ADOPTEQ

MIGRATOR PLUS PLANNING & OPERATION GUIDE

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About Migrator Plus Documentation

Documentation for Adopteq's Migrator Plus Product :

- Release Notes – Describes the current release of Migrator Plus and any new and enhanced features, resolved issues, and known issues.
- Installation Guide – An orientation to the product's basic purposes, features, and capabilities. It documents system requirements and explains how to install the software and obtain licensing.
- Planning & Operation Guide – summary of Migrator Plus's primary components and features, overviews of component and process instructions and guidance on planning, configuring, starting, and executing content migrations.
- Please note that Lotus Notes and Domino are used interchangeably within this document for ease of legacy understanding and wording.

Purpose & Audience

The purpose of this document is to provide information on how to configure and execute content migration from Domino to three (3) target or data types.

Type	From		To
Archive	NSF	>	EML
SharePoint/Teams	NSF	>	SharePoint/Teams
Export/File	NSF	>	CSV or HTML

This document assumes the reader has a minimum of one year's experience using a Notes Client and has a good general knowledge of Domino Administration, development, the Domino designer client as well as Windows administration, SharePoint, and the Power Platform. If Domino/Notes topics mentioned in this guide are not understood, please refer to the HCL Notes or System administration documentation.

1. Readiness

A. Strategic Plan

Before embarking on a migration of content from Domino applications and transformation of the application functionality, it is important to have a strategic plan which should include these critical factors:

Discovery & Validation

Before you begin, there are major key requirements which need to be surfaced and decided upon:

- **WHAT** do we have?
- **WHY** do we have it?
- **HOW** do we use it?
- **WHO** uses it?
- Do we **NEED** it?
- **WHERE** should it go (or can go)?

Without knowing the answers to these questions, unexpected issues will arise during the execution of your plan such as cost increase, project timeline extensions, data loss, end user experience degradation, compliance challenges, and un-necessary actions performed.

If you have not performed this activity, we highly recommend this is executed (no matter how small your migration or transformation) prior to moving into any migration phase.

Transformation Strategy

For larger implementations of Domino, when moving your applications, it is unlikely that this single platform lends itself to either a 1:1 migration approach (such as email migration) or a 'big bang' when

there is a one-time cutover from Domino to the new platform. Through analysis however, patterns will emerge that will allow you to 'group' application journeys.

Additionally, where an application could go or should go will be dependent upon your data compliance policy (e.g., on-premises or cloud based). If you have a hybrid environment (both on-premises and cloud), will impact the location of your migration environment and the complexity of solutions required.

If your project is global and large in nature, it is recommended that a global transformation team are responsible for the success of your Company digital transformation. Part of their duty is to have oversight of all projects across the business which may or may not be impactful to each other. Having an oversight group will streamline the transformation.

Grouping & Scheduling

Once you know the 'broad' categories applications will follow, creation of workflows, processes and business needs must be adhered to allowing for a repeatable schedule format to be executed.

Transformation Planning

A clear understanding of scope, the end points and the business needs of the transformation is needed for a successful execution at scale.

- Hardware location and requirements
- Software
- Licensing needs (project and user)
- Skills/Training requirement for multiple teams (e.g., transformation, devOps, application users, citizen developers)
- Team buildout: People, skillsets, time investments
- Communication plans: Team communication, management reporting, user community updates
- Testing procedures and success criteria
- Definition of business requirements for applications, Decisions required by whom, the time investment required, the development of the function, and the sign off requirements.
- Budget management: A transformation from Domino does not work in a vacuum and relies on business needs, responses and potentially a non-centralized budget. Application transformation is not something 'done to' users, but 'with', a strong policy for communication and expectations will be needed to ensure the migration and transformation of applications have the necessary and expected funding.

Execution

The speed of the migration and transformation is dependent upon the business capacity for change and how well the transformation plan is adhered to (for example, response times and training/education) by all parties however, if the previous pillars have been successfully executed, the migration and transformation will form a standard, repeatable format through to completion.

B. Service Enablement & Target Education

Technical Training/Enablement

Target platforms and new technology must be understood, and a functional service supported prior to transformation.

In general terms, a service needs to be enabled which comprises of education of IT professionals to support the new service, possibly new hires to augment knowledge and compliance, data policies and governance in place. Education in the form of technical training will be required for the platform and technologies, collaboration with the security and compliance teams to set up a secure and functional service and an operating expense budget calculated to maintain the service based upon a known workload the service will support.

End User Education

When moving to new platforms and technologies, those who will interact and work on those new platforms must have the appropriate training to ready them for the change in how they work and how their applications are likely to function in the future.

Training likely follows multiple layers depending upon the expectation you have for your end users. At the least, the users must understand the basic concepts of the new platform, the differences from the old and how to use and maintain their application on the future target.

For both pilots and production implementation to be successful, training is critical to success.

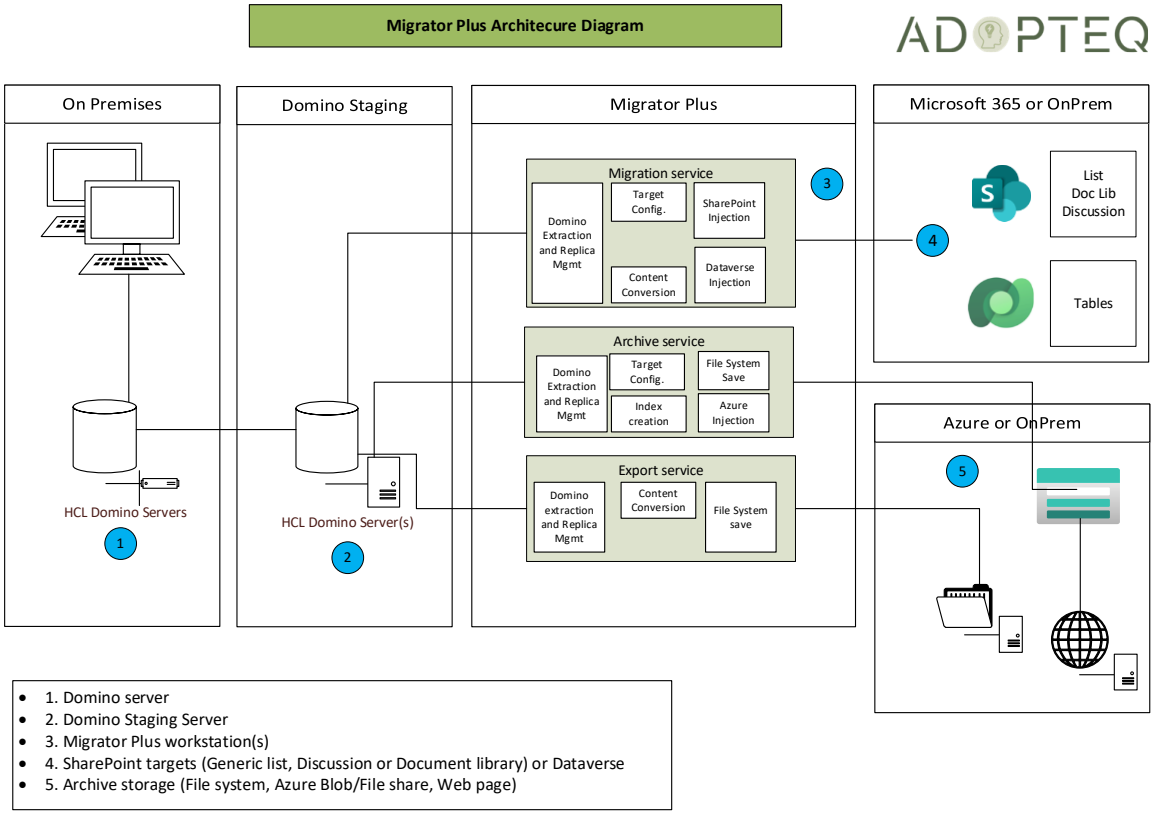
C. Migrator Plus Architecture & Sizing

Migrator Plus instances should be implemented and sized based upon several factors.

- Volume of content to be migrated.
- Number of databases to be migrated.
- Data complexity of databases to be migrated (not functionality)
- Duration or planned time to migrate the content.
- Speed of data transfer in the environment to the targets chosen.
- Blackout or network restrictions.
- Geographical spread and/or data federation requirement.

Migrator Plus Architecture Diagram

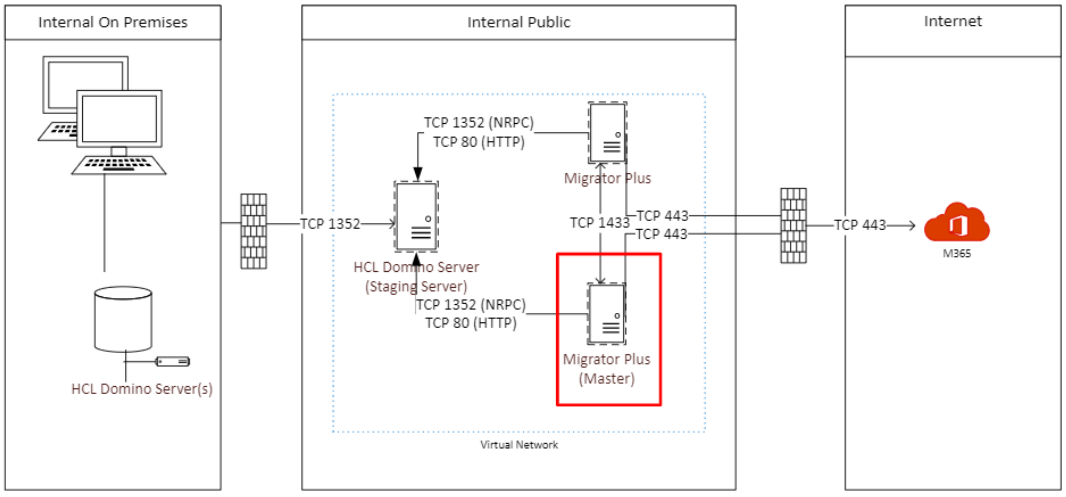
A Migrator Plus implementation consists of at least one Migrator Plus console or worker. The first instance of Migrator Plus will always become the 'master' because this will store the migration SQL database. All subsequent Migrator Plus installations are workers who communicate with the master SQL database maintained on the first instance of Migrator Plus.



- 1. Domino server
- 2. Domino Staging Server
- 3. Migrator Plus workstation(s)
- 4. SharePoint targets (Generic list, Discussion or Document library) or Dataverse
- 5. Archive storage (File system, Azure Blob/File share, Web page)

Migrator Plus Network Architecture

Migrator Plus can be implemented both on-premises and in an Azure tenant. The diagram used below assumes connecting to Microsoft 365 or Azure as the target. Internal Public can reside either within an on-premises data center or within Azure.

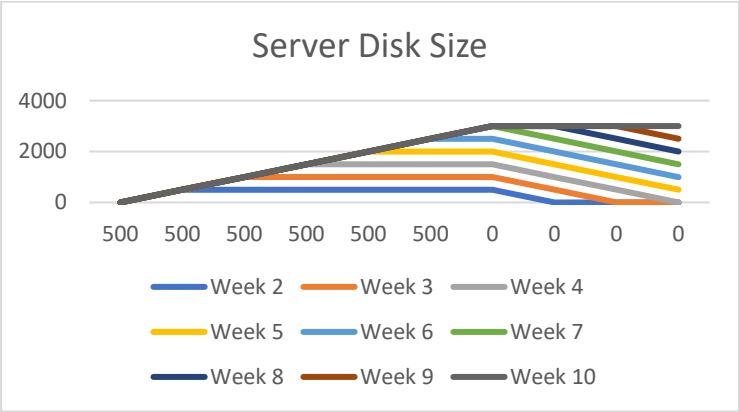


D. Domino Staging Server

Whilst not required, we highly recommend implementing a Domino Staging Server. By utilizing a Domino staging server, you reduce change and migration load on production servers. A Domino staging server is populated using native Domino replication and can be configured as either 'Push' or 'Pull'. Any design changes or access rights to allow for migration are changed on the staging server replica, not in production.

The sizing of your Domino Staging environment is dependent upon several factors. How much data you will migrate on an average week, the duration of your end-to-end migration process plus duration of the post migration support period plus 30% free disk space.

The best practice is to maintain each migration batch of databases on the Domino Staging Server until that batch has completed its cycle (for example 6 weeks). This is a simplified exercise but when grouping and scheduling your migration batches, you should take into consideration the cumulative volume to size your disk storage effectively. In this 6-week example, the storage will remain at the 6-week limit until the weekly input starts to reduce as you complete your migration.



In larger transformation projects, a best practice is to utilize multiple Domino Staging Servers for both speed and failover.

E. Migrator Plus Console/Worker Disk Size

Migrating to SharePoint

When migrating content to SharePoint, Migrator Plus does not store the full database size on disk, attachments from the database is stored in a 'tempfolder' before being uploaded to the SharePoint site. Therefore, there is a need to have sufficient disk space to store attachments for the larger databases on the worker. If DAOS is implemented on the production servers, the physical size (expanded size) should be considered when managing disk space requirements.

Migrating to Archives or File Export

When performing an Archive Migration or a File export, the database is stored on the local disk until moved to the target location. If migrating a 500MB archive to Azure, the worker disk space will require at least 500MB to store the files until the upload service picks up the archive and moves it to the Azure file store or the exported file is manually transferred.

If creating a CSV to import to an alternate target which supports CSV, this will remain on the Migrator Plus worker it was generated on until moved to an alternate location.

F. Throttling

During migration, it is widely accepted that your migration tasks may be throttled if migrating to the cloud. Throttling is implemented to ensure the best user experience and reliability of SharePoint. It's primarily used to load balance the database and can occur if you misconfigure migration settings, such as migrating all your content in a single task or attempting to migrate during peak hours.

Migrator Plus will migrate your content into SharePoint using the Migration API, leveraging Azure as a temporary holding place.

Best practice to reduce throttling are:

- Choose a datacenter location closest geographically to your migration environment and your Microsoft 365 account.
- Migrate during off-peak hours (nights and weekends in your SharePoint tenant time zone)
- When grouping migration batches, review the size and data complexity. Large files migrate faster than many small files, multiple lists, and custom columns. Files migrate faster than objects and list items.
- Create multiple Migrator Plus service accounts to run concurrently rather than a single account running all uploads.
- Leverage multiple Migrator Plus workers to distribute the load of uploads and account usage.

G. Pre-Requisites

Prior to embarking on the implementation of Migrator Plus, execute the steps in the Installation guide for MigratorPlus, and review the pre-requisite checklist to ensure that the environment is prepared to perform successful migrations. The pre-requisite checklist for Migrator Plus will be provided by our services organization or ask sales@adopteq.com for the latest version.

Migrator Plus Service Account

For all migration types, a Lotus Notes account is required with sufficient access to all content in scope for migration in each database.

We recommend (as per the pre-requisites) you run Migrator plus using service accounts. You will need two (2) accounts. One to access the source content and one to access both the migration environment and the target platform for the migrated content.

- Lotus Notes ID
- Active Directory Account

Refer to the pre-requisites checklist for required security permissions.

If you do not wish to create service accounts, the user currently logged onto the Migrator Plus console must have a Lotus Notes ID and valid Active Directory credentials to execute migrations.

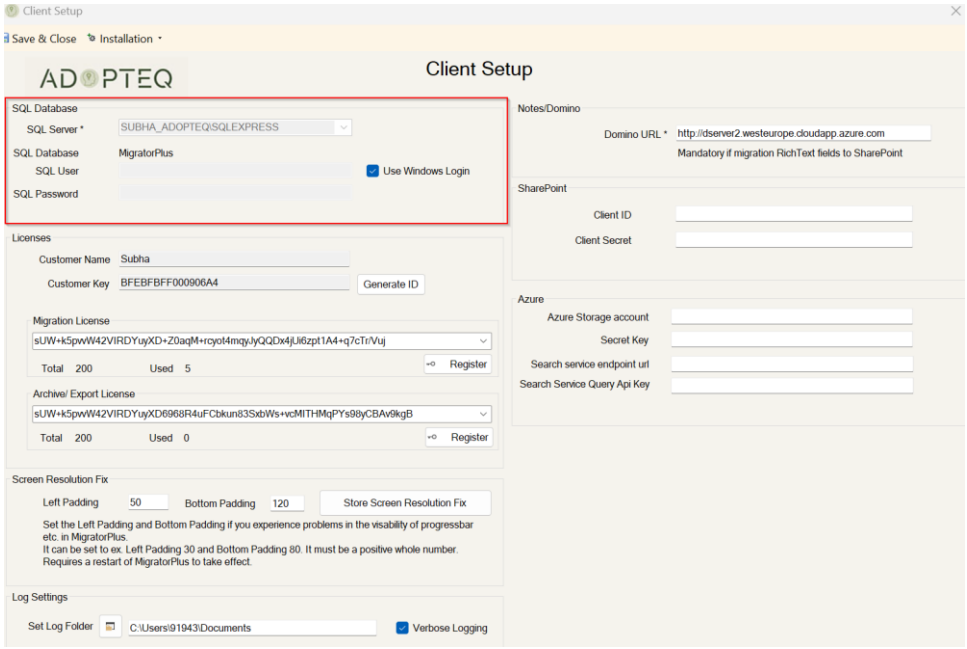
Note! The list of servers visible in Migrator Plus is dependent on the Lotus Notes permissions the service or logged on user account to access the local names.nsf database on the Notes client.

