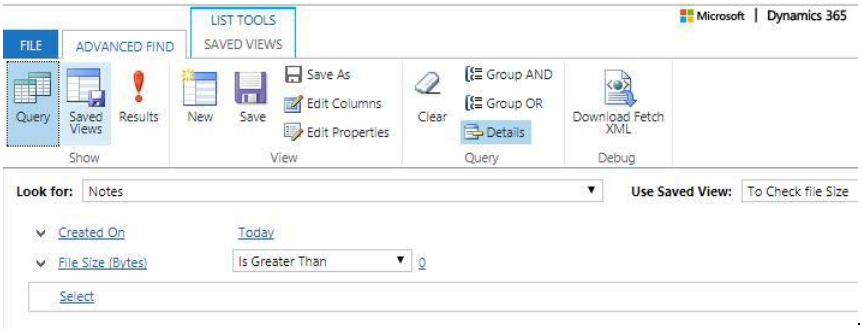




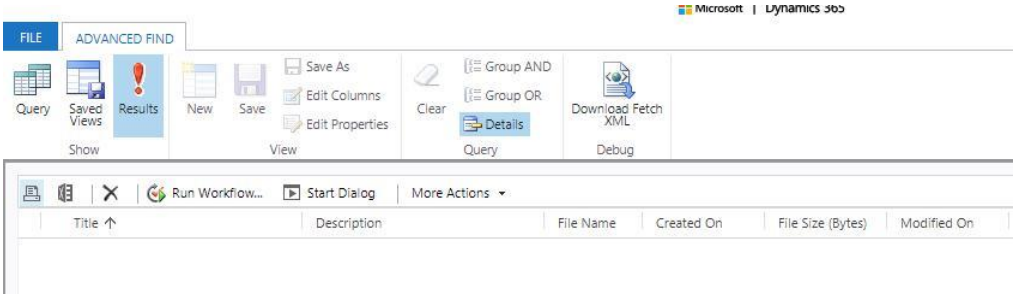
c. ~~The result confirms the file size is ZERO in CRM DB.~~

~~Method 2:~~

a. ~~Check the file size with the help of Advanced Find query: Where File Size > 0.~~



b. The result returns "No Note records are available in this view".



c. Conclusion: The second query (method) also confirms the file is not stored in CRM.

Email Attachments

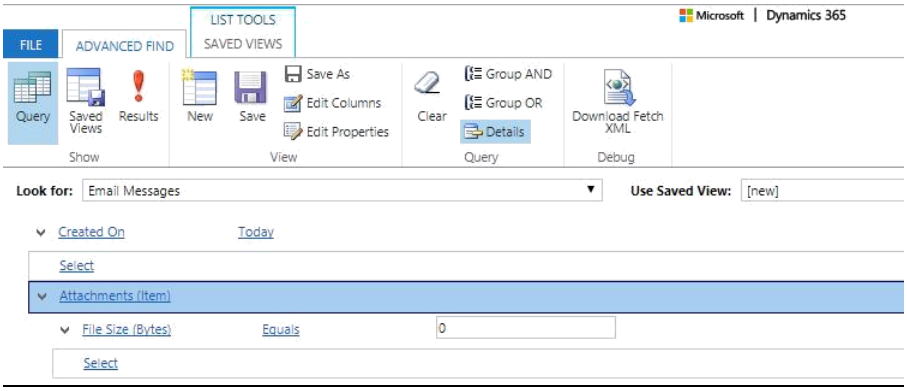
Method 1:

Attach a file to an email record.

a. Check the file size with the help of Advanced Find query: Where File Size = 0



b. The result confirms the file size is ZERO in CRM DB.



Method 2:

a. Check the file size with the help of Advanced Find query: Where File Size > 0.
b. The result returns "No Note records are available in this view ".
c. Conclusion: The second query (method) also confirms the file is not stored in CRM.

Note: The File Size field value in the Advanced Find query is populated dynamically from the related Blob information of that attachment through a plugin on the backend.

Note: The "Email Attachments" count may include the emails created from Email Templates with attachments. Please use "Move to Blob" button to move those email attachments to blob. Due to OOB limitations, Emails created from Email Template attachments will not be moved to Azure Blob.

