Tzunami Deployer
User Guide

Learn how to successfully migrate ECM contents to Microsoft SharePoint using Tzunami Deployer.

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PREFACE

ABOUT THIS GUIDE

This guide helps you to use the Tzunami Deployer and migrate contents from legacy ECM systems to Microsoft SharePoint.

This preface contains the following topics.

- ***Intended Audience***
- ***Structure***
- ***Related Documentation***
- ***Conventions***
- ***Technical Support***
- ***Comments and Suggestions***

INTENDED AUDIENCE

Tzunami Deployer Administrators' Guide is intended for:

- System Administrators who are responsible for setting migration environment using Tzunami Deployer.
- Project Managers and IT Managers who create and regulate usage of Tzunami Deployer.

STRUCTURE

This Tzunami Deployer User Guide is organized as follows:

- **Preface** contains the overview of this manual.
- **Chapter 1 'Tzunami Deployer for SharePoint Migration'** provides the overview of Tzunami Deployer.
- **Chapter 2 'Tzunami Deployer Options'** explicates how to set global options for migration projects.
- **Chapter 3 'Getting Started with Tzunami Deployer'** explicates how to create a Deployer project and save a project for future migration.
- **Chapter 4 'Connecting and Loading servers'** illustrates how you can load a Source ECM contents and target SharePoint in the Deployer Project.
- **Chapter 5 'Modeling Target SharePoint** explains how you can model the target SharePoint.
- **Chapter 6 'Deploying Source Data for Migration'** explains how you can deploy the source data to target. It provides the mapping metadata and its values to target.
- **Chapter 7 'Migrating Deployer Project'** explains how you can migrate the deployed project to the target source.
- **Chapter 8 'Auto Migration'** describes you how to auto migrate the data using Tzunami migration tools.
- **Chapter 9 'Auto Delta Migration'** describes you how to auto delta using Tzunami migration tools.

- **Chapter 10 'Configuring Tzunami Deployer Advance Features'** describes you how to configure Tzunami Deployer settings.
- **Chapter 11 'Naming Considerations'** describes the naming considerations and restrictions.
- **Chapter 12 'Troubleshooting'** describes you how to step forward when an error occurred during the migration.
- **Chapter 13 'Frequently Asked Questions'** lists out the 'Frequently Asked Questions' with its solution.

RELATED DOCUMENTATION

For more information, see these Tzunami Deployer resources.

Table 0-1: Tzunami Products Documentation and Resources

Products	Resource	Brief Description
Tzunami Deployer	Tzunami Deployer Installation Guide	Describes how to run the setup program and complete the installation and configuration of Tzunami Deployer and Tzunami Deployer Service Components.
	Tzunami Deployer User's Guide	Elaborates the steps required to create, Load, model, deploy and migrate a Deployer project.
Tzunami Deployer Licensing Service	Licensing Service Guide	Explains step by step instruction for Tzunami Deployer licensing service.
Exporters		
Tzunami AquaLogic Exporter	AquaLogic Exporter Guide	Supports migration of BEA AquaLogic User Interaction portal contents to Microsoft SharePoint.
Tzunami Confluence Exporter	Confluence Exporter Guide	Support migration of Confluence Enterprise contents to Microsoft SharePoint.
Tzunami Confluence Cloud Exporter	Confluence Cloud Exporter Guide	Support migration of Confluence Cloud Enterprise contents to Microsoft SharePoint.
Tzunami Documentum Exporter	Documentum Exporter Guide	Supports migration of Documentum repositories and content management services to Microsoft SharePoint.
Tzunami Documentum Cloud Exporter	Documentum Cloud Exporter Guide	Supports migration of Documentum Cloud repositories and content management services to Microsoft SharePoint.
Tzunami DocuShare Exporter	DocuShare Exporter Guide	Facilitates migration of Xerox DocuShare web contents to Microsoft SharePoint.
Tzunami eRoom Exporter	Documentum eRoom Exporter Guide	Supports extraction of all rooms on the server and guides migration to Microsoft SharePoint.
Tzunami Exchange Exporter	Exchange Exporter Guide	Guides migrating Exchange contents to Microsoft SharePoint.
Tzunami FileNet Exporter	FileNet Exporter Guide	Support migration of FileNet contents to Microsoft SharePoint.
Tzunami Hummingbird DM5 Exporter	Hummingbird DM5 Exporter Guide	Supports migration of Hummingbird DM enterprise contents repositories to Microsoft SharePoint.

Products	Resource	Brief Description
Tzunami Livelink Exporter	Livelink Exporter Guide	Supports migration of LiveLink contents to Microsoft SharePoint.
Tzunami OpenText Content Server Exporter	OpenText Content Server Exporter Guide	Supports migration of OpenText Content Server contents to Microsoft SharePoint.
Tzunami Lotus Notes Exporter	Lotus Note Exporter Guide	Supports migration of Notes contents to Microsoft SharePoint.
Tzunami Oracle WCI Exporter	Oracle WebCenter Interaction Exporter Guide	Support migration of Oracle WebCenter Interaction components to Microsoft SharePoint.
Tzunami HCP Exporter	HCP Exporter Guide	Supports migration of Hitachi Content Platform contents repositories to Microsoft SharePoint.
Tzunami HPE Content Exporter	HPE Content Exporter Guide	Supports migration of HPE Content Manager contents repositories to Microsoft SharePoint.

CONVENTIONS

The following text conventions are used in this document:

- Commands and keywords are given in **boldface**
- Terminal sessions, console screens, or system file names are displayed in fixed width fonts

Caution indicates that the described action might result in program malfunction or data loss.

Notes contain helpful suggestions about or references to materials not contained in this manual.

Tips provide information that might help you solve a problem.

TECHNICAL SUPPORT

Before contacting Tzunami Deployer Support team, ensure that you are referencing the latest copy of this user guide (Ctrl+Click to follow link) ***Tzunami Deployer User Guide***.

If you have searched our reference materials and the issue still persists, contact Tzunami Deployer Support Team at ***support@tzunami.com*.**

COMMENTS AND SUGGESTIONS

Your feedback is important to us and will help us to provide the most accurate and high quality information possible in our documentation. Send us comments or suggestions by email to ***support@tzunami.com***. Be sure to include as much of the following as possible:

- The document title.
- The location that the document was accessed from (either downloaded from Tzunami web site or the Tzunami Deployer User Guide available in Tzunami Deployer).
- The section or chapter number and the original text found in the document.

When you send information to Tzunami Deployer, you grant Tzunami a non-exclusive right to use or distribute the information in any way it believes appropriate without incurring any obligation to you

1 TZUNAMI DEPLOYER FOR SHAREPOINT MIGRATION

This chapter describes the features of Tzunami Deployer for SharePoint that are documented in this guide and provides pointers to additional information. It contains the following topics:

- ***Tzunami Deployer Overview***
- ***Tzunami Deployer Workflow***
- ***Key Features***
- ***Licensing Information***

1.1 TZUNAMI DEPLOYER OVERVIEW

Tzunami Deployer is the leading tool for rapid migration and consolidation of content from multiple sources into Microsoft SharePoint Products and Technologies.

Tzunami Deployer enables organizations that wish to start using or upgrading their SharePoint to dramatically reduce migration costs. Using Tzunami Deployer, the time required for a SharePoint content migration project is significantly reduced compared to the traditional labor-intensive processes.

Tzunami Deployer enables you to prepare modeling and migration plans offline and even off-site. Any changes performed in Tzunami Deployer do not actually affect the SharePoint server until you choose to migrate them.

1.1.1. Supported Source Systems

Tzunami Deployer supports various ECM systems, multiple versions of SharePoint servers, File System and HyperWave as source systems. The following table lists the ECM Systems as source.

Table 1-1 Source Systems

Field	Description
ECM Systems	This tab enlists the different ECM source systems. • Atlassian Confluence • Atlassian Confluence Cloud • BEA AquaLogic • EMC Documentum • ECM Documentum Cloud • EMC Documentum eRoom • Exchange Server • FileNet • Hitachi Content Platform • HPE Content Manager • Hummingbird DM5 • Lotus Notes and Domino Server Databases • OpenText LiveLink • Open Text Content Server • Oracle WebCenter Interaction • Xerox Docusate

Field	Description
SharePoint Systems	This tab enlists the different version of SharePoint servers. • SharePoint Portal Server 2001 • SharePoint Portal Server 2003 • SharePoint Server 2007 • SharePoint Server 2010 • SharePoint Server 2013 • SharePoint Online Server
Other	This tab enlists the other source system. • Local File System and Remote File Servers • HyperWave • Custom Repositories

1.1.2. Supported Target Systems

Tzunami Deployer supports the various SharePoint Server versions as target source.

The following table enlists the supported SharePoint Server versions as target source.

Table 1-2 Supported Target Systems

Field	Description
SharePoint Systems	This tab enlists the different version of SharePoint servers. • SharePoint Server 2016 • SharePoint Server 2019
O365	This tab enlists the different version of SharePoint Online servers. • Microsoft Teams • OneDrive • SharePoint Online
On-premise As Online	This tab enlists the different version of On-premise SharePoint servers. • SharePoint 2019 As Online

1.2. TZUNAMI DEPLOYER WORKFLOW

Tzunami Products should be configured based on the target system and migration approaches. There are four topologies available.

A. Migration to On-Premise SharePoint using Remote Service

Tzunami Deployer communicates with Remote Service and Source systems. Remote Service communicates with Target SharePoint On-Premise, Tzunami Licensing Service and Tzunami Link Resolver Service.

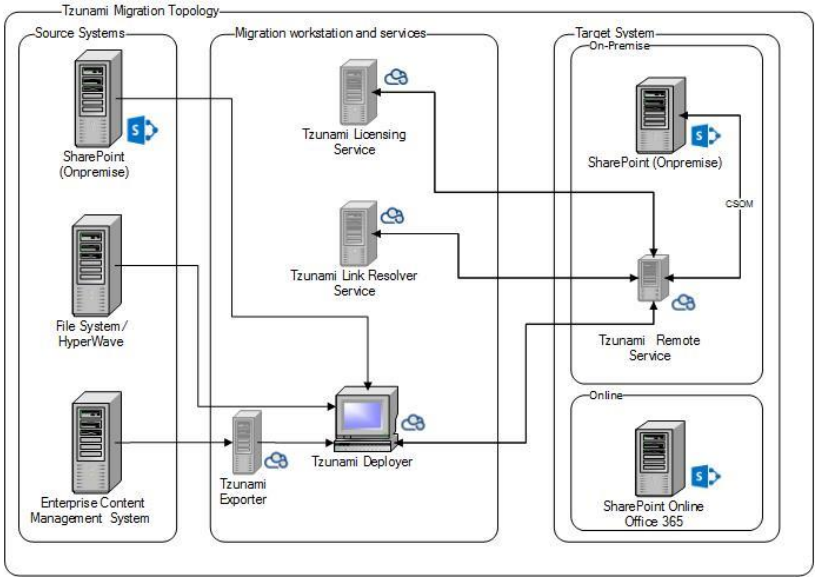


Figure 1-1 Topology for SharePoint On-Premise

B. Migration to SharePoint On-Premise as Online

Tzunami Deployer communicates with Source systems as well as Target SharePoint On-Premise, Tzunami Licensing Service and Tzunami Link Resolver Service.

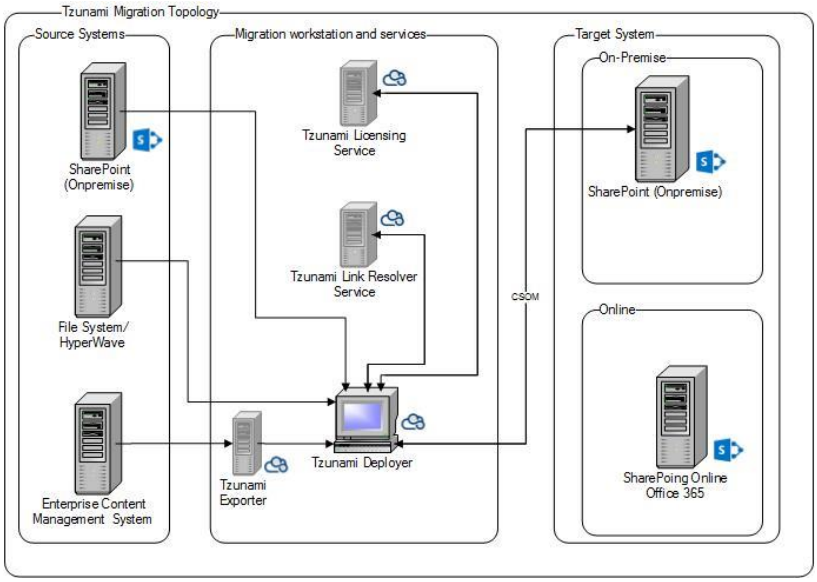


Figure 1-2 Topology for SharePoint On-Premise as Online

C. Migration to SharePoint Online

Tzunami Deployer communicates with Source systems as well as Target SharePoint Online, Tzunami Licensing Service and Tzunami Link Resolver Service.

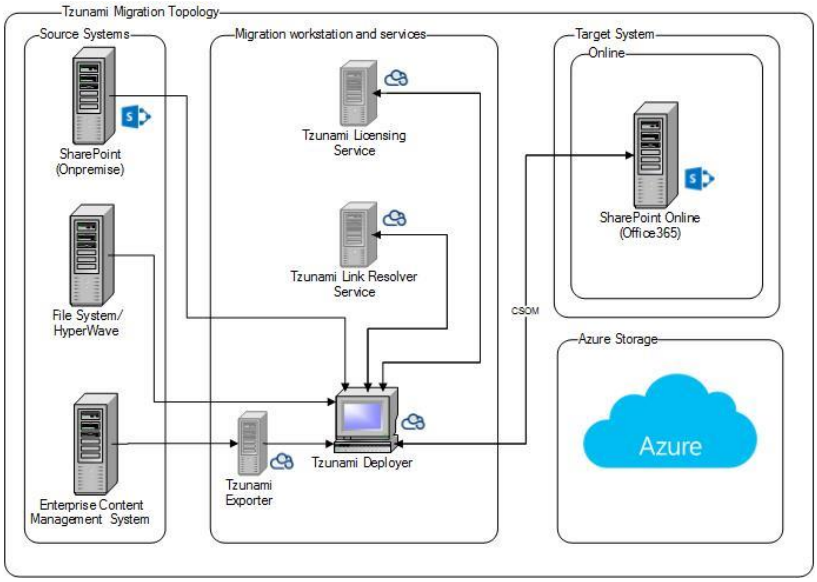


Figure 1-3 Topology for SharePoint Online

D. Migration to SharePoint Online using Migration API

Tzunami Deployer communicates with Source systems Remote Service as well as Target SharePoint Online using Migration API (and CSOM when necessary), Tzunami Licensing Service and Tzunami Link Resolver Service.

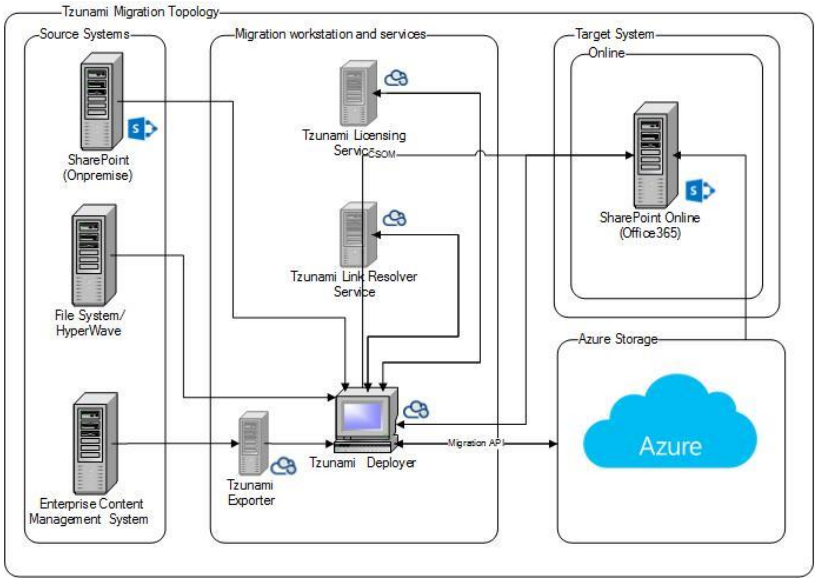


Figure 1-4 Topology for SharePoint Online using Migration API

1.3. KEY FEATURES

- **Easy to use**– Similar to the windows file explorer, Tzunami Deployer has a familiar, tree-based, drag and drop user interface.
- **Migrates all List Types**– Custom Lists, Document Libraries, Folders, Issues, Task, Contacts, Announcements, Discussions, Web Part, Home Page, Quick Launch, Wiki Site, Content Type etc. can all be migrated while preserving views, metadata, and user-edit information.
- **Copying contents within SharePoint servers**– Tzunami Deployer supports the copying of content between and within SharePoint Server 2007, SharePoint Server 2010, SharePoint Server 2013, SharePoint Server 2016, SharePoint Server 2019, SharePoint Online, sites and lists.
- **Modeling and deploying tool**– Leading tool for modeling, customizing, and designing SharePoint sites, lists, libraries, and folders etc. as well as managing security settings.
- **Metadata editing and mapping**– Tzunami Deployer's metadata editing and mapping features provides a central point for metadata administration for all SharePoint sites.
- **Retain your valuable data**– When deploying content to SharePoint, Tzunami Deployer maps metadata properties of source items to target columns in SharePoint libraries and lists. If no appropriate columns exist in the target to host your source properties, you can create them on the spot.
- **Migrate permission**– When migrating content into SharePoint, Tzunami Deployer analyzes security permissions in the content sources and allows mapping of source users, roles and permissions to corresponding SharePoint users, groups, roles and permissions in order to best match the existing settings.
- **Offline simulation environment**– Tzunami Deployer loads all source and target information into a Tzunami Deployer project. This enables Tzunami Deployer to be used to make modifications and deployment plans even when it is not connected to either the source or the target machines.

  All modification and deployment actions performed in Tzunami Deployer are not executed immediately. Rather, these changes are recorded in a Tzunami Deployer project. You can duplicate a Tzunami Deployer project to create several modeling and deployment scenarios, and choose the one best suited for your needs.

  Tzunami Deployer only applies the changes to the target location and uploads the content from the source locations when you perform the migrating stage.

All changes performed by Tzunami Deployer are done through the supported SharePoint API's. Tzunami Deployer does not perform any unsupported direct writes to the SharePoint databases.

1.4. PERMISSION REQUIRED FOR MIGRATION USER

During the migration from source to target SharePoint, migration users should have specific set of permissions are required to perform various actions required for data migration.

- **ECM System and File System as Source:** Typically, Tzunami Deployer/Exporter requires the read permission in the source ECM System or File Systems. Tzunami tools or services do not write/edit/delete in source system. However, Tzunami Deployer/Exporter required elevated permission to download the files or read data from personal workspaces of the users in the system.

Therefore, Tzunami Inc. recommends connecting using user having elevated administrator permission while connecting to source ECM or File system.