2. Migrator Plus Setup

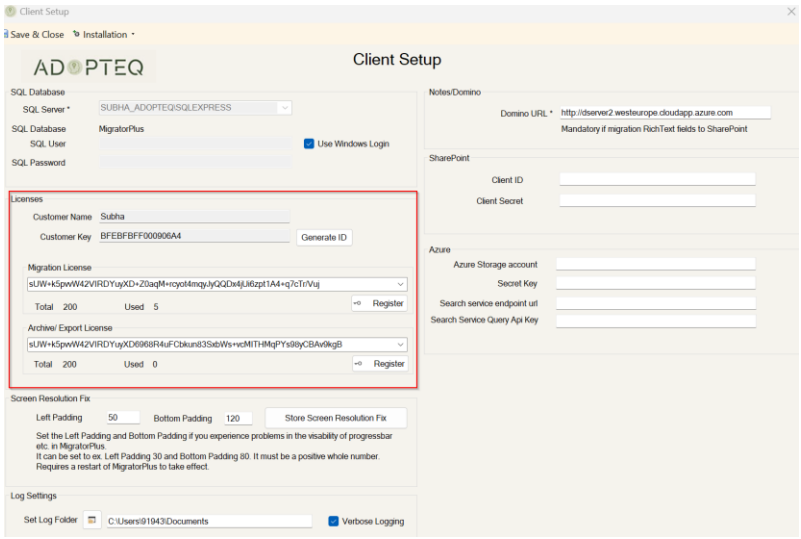
A. Setup Configuration

Note! This must be configured for each Migrator Plus worker.

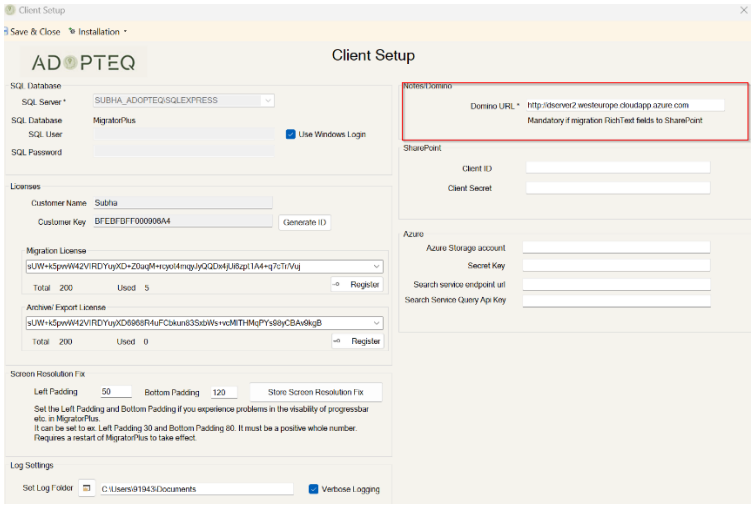
1. Provide the SQL server, database, username, and password to connect to SQL. Alternately you may select the check box 'Use Windows Login' to log into SQL using your windows credentials.



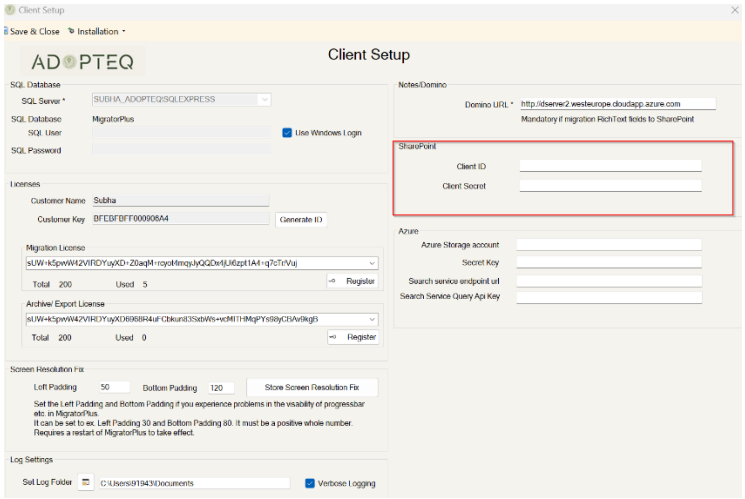
2. Next step is to configure the license. Provide a name in the Customer Name field and click on Generate ID. A number will be populated in the Customer Key field. Email sales@adopteq.com to receive the license key. Enter the provided key in the license fields and click on register.



3. Under scope, enter the Domino URL if the database contains Rich text fields.



4. Enter the SharePoint client ID and client secret.



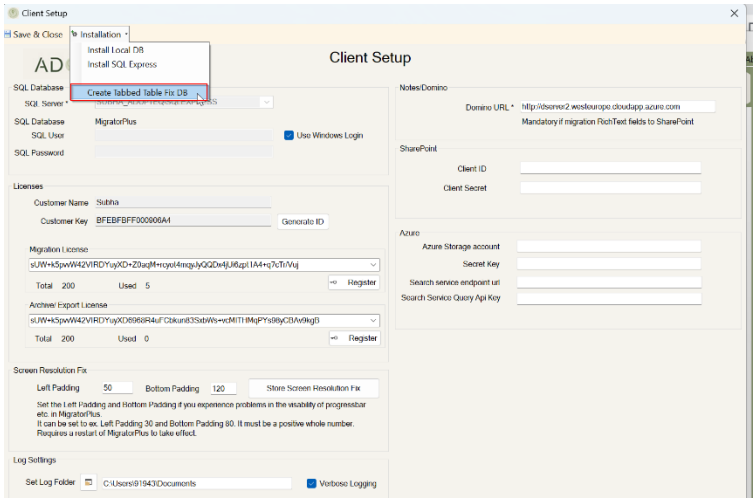
   a. If you unsure of how to register the application as a SharePoint app, please refer to https://learn.microsoft.com/en-us/sharepoint/dev/solution-guidance/security-apponly-azureacs.

      Note! Irrespective of whether you are migrating to Onpremises SharePoint or Online, this registration must occur.

Note! This setting relates to SharePoint migrations of databases with the below:

5. If the Domino database content contains tabbed tables or sections (expandable areas showing as a 'twisty' in Notes), an additional configuration in Migrator Plus is required.
   a. Below is an example of a tabbed table:

6. Navigate to the dropdown list 'Installation' then select 'Create tabbed table fix DB'.



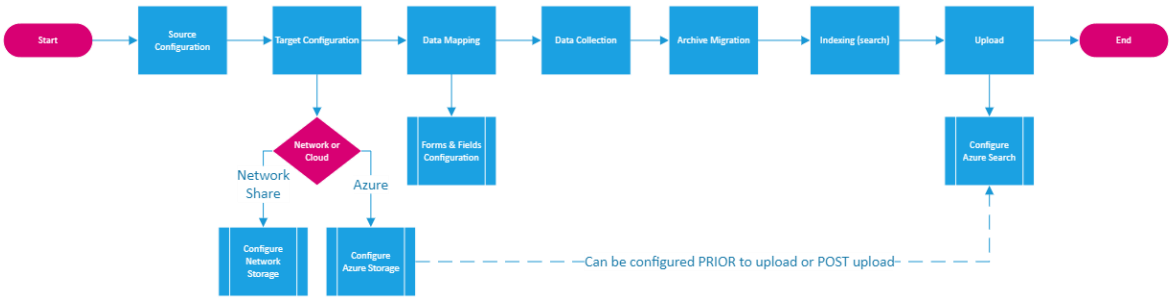
7. Migrator plus creates a database locally and this database is used by Migrator Plus when the transformation is performed (to avoid any design change on the source database) to collect content not expanded and visible otherwise.

3. Archive Migration

A. Introduction

Based upon the analysis output of your discovery, there may be applications which are a good fit for Archival. Creation of an archive is the extraction of all valid and available Domino database content, including metadata to EML. An archive is defined as a read-only copy of the content. It is a snapshot in time of all content available in the Domino database at point of migration.

To complete an archive migration, there are multiple steps to complete



B. Target File Store

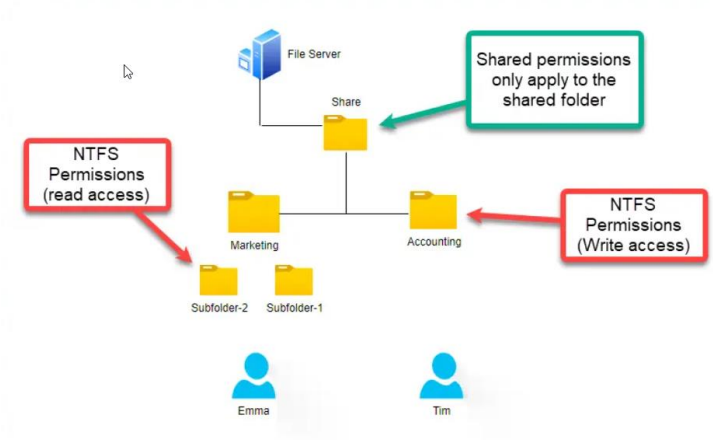
Storage Planning

Before embarking on the archival of content, careful consideration should be given to the location of your archived content and the accessibility of the archives. Migrator Plus currently supports two (2) target storage locations, Network file storage and Azure file store.

When migrating a database and its content to EML, a folder is created per database to store the EML files which have been transformed from NSF document.

Neither Migrator Plus nor the end client Archive Viewer manages security for the end point of the archives. This is provided by using the integrated security platforms provided, such as Active Directory authentication. Therefore, prior planning of location, folder structure and folder security inheritance should be set up before you archive and transfer content.

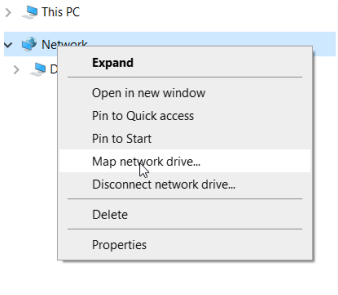
For more information, review the relevant administrator guides for the storage platform of choice.



Network File Store Setup

Mapping a network drive for your end users to access the network file storage location will be a requirement to either browse the content using native file explorer or to connect the Archive Viewer client.

Mapping a network drive can be done at an individual level or via a script pushed out by local IT.

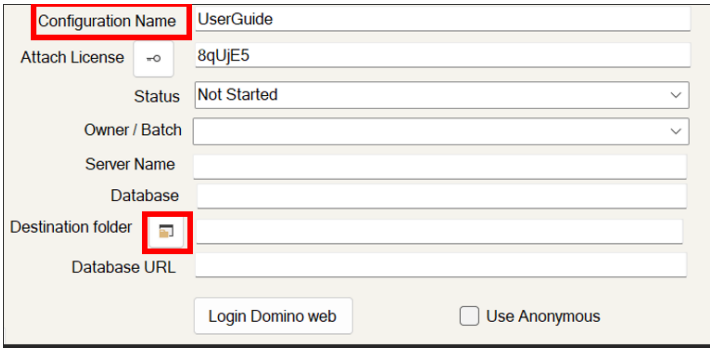


Review the https://support.microsoft.com/en-us/windows/map-a-network-drive-in-windows-29ce55d1-34e3-a7e2-4801-131475f9557d for further information.

Network File Storage Configuration in Migrator Plus

Within Migrator Plus setup, provide the location of where the databases for archive are to be stored.

1. Enter a configuration name for your migration.
2. Enter the name and destination folder (where the archive will be created)
3. Save the values by clicking close.
   Note! If you do not enter the destination, the configuration will NOT be saved.



Cloud File Storage Setup

To store content in Azure, it first requires a setup of the following:

1. Azure storage account
2. Storage container(s)
3. Search Service
4. Search Index(s)

Azure Setup

STORAGE ACCOUNT

1. In the Azure console, create a storage account which will manage the archived content within your tenant.

2. Click 'Create' and fill in the requested information. If you are unsure, please refer to the Microsoft documentation. Each company will have its own configuration standards.

CONTAINER

The next step is to create a container in which to store your blob.

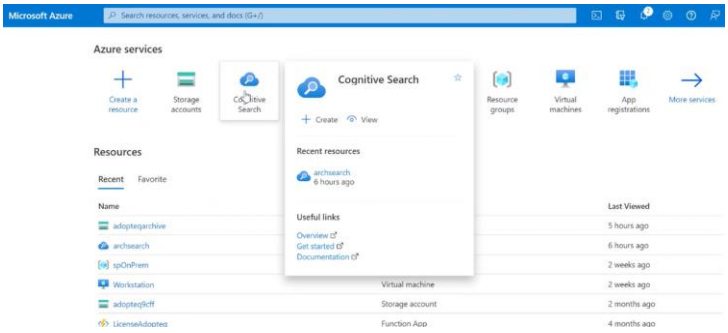
1. Navigate to the 'Data Storage' section in the Azure console.
2. Create at least one Azure container for storage purpose (likened to setting up a root folder)
3. Enter a name for your container and click OK.

AZURE SEARCH SERVICE CREATION

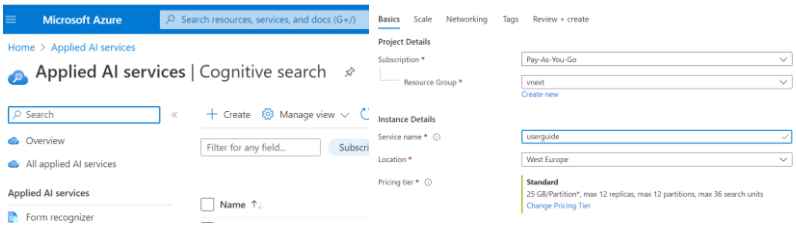
Navigate to 'Cognitive Search' to set up the search service.

Microsoft define different search index tiers depending upon the volume of archives stored. When creating a search index, ensure you understand the volume to be stored in Azure prior to the creation of the search service.

Follow the Microsoft guidelines found here to create the search service in the same location as your storage containers. More information can be found here: https://learn.microsoft.com/en-us/azure/search/search-create-service-portal

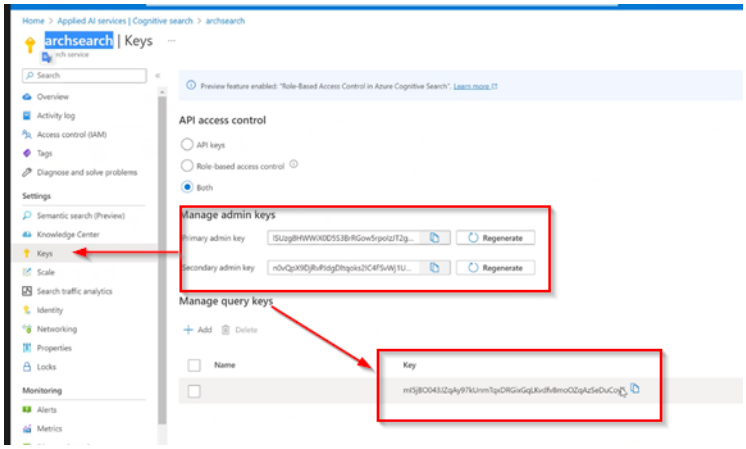


Note! The location you select for the search service should be the same as the region for the container



Before leaving the Azure console, copy the following information for entry into Migrator Plus:

1. URL for the search service
2. Storage account name
3. Key (as shown below)
4. Container name
5. Query key.



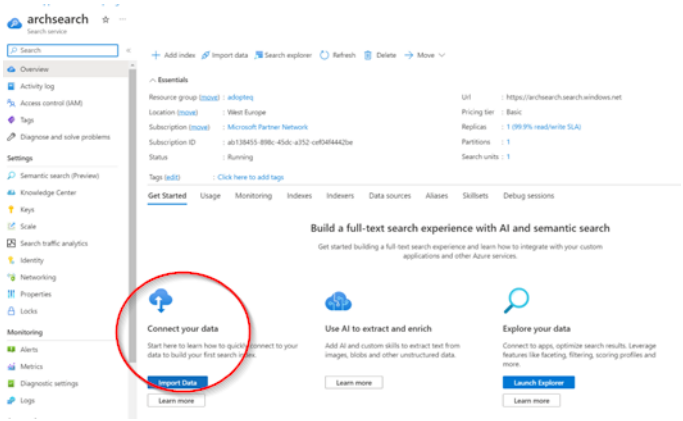
AZURE SEARCH INDEX CREATION

Prior to configuration of a search index, content must first be uploaded to Azure

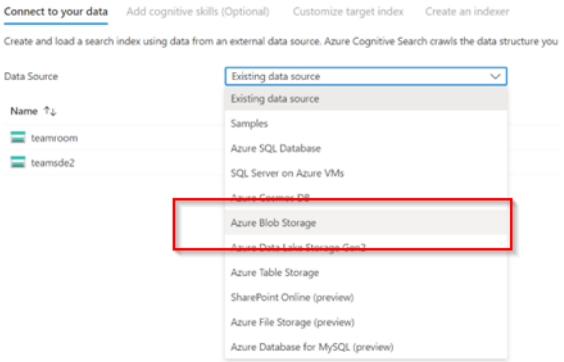
To upload content to Azure, please move to the next section of the document. This sounds counter-intuitive, but Microsoft will only allow you to select a blob folder in the wizard once you have uploaded content in the first instance to create the blob folder.