Note:

~~1. To move existing attachments (which are stored in CRM) to Azure Storage Blob in bulk, use LogicApp.~~

~~2. Plugin can move attachments with file size ~ 10 MB - 12 MB within 2 mins and it is dependent on Internet speed as well (By default, in MS CRM custom plugin's execution time limit is 2 mins).~~

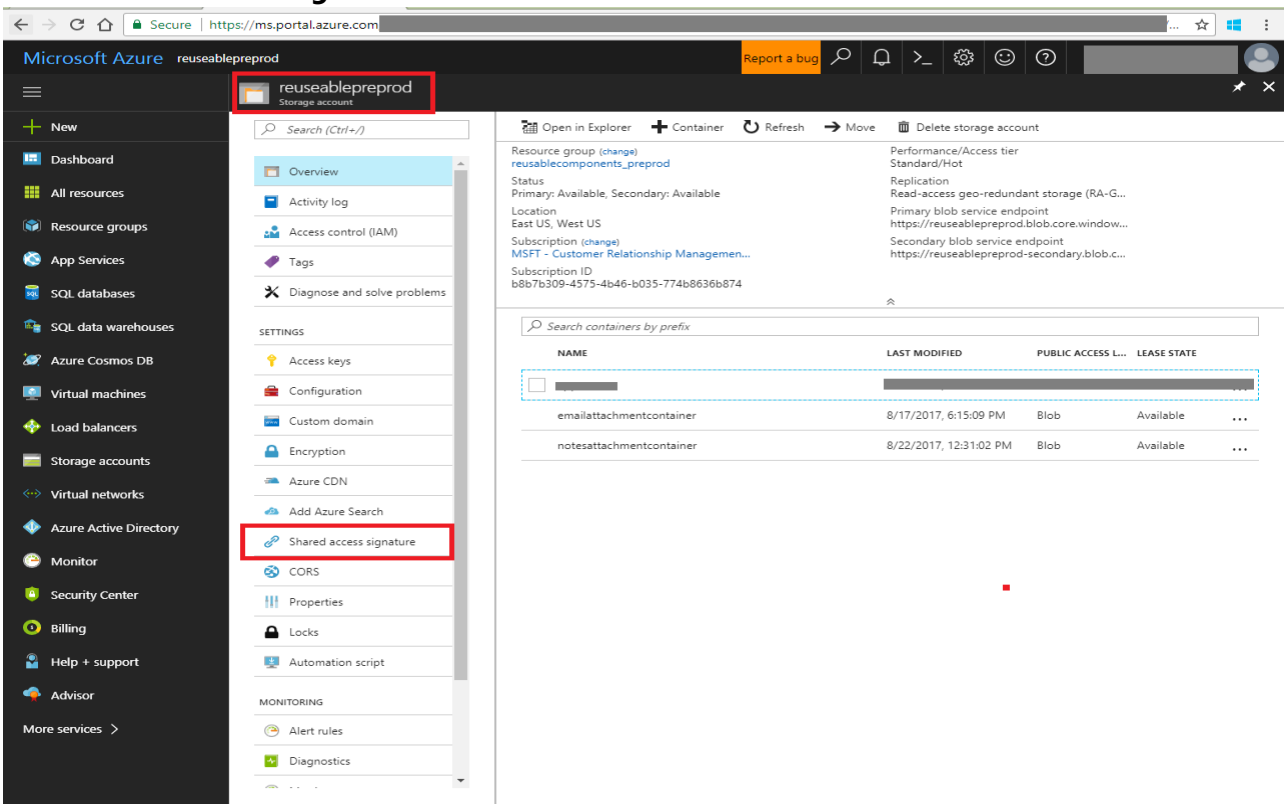
Access to the Custom Entities for other Roles

As per design change in new solution version 1.8.0.1 onwards, We do not require any permissions for the custom entities.