- **SharePoint On-premises as Source:** Tzunami Inc recommends using the migration user as a member of site collection administrator's group while connecting to SharePoint on-premises as source. Even though there are no write/edit/delete actions required in source, reading the system configurations, templates and managed metadata etc. requires elevated permission for migration user.
- **SharePoint On-premises as Target:** Tzunami Deployer requires the write/edit/delete/read operations in SharePoint site collection during the migration. Tzunami Inc requires using the migration user as a member of site collection administrator's group.
- **SharePoint Online as Target:**
  User account used for connecting SharePoint online and data migration requires Site Collection Administrator Level Permission.
  Deployer recommends and implements azure app-based authentication approach for data migration. The Azure App authentication approach requires an azure app to be created on target tenant's Azure directory and provide necessary API permissions.
  - **Azure App Creation**
    Azure App creation is a one-time operation that needs to be done before starting a migration project. Tzunami recommends creating Azure App and providing one time consent for the App with user having Global Admin permission. Migrating user does not require any tenant level permission.
    Azure App creation process is detailed in separate guide, please refer link below. https://tzunami-downloads.s3.us-west-2.amazonaws.com/TzunamiAzureAuthenticator/How+to+create+an+Azure+Application+for+migration.pdf

  - **Office 365 AD Service**
    - Office 365 AD service utilizes the consent provided for Azure App to read users from Azure Active Directory.

1.5. AZURE APPLICATION FOR SHAREPOINT ONLINE CONNECTION

Tzunami Deployer requires Azure Application to connect the SharePoint online. The Azure Application should have the following permissions:

SharePoint API

- AllSites.FullControl
- TermStore.ReadWrite.All

The SharePoint API is used to read and write the content in SharePoint Online during migration.

Graph API

- User.Read.All
- Group.Read.All
- Directory.Read.All

The Graph API is used to read the users and groups from Azure Active Directory in Microsoft 365.

The Azure Application can have Delegated or Application Permissions as per client opts. The Azure Application can be created and provide the consent by the client oneself or use the Azure Application provide by the Tzunami Inc.

Furthermore, the **Tzunami Deployer O365 AD Service** must connect to the Azure Application. The **Tzunami Deployer** communicates with **Tzunami Deployer O365 AD Service** to get the necessary connection parameters for the SharePoint online connection. Please, refer the *Tzunami O365 Active Directory Service* section of Deployer Installation user guide for more information about the connection parameters for Azure Application.

User can refer the following link to create the Azure Application using "**Public client/native (mobile & desktop)**" option in **Redirect URI(optional)** setting.
https://learn.microsoft.com/en-us/azure/active-directory/develop/quickstart-register-app

User can use the Tzunami Azure Authenticator tool (refer ***user guide for the tool***) to register the Tzunami Azure Application.

The Azure Application can have the Application Permissions or Delegated Permissions.
In case of Application Permissions, the Azure application must have the **Admin Consent** which should be provided by a user having **Global Admin** role in Microsoft 365 only. Tzunami recommends to provide the Admin Consent in both Application Permissions or Delegated Permissions types. However, **User Consent** can be used in case of Delegated Permissions, in this case, the consent can be provided by a user having minimum **Cloud Application Administrator** role in Microsoft 365 to the Azure Application.

In Application Permissions, the Azure application runs as a background service or daemon without a signed-in user. So, there is no need the user credential while connecting SharePoint from Tzunami Deployer. The application gets the necessary permission as a member of site collection administrator group upon successful connection to the SharePoint.
In Delegated Permissions, the Azure application needs to access the API as the signed-in user.. So, migration user must provide credential while connecting SharePoint from Tzunami Deployer. The migration user should be the member of Site Collection Administrators group in target SharePoint site.

1.6. AZURE STORAGE KEY FOR MIGRATION API

Tzunami Deployer supports Azure Storage subscribed by the organization (or other vendors) and provided by the Microsoft as well. For the Azure Storage subscribed by the organization, user should manually configure the storage account details and provide the parameter in Deployer's option as shown below:

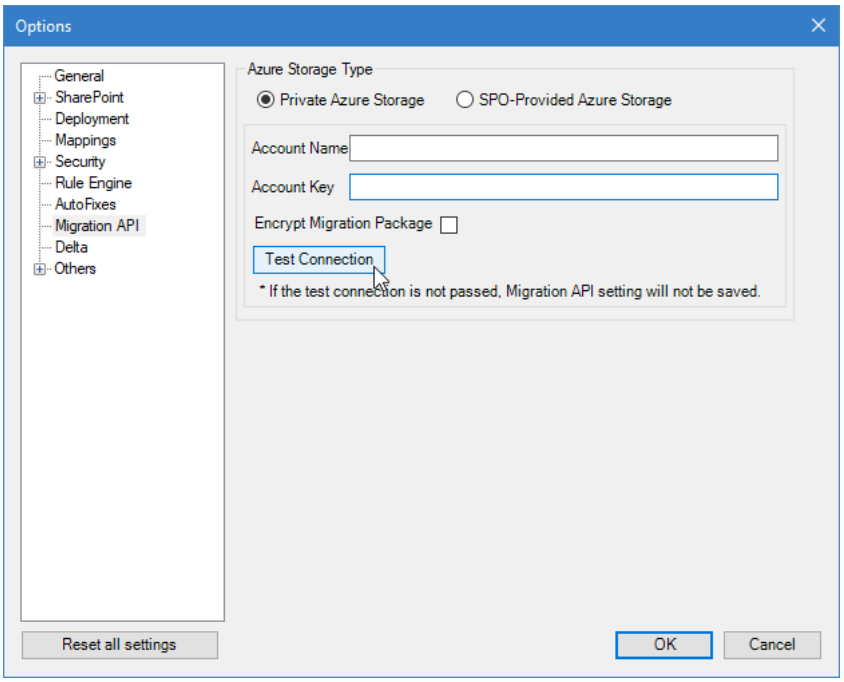


Figure 1-5 Private Azure Storage

Users need to test the connection and save the credentials. For Microsoft provided azure storage (SPO-Provided Azure Storage) option, no such parameters required.

Please, contact your SharePoint Administrator for more about Azure Storage configuration.

In order to plan the auto migrations, after the first install of Deployer tools, the user must run at least one sample migration manually. If they are planning to use Migration API (with Private Azure Storage, provide the Azure Storage Credentials and Test the Connection), enable that as well during the connection accordingly.

2 TZUNAMI DEPLOYER OPTIONS

Tzunami Deployer allows you to configure its behavior via the Options window.

To define the Tzunami Deployer options:

Navigate to **Tools > Options**

The Options window appears.

2.1 GENERAL

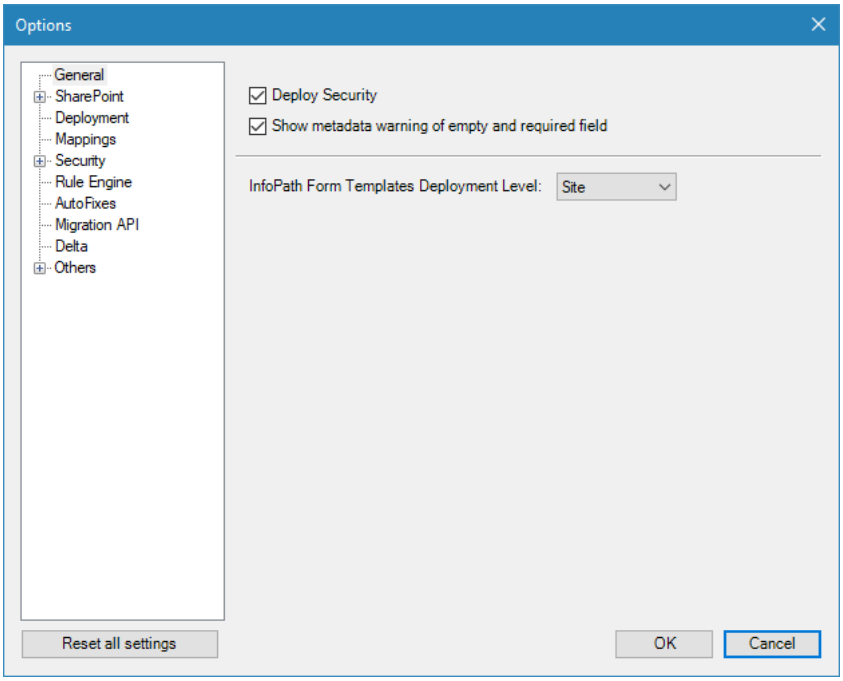


Figure 2-1 Options Window – General

Table 2-1 Deployer Options - General

Option	Description
Deploy Security	Enables you to specify whether to deploy security (users, groups and roles).
Show metadata warning of empty and required field	Select this option to show metadata warning of empty and required fields.
InfoPath Form Template Deployment Level	Specify the location for deployment of InfoPath form template in the target SharePoint.

2.2 SharePoint Connectivity

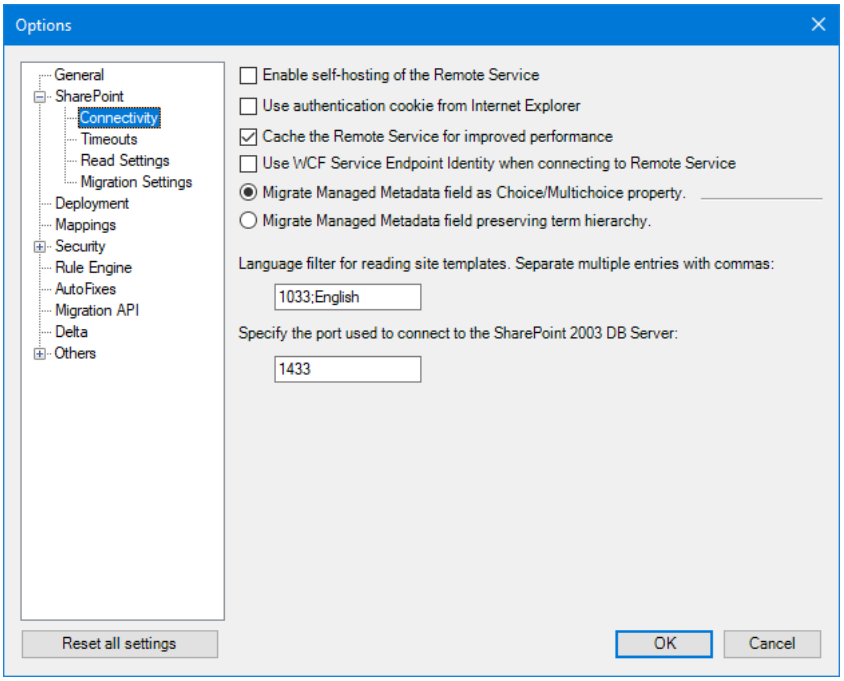


Figure 2-2: Options Window – SharePoint Connectivity

Table 2-2: Deployer Options - SharePoint Connectivity

Option	Description
Enable self-hosting of the Remote Service	Self-host Deployer Remote Service and force connecting to the Remote Service using TCP or HTTP.
Use authentication cookie from Internet Explorer	Enables you to use the authentication cookie from Internet Explorer cookie cache.
Cache the Remote Service for improved performance	Enable the proxy object to the Tzunami Deployer Remote Service is cached and not created from scratch for each request. It improves performance while working with SharePoint 2007, SharePoint 2010, SharePoint 2013, SharePoint 2016 server and SharePoint 2019 server.
Use WCF Service Endpoint Identity when connecting to Remote Service.	Specify the endpoint identity mode to use when connecting to the remote service using WCF.
Commit Managed Metadata field as Choice/Multichoice property	Select the option for migrating Managed Metadata from source to target as Choice/Multichoice property.
Commit Managed Metadata field preserving term hierarchy	Select the option for migrating Managed Metadata from source to target as Managed Metadata preserving the term hierarchy of the source.
Language filter for reading site templates. Separate multiple entries with commas	Specify filtering the reading of site template based language. For Example, the value: '1033: English'. Multiple entries are allowed, separated with commas (,) such as '1033:English, 1049:Russian'.
Specify the port used to connect to the SharePoint 2003 DB Server	Controls the ports used to connect to the SharePoint 2003 DB Server.

2.2.1 SharePoint Timeouts

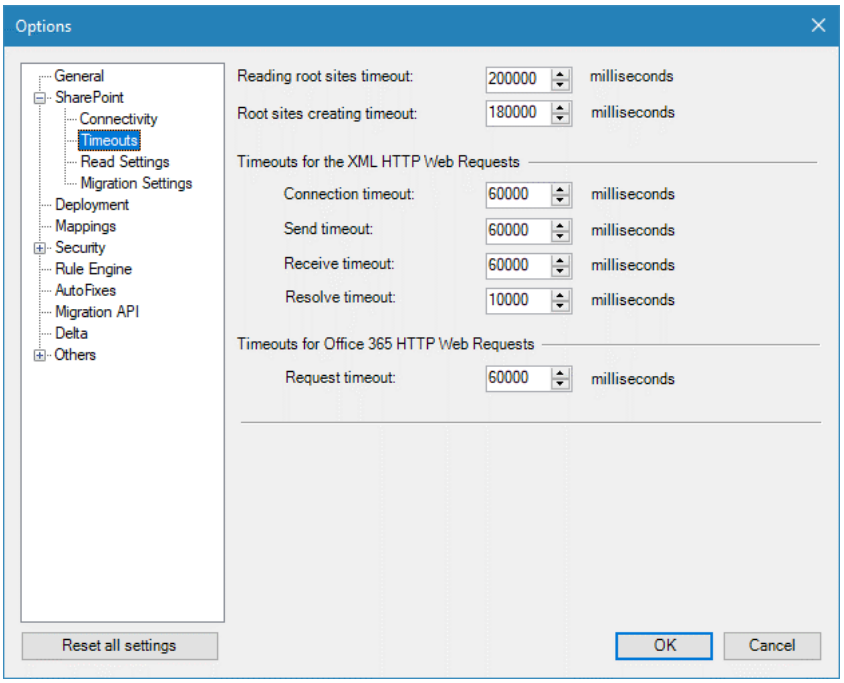


Figure 2-3: Options Window – SharePoint Timeouts

Table 2-3: Deployer Options – SharePoint Timeouts

Option	Description
Reading root site timeout	Specify the amount of time, in milliseconds, that Tzunami Deployer tries to connect to the specified Active Directory domains before it times out the connection.
Root sites creating timeout	Specify the root site creation timeout value in milliseconds
Timeouts for the XML HTTP Web Requests	
Connection timeout	Specify the connect timeout value in milliseconds
Send timeout	Specify the send timeout value in milliseconds
Receive timeout	Specify the receive timeout value in milliseconds
Resolve timeout	Specify the resolve timeout value in milliseconds
Timeouts for Office 365 HTTP Web Requests	
Request timeout	Specify the request timeout value in milliseconds for SharePoint Online

2.2.2 SharePoint Read Settings

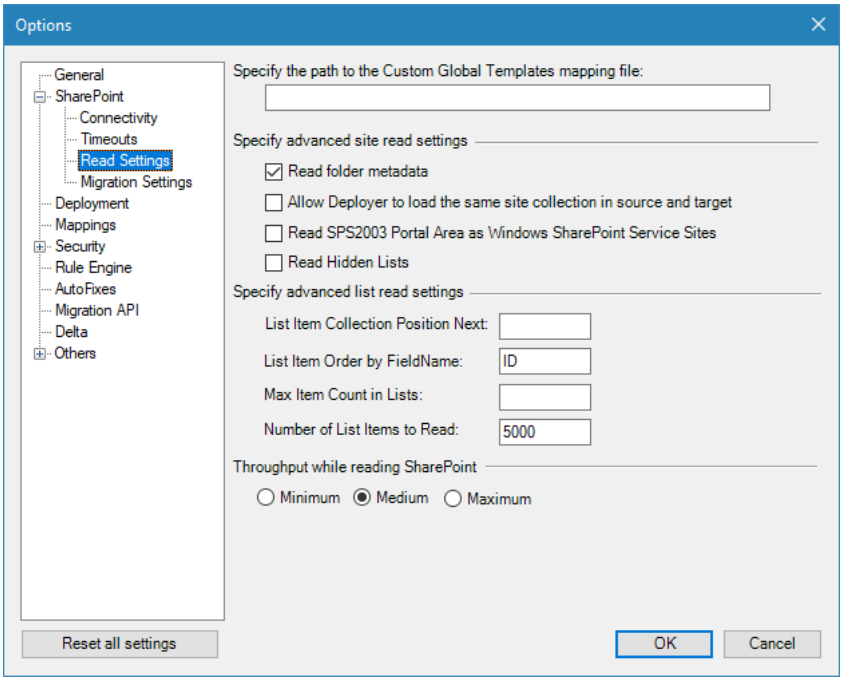


Figure 2-4: Options Window – SharePoint Read Settings

Table 2-4: Deployer Options– SharePoint Read Settings

Option	Description
Specify the path to the Custom Global Templates mapping file	Enables you to specify the path to the Custom Global Template mapping file.
Specify advanced site read settings	
Read folder metadata	Set this flag to 'True' to load metadata of folders while loading the target.
Allow Deployer to load the same site collection in source and target	Enables you to connect to the same SharePoint Site Collection in both as a source and target.
Read SPS2003 Portal Area as Windows SharePoint Service Sites	Allows Tzunami Deployer to read Areas as regular sites in order to get also non Area sub sites under a parent Area.
Read Hidden Lists	Enables you to read the hidden lists.
Specify advanced list read settings	
List Item Collection Position Next	The index of an item in each list from which to read onwards.
List Item Order by Filename	The field name used to sort items while reading from SharePoint lists or folders.
Max Item Count in Lists	The maximum number of items to be read from each list or folder.
Number of List Items to Read	The number of list items to reach in each request to SharePoint.

Option	Description
Throughput while reading SharePoint	Enables you to specify how intensely Tzunami Deployer will interact with the SharePoint server during connection and reading from the server. By default, medium level is set. User can change to minimum and maximum level, too. When using a higher level of usage, SharePoint performances might be influenced.

2.2.3 SharePoint Migration Settings

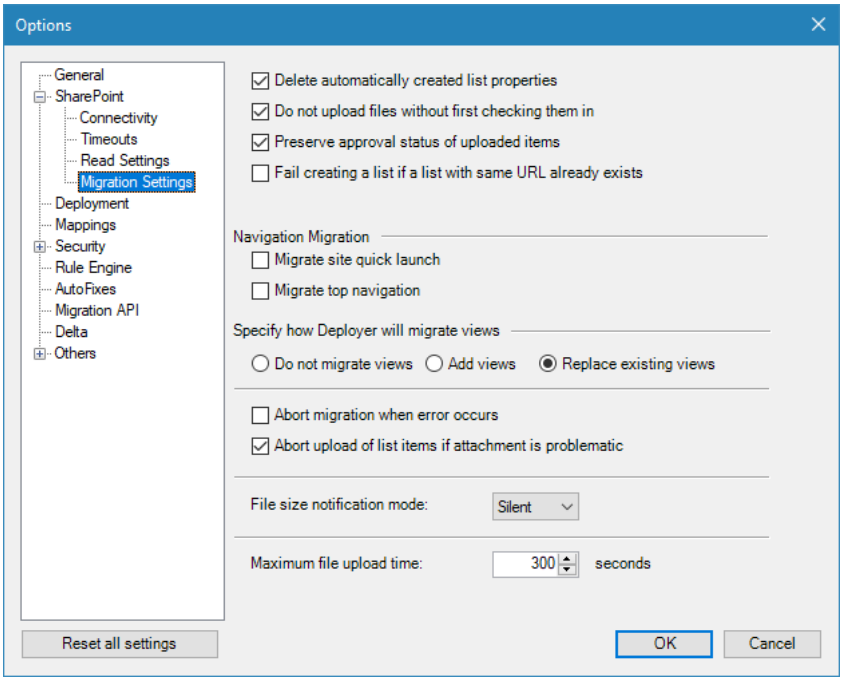


Figure 2-5: Options Window – SharePoint Migration Settings

Table 2-5: Deployer Options – SharePoint Migration Settings

Option	Description
Delete automatically created list properties	Enables you to delete auto created properties and content types from the target list.
Do not upload files without first checking them in	Enables you to prevent items from being uploaded as check-out. If this flag is enabled, items which fail to publish will not be uploaded to SharePoint. An error will be provided during the migration and items will be available for migrating at a later time.
Preserve approval status of uploaded items	Enables you to preserve information about approval status from the source. • In case of migration to SharePoint Online (without using Migration API), the Approval Status or (Modified by & Modified Date) will be preserved, but not both due to SharePoint API limitation. If you don't want to preserve Approval Status (Moderation Status) but want to preserve (Modified by & Modified Date) then, uncheck the option.