Once the upload to Azure is complete, follow the following instructions to set up the Azure Search index.

1. Open the Search Service and "Connect Your data" by clicking "Import Data". This will start a wizard that will guide you through the process.



   a. Select Azure Blob Storage data source. One must be set up per archived database (i.e., folder in the container)



2. Fill in the form displayed.

(1) Choose your data source 'Azure Blob Storage'

(2) Enter the Data source name (the name of your archive folder)

(3) Select 'content and metadata' as data to extract

(4) Choose Text as Parsing Mode

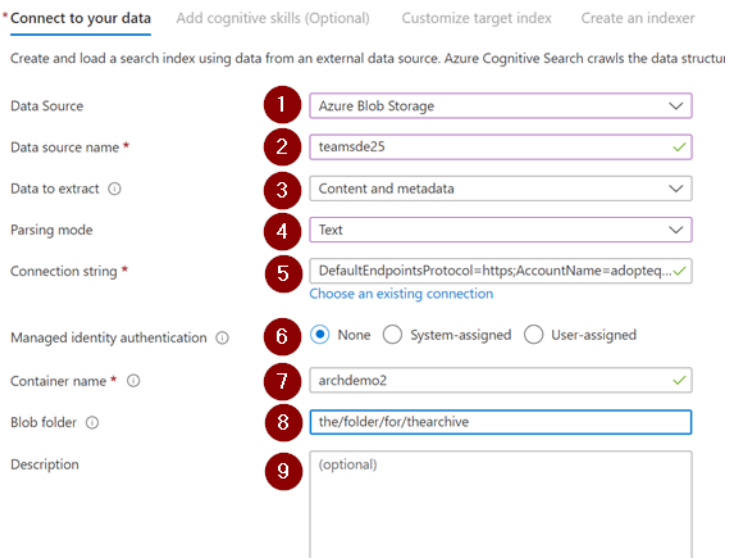
(5) Click on "Choose an existing connection" to select the storage account and container created in the previous step

(6) Select 'none for Managed identity authentication

(7) Enter the container name for where your archive files are stored (case sensitive)

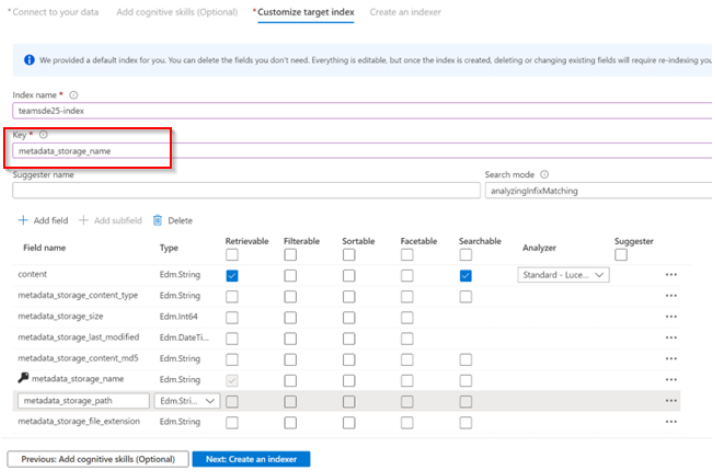
(8) Type the Blob folder where the archived files are stored (Case sensitive) – as created in Migrator

(9) Add a description (optional)



3. Skip the tab 'Add Cognitive Skills'
4. Click 'Create index'

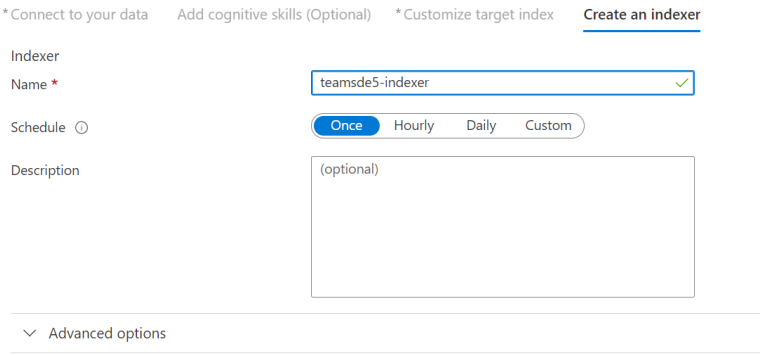
Navigate to the next tab within the configuration view.



5. Select tab 'Customize target index'.
6. **Index name***: Use the index name previously entered in Migrator Plus
7. **Key***: Select the option 'metadata_storage_name' as the key.
8. Select content as retrievable.
9. Accept the defaults on the remaining fields and options.

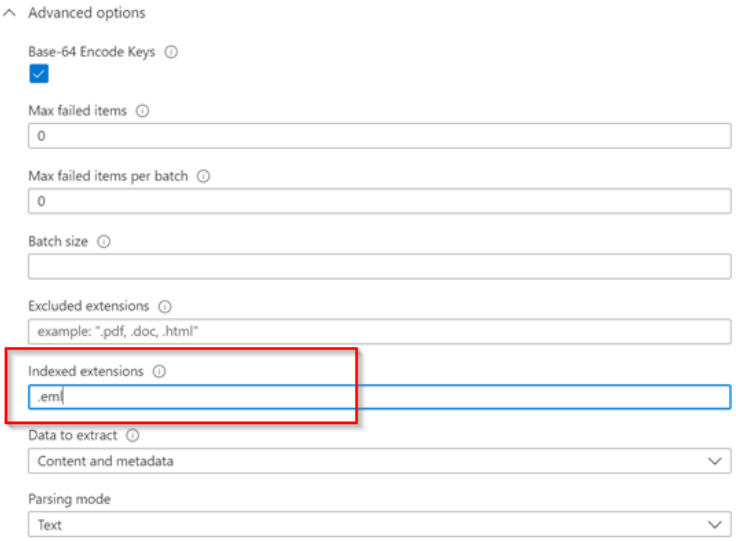
Navigate to the tab 'Create and indexer'

10. Select tab 'Create an indexer'.
11. Create an Indexer with a name more relevant to your search index.

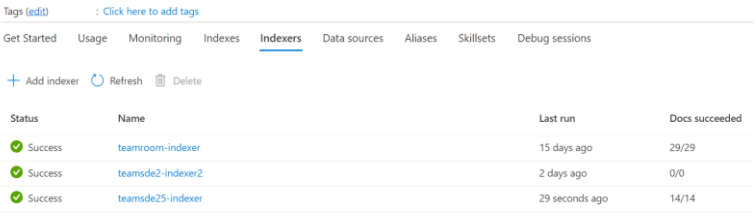


Note! There are options to run the index service on a schedule. This can remain as 'once' unless planning to upload further content to the archive.

12. Expand Advanced options and include ".eml" as indexed extensions



13. Ensure that the parsing mode is set to 'text'.
14. Click 'Submit'
15. Check that the indexer is functional and reporting success.



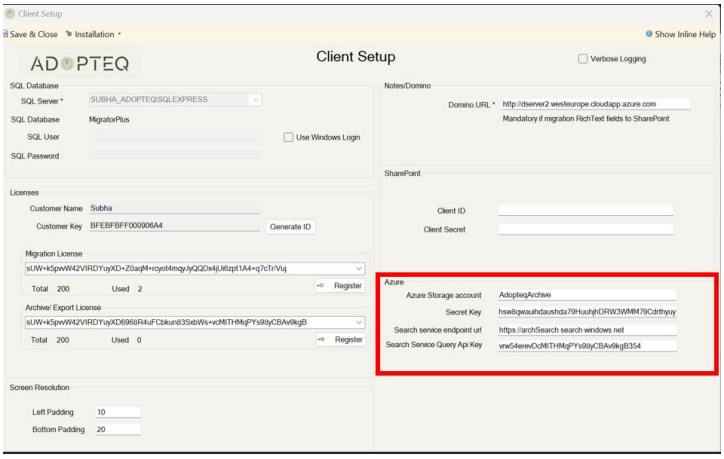
Note! Indexing of content will take a minimum of 10 minutes.

Azure Configuration Setup in Migrator Plus

This section will provide you with the information necessary to create a standard setup of Azure connectivity. If you have not created a storage account, a container, key, and search index, please refer to the documentation.

Azure File Storage in Migrator Plus

1. Open 'Setup' to create a global configuration of Azure connectivity.

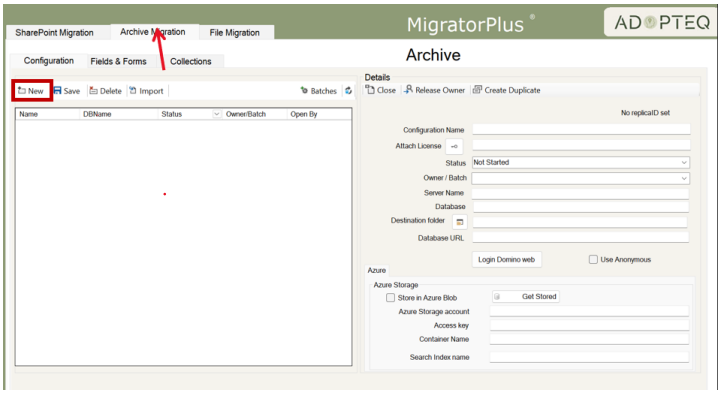


2. Complete the fields with the information previously copied for the Azure console.
   a) Storage account name
   b) Secret Key
   c) Search service endpoint URL
   d) Search Service Query API key

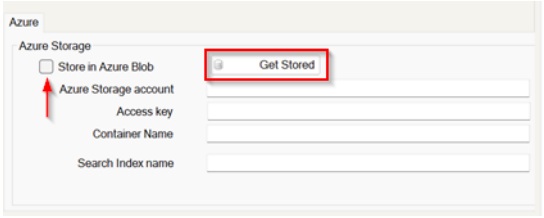
C. Source Configuration

This phase will create the folder with which you can create a search index for the archive you will store in Azure

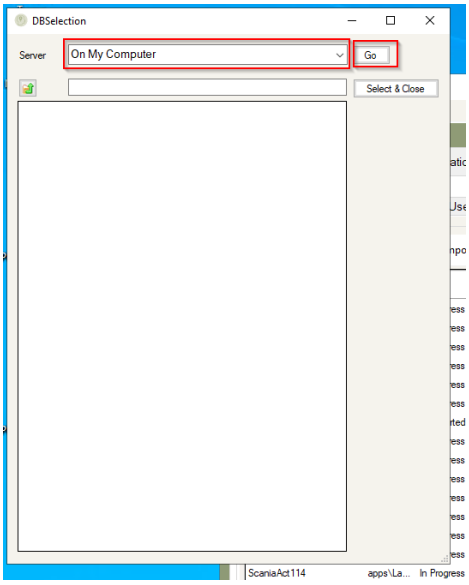
1. Navigate to the "Archive Migration" tab.
2. Click on the New button.



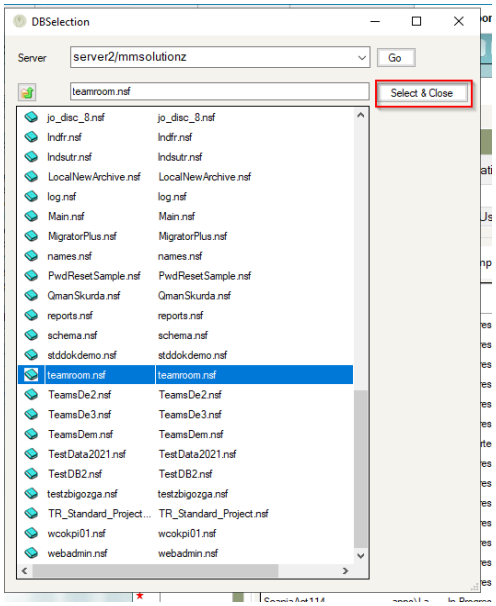
Note! All Azure archives will use standard setup unless you change the configuration when creating a new archive in Migrator Plus.



A dialog will be displayed to select the Domino applications (Source or Staging Server) you wish to archive.

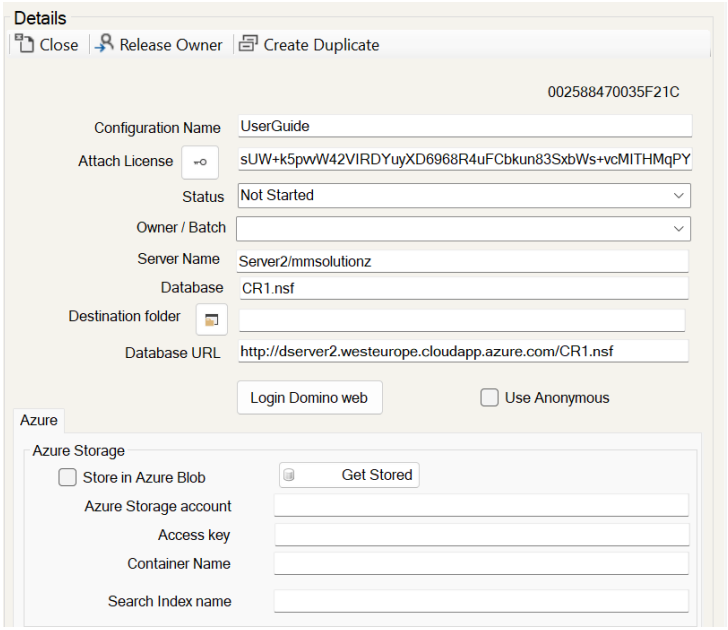


3. Select the source server and click 'Go'.
4. Navigate to the database in the folder structure you wish to archive and double click the entry. This will populate the database selection.
5. Once this is populated click Select & Close.
   Tip! Any available database can also be entered manually by typing the location of the application in the selection dialog.



Once the database has been selected the configuration details must be entered.

6. Give the configuration a name.
7. If a license key is to be associated with this migration, enter the license key (this will be automatically populated if generated during setup (see Installation Manual for instructions)). Click the key icon to assign the license.
   Note! Assigning the license will consume one (1) license per replicaID. If no license is assigned the migration will be limited to five documents.



8. Provide a search index name for the archive to upload
   Tip! use the databasename for ease of reference (all lowercase)

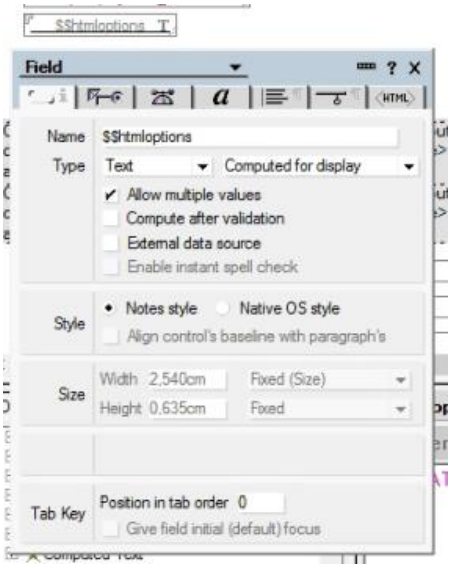
Database Design Configuration

Prior to setting up Migrator Plus to archive NSF content to EML, remediation may be required for some types of database settings.

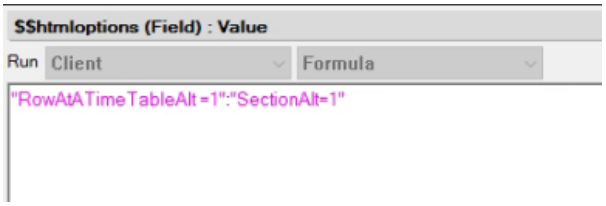
Tabbed Table Remediation

The changes for tabbed tables in the setup of Migrator Plus are related to SharePoint. This action must be completed for each database you wish to archive which contains tabbed tables. A field must be added to the forms design to be able to correctly migrate the data. To reduce changes made on a Production Domino database environment, we recommend that any changes are made on the Domino Staging Server replica instead of the source database.