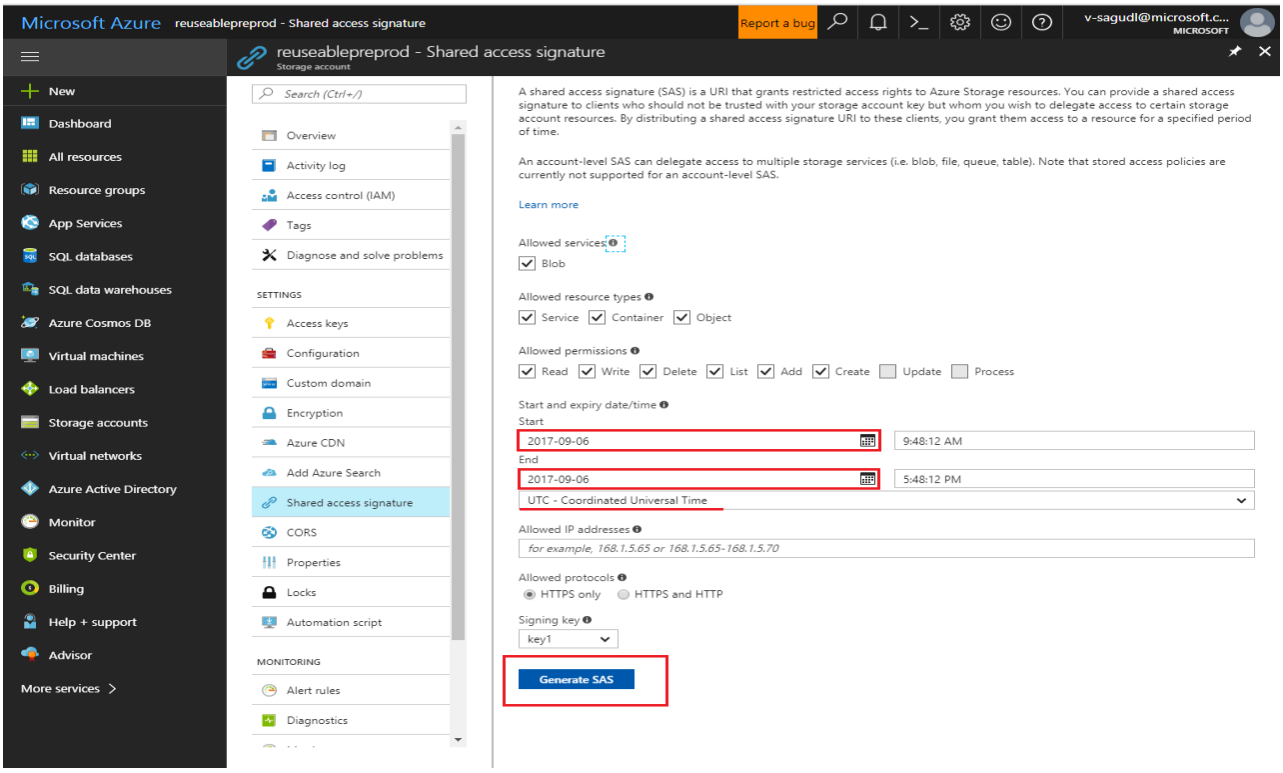
How to Generate SAS Key

This section describes how to generate the SAS Key.

1. Go to https://ms.portal.azure.com
2. Click on the Storage Account that was created for Emails and Notes Attachment Containers.
3. Go to **Shared Access Signature** to add an Azure Search.



The SAS key generating page will appear as shown below.

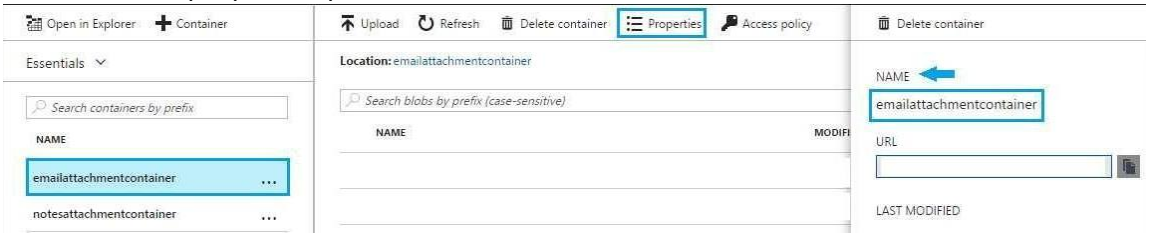


Before, clicking on **Generate SAS**, ensure the Current Time zone is properly set relative to Local Time. Then set the Start and End times for the SAS key.

Troubleshooting Steps

System Administrators can use the quick tips below for troubleshooting possible issues:

1. Ensure Azure Storage account details have been entered correctly.
2. Ensure the plugin steps have been registered for the event, for example "Post Create of Entity".
3. Go to "**Customize the System**" and click "**Publish all Customizations**".
4. Ensure the **Azure Blob Settings** configuration information is correct, for example the "Name" in the Container properties pane matches the name of the Container.



Ensure the **Start Time** and **End Times** are chosen correctly while generating the SAS token.

5. Check the custom entity (Azure Blob Storage Settings) settings using the follow below steps.
    a. Go to **Settings|Customizations|Customize the System**.
    b. Under **Components** on the left side, expand **Entities** and select **Azure Blob Storage Settings** entity.

6. Preview functionality **will work** only for containers with public access level as "**Blob**" and **will not** work with public access level as "**Private**".

End of Document