Option	Description
Fail creating a list if a list with same URL already exists	Stops creating a list if a list with same URL already exists in the target.
Navigation Migration	
Migrate site quick launch	Enables you to update the Quick Lunch Bar of the target site.
Migrate top navigation	Enables you to update the Top Navigation bar of the target site.
Specify how Deployer will Migrate views	Specify how to migrate the Source views into target SharePoint. Tzunami Deployer provides following options: • Do not migrate views: check this option if you do not want to migrate views. • Add views: check this option if you do not want to add views. • Replace existing views: This option is checked by default and replaces the existing views.
Abort Migrate when error occurs	Select this option to quit migrate when error occurs during migration.
Abort upload of list items if attachments is problematic	Select this option to abort uploading items containing problematic attachments (such as the attachment file size that exceeds the SharePoint maximum limit, attachment files containing blocked extensions or attachment file size are zero (0) byte or corrupted). Do not select this option if you wish to upload parent items without problematic attachments.
File size notification mode	Set file size notification mode as Silent/Loud/None as required. This refers to whether you want to let the user/log know if a file size which was uploaded is different than the original file size.
Maximum file upload time	Specify the timeout used when uploading files to SharePoint. If you plan to migrate large files, it is recommended to increase this value.

2.3 DEPLOYMENT

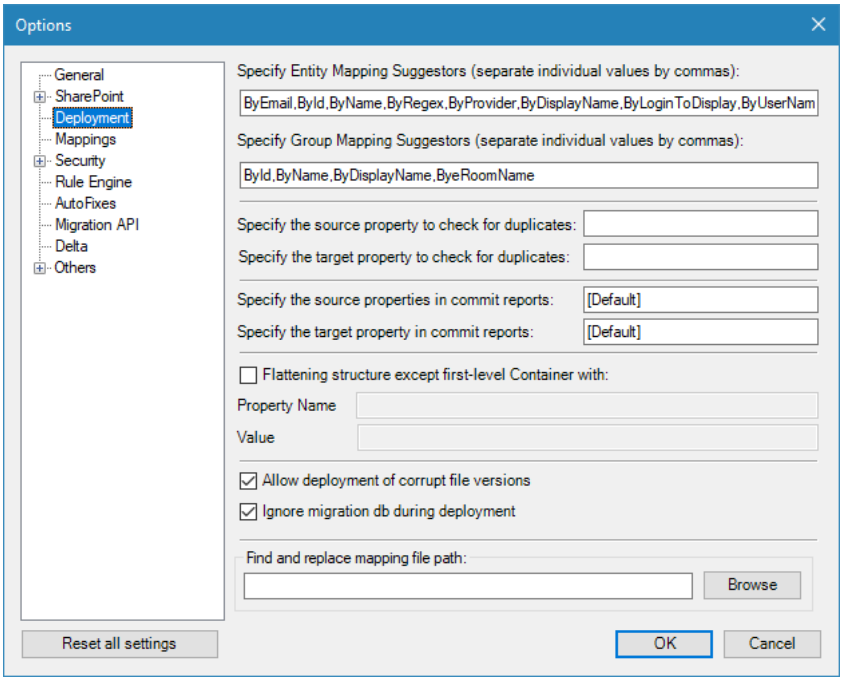


Figure 2-6: Options Window – Deployment

Table 2-6: Deployer Options – Deployment

Option	Description
Specify Entity Mapping Suggestors (separate individual values by commas)	Configure the Suggestors for entity mapping. These are used to suggest entity mappings. Following suggestors are provided: ById ➔Suggest by ID ByName➔ Suggest by Name ByRegex➔ Suggest by Regular Expression ByProvider ➔ Suggest by Membership Provider ByDisplayName ➔ Suggest by Display Name ByLoginToDisplay➔ Suggest by Login Name to Display Name
Specify Group Mapping Suggestor (separate individual value by commas)	Configure the Suggestors for group mappings. These are used to suggest group mappings: ById ➔ Suggest by ID ByName ➔Suggest by Name ByDisplayName ➔ Suggest by Display Name ByeRoomName ➔ Suggest by eRoom Name – useful when source is eRoom
Specify the source property to check for duplicates	Enter Unique Property Name of any Folder/Item/Documents of source property during the first migration, later Deployer identifies and uses these in a delta/incremental migration to find the matching existing Folder/Item/Documents based on that retained property.
Specify the target property to check for duplicates	Enter Unique Property Name of any Folder/Item/Documents of target property during the first migration, later Deployer identifies and uses these in a delta/incremental migration to find the matching existing Folder/Item/Documents based on that retained property

Option	Description
Specify the source properties in commit reports	List of source properties separated by ',' that values would be written as 'Source URL' in commit report. If no value or [Default] is specified, usual values as returned by Deployer will be used.
Specify the target property in Migrate report	Target properties whose value would be written as 'Target URL' in Migrate report. If no value or [Default] is specified, usual values as returned by Deployer will be used.
Flattening structure except first-level Container with:	Select this flag to flatten the folder structure except the first level container having specified value in the property. • **Property Name** – Enter the property name. • **Value** – Enter the property value.
Allow deployment of corrupt file version	Select this flag to enable deployment of corrupt file version. Set this flag to false to prevent deploying corrupted or physically non-existing file version.
Ignore migration db during deployment	During deployment, Tzunami Deployer verifies existing items in SharePoint target based on entries available in migration database and loaded project's target source. Check this option if latest information is available in project's target source. Tzunami Deployer will only consider the project's target source to verify existing items in target SharePoint and skip to query in migration database to check for existing items. Location of Migration database: **C:\ProgramData\Tzunami\Tzunami SPO Migration**
Find and replace mapping file path	Enter the path of **FindAndReplaceSample.xml** file including the file name (e.g. C:\Program Files (x86)\Tzunami\Deployer 4.0\Utility Files\FindAndReplaceSample.xml). **FindAndReplaceSample.xml** file has options to specify the text(s) to find and replaced with for Folders or Files as well as both separately. During the deployment process, Deployer reads the configuration(s) from the **FindAndReplaceSample.xml** file and performs the find and replace action accordingly. User can see the replaced text in target window of Deployer after finishing the deployment process. • User need to specify the text to be found in regex pattern if **RegEx** is set to **True** in FindAndReplaceSample.xml file. It is useful to specify the complex search pattern for example to ignore some leading/tailoring character(s), to ignore some characters within text to be found etc.

2.4 MAPPINGS

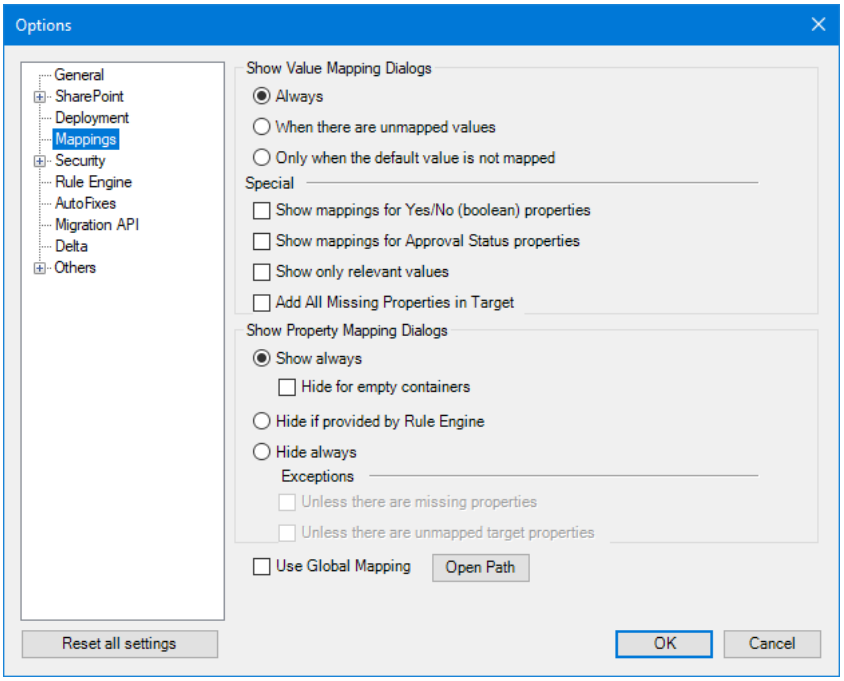


Figure 2-7: Options Window – Mappings

Table 2-7: Deployer Options – Mappings

Option	Description
Show Value Mapping Dialogs	Enables you to specify whether the deployment wizard will display (or skip) Value Mapping steps: • **Always** – Always display Value Mapping steps. • **When there are unmapped values** – Display Value Mapping steps only if some of the source values are not mapped. • **Only when default value is not mapped** – Display Value Mapping steps only if the default source value is not mapped.
Special	**Show mapping for Yes/No (Boolean) properties** – Select this option to display value mapping for Boolean properties. **Show mapping for Approval Status properties** – Select this option to display value mapping for Approval Status properties. **Show only relevant values** – Select this option to display value mapping for relevant values. **Add All Missing Properties in Target –** Select this option to add source's all missing properties in target during deployment, automatically.

Option	Description

Show Property Mapping Dialogs	Enables you to specify whether the deployment wizard will display (or skip) Property Mapping steps:
	• **Show Always** – Always display Property Mapping steps.
	  • **Hide for empty container** – Check this option to skip Property Mapping steps for the empty container.
	• **Hide if provided by Rule Engine** – Skip Property Mapping steps that are filled using the Rule Engine.
	• **Hide Always** – Always skip Property Mapping steps.
	  • **Exceptions**:
	  • **Unless there are missing properties** – Do not skip Property Mapping steps if there are missing properties.
	  • **Unless there are unmapped target properties** – Do not skip Property Mapping steps if any of the target properties is unmapped.

Use Global Mapping	• If checked, mapping for Security, Property and Value mappings are taken from files available in the directory ***C:\ProgramData\Tzunami\Global Configuration***. • If unchecked, Mapping available in Deployer Migration Project is used. The default directory "C:\ProgramData\Tzunami\Global Configuration" will be used as the Global Mapping path. When the plan file for auto migration is generated, mapping files are created under this location. Alternatively, the end user may copy the required mapping file to this place. Additionally, if we execute deployment and choose the "Use Global Mapping" option, the mapping files are created in the default place.

2.5 SECURITY

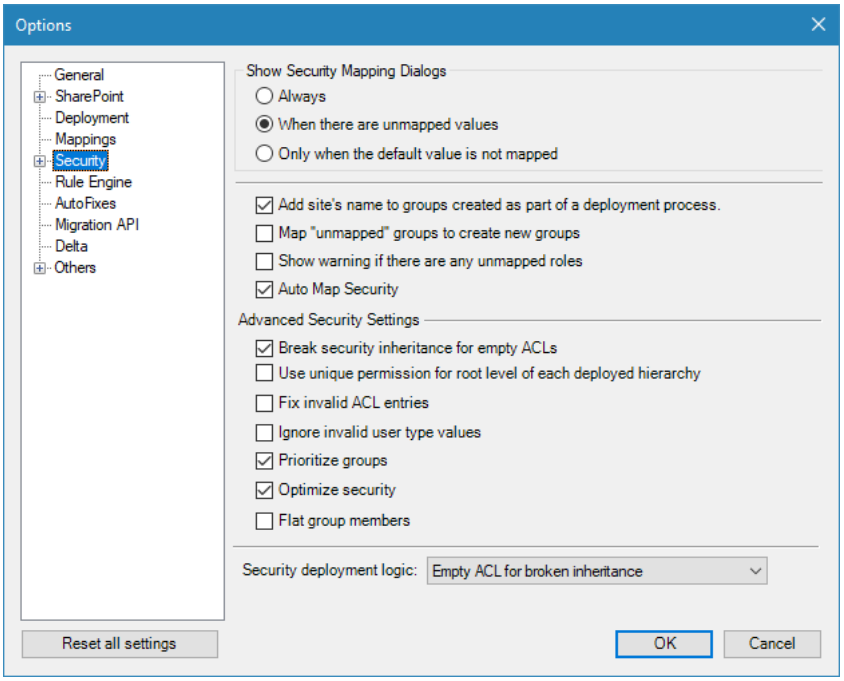


Figure 2-8: Options Window – Security

Table 2-8: Deployer Options – Security

Option	Description
Show Security Mapping Dialogs	Enables you to specify whether the deployment wizard will display (or skip) Security Mapping steps: • **Always** – Always display Security Mapping steps. • **When there are unmapped values** – Display Security Mapping steps only if some of the source values are not mapped. • **Only when default value is not mapped** – Display Security Mapping steps only if the default source value is not mapped.
Add Site's name to groups as a part of a deployment process	Select this option to add site's name to group as a part of a deployment process
Map "unmapped" group to Create New Groups	Select this option to map "unmapped" group to create new group.
Show warning if there are any unmapped roles	Select this option to display warnings if there are any unmapped roles.
Auto Map Security	Select this option to auto map security (Users and Groups).
Advanced Security Settings	
Break security inheritance for empty ACLs	Select this option to break inheritance even when created ACL is empty.
Fix invalid ACL entries	Select this option to automatically fix ACLs by removing entries of invalid entities.

Option	Description
Ignore invalid user type values	Select this option to upload item in case a user property value is of user which cannot be resolved. Empty value will be used instead resulting in the Deployer user value in SharePoint.
Prioritize Group	Select this option to specify not to assign permissions to an entity if it receives similar permission by being a member of a group that already has permission on that item.
Optimize Security	If this option is set, an item will inherit permission if its ACL is same as its parent's ACL when a TDX is loaded.
Flat group members	Select this option to specify not to assign permissions to an entity if it receives similar permission by being a member of a group that already has permission on that item.
Security deployment logic	Enables you to specify the security deployment. Set this value to a Copy of Parent ACL for broken inheritance if the break in security inheritance should result in item to have a copy of parent ACL, otherwise, inheritance breaks will result in blank ACL.

2.5.1 Active Directory

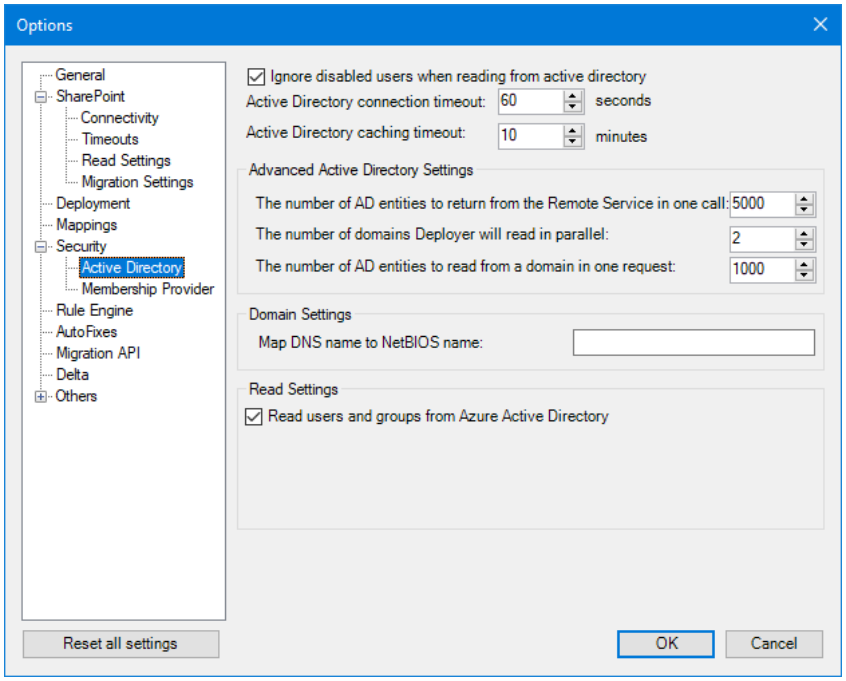


Figure 2-9: Options Window – Active Directory

Table 2-9: Deployer Options – Active Directory

Field	Description
Ignore disabled users when reading from active directory.	Select this option to ignore disabled users while reading users from active directory
Active Directory connectivity timeout	Specify the timeout used when checking Active Directory connectivity.

Field	Description
Active Directory caching timeout	Configure how long (in minutes) a thread should wait for another thread to complete reading and caching of AD. If the operation is not completed in this time, the thread will start reading the AD directory. Note that this time should be less than Remote Service Timeout.
Advanced Active Directory Settings	
The number of AD entities to return from the Remote Service in one call	Configure how may Active Directory entities to return from the Remote Service in one call. Large size might cause WCF buffer overflow.
The number of domains Deployer will read in parallel	Configure how many Domains to read in parallel based on resource availability on the Remote Server machine. This operation is memory intensive.
The number of AD entities to read from domain in one request.	Configure how many entities to read from an Active Directory domain at a time. Maximum allowed size is 100. Decrease in case AD overflow errors are seen while reading.
Domain Settings	Map DNS name with NetBIOS name, if DNS name is different than NetBIOS name. Enter the DNS name and NetBIOS name separated by colon (:). For Example 'Domain1:Domain2'. Multiple peers are allowed, separated with commas (,).
Read Settings	Settings to fetch the Users and Groups
Read users and groups from Azure Active Directory	Check this option to read users and groups from Azure Active Directory. If this option is unchecked, users and groups will not be read from Azure Active Directory.
Always read users and groups	While using **Use REST API** option, the users and groups are always ready from O365 even if TzOnlineUserandGroups.xml file exits in the Deployer installation directory.

2.5.2 Membership Provider

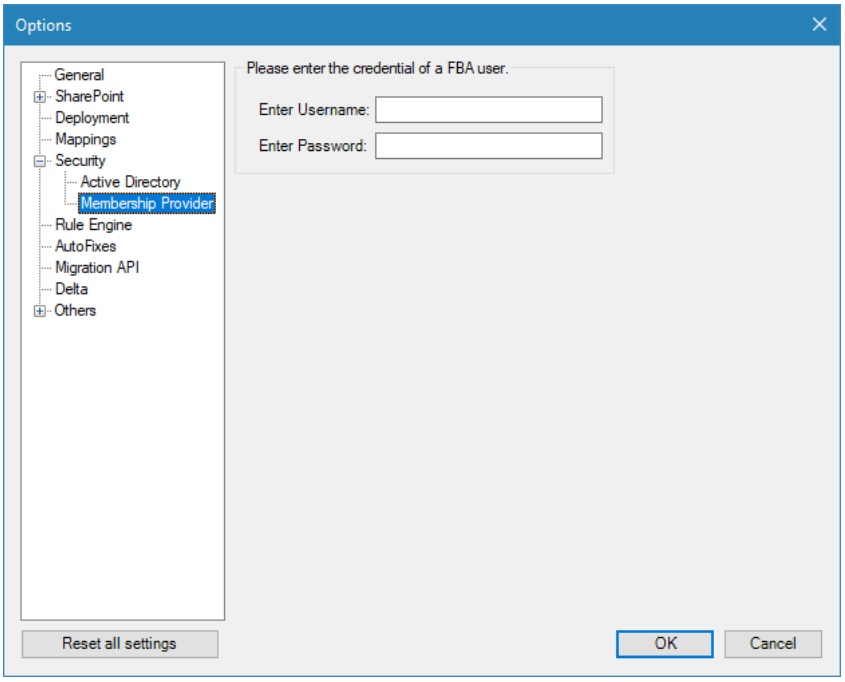


Figure 2-10: Options Window – Membership Provider

Table 2-10: Deployer Options - Rule Engine

Option	Description
Please enter the credentials of an FBA user	Enter the credentials of a Form Based Authentication user. The user should have enough privileges in the web application to add other FBA users to SharePoint. The user must have Full Control and Full Read permission in the User Policy of the Web Application.