1. Add a "Computed for display" field named "$$htmloptions"



2. Computed formula should be “RowAtATimeTableAlt=1”:”SectionAlt=1”



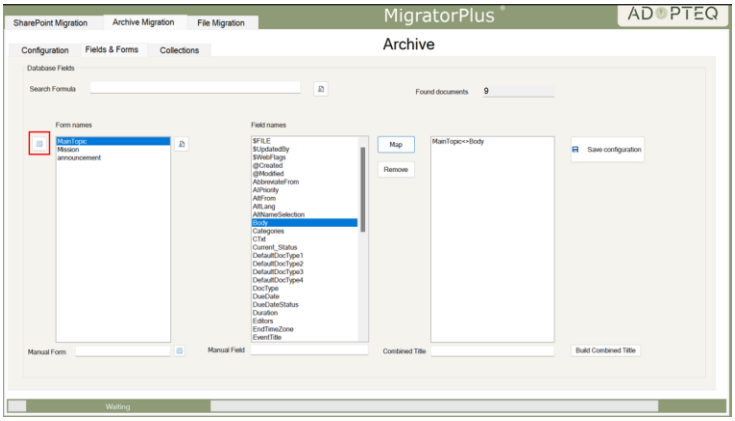
D. Data Mapping

Fields & Forms Configuration

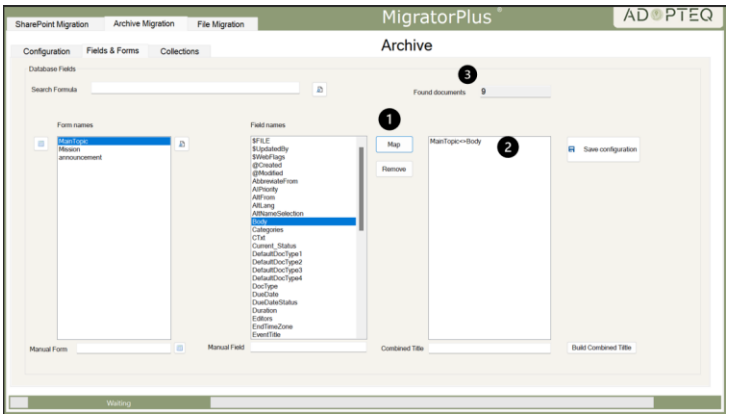
This step configures how the data will be mapped for migration. Configuration for the data mapping is managed in the ‘Fields & Forms’ tab in Migrator Plus.

All forms within an application can be configured at the same time.

1. Press the Forms Icon. This will fetch all forms in your chosen database.
2. The forms will be populated in the left-hand column.



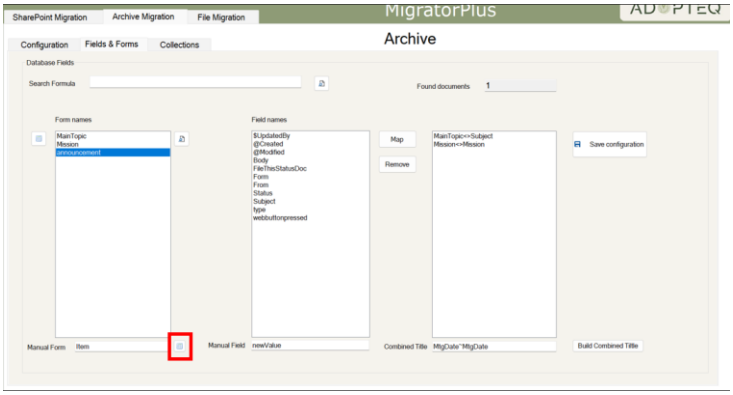
3. When you select a form, the available fields for that form will display in the middle column.



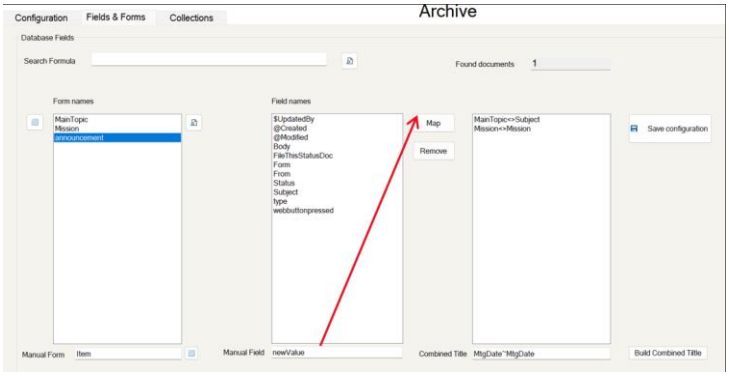
4. When both columns contain values, it is possible to map a Title field to be used for a specific form.
5. To map a Title field, highlight the Form, the Field and click the ‘Map’ (1) button. This will display the mapped values in the right-hand column (2). The number of documents used by the selected form will be displayed above the form names (3)
6. To remove a mapping, highlight the mapping in the right-hand column, and click on the remove button.

Note! There are occasions where the form used will not be displayed in the list of form names. A manual addition can be performed. Similarly for form fields.

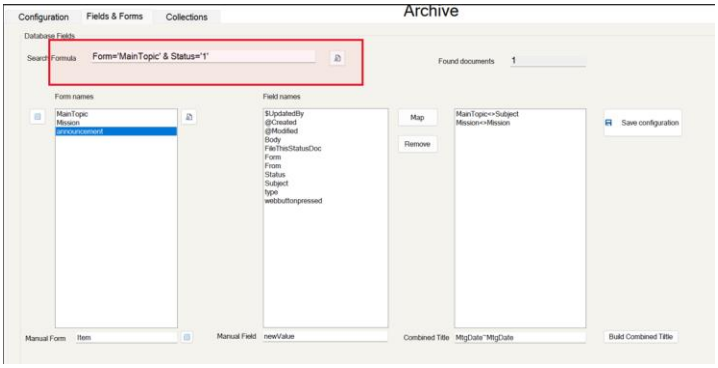
7. If the form used is not displayed, it can be added by typing the form name in the field 'Manual Form and then clicking the form icon and following the previous steps.



8. For documents created programmatically, when there is no design to refer, fields can be entered manually and mapped using the **Manual Field** option. Enter the field name in the field and click on **Map** to build the title.



9. For document heavy databases, you can reduce the number of documents retrieved by entering a search formula in the 'Search Formula' field. This will then restrict the number of documents collected in the next step.

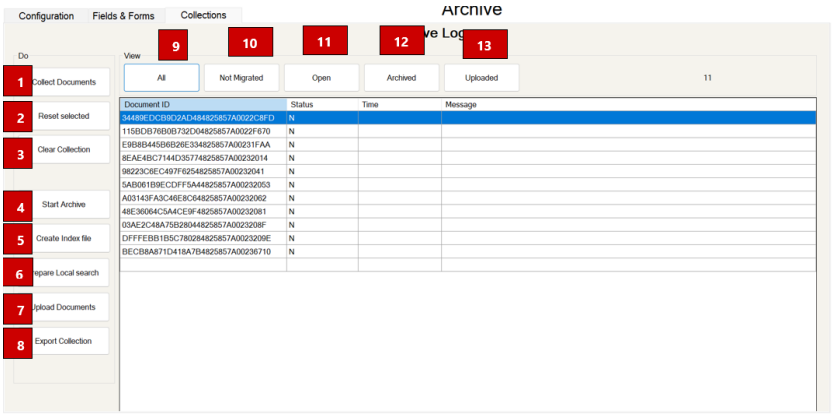


10. Save the configuration.

E. Data Collection

Once the mapping has been completed, the next stage in the archival process is to collect the data from Domino database.

The collections tab has multiple buttons and actions. Here is the overview of the collections tab.



(1) **Collect Documents**: This will gather all the documents in scope from the Fields and Forms tab

(2) **Reset Selected**: This will reset the status to N on the selected documents

(3) **Clear Collection**: This will remove the collection all together. Note. If this is performed, a new Collect Documents must be performed.

(4) **Start Archive**: The starts the archive process for all documents in scope

(5) **Create Index file**: This creates the file used in the archive viewer (end user product) to display the items

(6) **Prepare Local Search**: Preparation for the search index to have txt files to index as well as the eml files. Those txt files will have only the Notes properties in it. but will be named the same pattern (except for the filetype) which results in better search result and must be used for the cloud cognitive search.

(7) **Upload Documents**: This uploads the documents to cloud storage previously configured in setup.

(8) **Export Collection**: If the data is to be stored in a cloud storage the item uploaded to the selected cloud storage will be displayed here once they have been uploaded

(9) **All:** Displays the list of all collected documents, regardless of status

(10) **Not Migrated**: Displays the list documents not migrated marked with a status of 'N'

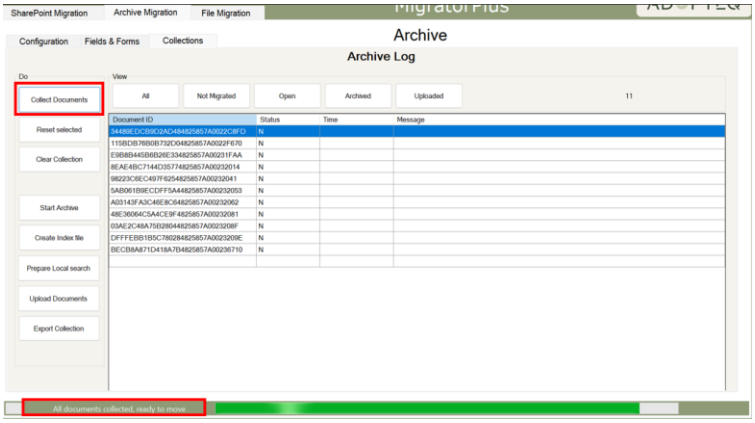
(11) **Open**: Displays the list of all documents where an issue has occurred during export. The Message column will be populated with a status of 'O'

(12) **Archived:** Displays the list of migrations which have started. This means that partial metadata has been gathered, but the complete (export) file has not been created.

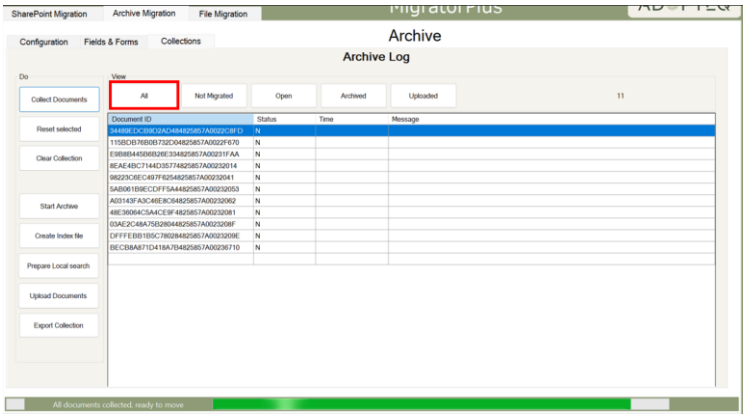
(13) **Uploaded:** Displays the list of documents where the data has been exported to a physical file

To collect the documents for upload, perform the following steps:

1. Click the Collect Documents button. At the bottom of the product a confirmation will be displayed once all documents have been collected.



2. Press the 'All' button to list all collected documents.
   Note! If only 5 documents are visible, a license key has not been configured or assigned.



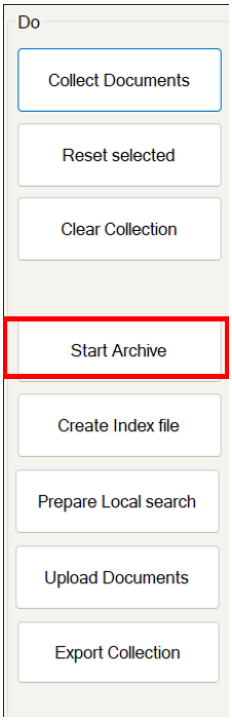
Note! If you encounter an error with one or more documents these can be reset

3. Highlight the documents and press the 'Reset' selected button (2)
4. The collection can be removed by clicking the Clear collection button (3)
5. Remediate and repeat the Collection steps above.

F. Migration

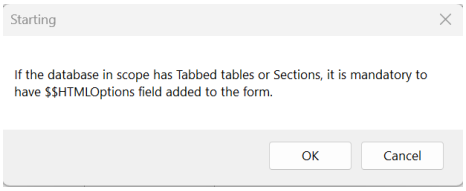
Post collection, the act of transforming the NSF content to EML content begins. This is the archive migration process.

1. Click Start Archive. This will archive all documents with the Status N

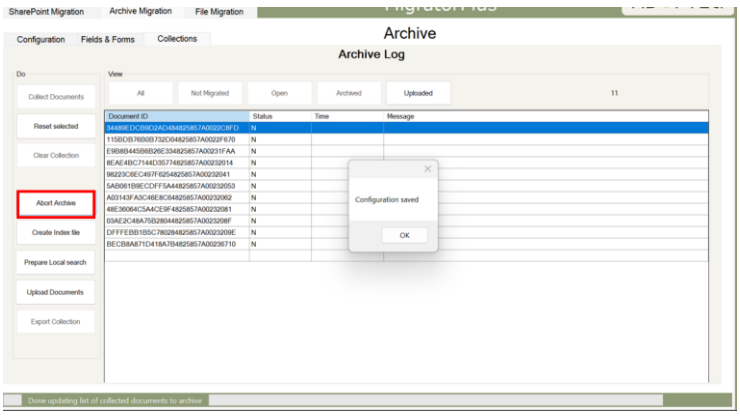


When selected, the configuration will be saved.

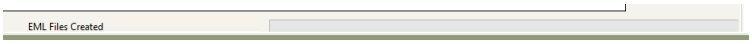
2. Click OK to continue.
3. Alert will appear to create $$HTMLOptions field in the form if there are tabbed table/sections. Click OK to continue.



Note! The 'Start Archive' button will change to 'Abort Archive'. Clicking this button will stop the process.



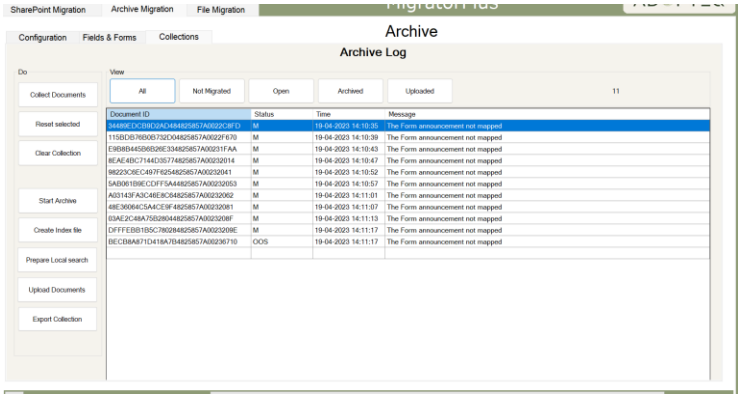
The Status bar shows the progress of the archive. Once it is completed it will display the results and the 'Abort Archive' button will once again display as 'Start Archive'.



4. Click the 'All' button to refresh the view.

5. There are multiple statuses shown which will provide you with information on the data quality of the archive and its status:

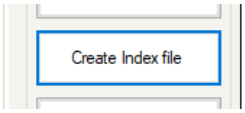
   OOS = Out of Scope. This form hasn't been mapped in the previous step and will be skipped.
   M = Archived successfully
   N = Archive not started
   O = Shows documents which have failed to migrate



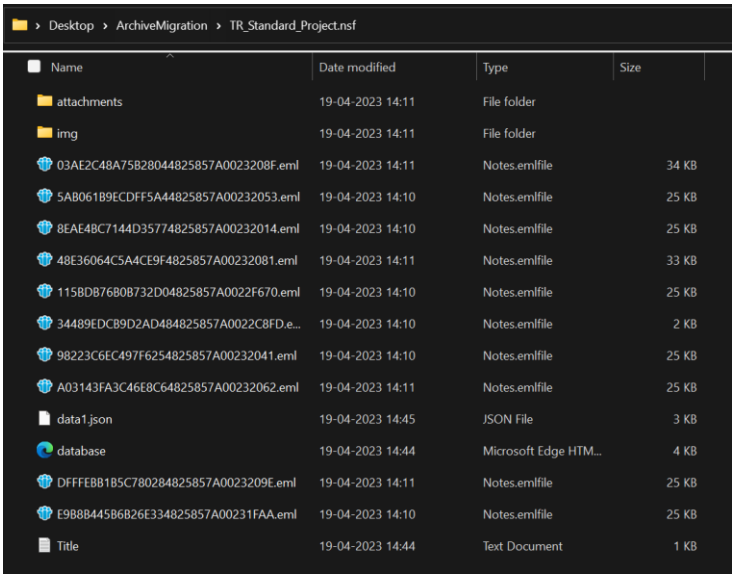
Indexing (for Archive Viewer Plus requirement)

Once content has been transformed, an index of the EML file is automatically created and a JSON file is generated.

1. The Index file can also be manually created by clicking the Create Index file button.



2. The exported data can be found in the specified in the configuration tab comprising of the ".eml" files generated from Notes content and the data1.json used by the Archive viewer client.

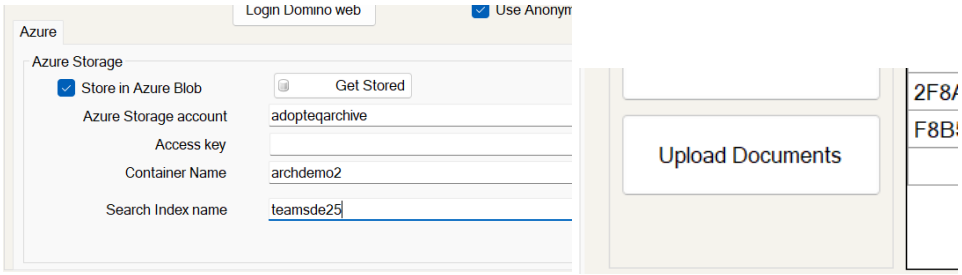


G. Upload

In the target configuration, a destination storage was created. These steps will now upload the content to the pre-created location.

Note! For search to function within using the Archive Viewer end user client when content is stored in Azure, there is a requirement to create a search index within Azure (See previous section).

1. Add the Index name created in Azure.
2. Click on upload documents again. This will upload the folder information with the Index name for use in the Archive Viewer



3. Exit

H. Re-Homing of Archived Content

Should the need arise to move the Archived content to an alternative storage location, this can be achieved however, it is important to follow these guidelines:

1. Copy the complete folder to any target location, including json file, text file and EML files.
2. If you upload to Azure, you may use Migrator Plus or native tools such as Storage Explorer or Console.
3. Do not modify the folder structure for the archived databases.

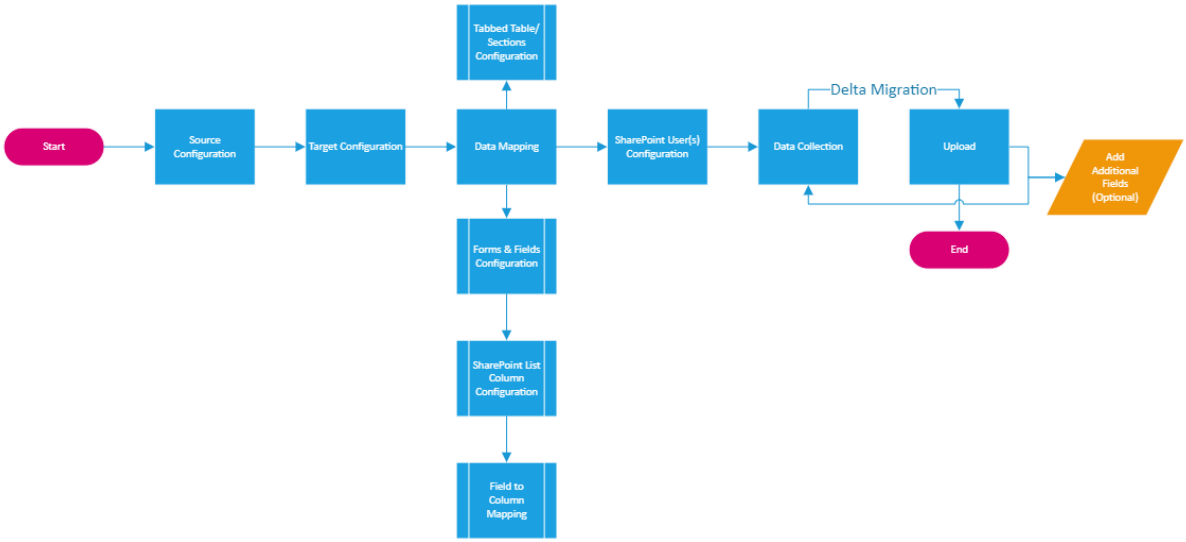
4. SharePoint (or Teams) Migration

A. Introduction

Based upon the analysis output of your discovery, there may be applications which are a good fit for SharePoint.

Databases which are a good fit are those which generally do not exceed the standard size limitations for SharePoint, do not have reader/author field requirements, do not require role-based views, or have complex workflow.

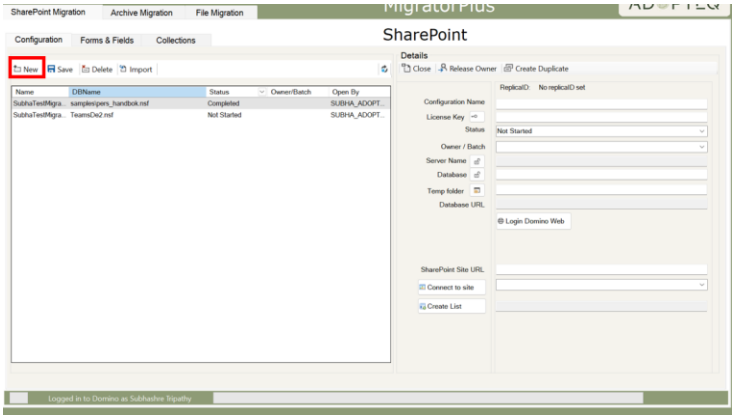
To complete a SharePoint migration, there are multiple steps to complete.



The following section contains the steps shown above and explain how to configure and execute a content migration to SharePoint.

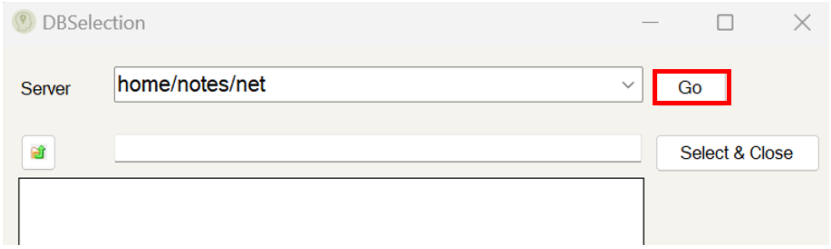
B. Source Configuration

For a migration to SharePoint/Teams, begin with creating a new configuration in the "SharePoint Migration" tab Start by clicking on the 'New' button.



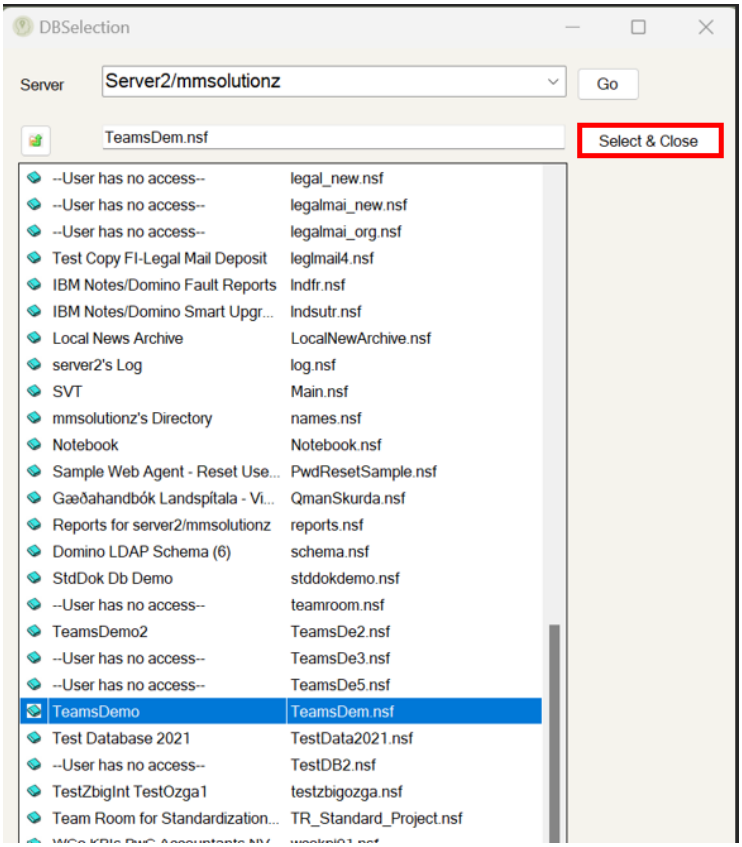
A dialog will be displayed to select the Domino application (Source).

1. Begin by selecting the source server and click Go.

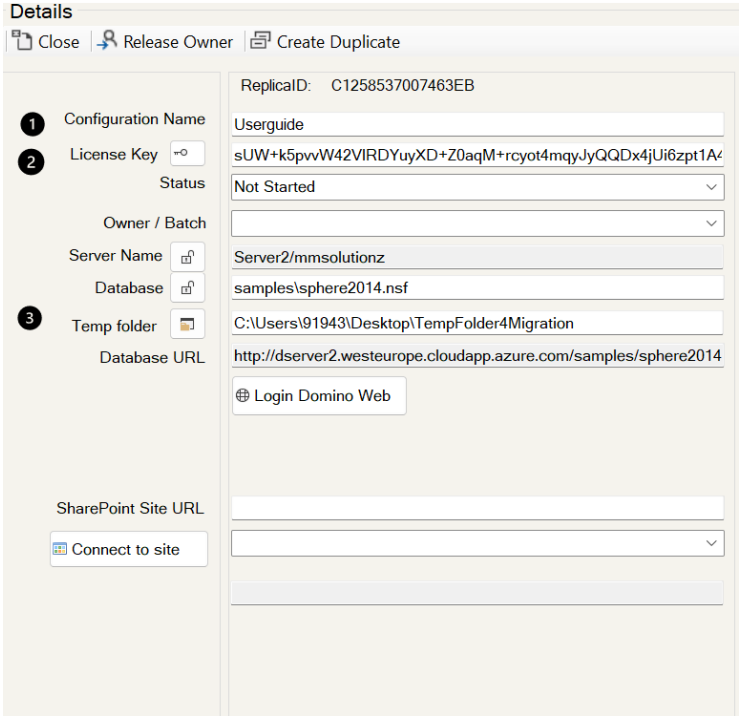


2. Navigate to the database in the folder structure. To select the application, double click the entry. This will populate the database selection.
3. Once this is populated Click Select & Close.

Note! A database can also be entered manually by typing the location of the application in the selection dialog.



Enter the configuration details. Begin with giving the configuration:



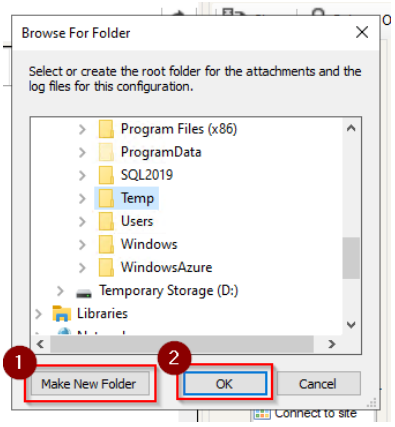
(1) Configuration Name: A name you wish to use to identify this migration

(2) License Key: If a license key is to be associated with the migration this is done by entering the license key (this will be entered automatically if the license key is available in the setup section). Clicking the key icon (2), will consume one license per ReplicaID

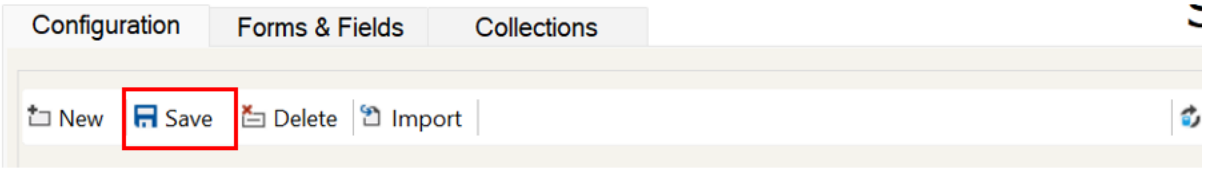
(3) Temp folder: Provide the location for the Temp folder to be selected/created. This is done by clicking on the folder icon (3)

Navigate to the folder where the temp files are to be stored.

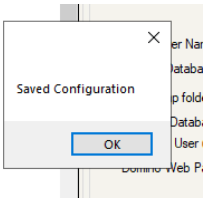
4. If a new folder needs to be created, this can be done via the Make New Folder (1) button. Once the folder has been selected the value is confirmed with the OK (2) button.



5. Once the configuration details have been added, save the information. This is performed in the configuration tab as shown below:



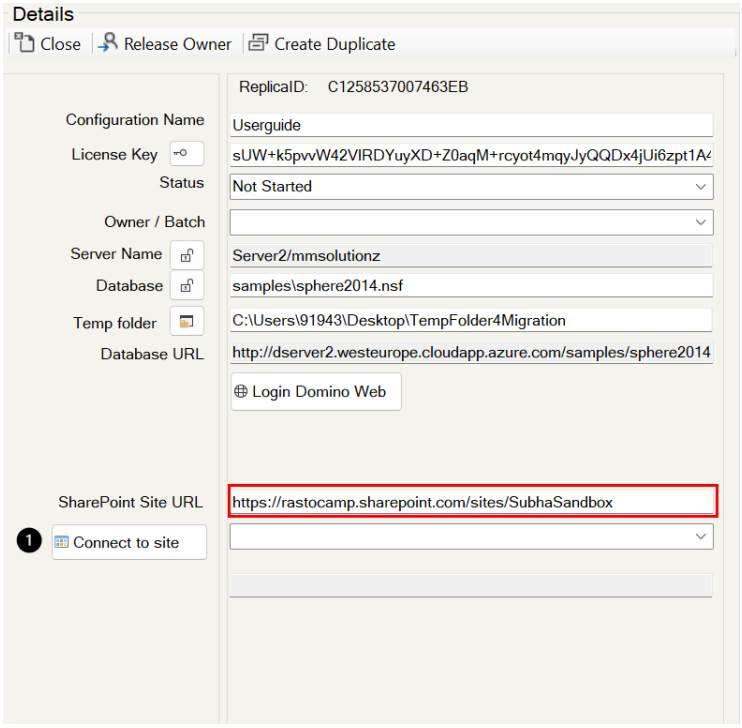
6. After a successful save a confirmation will be displayed. Press OK to close.



C. SharePoint Target Configuration

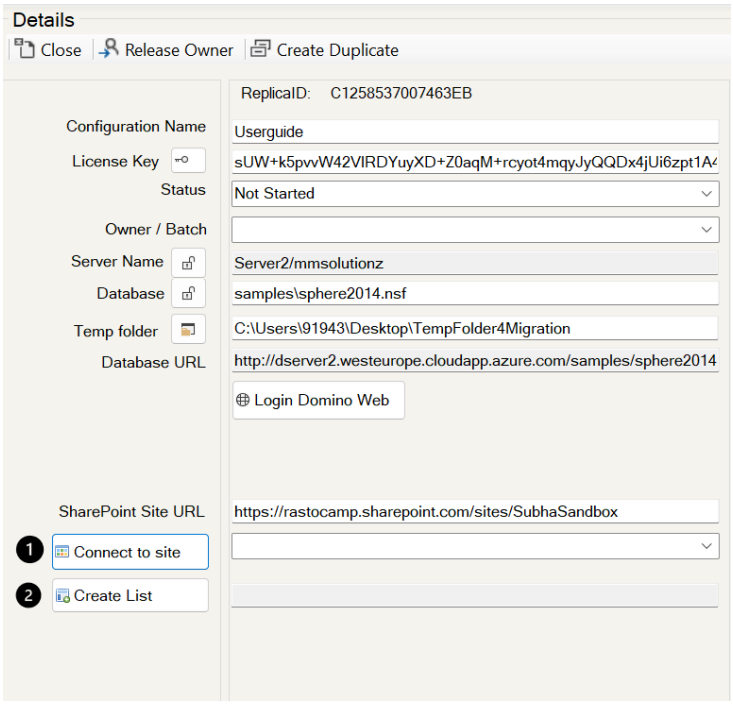
The next logical step is to configure the target SharePoint environment.

1. Create each SharePoint sites you have in scope for migration in SharePoint and assign permissions for the migration service account as per the pre-requisites.
2. In Migrator Plus, enter the SharePoint site in the field for SharePoint site URL.
3. Once this is entered click on (1) Connect to site. This will perform a web login to the selected SharePoint site. You will need to enter a valid User ID and Password to logon to SharePoint.

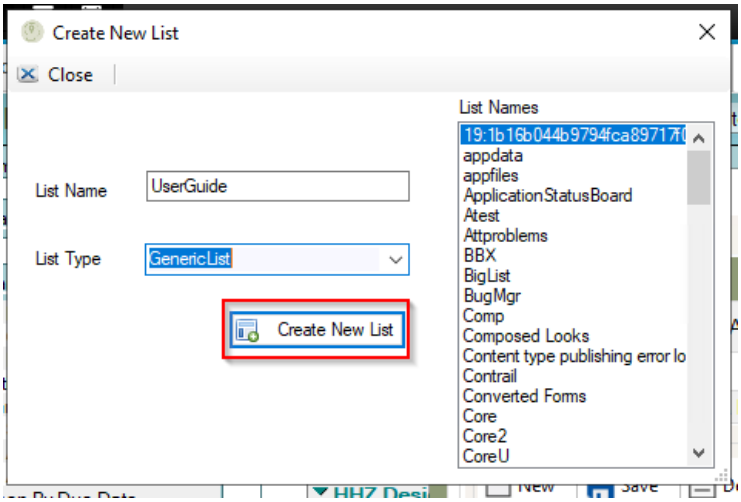


4. Once this logon is complete, you can either select an existing SharePoint list (1) or create a new SharePoint list (2).