2.6 Rule Engine

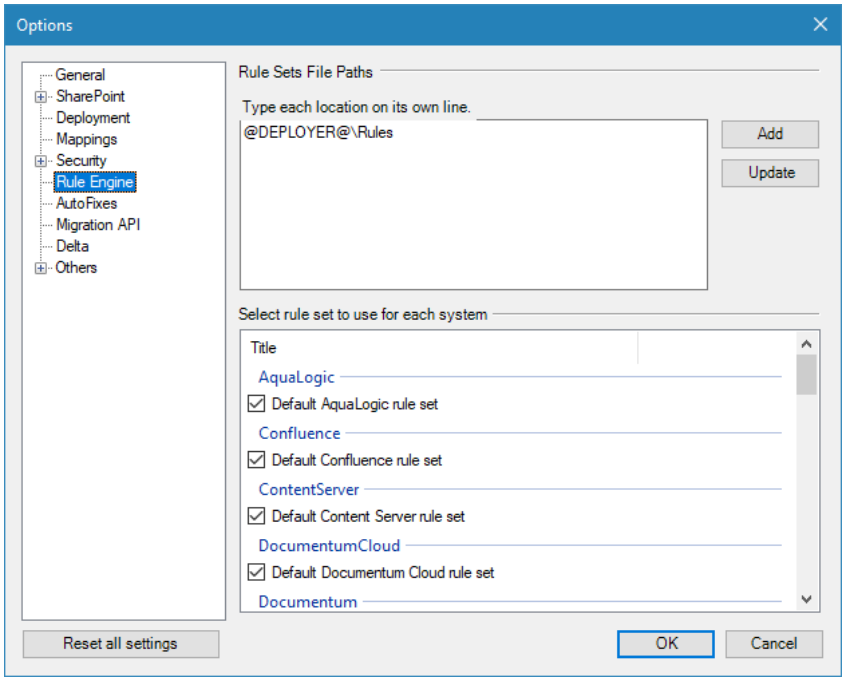


Figure 2-11: Options Window – Rule Engine

Table 2-11: Deployer Options - Rule Engine

Option	Description
Rule Sets File Paths	Enter the Rule Set File Paths.
Select rule set to use for each system	Allows you to select the rule set to use for each system.

2.7 AUTO FIXES

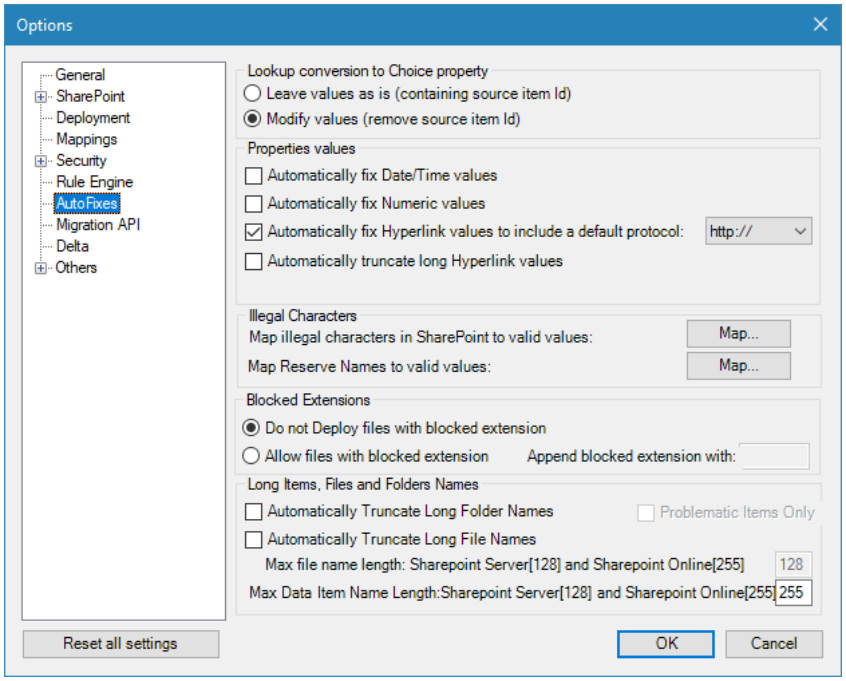


Figure 2-12: Options Window - Auto Fixes

Table 2-12: Deployer Options - Auto Fixes

Option	Description
Lookup conversion to choice property	When a list containing a lookup column is deployed without the list to which the lookup column is pointing to, then that column is changed into a choice type in SharePoint after migration. Deployer allows you to decide the format of the corresponding choice value in the target SharePoint with the help of the following two options: i. Leave values as is (containing source item id): If you select this option, the choice value in target appears as: "Item id;* Item Value", where "Item id" is the lookup id and "Item Value" is the lookup value. ii. Modify values (remove source item id): If you select this option the choice value in target appears as: "Item Value", which is the lookup value.
Properties Values	
Automatically fix Date/Time values	Select this option to let Deployer fix Date/Time values that are out of valid range, to valid SharePoint values.
Automatically fix Numeric values	Select this option to let Deployer fix numeric values that are out of valid range (Maximum or Minimum values), to the valid values.
Automatically fix Hyperlink Values to include a default protocol	Specify whether to automatically add a protocol to values of properties of type Hyperlink, in order to meet SharePoint restrictions.
Automatically truncate the long Hyperlink values	Select this option to truncate the long URLs.

Option	Description
Illegal Characters	From this section, user can map the **illegal characters** and **Microsoft Windows reserved words** to desired valid values. Tzunami Deployer provides separate mapping sections for illegal characters and Microsoft Windows reserved words mapping configuration. • Click on **Map** button beside **Map illegal characters in SharePoint to valid values** to replace illegal character(s) with desired valid value. In the Replace Illegal Char dialog, provide the mapping with desired valid values then, click on **OK** button to save the mappings. • Click on **Map** button beside **Map Reserve Names to valid values** to replace Microsoft Windows reserved words in folder(s) and file(s) name (exact matched name) with desired valid name. In the **Replace Reserve Name** dialog, provide the mapping with desired valid name then, click on **OK** button to save the mappings.
Blocked Extensions	Enables you to specify how to handle blocked extension files. • **Do not deploy files with a blocked extension** – Select this option to stop deploying files with blocked extensions. • **Allow files with blocked extension** - Select this option to deploy files with blocked extension. If this option is selected, Deployer allows you to append the blocked extensions with the given text. **Append blocked extension with**: Appends all blocked extensions with the given text. [For e.g.: "txt", blocked files with extension will be deployed as .exe.txt, dll.txt, aspx.txt etc.] In case of migrating to **SharePoint Server 2013** through **On-Premise** mode, user can update the list of blocked extensions in this file according to their needs **BlockedExtensions.xml** file located in "Sp2013Online" folder under the Deployer installation directory contains blocked extensions for **SharePoint Server 2013**.
Long Items, Files and Folders Names	
Automatically Truncate Long Folder Names	Select this option to automatically truncate long folder names while deploying.
Automatically Truncate Long File Names	Select this option to automatically truncate long file while deploying. • **Max file name length: SharePoint Server[128] and SharePoint Online[255]** Based on the SharePoint server, provide the character length to truncate (less than the maximum limit as indicated in square brackets).

Option	Description
Problematic Items Only	Select this option to automatically truncate long folder/file name in problematic items based upon the above options selected.
Max Data Item Name Length: SharePoint Server[128] and SharePoint Online[255]	This option truncates Data Item Name length to 128 characters for SharePoint On-premise and 255 characters for SharePoint online and SharePoint 2019. You can specify the character length to your desired length to truncate (less than the maximum limit as indicated in square brackets).

2.8 MIGRATION API

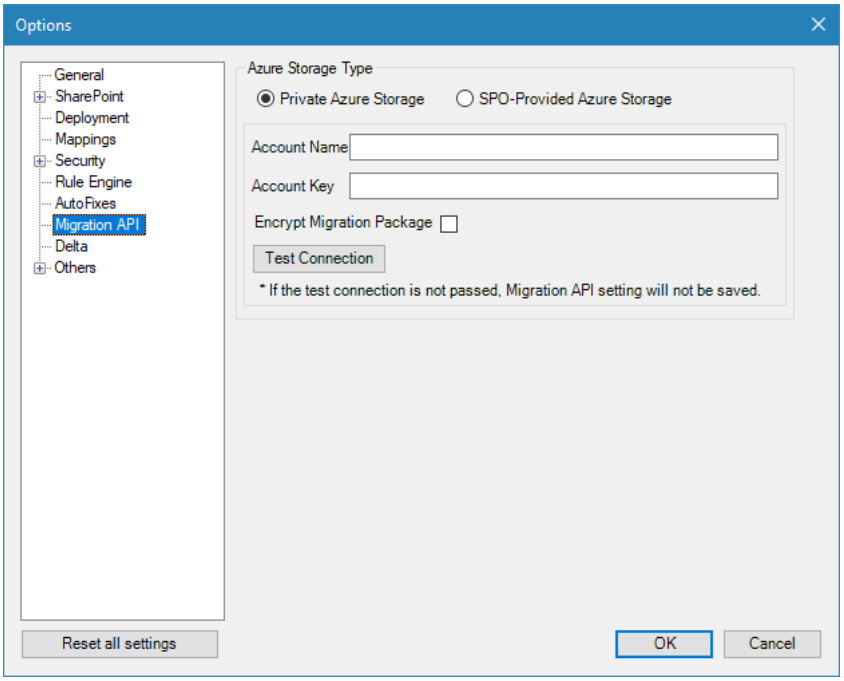


Figure 2-13 Settings for Migration API

Table 2-13 Settings for Migration API

Field	Description
Azure Storage Type	Tzunami Deployer supports Azure Storage subscribed by the organization (or other vendors) and provided by the Microsoft as well. For the Azure Storage subscribed by the organization, user should manually configure the storage account details and provide the parameter in Deployer whereas for the Microsoft provided azure storage no such parameters should be provided in Deployer. Please, contact your SharePoint Administrator for more about Azure Storage configuration.
Private Azure Storage	Check this radio button to use private azure storage which is subscribed the organization (or other vendors.
Account Name	Enter the account name for the azure storage account.
Account Key	Enter the key for the azure storage account.
Encrypt Migration Package	Check this option to encrypt the migration package and logs.

Field	Description
Test Connection	Once the parameters are entered, click on **Test Connection** button to check the connectivity for the azure account. If connection fails, connection parameters won't be saved.
SPO Provided Azure Storage	Check this radio button to use Microsoft provided azure storage account. There is no need to provide other connection parameters. The migration package and logs are by default encrypted when using this option.

2.9 DELTA

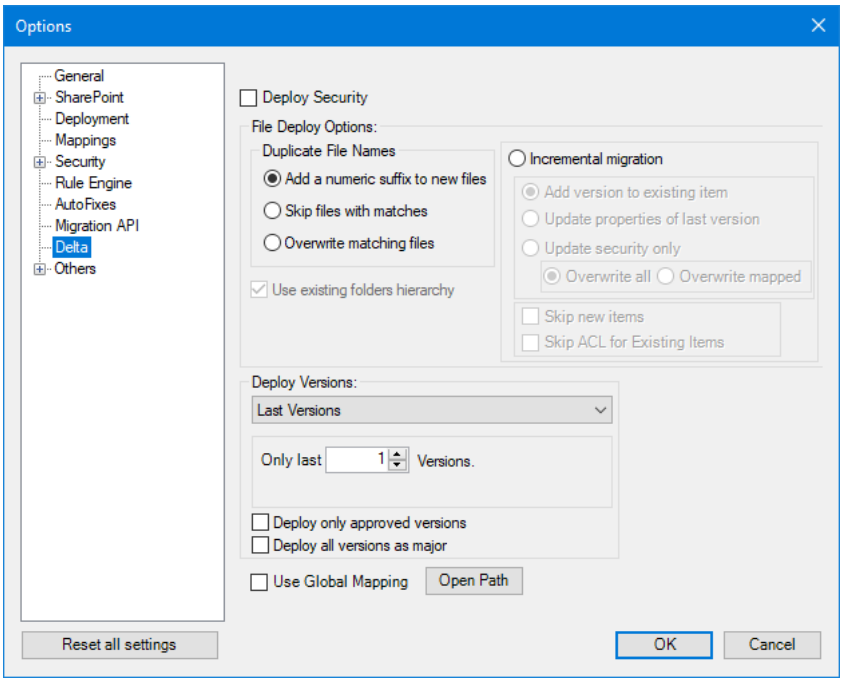


Figure 2-14 Settings for Delta

Table 2-14 Settings for Delta Deployment Description

Field	Description
Deploy Security	Security mappings are deployed during delta deployment.
Duplicate File Names	Specify how Tzunami Deployer handles multiple items with the same name in a target location.
Add a numeric suffix to new files	Item(s) is deployed with a numeric suffix appended in file name.
Skip files with matches	Item(s) does not get deployed.
Overwrite matching files	Item(s) is deployed by overwriting the existing item(s).
Incremental migration	Item(s) is deployed with behavior specified as I or II. The incremental migration allows updating properties of existing items. Depending on version settings of a library the item version number may change.
I. Skip New Items	When this option is checked, Tzunami Deployer skips all the newly added items and only deploy the updated items in source system, which were migrated in previous migration.

Field		Description
II.	Skip ACL for Existing Items	When this option is checked, Tzunami Deployer skips ACL update for existing items in target, but not for the new items.
III.	Add version to existing item	Item(s) is deployed as new version in the existing item(s).
IV.	Update properties of last version	Item(s) is deployed and properties get updated in the last (highest) version of the existing item(s).
V.	Update security only	When this option is checked, Tzunami Deployer updates the security and ACL only.
Overwrite matching files		When this option is checked, Tzunami Deployer will overwrite the matched existing files.
Use existing folder hierarchy		Tzunami Deployer will ignore the duplicate items handling for folders, and use the existing folder structure. This option is only available when the target of the deployment is a list or a folder
Deploy Versions		Specify which item versions to copy when the deployment is migrated. The item versions you specified to deploy are selected by default. You can deploy.
Last Versions		Only the available last (latest) document versions are deployed.
Only last <#> Versions		Only the specified number of latest document versions are deployed
Deploy only approved versions		Only those document versions marked as approved (non-draft) are deployed.
Deploy all versions as major		All document versions (including minor versions) are deployed as major versions.
Use Global Mapping		• If checked, mapping for Security, Property and Value mappings are taken from files available in the directory ***C:\ProgramData\Tzunami\Global Configuration***. • If unchecked, Mapping available in Deployer Migration Project is used. The default directory "C:\ProgramData\Tzunami\Global Configuration" will be used as the Global Mapping path. When the plan file for auto migration is generated, mapping files are created under this location. Alternatively, the end user may copy the required mapping file to this place. Additionally, if we execute deployment and choose the "Use Global Mapping" option, the mapping files are created in the default place.

2.10 OTHERS

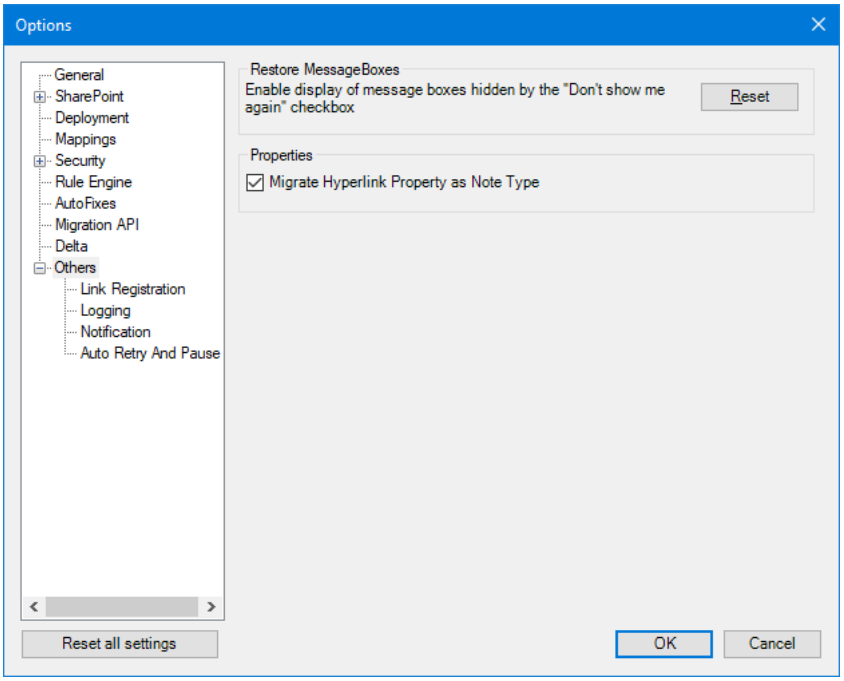


Figure 2-15: Options Window – Others

Table 2-15: Deployer Options - Others

Field	Description
Restore message boxes	**Enables display of message boxes hidden by "Don't show me again" checkbox** – This will result in all message boxes being displayed to the user.
Migrate Hyperlink Property as Note Type	Check this option to migrate the hyperlink type properties as Note Type.

2.10.1Link Registration

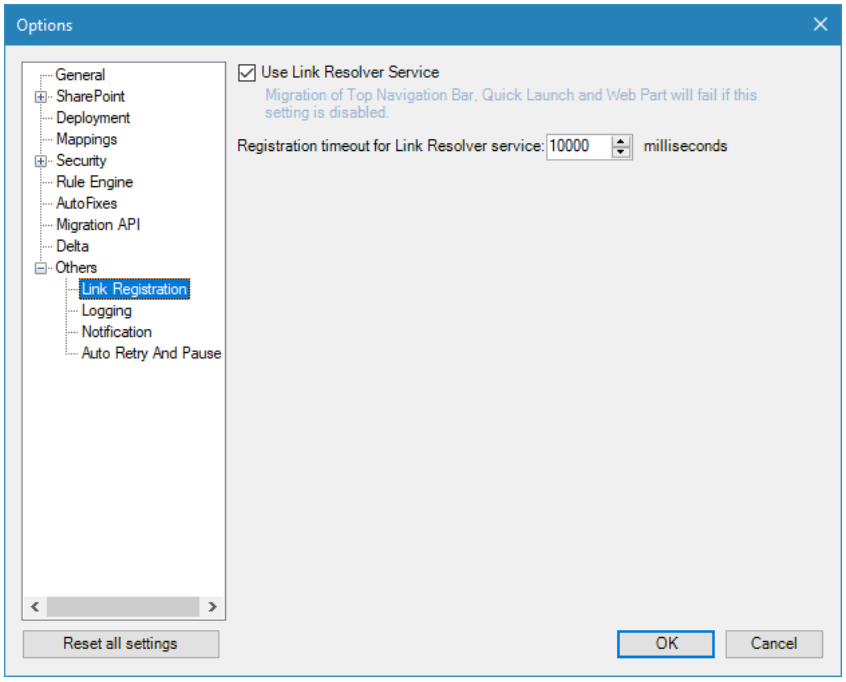


Figure 2-16: Options Window – Link Registration

Table 2-16: Deployer Options – Link Registration

Field	Description
Use Link Resolver Service	Controls if Deployer will register migrated items to Link Resolver Service.
Registration timeout for Link Resolver service	Specify the link registration timeout for Link Resolver Service in milliseconds.

2.10.2Logging

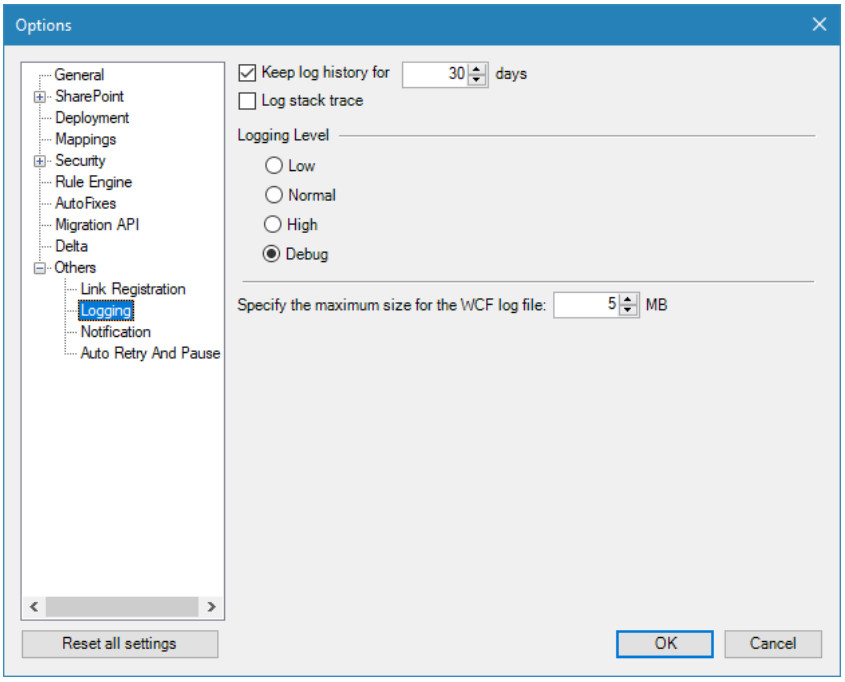


Figure 2-17: Options Window – Logging

Table 2-17: Deployer Options – Logging

Option	Description
Keep log history for	Enables you to specify for how long Tzunami Deployer retain log files in the open project.
Log stack trace	Specify whether to include additional information in the log files.
Logging Level	Specify the verbosity of the logs. The higher the level you select, the more verbose the logs will be. It is recommended to leave this to Debug level.
Specify the maximum size for the WCF log file	Enables you to set WCF Log file size. The default WCF log file size is 5 MB.

2.10.3Notification Setting

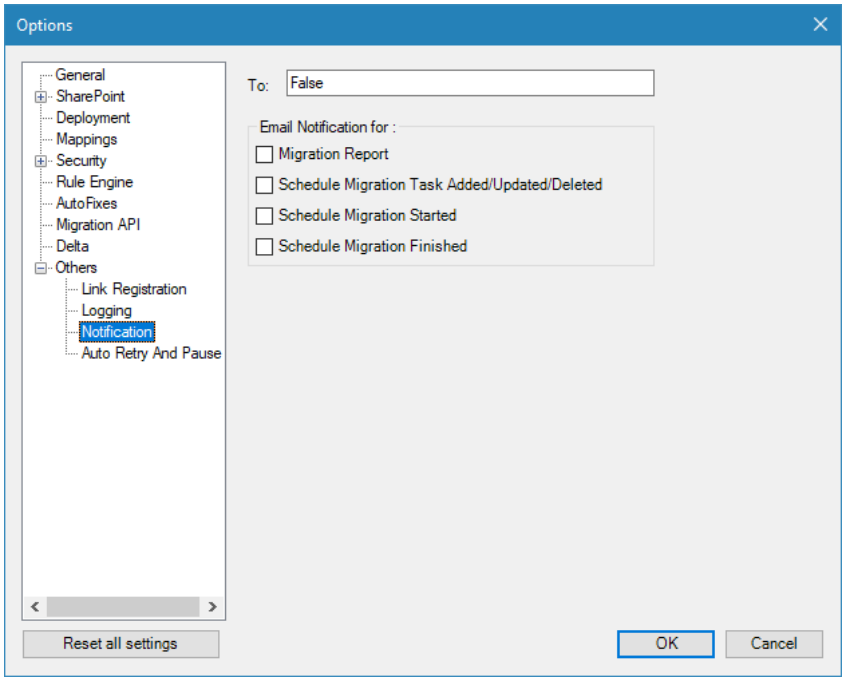


Figure 2-18 Options Window – Notification Setting

Table 2-18 Deployer Options – Notification Setting

Option	Description
To	Enter email address to send/receive notification.
Email Notification for	
Migration Report	Check if needs to send notification for Migration Report.
Schedule Migration Task Added/Updated/Deleted	Check if needs to send notification for Schedule Migration Task Added/Updated/Deleted.
Schedule Migration Started	Check if needs to send notification for Schedule Migration Started.
Schedule Migration Finished	Check if needs to send notification for Schedule Migration Finished.

2.10.4Auto Retry and Pause

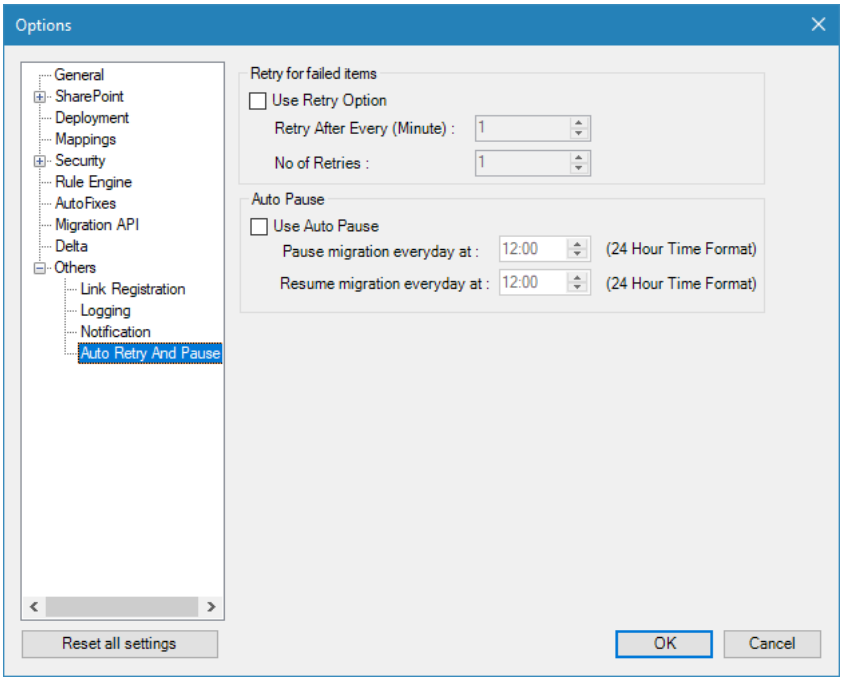


Figure 2-19 Options Window - Auto Retry and Pause

Table 2-19 Deployer Options – Auto Retry and Pause

Option	Description
Retry for failed Items	This option works after completion of running migration. This option is beneficial for those kinds of failed items which are caused by temporary reasons like internet connection issue or throttling issue that can be resolved in next try after some minutes.
Use Retry Option	By default this option is unchecked. Check this option to use Auto Retry for failed items after completion of running migration process.
Retry After Every (Minutes)	Specify the time in minutes to start auto retry in every specified time for failed items after completion of running migration process. Maximum time period is 1440 minutes (i.e. 24 hour).
No of Retries	Specify the number of retry attempts to be made. Maximum retry value is 9.
Auto Pause	This option is used to pause and resume the current running migration process. It is beneficial to pause during working hours and resume after working hours for migration.
Use Auto Pause	By default this option is unchecked. Check this option to use Auto pause and resume of running migration process.
Pause migration every day at	Specify the time in 24 hour format. E.g. 09:00 for 9 AM every day.
Resume migration every day at	Specify the time in 24 hour format. E.g. 17:00 for 5 PM every day.

3 GETTING STARTED WITH TZUNAMI DEPLOYER

This chapter describes how to create a project in Tzunami Deployer and save Deployer project for future use. This chapter contains the following topics:

- ***Configuration of Tzunami Migration Services***
- ***Creating a New Migration Project***
- ***Save a Project***

3.1 CONFIGURATION OF TZUNAMI SERVICE SETTINGS

The Tzunami Deployer, Exporters and Deployer Remote service communicate with various migration services during the migration process. Tzunami Inc. provides a program packaged with the respective installation file. This program enables the user to configure the services, time outs and other relevant settings during installation.

When users save the configuration parameters, **ServiceComponentConfiguration.xml** located at **C:\ProgramData\Tzunami\Deployer** is updated. The Tzunami Deployer, Exporters and Deployer Remote service uses this file to point the migration services. The following sections provide the details for the configuration.

3.1.1 Service Settings for Deployer and Exporters

When installing **Tzunami Deployer or Exporter or Remote Service** for the first time, a **Tzunami Service Settings** dialog is displayed. In **Tzunami Service Settings,** the Licensing Service, Link Resolver Service and O365 AD Service are pointed to localhost (same machine) along with the **Time Outs** for the respective services.

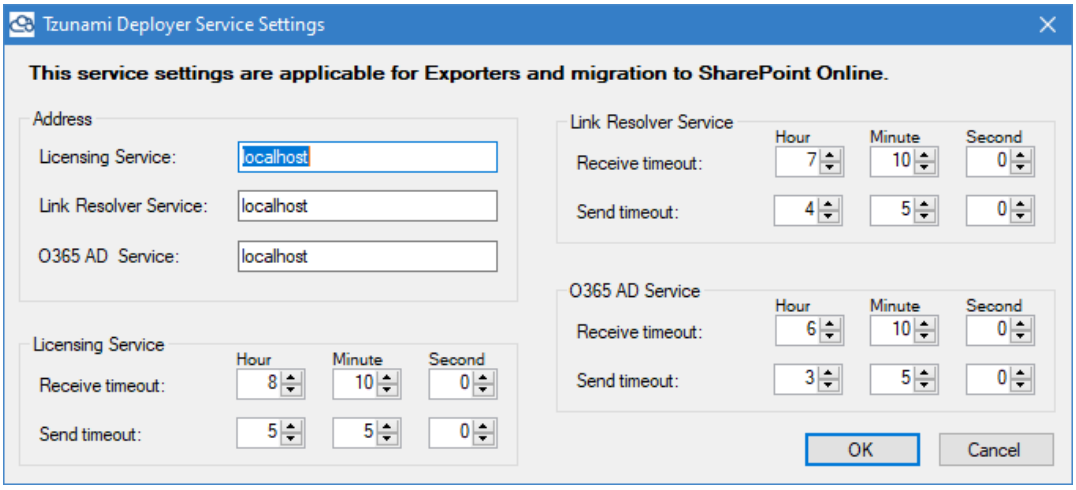


Figure 3-1 Tzunami Deployer Service Settings Manager

User can run the **Settings Manager.exe** application from the installation directory of the Deployer or Exporter to display this service settings dialog at any time and updated the settings to point the Tzunami services as required.

If these services are installed on another machine, point to that machine with the machine name or IP Address. Also, the following ports should be enabled in firewall or equivalent programs to make connections with the respective services.

Licensing Service: TCP port 8008

Link Resolver Service: TCP port 9028 and

O365 AD Service: TCP port 9000

3.1.2 Service Settings for Deployer Remote Service

Similarly, when installing the **Deployer Remote Service (RS)** in the SharePoint on-premises server, Licensing service and Link Resolver Service should be configured. At the end of the installation, **Remote Service Settings** dialog opens. In **Remote Service Settings,** the Licensing Service and Link Resolver Service are pointed to localhost (same machine) along with the **Service Timeouts, Delays and Logging Level** for the remote service.

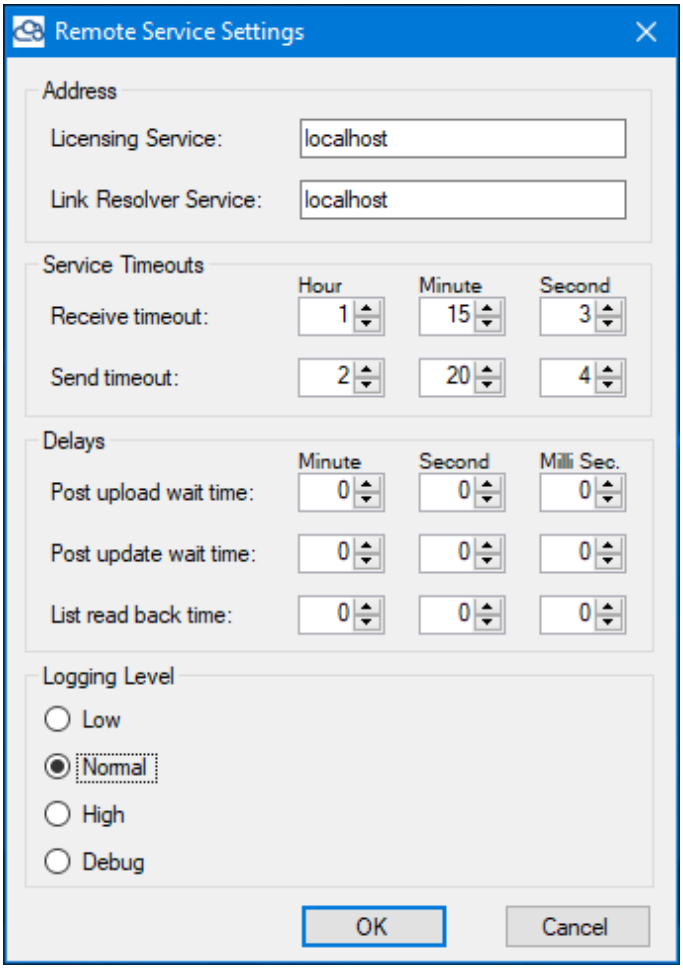


Figure 3-2 Remote Service Settings Manager

User can run the **Settings Manager.exe** application from the installation directory of the Deployer or Exporter to display this service settings dialog at any time and updated the settings to point the Tzunami services as required.

If these services are installed on another machine, point to that machine with the machine name or IP Address. Also, the following ports should be enabled in firewall or equivalent programs to make connections with the respective services.

Licensing Service: TCP port 8008

Link Resolver Service: TCP port 9028 and

Users must restart the Remote Service in windows services after changing and saving the configuration parameters.

3.2 Configuration To Support Dot Character In Folder

Tzunami Deployer supports dot (".") character in folder name while migrating in SharePoint online. By default, it is not supported. User needs to configure in Deployer configuration file to enable it. Please, perform the following steps to configure the settings.

1. Go to the Deployer installation location.
2. Open the **Deployer.exe.Config** in an editor with privileged permission.
3. In <appSettings>, find the key **SupportDotOnFolderNameForOnline.**
4. Set the value to **True**.

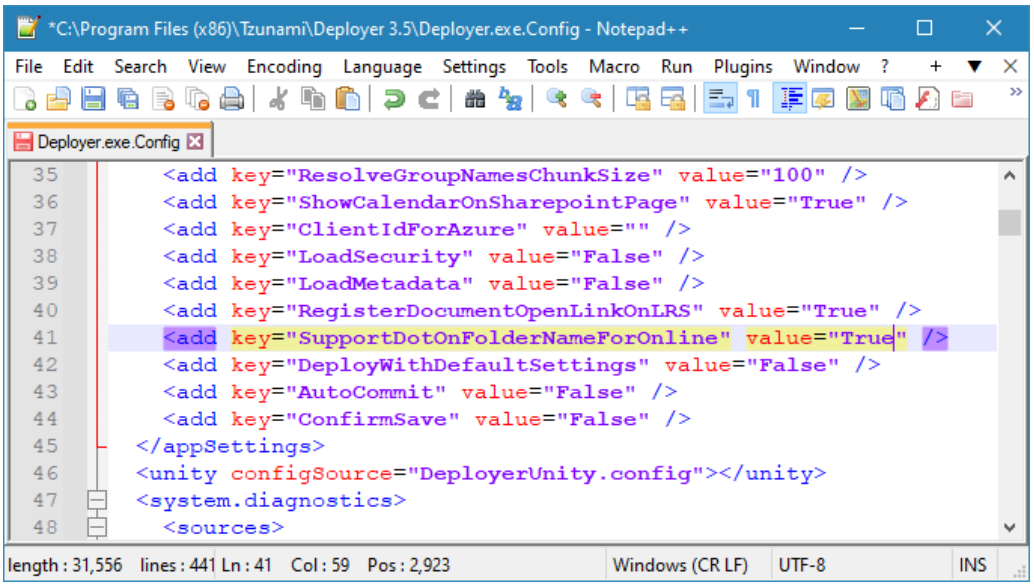


Figure 3-3 Support dot character in folder name.

5. Save the file in same location.

Now, user can run the deployer.

The dot (".") character in folder title property is supported even when the key **SupportDotOnFolderNameForOnline** in Deployer configuration file is set to **False**.

3.3 Creating a New Migration Project

Tzunami Deployer stores all the information related to a particular project in a Tzunami Deployer project. The project consists of a file system folder, which contains the Tzunami Deployer project file (information describing the SharePoint structure and changes that will be executed on the target).

Begin using Tzunami Deployer by creating a new project.

3.3.1 To create a project:

1. Launch Tzunami Deployer and select **File > New**. The New Project window appears.

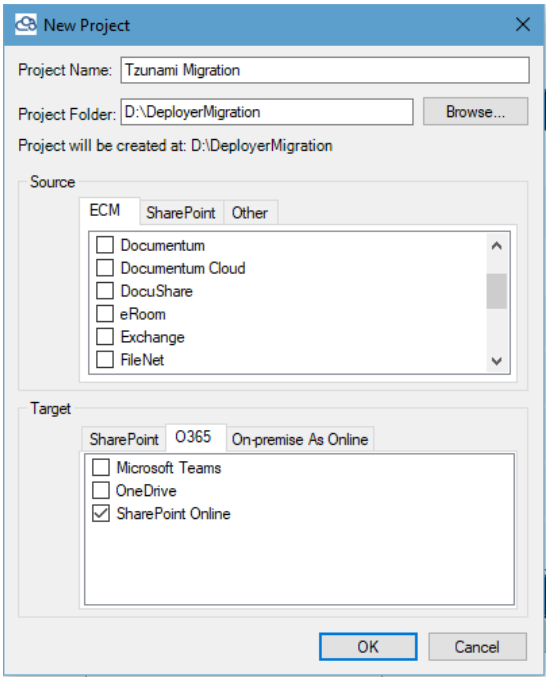


Figure 3-4: New Project Window

2. Enter a name for the project in the Project name field.
3. In the Project folder field, enter the location where you want Tzunami Deployer to create the new project folder.

The project folder contains all the definitions that you create in Tzunami Deployer, automatic backups of the project, as well as logs and reports of the activities that are performed in and by Tzunami Deployer.

4. Select one or more types of source systems to be migrated to this project.

   One of Tzunami Deployer's advantages is its ability to consolidate several source systems (Enlisted in ECM, SharePoint and Other tabs) into a single target SharePoint server. The source options that are available for selection are determined by the license that you installed, as described in the previous section. Options that are not permitted by your license are not available for selection. For more information about the Tzunami Deployer license, and for support of systems that are not listed, contact the Tzunami Support Team.

   The following table shows the supported source system enlisted under ECM, SharePoint and Other tabs.