   Connecting to an existing list is convenient if migrating multiple forms to the same SharePoint list. Otherwise creating a new list is the more common action.

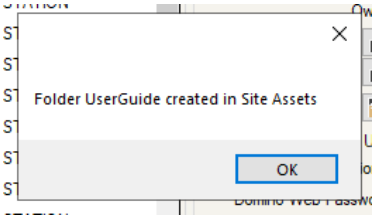


When creating a new list, enter a List Name, and select a List Type (Generic List being the most common).

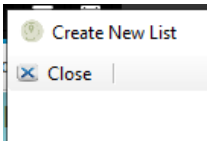


5. Once chosen, Click 'Create New List' button.

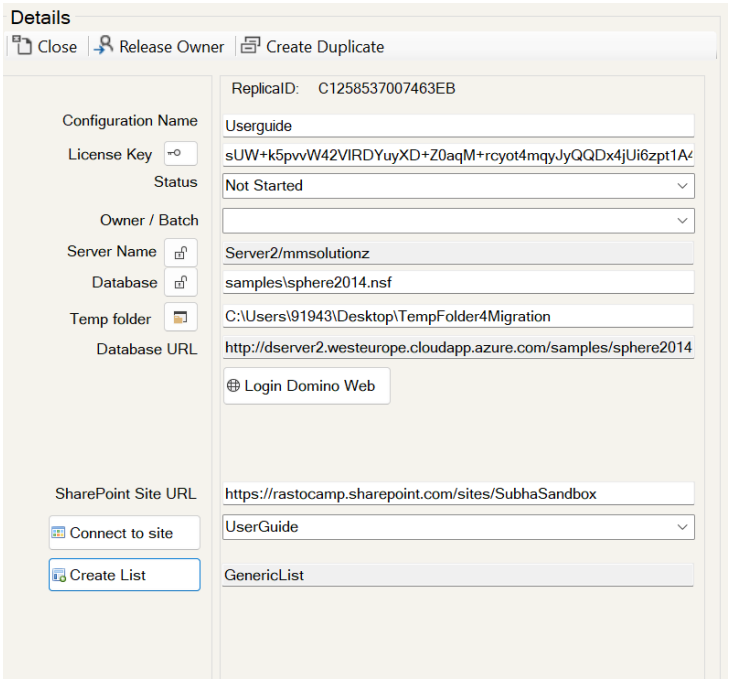
   A confirmation will be displayed, click OK to close.



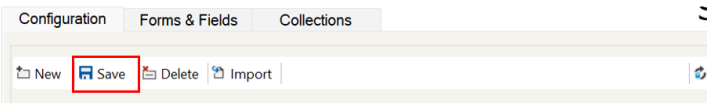
6. Use the Close button to exit the list creation dialog. Using this button will populate the fields in the configuration, these must be entered manually if closed in another way.



The completed configuration should look like the below. If a different username or password is needed for accessing Domino web environment, the username and password should be entered in the Domino Web User & Domino Web Password fields.



Tip! Every time the configuration is saved it will validate the fields and any errors will be caught early.



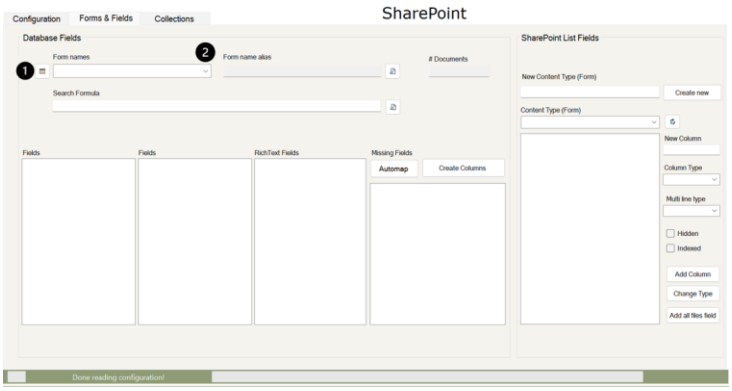
D. Data Mapping

Domino Forms & Fields Configuration

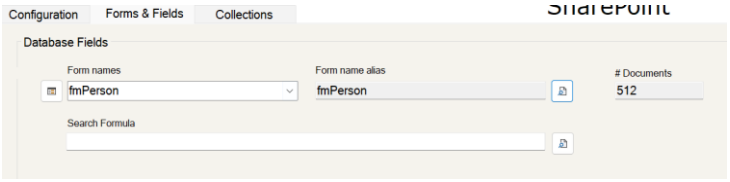
Once you have the connection established between your Domino database/application and the SharePoint site, the next step is to configure the data to be transferred. This is performed in the Forms & Fields tab. There are two (2) ways to select the documents in scope:

Option one – Forms Based

1. Click the form icon (1) and then click the dropdown for Form names (2), note that if the database has many forms, there can be a slight delay until the dropdown is fully populated.



2. Once a form has been selected click on the small magnifying glass and the number of documents in scope will be displayed.



Option 2 - Lotus Notes Search Formula

This method can be used if only certain documents are to be migrated, or as in the case below documents containing a value in the field Subject is selected.

The formula in this example will pick up the MainTopic (as above) but also any other document that has this field i.e., Response documents.

Enter the formula in the Search formula field (1) and click the magnifier (2) to update the number of documents in scope. The last magnifier that was clicked will decide which set of documents are in scope. There is no need to clear any value to switch between the two options.

E. SharePoint List Column Configuration

Forms in Domino can be matched to 'lists' in SharePoint and Fields to 'column' within those lists in SharePoint. To migrate content correctly, mappings must be created.

A Domino database contains many forms and fields of which only some are displayed. For example, Subject, Title, Body, Category, and Status. Fields which are not visible however, are required for function or for data compliance (created by, modified, revisions…).

To be successful with content migration, both visible and backend fields must be mapped. The Migrator Plus methodology is to perform this in two steps.

The first step is to create columns which have a user-friendly name manually and map these to corresponding fields in Domino. These can be relative to the main fields which are visible in the database (such as title, subject and so on). For explanation, these have been named "Visible Fields".

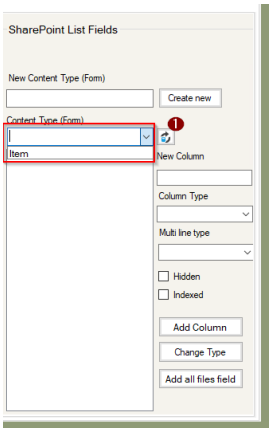
The second step is to automate the creation of the remaining fields to SharePoint columns. This is achieved using the 'automap' feature in Migrator Plus.

This section details the steps required to map lists and columns.

F. Manual Column Creation for "Visible Fields"

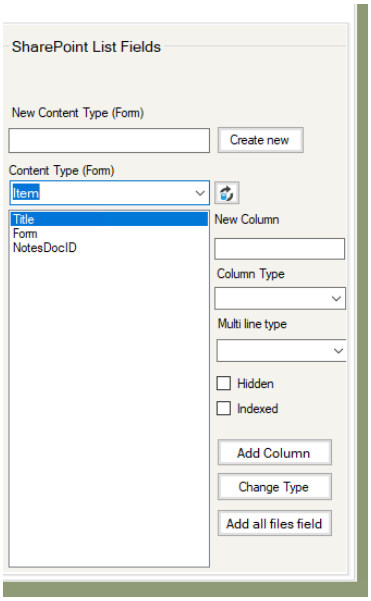
SharePoint Column Creation

1. Click the dropdown and select item.



This loads the available SharePoint columns into the Migrator Plus window highlighted below. Title, Form and NotesDocID are always created.

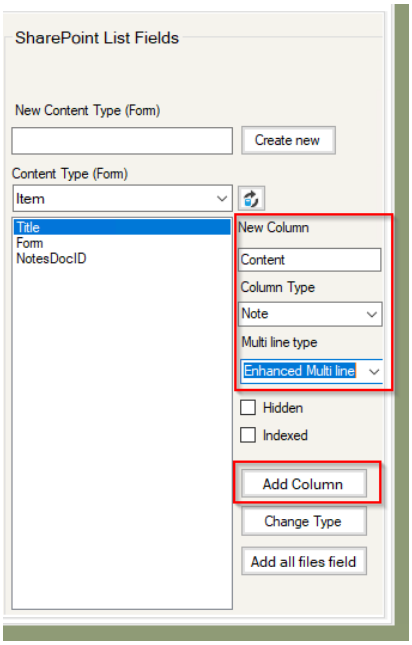
Note! NotesDocID will be mapped to the document UniqueID in Notes. This mapping is the pivotal datapoint for the migration of this content.



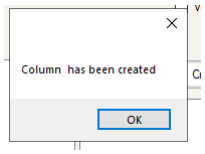
For additional columns not listed by default, they can be added and set with 3 types of columns: New Column, Column Type and Multi line type.

- New Column and Column type are needed for all new columns.
- Multi line type is only needed for columns of type "Note" (rich text).

2. Complete the name of the column, select from the dropdown menus, and click 'Add Column.'



A confirmation will be displayed that the column has been created.

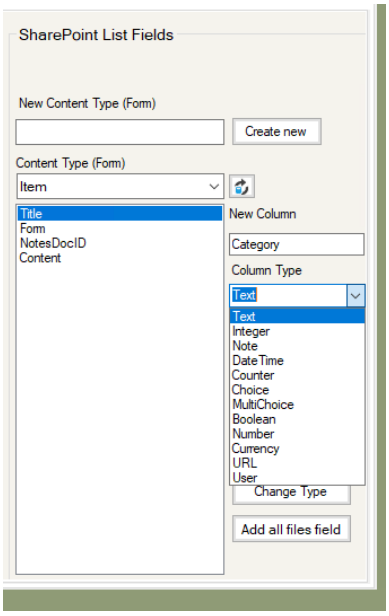


Continue to create the columns as needed with correct column type.

Tip! Use as few column types as possible (text and note), and instead change them in SharePoint after the data has been migrated. This is because text columns are more forgiving of incorrect data than the other types are.

Note! Be aware of SharePoint restrictions. SharePoint has a limit of 255 columns for a SharePoint list. The text column type has a limit of 255 characters. If there are more characters in the Notes field, the migration will error.

Tip! For standard Lotus Notes text fields with more than 255 characters use column type 'Note' and 'Multi line' type as Plain text.

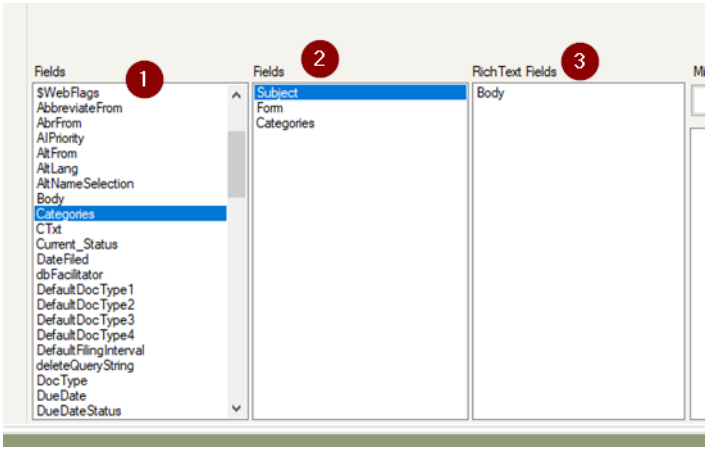


Notes Field to SharePoint Column Mapping

Once you have created the "Visible Fields" columns required, the Notes fields must be mapped with SharePoint columns. This is performed by dragging the notes field (from the leftmost 'Fields' section (1)) into either Fields (2) or Rich Text Fields (3).

Important. In the Rich Text fields column, only Lotus Notes Rich Text fields should be added.

Note! The more fields that are added to the Rich Text Fields section that are added the longer each document will take to migrate.



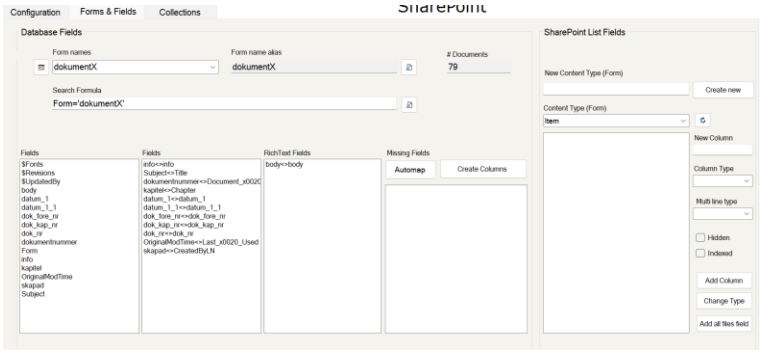
Linking Mapped Fields to Columns

Once the Notes Fields are selected, the SharePoint column needs to be linked or connected to that field.

1. Highlight the Notes field then drag the SharePoint column to that Field.
    a. If you incorrectly map a field, you can undo it by selecting the field and pressing the backspace key on your keyboard.

Note! All fields which have been moved to the Fields & Rich Text Fields sections must be mapped to save the configuration.

Tip! If there are many fields to be mapped, we recommend saving often whilst mapping to avoid potential loss of data.

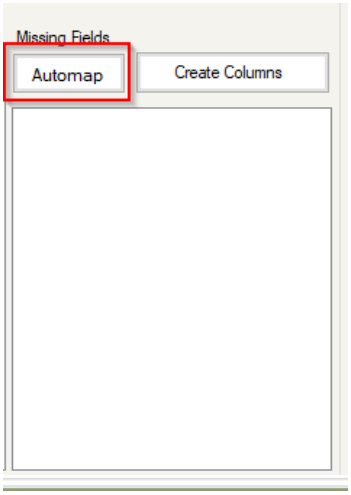


Automapping for remaining fields

Once the basic fields have been mapped manually, Migrator Plus provides the option to automap the remaining fields to columns in SharePoint. This can be a faster way to create SharePoint columns but will still require updates in SharePoint to modify column types (if required).

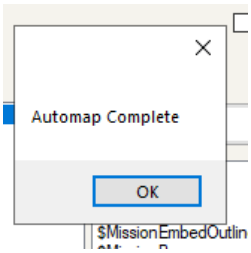
Note! These will be mapped to Fields section, and not available for Rich Text.

1. To automate the creation of SharePoint columns, click the Automap button.

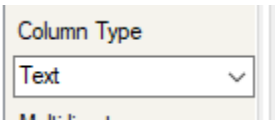


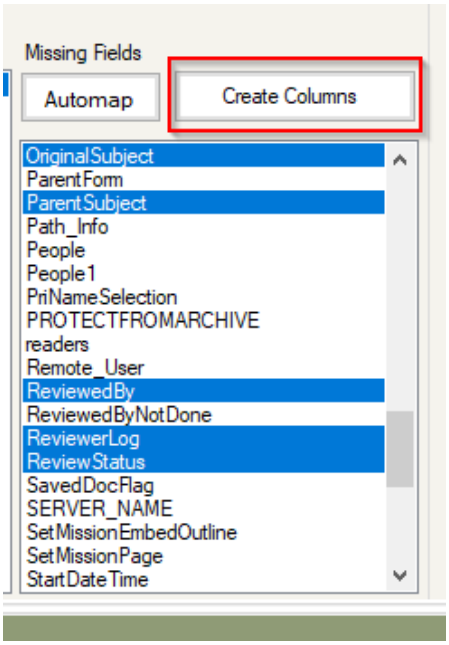
When pressed, it will present a dialog stating Automap Complete. This only confirms that the list of fields has been completed. It has not performed mapping!

2. Click OK to close the dialog.



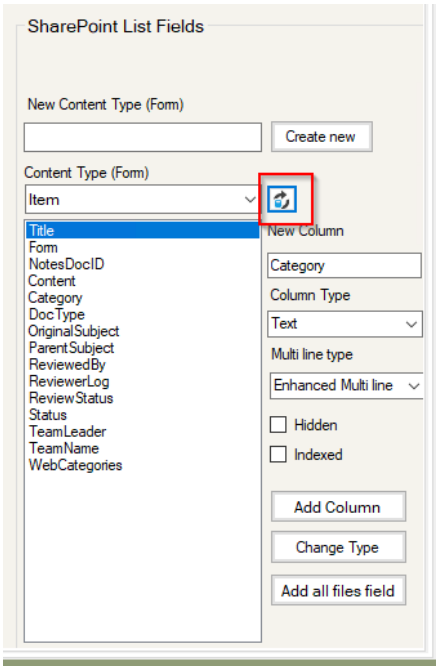
3. In the list presented, select the Lotus Notes fields to auto create.
    a. To select multiple fields, use the Shift key or the Ctrl key, works in a similar way as selecting files in windows explorer.
4. When complete selecting fields, click Create Columns.
   Note! All columns will be created with the currently selected column type.



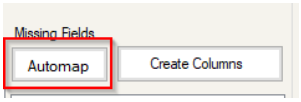


The columns will now be created in the Migrator Plus mapping file.

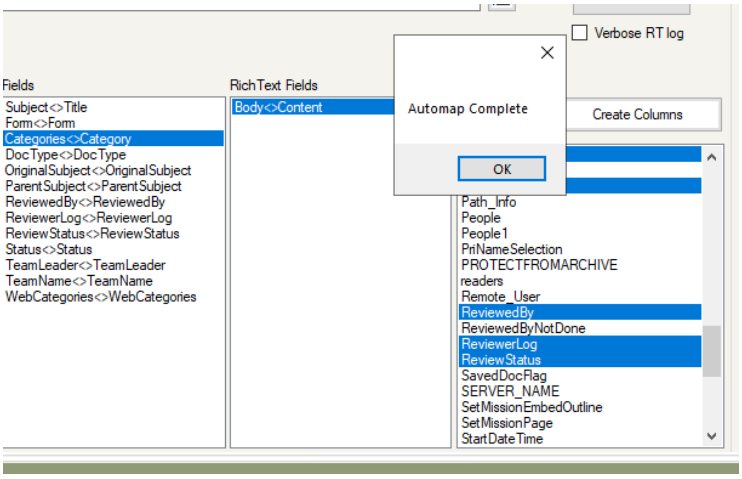
Note! The completion of the action depends upon the number of columns to be created. The greater the columns, the longer the processing time. Wait a few seconds then click on the refresh icon to see the new columns displayed in the SharePoint section.



5. Without changing the selection click on Automap again. This will map the selected fields.



When the mapping is complete a confirmation will be displayed, and the fields will be mapped.



G. Data Collection

The final step prior to migration is to collect the data from Domino. This is performed in the Collections tab. At the top of the collections table are several buttons/actions that can be performed:

(1) **All:** will display all collected documents regardless of status

(2) **Not migrated**: will display all documents with the Status N (not migrated)

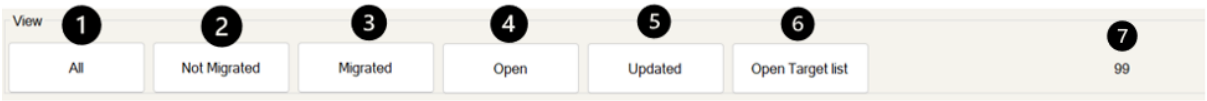
(3) **Migrated:** displays all documents that have been migrated to SharePoint with the status M (Migrated)

(4) **Open:** shows documents which have failed to migrate. The message column will contain a hint of the reason it failed and have a status of O

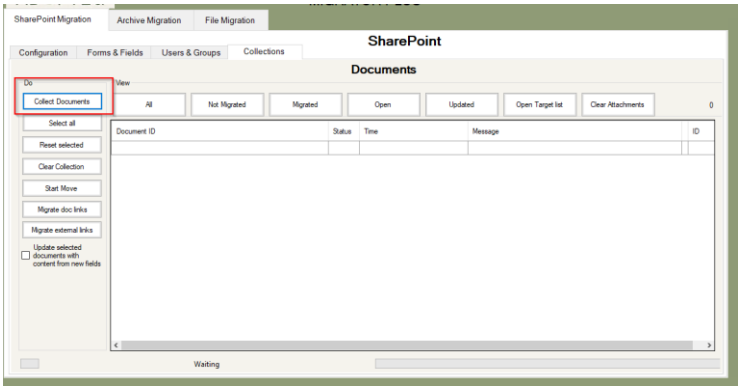
(5) **Updated**: displays Domino documents which have been modified and will show with the status U. **Note!** A previous process to Collect the documents needs to be executed prior to display this information

(6) **Open Target List**: A quick link to open the SharePoint site and the selected list

(7) The Number of documents displayed, for All (1), the number should be the same as the number in Forms & Fields

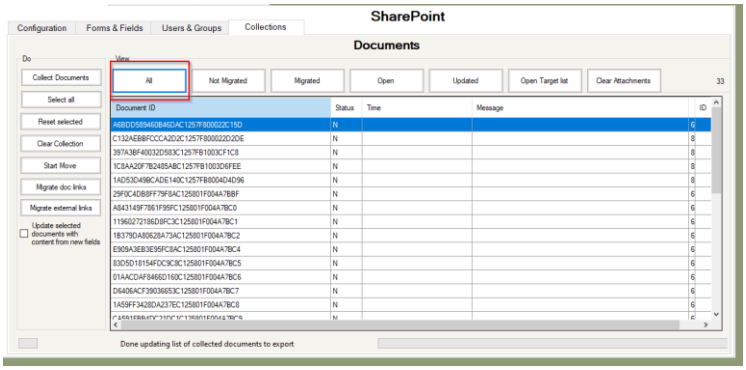


1. Click on Collect Documents to scan for the available Domino document as configured in Forms & Fields tab.
   Note that if no license key has been assigned to the configuration only 5 documents will be collected.



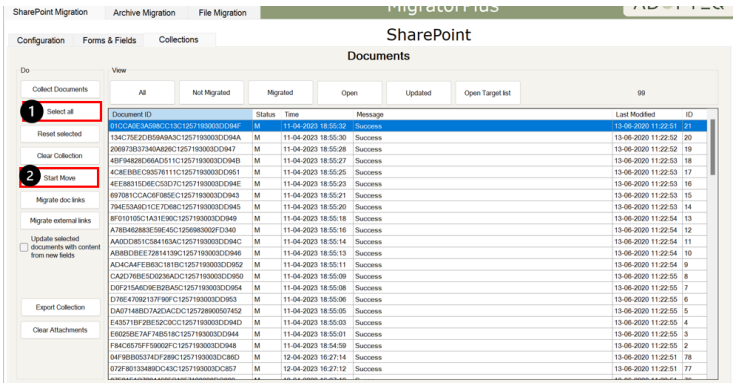
The progress of the collection will be displayed at the bottom of the product window.

2. Once all documents have been collected, click on the All button to display the collected documents.



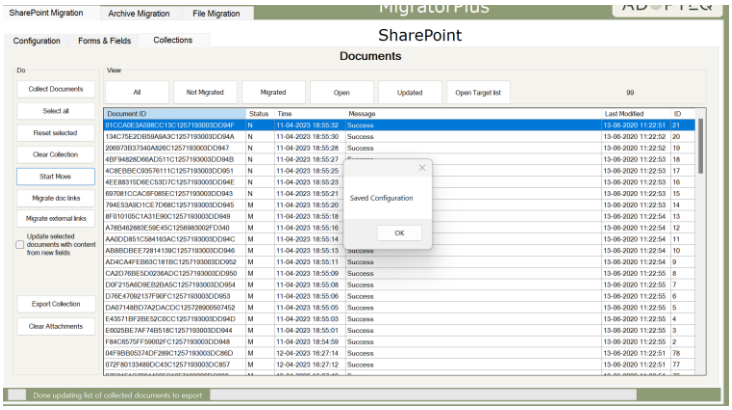
3. Select the documents you want to migrate.

a. To only select a few, they can be highlighted individually by clicking on the row for the document.
b. To choose all click Select all (1), when you are done with the selection, click Start Move (2)



This will first Save the configuration.

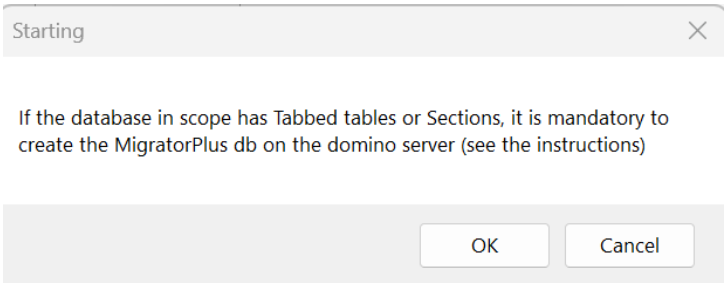
4. Click OK to close the dialog.



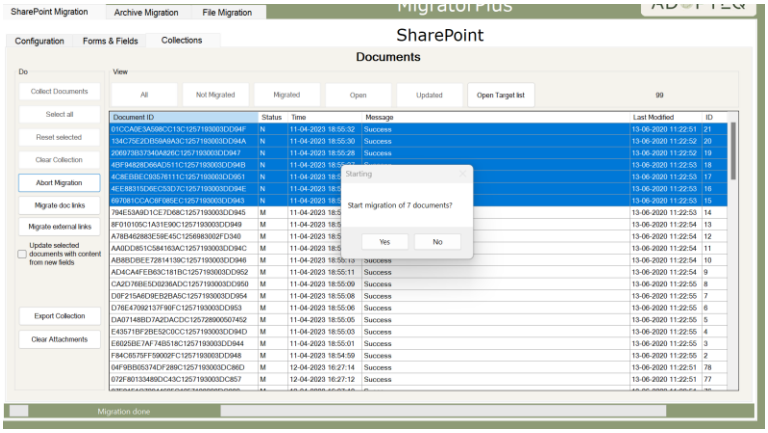
I. Upload and Delta Migration

The final stage in the migration is to upload the content to SharePoint either singularly or using a delta migration approach.

1. If your content consists of tabbed tables or sections, Migrator plus will ask you to create a Migrator Plus database on the domino server. If you do not perform this action, the default open section of content will be migrated.
2. Click on OK to continue.

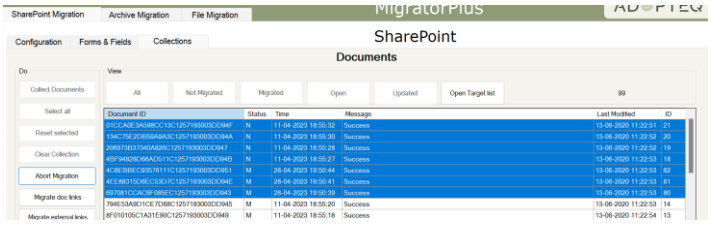


3. Migrator Plus will ask you to confirm the number of documents that will be migrated. Select 'Yes' to continue or 'No' to abort.



Progress can be monitored in the product window. The status of each document will be updated as it is uploaded.

Note! The process starts at the bottom of the list and goes up.

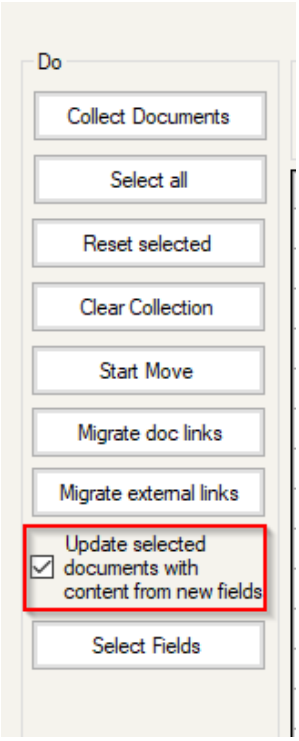


4. For migration of live data, delta migration(s) may be needed depending upon the duration of your transformation process. This is accomplished by repeating the Data Collection and Upload Process.
5. New content will report a status of N and changed content will U in the Migrator Plus status window.

J. Adding Additional Data Content

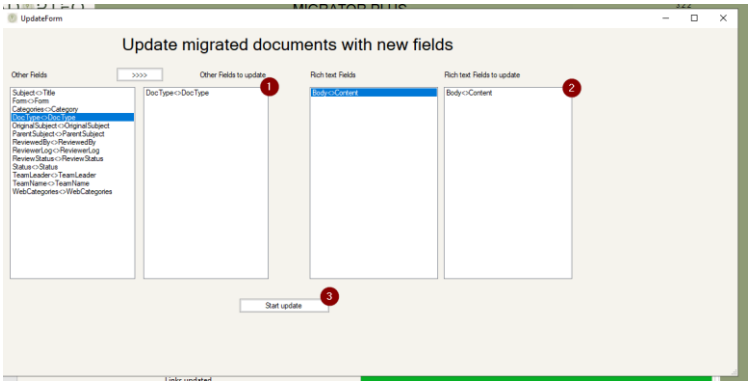
After the initial migration has completed, there may be a requirement to add further field content. You can append to your previous migration by performing the following actions:

1. Select the checkbox 'Update selected documents with content from new fields'.

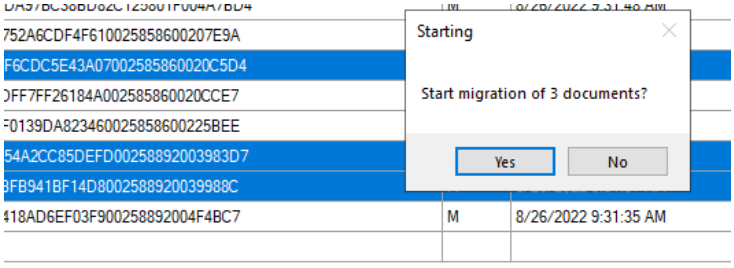


2. Highlight the documents which should be updated.
3. Click 'Select fields' box.

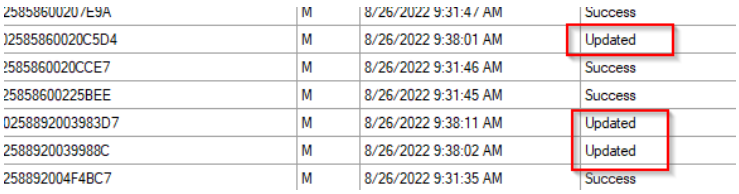
1. Drag and drop the fields that should be updated.
   (1) Standard fields are dragged to Other Fields to update (1), and Rich text, to Rich text Fields to update (2),
2. When all fields in scope have been selected click Start Update (3)



4. A confirmation of the number of documents to update will be displayed. Press 'Yes' to continue, 'No' to abort.



Once the update is complete, the migration status window reflects the change.



5. File Migration/Export

Migrator Plus has the option to generate a CSV file or export content to HTML from Domino databases. This section reviews how to manage File Migration/Export capabilities.

When performing a file export, only the configuration of 'how' you will map the source export to a target file and the collection of the data is required.

It is important to discuss with the owners of the target system how the data is expected for import to reduce considerable rework of the exported content. A review of the target schema and a mapping plan is created prior to beginning large scale file export.

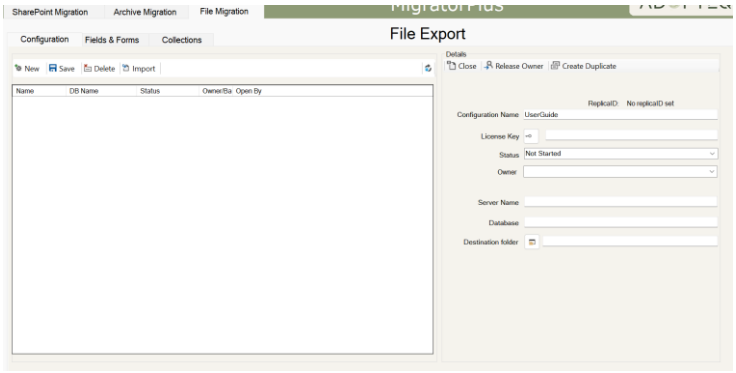
The migrated files will reside on the Migrator Plus console until ready for import to applications which support CSV or HTML content.

A. File Export Migration

For File Migration target transformation, you navigate to the File Migration Tab in Migrator Plus.

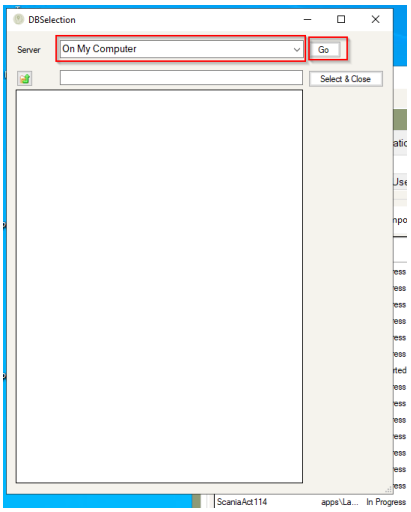
Source Configuration

1. To create a new File Migration configuration, start by clicking on the 'New' button.

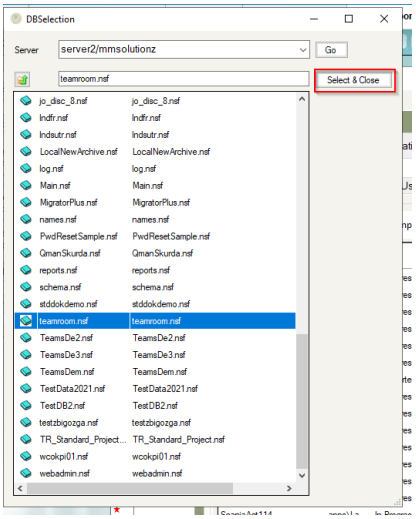


   A dialog will be displayed to select the Domino application (Source).