Table 3-1: List of Supported Source Systems

Field	Description
ECM	This tab enlists the different ECM source systems. • AquaLogic • Confluence • Documentum • DocuShare • eRoom • Exchange • FileNet • Google • Hummingbird DM • Hitachi Content Platform (HCP) • HPE Content • Livelink • LotusNotes • Oracle WCI
SharePoint	This tab enlists the different version of SharePoint servers. • SharePoint 2001 • SharePoint 2003 • SharePoint 2007 • SharePoint 2010 • SharePoint 2010 Remote • SharePoint 2013 • SharePoint 2016 • SharePoint 2019 • SharePoint Online
Other	This tab enlists the other source system. • File System • HyperWave

Tzunami Deployer does not support SharePoint 2001.

5. Select a target system for the migration in this project. The options that are available for selection are determined by the license that you installed. The following table shows the supported target systems.

Table 3-2 List of Supported Target Systems

Field	Description
SharePoint	This tab enlists the different version of SharePoint servers. • SharePoint 2003 • SharePoint 2007 • SharePoint 2010 • SharePoint 2010 Remote • SharePoint 2013 • SharePoint 2016 • SharePoint 2019
O365	This tab enlists the different online SharePoint sites. • Microsoft Teams • OneDrive • SharePoint Online
On-premise As Online	This tab enlists the different On-premise SharePoint sites • SharePoint 2019 As Online

6. Click **OK**. Tzunami Deployer creates the new project folder and initializes the project files in it. The Project window appears. Initially, both parts of the Project window are empty.

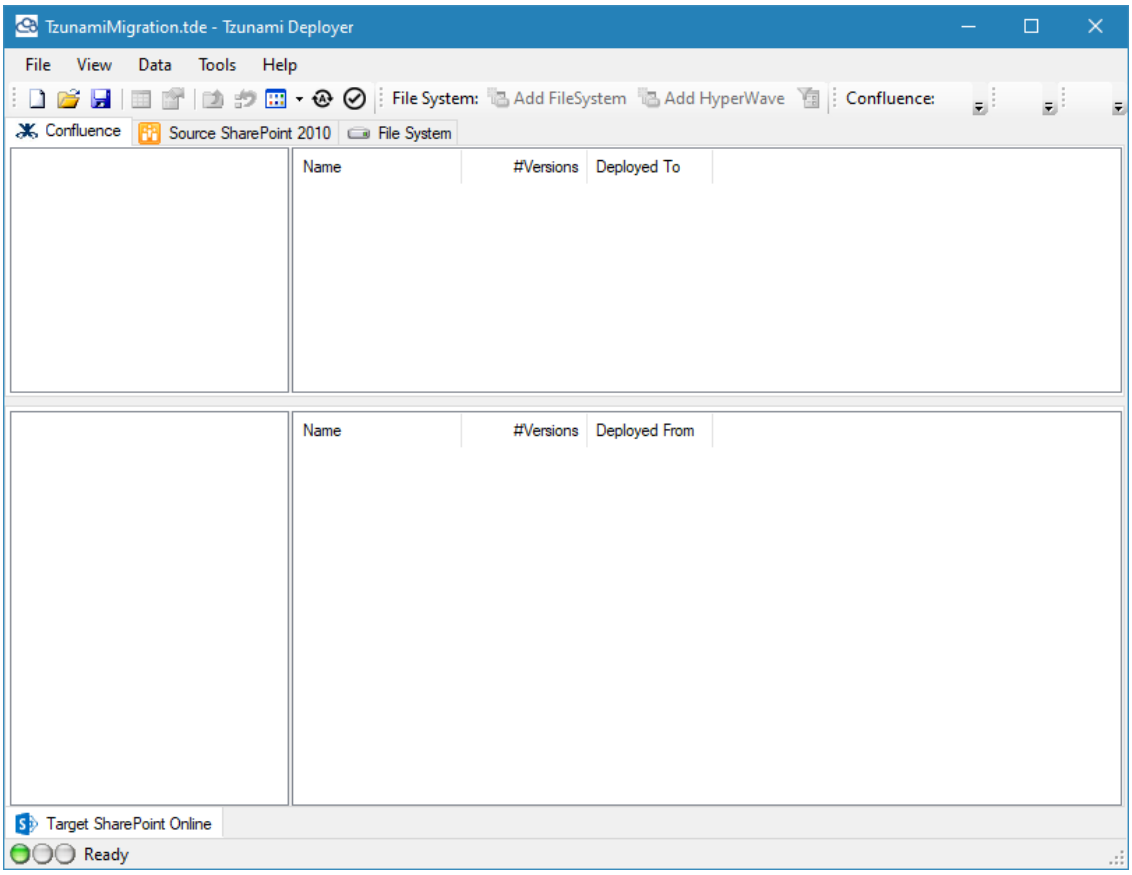


Figure 3-5: Project Window

The top half of the Project window uses a Windows Explorer style folder tree and details list to display the structure and content that has been loaded from the source systems. The bottom half of the Project window uses a similar approach to display the structure and content of the target SharePoint. The details list in the top and bottom parts of the Project window show columns of metadata properties and other information for the child items.

The status bar indicates various types of information, such as the currently listed and selected items and the status and progress of Tzunami Deployer processes. An indicator on the left of the status bar displays red when Tzunami Deployer is busy or when a dialog is open and Tzunami Deployer is waiting for user input. This indicator blinks yellow when Tzunami Deployer is performing a background operation. During a background operation, the current stage of the operation is also displayed, as well as a progress bar and the estimated time remaining for the operation to be completed. The indicator is green at all other times.

3.4 Save a Project

When you save a project, you can save it to a folder on your hard disk drive, a network location, disk, the desktop, or another storage location. To do this, select a desired drive/folder from the Save As window. The Saving process is the same, regardless of what location you choose.

You should save the project frequently while you are working on it to avoid losing data because of an unexpected power failure or other problem.

3.4.1 To save a project:

1. Click

   Or

   Select **File > Save**

   Or

   Press **Ctrl + S**

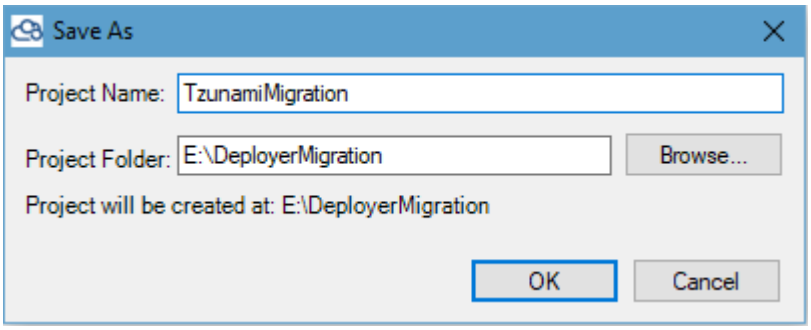


Figure 3-6: Save As window

2. Enter Project name and Click **Ok**.

4 CONNECTING AND LOADING SERVERS

This chapter explains how to connect and load sources content and target SharePoint in Deployer project. This chapter contains the following topics:

- ***Connecting and Loading Source Server***
- ***Connecting and Loading Target Server***
- ***Reloading SharePoint Items***
- ***Removing SharePoint Projects***
- ***Handling Throttling with SharePoint Online***
- ***Best Practice***

4.1 Connecting and Loading Source Server

After creating a Tzunami Deployer project, you can load the information that describes the source system's hierarchy structure and the metadata properties associated with each item. A tab appears in the Project window for each source system type that you selected in the New Project window.

The loaded information is only read from the source system and no modifications are made to the actual source at any time during the migration process.

You can load information into Tzunami Deployer from one or more of the following source stores:

- **ECM System**– Tzunami Deployer can load directly from a source or load the exported .tdx file.
- **SharePoint On premise server**– Tzunami Deployer can load directly from a source SharePoint 2003/2007/2010/2013 store.
- **File System** – Tzunami Deployer can load information directly from your file system.

Information loaded from a source system captures the contents of that store at the time it is loaded (or exported, in the case of TDX files). If the source system is modified after being loaded, these modifications are not reflected in your Tzunami Deployer project. To access the up-to-date content of the source system, you must reload that system (or recreate the TDX file, where necessary).

After loading, two numbers appear to the right of each folder name in the source tree, for example Log (0/22). The second number is the total number of items in that particular folder and all its subfolders. The first number is the number of items that were deployed to the target.

All source items are read-only and their icons are displayed with a blue lock ( ) overlay.

4.1.1 Loading from File System

Tzunami Deployer can load directly from a file system into one or more root folders that you can define in the source tree.

You can load HyperWave directly from a File System by using HMI files generated by HyperWave. HMI files are text files. It contains properties, their values and security permission for a specific file folder.

In order for a .HMI file to relate to a file/folder, the HMI file should:

Be named after the related file/folder.
For Example – The HMI file **sample1.doc.hmi** relates to **sample1.doc** and contains its properties and security permissions.

Have the correct value for the property 'Type'
For Example – If the property Type is populated with the value 'Link', the file has to be html (or similar) file.

HMI files must start with the following line:
"HyperWave Meta Information/1.1"
Followed by an empty line

To load a source file system:

1. Click

   Or

Right-click in the **File System** tab and select **Add File System Root** or **Add HyperWave Root**.

You can add as many roots as you want.

The Add File System Root window appears.

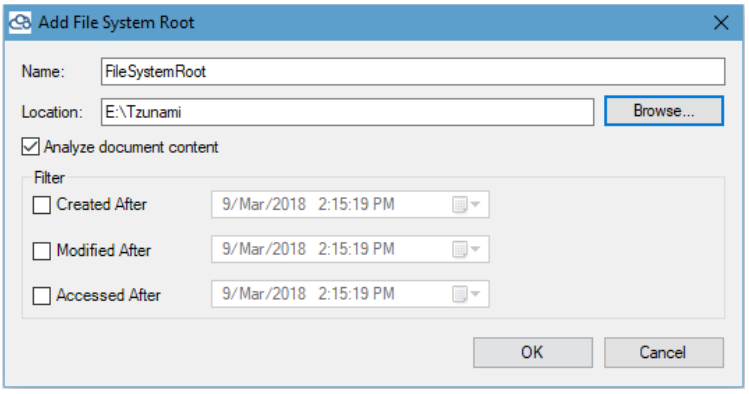


Figure 4-1: Add File System Root window

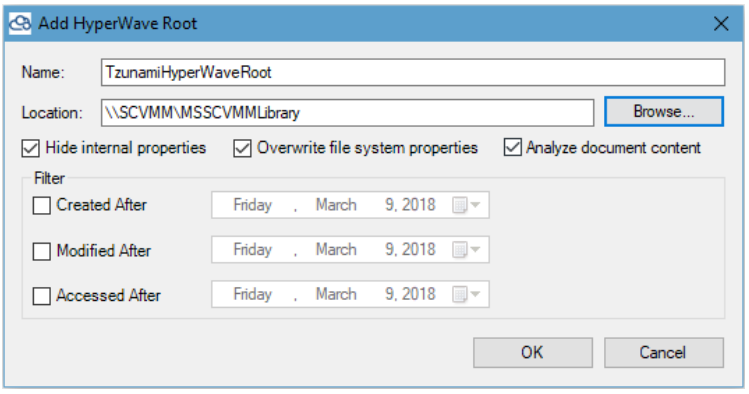


Figure 4-2: Add HyperWave Root window

2. Enter a name for the file system root and specify the location of the source file system folder to be loaded.
3. Select **Created After, Modified After**, and **Accessed After** to filter out the files that will be loaded from the file system.

The **Analyze document content** checkbox is selected by default and instructs Tzunami Deployer to scan each file for embedded metadata properties, such as title, author, and so on. Metadata is retrieved based on IFilters installed on the computer running Tzunami Deployer.

If the number of source documents in your file system is very large or each file's internal metadata does not need to be migrated, deselect this checkbox. When the **Analyze document content** checkbox is deselected, the loading process is faster.

4. Click **OK**. The source begins to load. When the process is complete, the folder and files loaded by Tzunami Deployer appear at the top of the Project window and the status bar displays **Ready**.

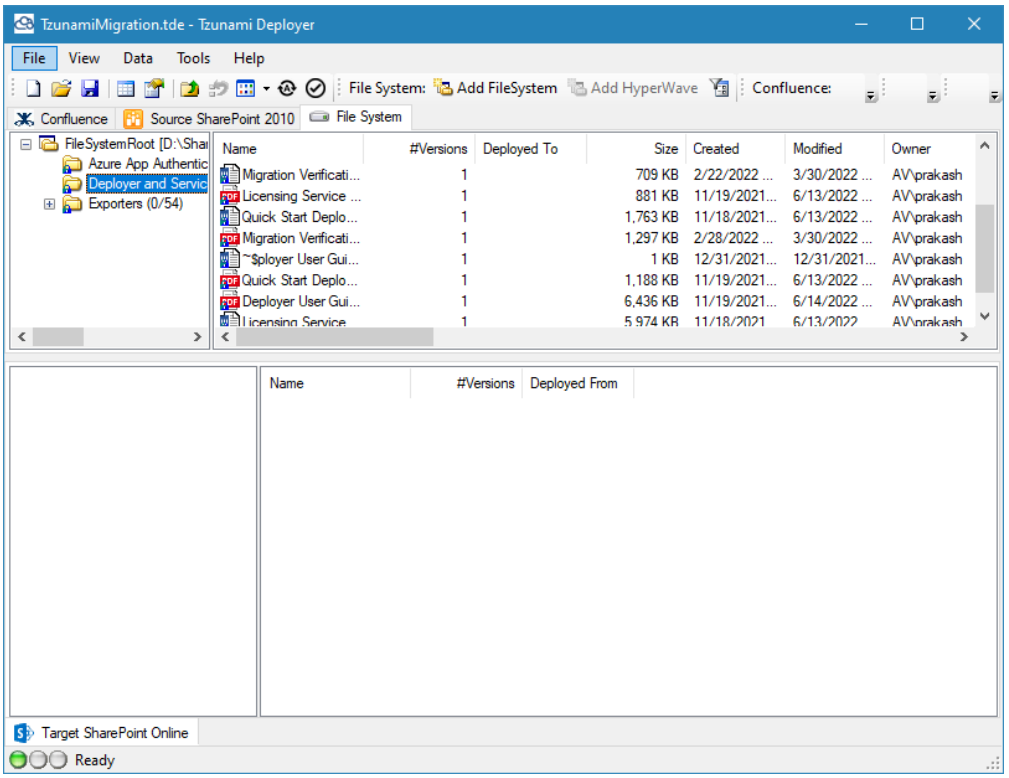


Figure 4-3: Tzunami Deployer Window - Loaded File System

If certain files fail to load, a warning window appears, listing those files. You can save the information in this window in order to keep track of the migration. This may occur for a variety of reasons, such as failure to access a file because of a technical problem.

4.1.2 Connecting and Loading from Source SharePoint

If you are migrating contents between SharePoint servers, upgrading from SharePoint 2003/SharePoint 2007/SharePoint 2010 to SharePoint 2013/SharePoint 2016/ SharePoint 2019/SharePoint Online or simply copying your SharePoint content, Tzunami Deployer is an easy to use, leading tool to migrate your SharePoint data.

To do so, you must first connect and load the source SharePoint as a source in the Tzunami Deployer project. This process is identical to the process of loading the target SharePoint information, except that you right-click in the source store area and then select the ***Connect to SharePoint*** option.

To connect and load source SharePoint:

- Click Connect

  Or

  Right-click in the **Source SharePoint** (**For example** SharePoint 2010) tab and select **Connect to SharePoint**.

4.1.3 Loading from TDX File

4.1.3.1 Load TDX file

If you have purchased a Tzunami Exporter, you can migrate content from additional sources such as SharePoint 2001, LiveLink, and various other systems. This is done with a Tzunami Deployer Export (TDX) file that can then be loaded as a source in Tzunami Deployer. If you want to migrate from a content source that is not currently supported, contact the Tzunami Support Team for more information, including the specifications for the TDX file format, which can then be used in the same manner as the sources.

When running Tzunami Deployer on several machines, you can run an export on one machine, and load the exported data on another machine. While copying exported data to another machine, verify that you copy all the exported data, including both the TDX file and the extracted files directory (typically named FileStore).

When loading TDX file, Exporters have two modes of operations: Full Export and Lite Export. When performing a Full Export, documents that are exported are saved to the file system and uploaded from the file system during the migrate stage. When performing a Lite Export only the structure, metadata, and security information are exported, without the documents. During the migrate stage, Tzunami Deployer accesses the source system and downloads the documents that are to be uploaded. For Lite Export, the Tzunami Exporters must be installed on the Deployer machine.

To load a TDX file:

1. Right-click in the source area, and select **Load *<ECM Name>* TDX**. The **Load <ECM Name> exported information** window appears.

If you have just completed an export, the Load <ECM Name> exported information window is already displayed and the Location field already contains the location of the exported data.

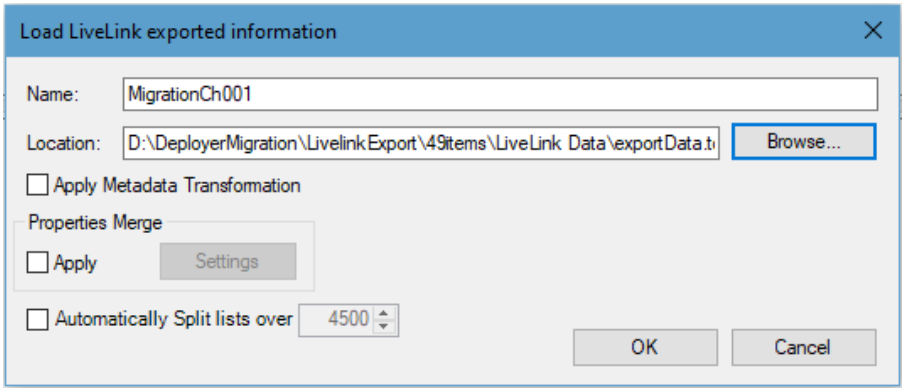


Figure 4-4: Load <ECM Name> exported information window

2. Enter a name for the content to be loaded and specify the location of the TDX file.
3. Click **OK**. The source content begins to load. When the process is complete, the folder and files loaded by Tzunami Deployer appear in the top window and the status bar displays **Ready**.

4.1.3.2 Load TDX with Property Merge

Tzunami Deployer provides a feature to merge multiple source properties' values into a newly created single property after loading the source content in Tzunami Deployer project. User can initiate a property merge process in the Deployer migration project during loading the source data in the project. User can create a new property to hold merged properties' values, select properties to merge whose values will be merged in a single property and select a separator which will separate the merged values.

Steps for Property Merge in Deployer migration project

1. Create or open the Deployer Migration Project, then load the tdx file in source panel. A tdx file browsing window appears.

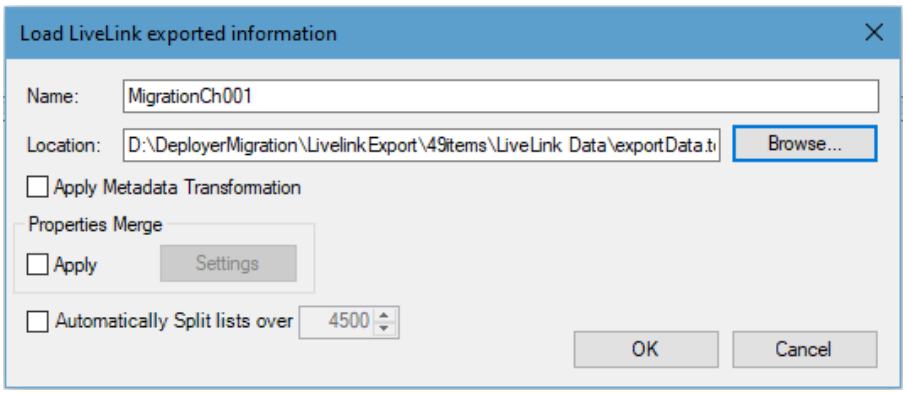


Figure 4-4 TDX File Browsing Window

Enter the name, browse the tdx file.

2. Check Apply check box, then click on **Settings** button. A **Merge Properties** window appears.

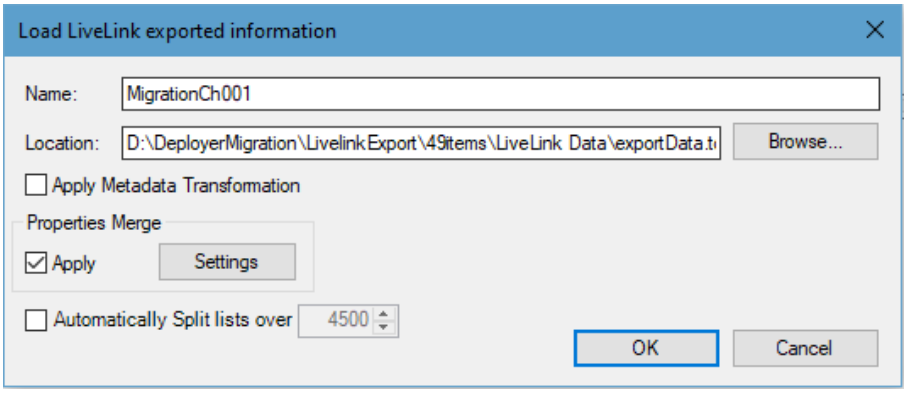


Figure 4-5 Settings for Properties Merge

If you do not want to use the property merge feature, click on **OK** button then the property merge process will be skipped. The source data will load in the source panel.

3. Create a new property in which properties will be merged by clicking on **New** button beside **New Properties** list in upper panel.

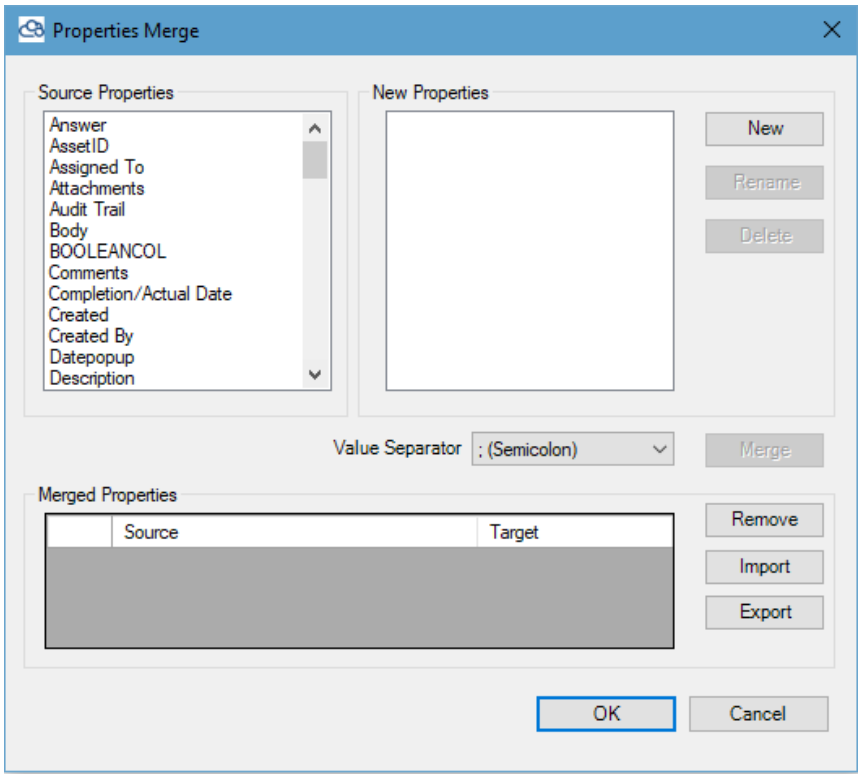


Figure 4-6 Merge Properties Window

A **New Property** window appears.

4. Enter the name of Output column, then click **OK** button.

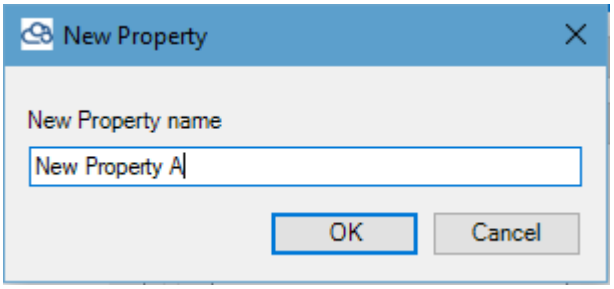


Figure 4-7 New Merge Property Window

The new added property is always of type “Long Text”.

You can perform following action for new property:

- **Rename**: You can rename and remove the newly created merge property using **Rename** button when a property is selected in **New Properties** list.
- **Delete:** you can delete new property using **Delete** buttons when a property is selected in **New Properties** list.

5. Select properties to be merged from Source **Properties** and a newly created property from **New Properties** list, then select a separator from dropdown **Value Separator**. After that, click on **Merge** button**.**

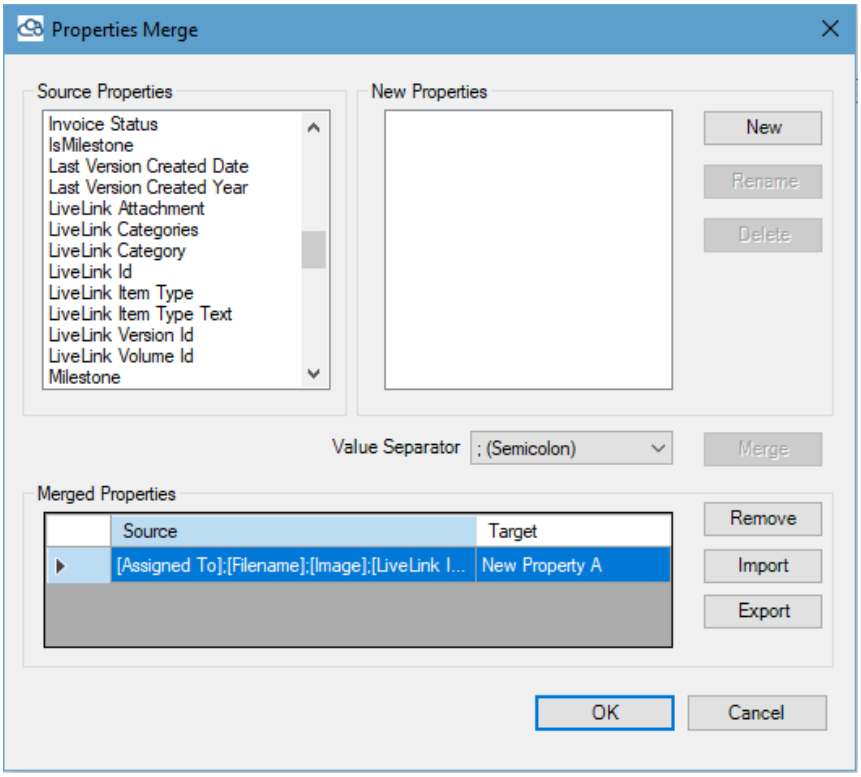
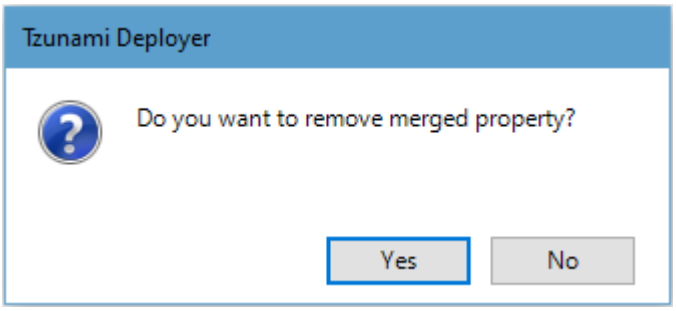


Figure 4-8 Merged Property Window

The selected properties from **Source Properties** list are merged to selected property from **New Properties** list and the merged property is displayed in **Merged Properties** Panel in the bottom. The **Source** column shows the selected properties with specified separator and **Target** column shows the property in which source properties are merged.

For the newly merged property, you can perform the following actions:

- Remove: Select a merged property, then click on **Remove** button. A confirmation window appears, click in **Yes.**



The removed new property is displayed in **New Properties** list.

- Export: You Click on **Export** button to export the newly merged property so that it can be imported in another migration project. Select a destination and provide the file name and then click on Save.

- Import: You can import the already created and exported merge property using **Import** button.

6. Repeat steps 2, 3, 4 and 5 to create more properties to merge if required, then click on **OK** button of the **Properties Merge** window.

7. Click on **OK** button in the Tdx loading window.

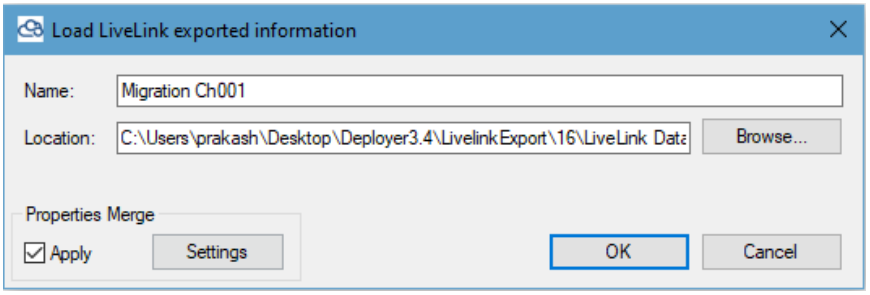


Figure 4-9 TDX Loading Window

The new merge property will be created and values from selected properties will be merge into the property. Then, the source tdx will be loaded in source panel. You can verify the output column from Properties window by right clicking the item in left side and selecting **Properties**.

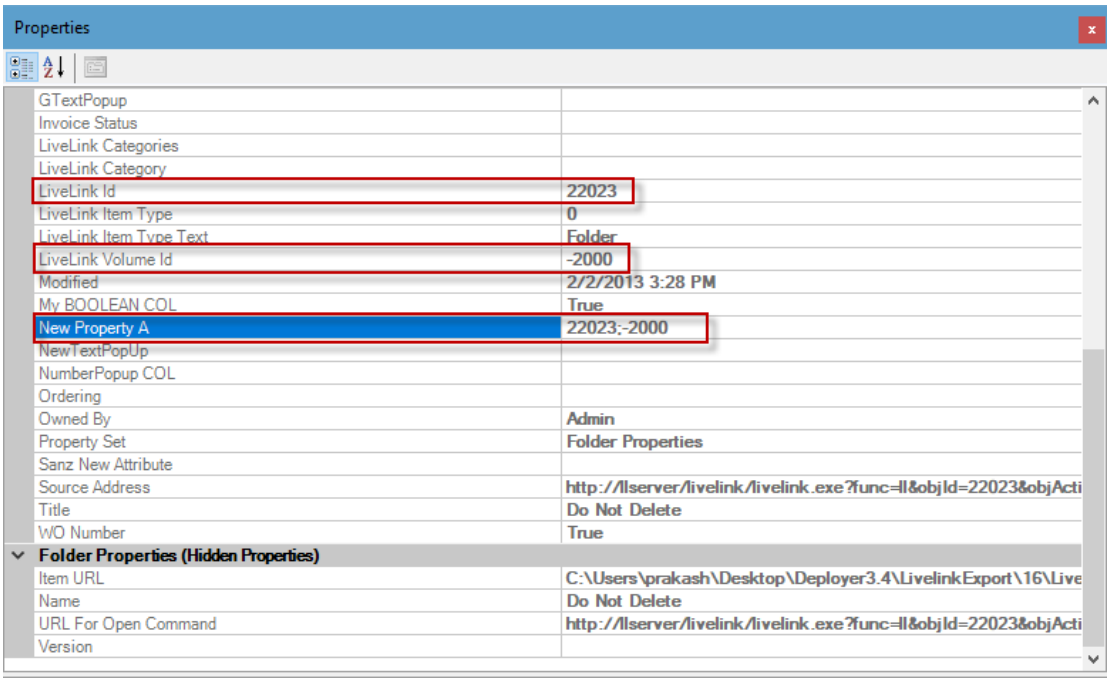


Figure 4-10 Merged Property Data Window

4.1.3.3 Load TDX with Metadata Transformation

Tzunami Deployer when loads the exported source content in migration project, all the associated metadata are loaded in the source panel. User can view the metadata associated in with each item separately. Also, user can view the metadata associated with each property set separately as well. The Tzunami Exporter tool manages all exported metadata in .tdx and .stdx files based on its architecture. Based on the information available in .tdx and .stdx files, Tzunami Deployer configures and displays the metadata in property sets and items in Deployer migration projects.

In some cases, user needs to transform one or more metadata. Tzunami Deployer or Exporter do not provide facility to edit the exported data i.e. .tdx or .stdx files. However, Tzunami Deployer provides feature to transform the metadata in the Deployer Migration project. In fact, the metadata transformation feature in Tzunami Deployer provides facility to create metadata as a transformed metadata in Deployer Migration project during loading the .tdx file in the project. Hence, user will have all exported metadata along with newly created transformed metadata in the Deployer Migration project that can be mapped and migrated to the target SharePoint as other metadata using regular process of migration.

Since, the transformation metadata is accompanied by creating new metadata in Deployer Migration project, this feature is also useful when user has externally or internally managed metadata which is not possible to export using API or by the limitation in the source ECM system.

Before using Metadata transformation in Deployer Migration project, user needs to create a .csv file where user needs to reference the source property and provide the unique value of that property. Then, provide title for the transform property and choice values (separated with semicolon). Once the .csv file is prepared, user will be guided through the steps required for metadata transformation while loading the source ECM in Deployer Migration project. The following section will provide the detail steps.

4.1.3.3.1 Create Metadata Transformation file

User has to create a .csv file with some detail and save the file in any convenient location. The first row of the .csv file must have the source property preceded with “$” and should specify the values in successive rows. The transform property should have specified in next row with regular name i.e. without preceding with above mentioned sign and values should be specified in successive rows. If transformation property has multiple values, then those values should be separated with semicolon. The sample of the file is as below:

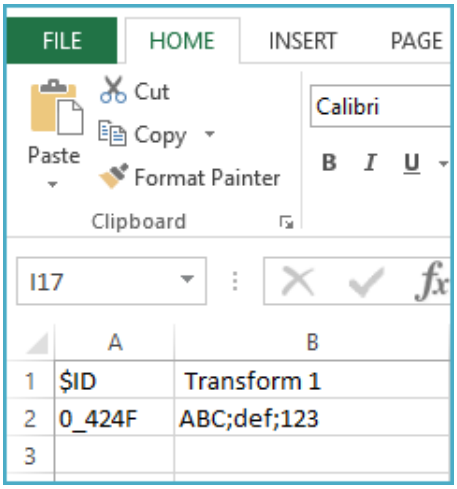


Figure 4-5 Transformation File Sample

In the above figure, first column refers to the source property which is preceded with "$" sign. This property is exported and is available in .tdx or .stdx files. It is reference here because the Tzunami Deployer when load the ECM source in Deployer Migration project, it should identify the property set where transform property should be created. The value of this property specified in successive row (here in second row) uniquely identify the associated property set having "ID" property with value "0_424F". Then, during transformation, a transformed property named "Transfrom 1" is created with multi choice values "ABC, def, 123" in the property set of the Deployer Migration project. So, the newly created transformed property will be always created as multi-choice property. User can save this file in any convenient location in the network and will need to browse in next step.

4.1.3.3.2 Load Metadata Transformation file in Deployer Migration Project

Create Deployer Migration project with desired source and target systems.

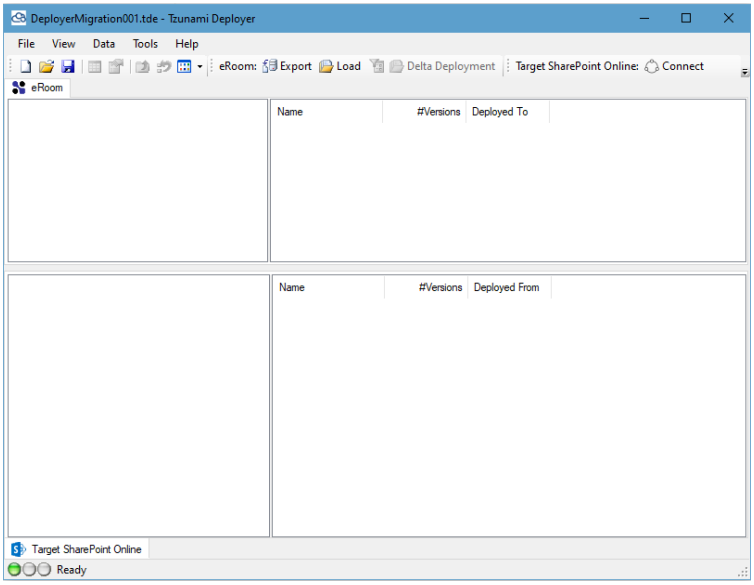


Figure 4-6 Deployer Migration Project

Load the source in upper source panel of the Deployer migration project.

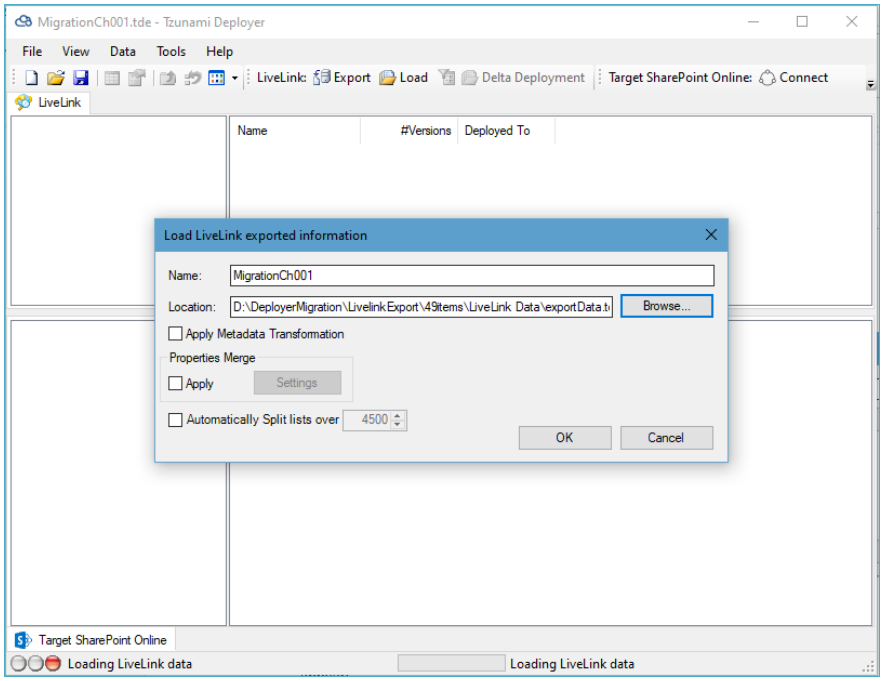


Figure 4-7 Loading Source ECM data in Deployer Migration Project

When .tdx file is browsed, the **Apply Metadata Transformation** option is enabled.