2. Begin by selecting the source server and click Go.



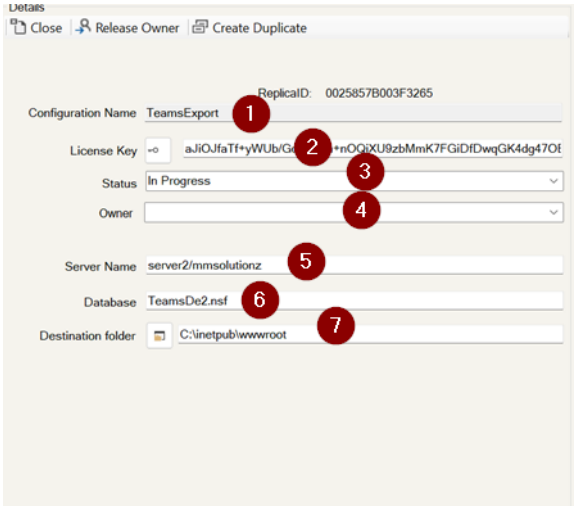
3. Navigate to the database in the folder structure.
4. Double click the database for export/migration



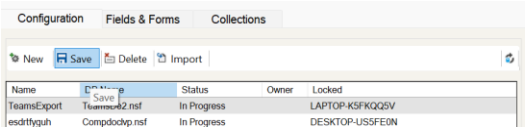
5. Click Select & Close.

Note! A database can also be entered manually by typing the location of the application in the selection dialog.

6. The configuration requires:
   (1) **Configuration Name**: Type a name you wish to use to identify the export
   (2) **License Key**: If a license key is to be associated with the migration, this is added now. If license keys have been setup during the Migrator Plus setup, this will be auto populated.
   (3) **Status:** The status of the export. This can be manually selected, or it will change depending on the Migrator Plus progress.
   (4) **Owner:** If you work in a multi worker project you may dispatch the configurations to different workers. Then this can be sorted in the Configurations view of Migrator Plus.
   (5) **Server Name**: Provide the abbreviated source server name containing the database. By default, this will be filled in from the previous database selection dialog.
   (6) **Database:** Provide the full path of the database starting from the root folder of the server. By default, this will be filled in from the previous database selection dialog.
   (7) **Destination Folder**: Provide the location for the folder where the Exports will be stored locally.



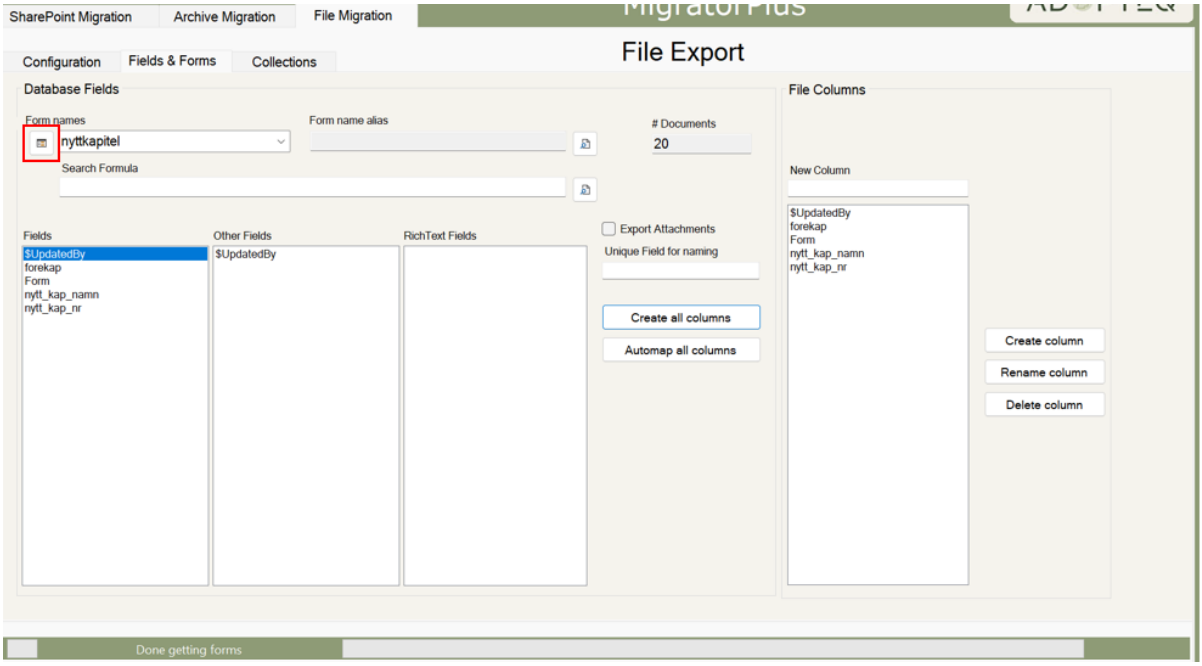
Tip! Every time the configuration is saved it will validate the fields and any errors will be caught early.



B. Mapping Configuration

Configuration for the data mapping is managed in the 'Fields & Forms' tab in Migrator Plus. All forms within an application can be configured at the same time.

1. Navigate to the Fields & Forms Tab



2. Fetch the available forms by clicking the icon.
3. Select the form on which the export will be based.
4. Either create matching columns in the field "New Column" or click the button 'Create all columns'
5. Map fields to columns by drag and drop in one of the two list boxes (Other Fields or RichText Fields)
    a. If you want to export attachments, click in the checkbox (It is also possible to use a specific field that will make attachment names more unique).

C. Data Collection

The final step prior to export is to collect the data from the Domino database. This is performed in the Collections tab. At the top of the collections table are several buttons which will display the views depending upon status of the collected documents:

(1) **All:** Will display all collected documents regardless of status

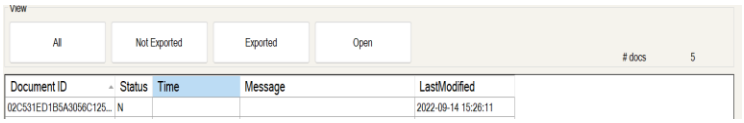
(2) **Not Exported**: Will display all documents with the Status N (not migrated)

(3) **Exported:** Displays all documents that have been exported to the CSV file with the status M (Migrated)

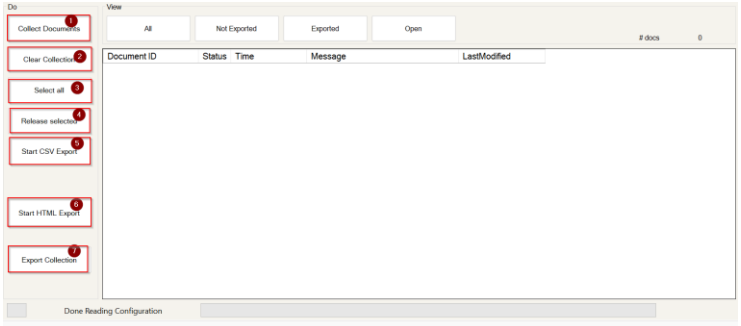
(4) **Open:** Displays all documents that have export issues (status O)

(5) **Message:** Any messages from each document exported will be shown here e.g., success or error

(6) **LastModified:** Last modification date of the document in Domino



To initiate a collection, the following buttons/actions are used:



(1) **Collect Documents**: Collects all documents to be exported from the configured database

(2) **Clear Collection**: Clears the previously collected documents from the view (This will NOT delete documents in the database)

(3) **Select All**: Selects all documents for export. The other alternative is multi-select documents manually

(4) **Release selected**: Sets the status of an exported (or open) document back to N status

(5) **Start CSV Export**: Starts the export of selected documents to CSV

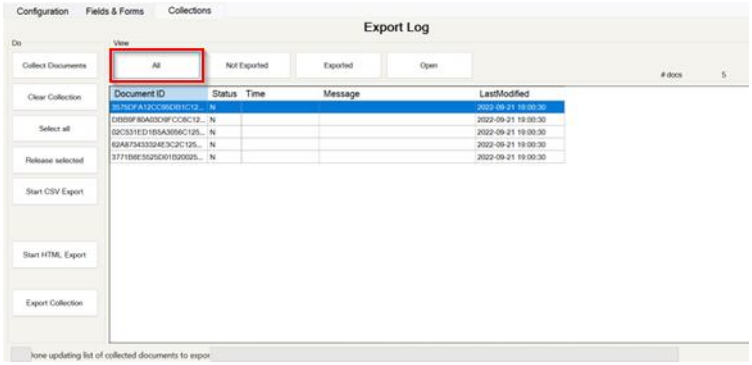
(6) **Start HTML Export**: Starts export of selected documents to HTML

(7) **Export Collection**: Exports the Collection to an Excel file.

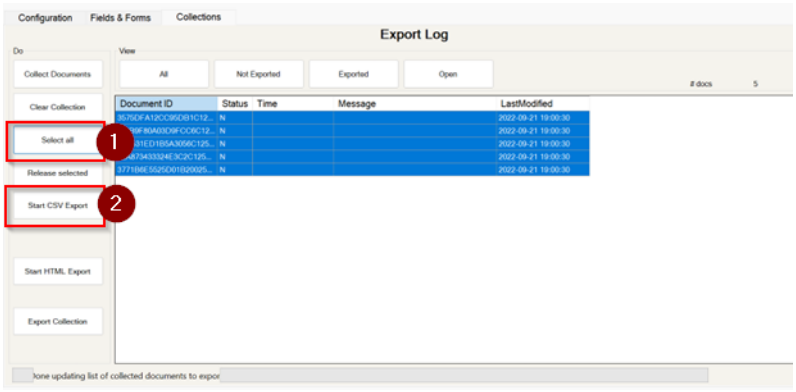
5. To begin the collection, click on Collect Documents to scan for the available Domino document as configured in Forms & Fields tab.
   Note that if no license key has been assigned to the configuration only 5 documents will be collected.

The progress of the collection will be displayed at the bottom of the product.

6. Once all documents have been collected, select the 'All' view button to display the collected documents.

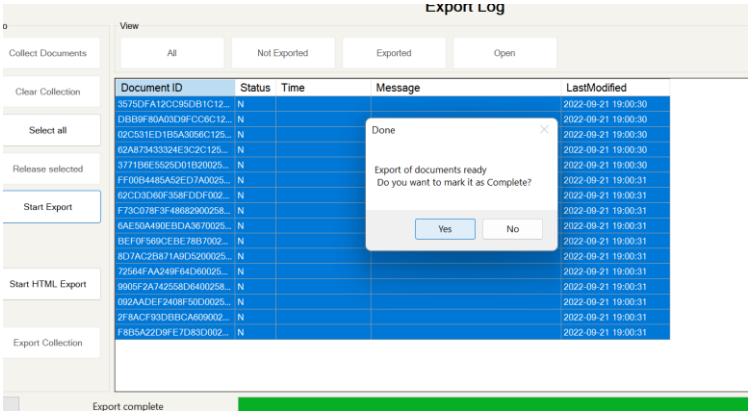


7. Select the documents you want to migrate.
    a. To only select a few, they can be highlighted individually by clicking on the row for the document.
    b. To choose all click 'Select all' (1) button.
    c. Click (2) Start CSV Export



Progress can be monitored in the view. As each document is updated as it is moved, the progress bar updates at the bottom of the window.

6. When the export is complete, a confirmation dialog box will display



K. Transfer for Import

File Migration/Export is designed to create an export file only to an industry standard format such as CSV or HTML. The import of the content is a manual task performed by the administrators of the target application.

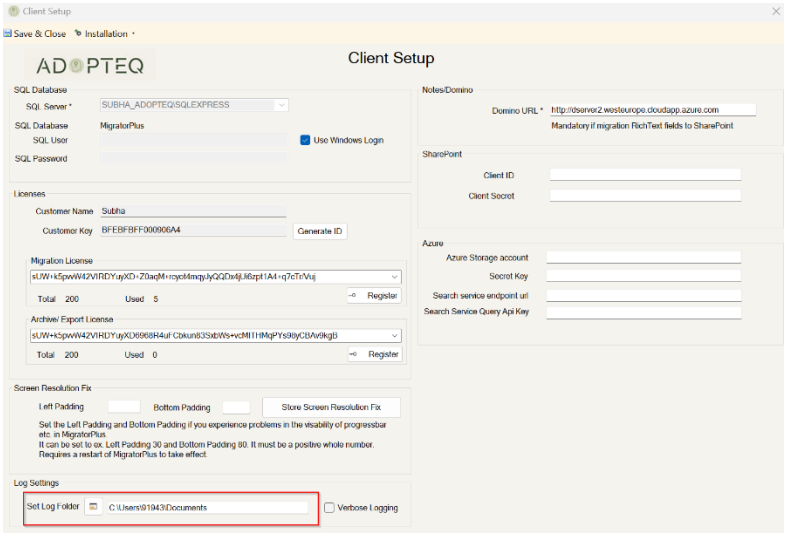
The file(s) created by Migrator Plus can be copied and transferred as required using a standard file copy process.

6. Troubleshooting

A. Logging

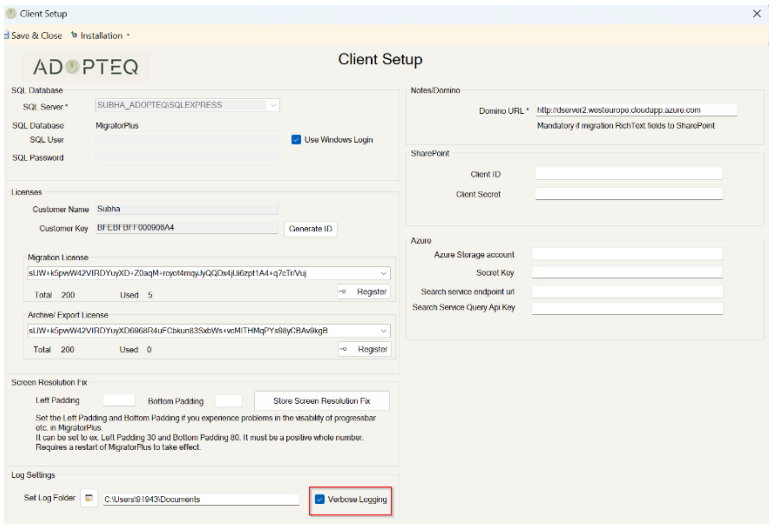
File Location

You may select the location to save your log files. To change the log file location, go to setup and browse to the location.



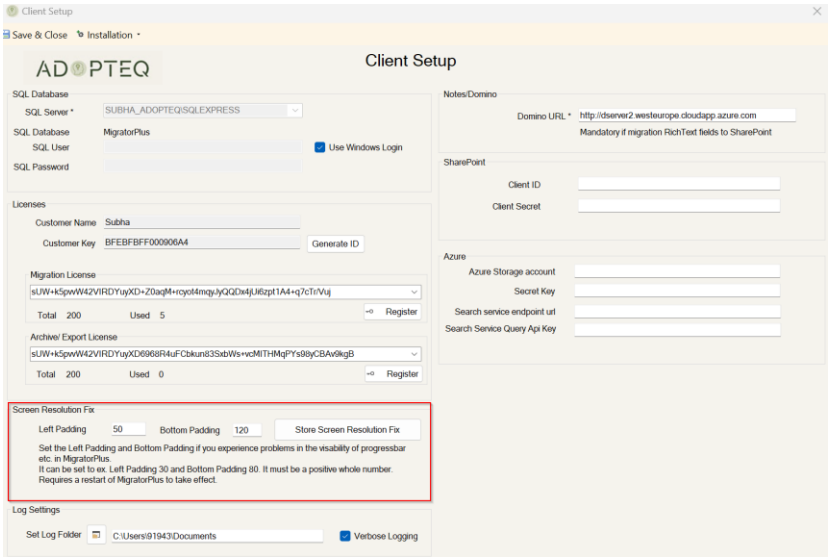
Verbose Logging

For detailed logs go to Setup and check **verbose log**. To save the configuration click on **Save & Close**.



B. Screen Resolution

For some operators, during RDP sessions the screen view may be compromised and limits the information shown within the MigratorPlus console. To resolve this issue, please configure left and bottom padding in the setup.



C. Data Quality & Availability

Notes is a system which has been around for many years, has had many iterations and allows for more flexibility than more modern systems today. Additionally, the capability to secure data at deep levels can create challenges when migrating that content. Pre-migration analysis should be a key activity prior to migration.

This list is not exhaustive, but the following should be reviewed and remediated where necessary:

- Filenames with leading space and/or trailing spaces
- Filenames which exceed 255 characters
- Illegal characters for the target system
- Access levels for the database at, view, document, and field level including Author and Reader roles.
- Encrypted items
- Database not accessible through HTTP
- Browser cookie storage settings (must be enabled on the browser to maintain session otherwise anonymous must be used and granted access)
- Use of Java applets for rich text fields (can result in empty content because it creates a frame inside of the web page which Migrator Plus cannot access)
- Valid SSL certificate when using HTTPS. If SSL has expired, error message may show "underlying connection was closed. Could not establish trust relationship."
- Database must be accessible through a web browser.
- The web version of an application must match Notes version for archive migration.

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