Check the option **Apply Metadata Transformation**, a Metadata Transformation window appears,

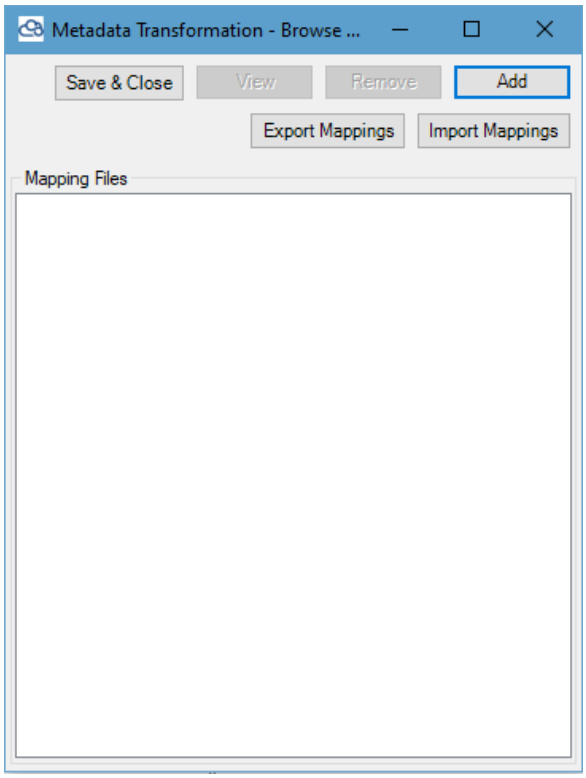


Figure 4-8 Metadate Transformation Window

Click on **Add** button, then browse the Metadata Transformation csv file. Then, Metadata Mappings window appears.

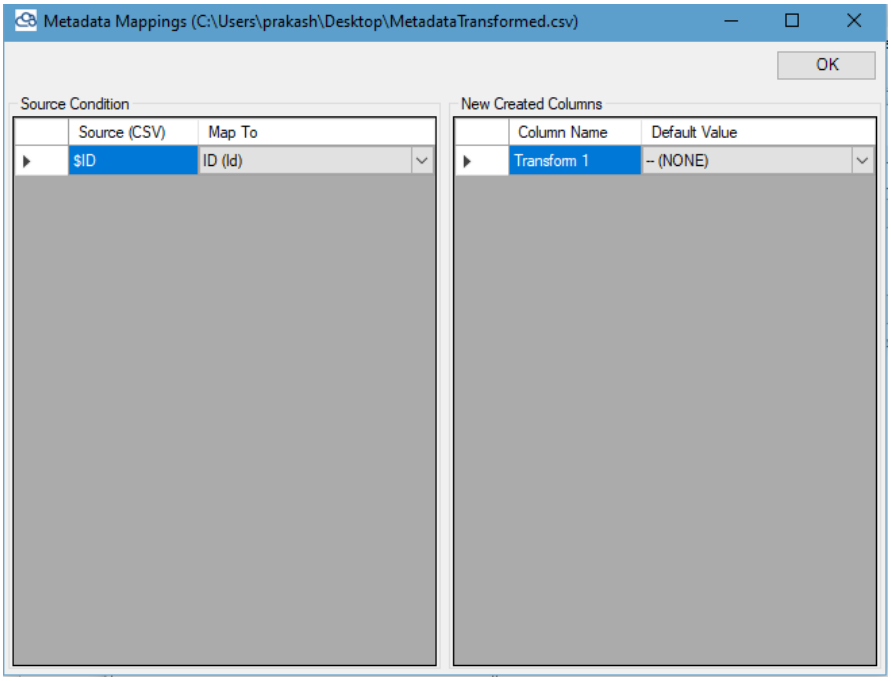


Figure 4-9 Metadata Mappings Window

4.1.3.3.3 Configure default values

In the Metadata Mappings window, user can define the default value for the transformed metadata.

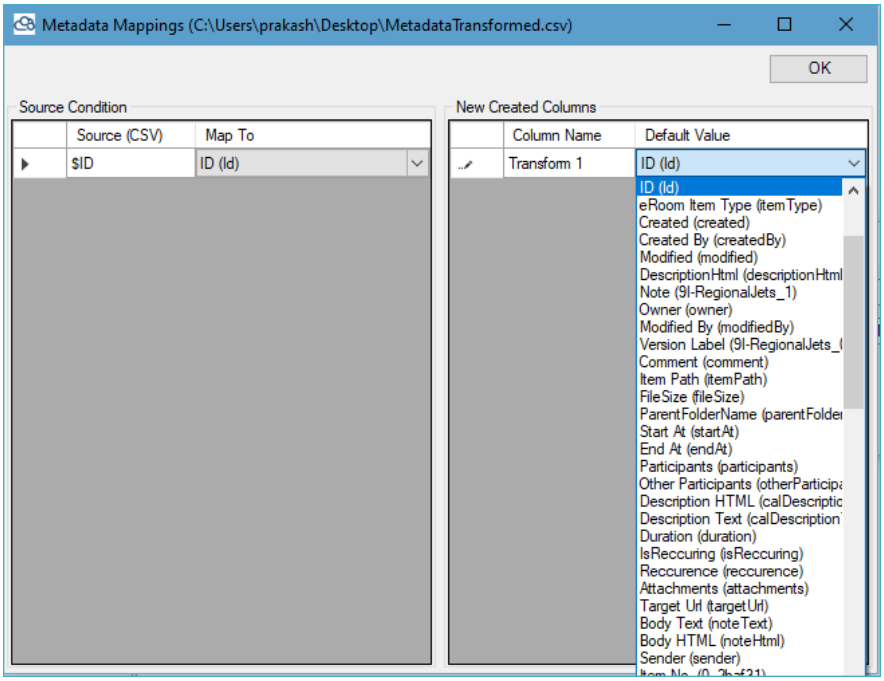


Figure 4-10 Metadata Transformation Default Value

In the right side panel of the Metadata Mappings window, Default Value column is presented and a dropdown for each transformed metadata is available. From the dropdown user can select the default value as desired.

In the left side panel of the Metadata Mappings window, user can map the default value for the referenced source property. User can choose the default value from the dropdown

available under Map To column. This mapping is beneficial when there are duplicate values for the referenced property in the source system.

When default value configuration is completed, click on **OK** button. Then, the Metadata Mappings window is closed and Metadata Transformation window is displayed.

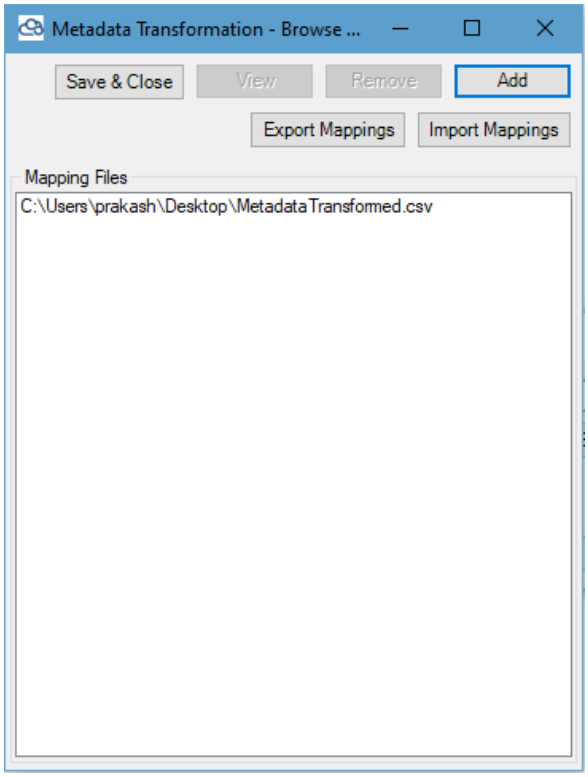


Figure 4-11 Metadata Tranformation Window with Mapping files

User can see the list of mapping files currently used in Mapping files panel.

4.1.3.3.4 Export/Import Metadata Transformation configuration

When mapping files is browsed and configure, user can export the mappings files to any convenient location for future use in another Deployer Migration project.

Click on **Export Mappings** button, a location to save mapping file is displayed. It is recommended to save the file in shared location in the network so that Tzunami Deployer instances running in different machine can import this file in Deployer Migration project.

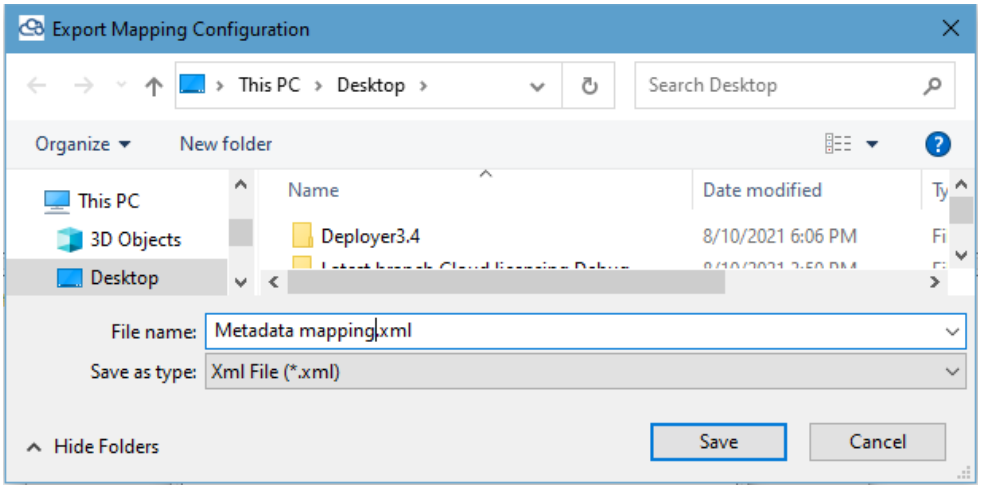


Figure 4-12 Metadata Transformation Export Mapping files

Follow the other instruction to save the file.

Similarly, if metadata mapping file is already exported, user can click on **Import Mappings** button to import the mapping file.

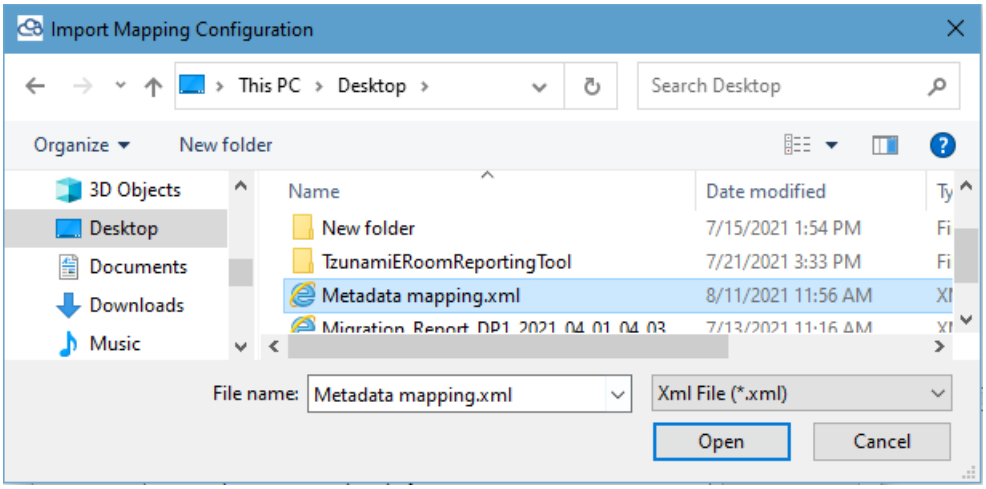


Figure 4-13 Metadata Transformation Import Mapping file

Once importing the mapping files, the imported files is listed in Metadata Transformation window.

4.1.3.3.5 View transformed metadata

When mapping configuration is completed, user can view the metadata.

First select the mapping file from Mapping files list, then **View** and **Remove** buttons will be enabled. Click on **View** button, then the information will be displayed.

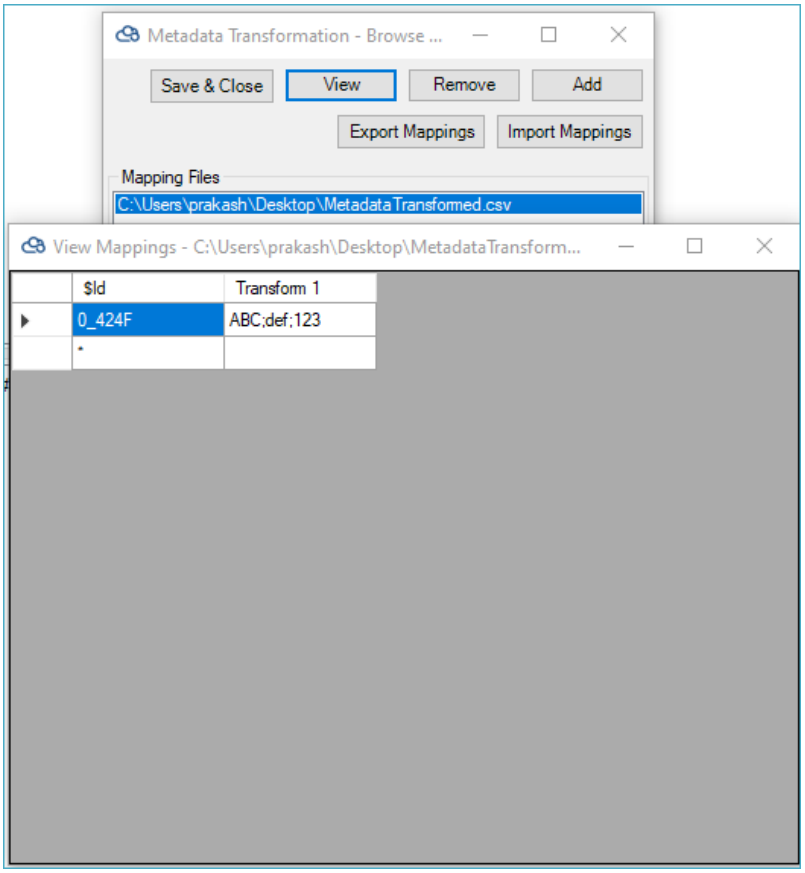


Figure 4-14 Metadata Transformation View Information

4.1.3.3.6 Remove transformed metadata

When mapping configuration is completed, user can remove the metadata mapping file.

First select the mapping file from Mapping files list, then **View** and **Remove** buttons will be enabled. Click on **Remove** button, then the information will be removed.

4.1.3.3.7 Save and Close transformed metadata

When mapping configuration is completed, Metadata Transformation window is displayed as below:

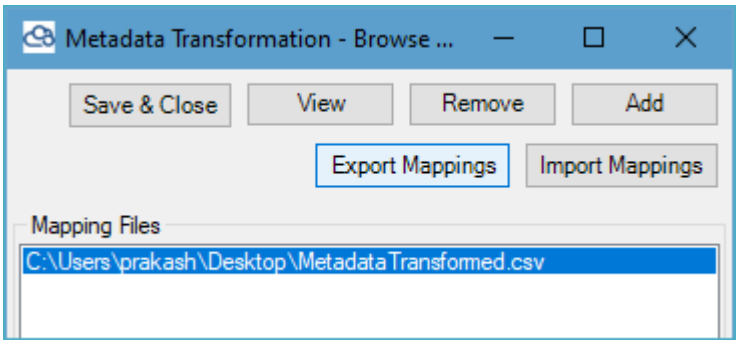


Figure 4-15 Metadata Transformation Window

Click on Save & Close button. The source loading window appears.

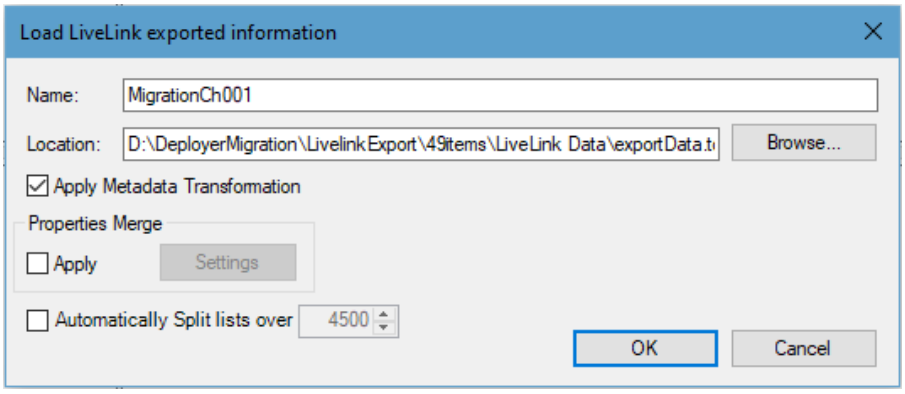


Figure 4-16 Load Source Information

Click on **OK** button. The metadata transformation process executed internally and the update source is load in the source panel. User can see the transformed metadata and value in associated item or property set.

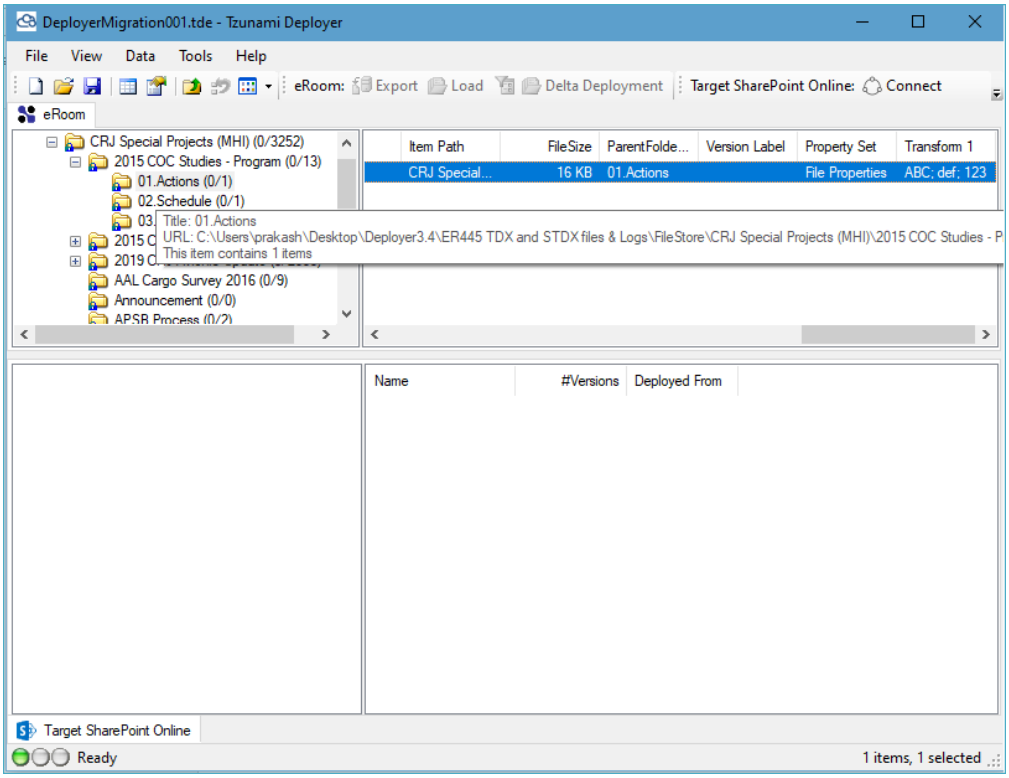


Figure 4-17 Metadata Transformation in Deployer Migration project.

User can perform the deployment, mapping and migration of the transformed metadata as other metadata onwards.

4.1.3.4 Load TDX with Split Content

In any ECM system, a folder may have a fixed number of maximum data items. This value differs from one ECM system to another ECM system. Therefore, the source ECM system and SharePoint may have the different value for maximum number of items limit in a list. If the source ECM system supports greater number of maximum number of items in a list, then a case may encounter where the number of items in a list crosses the maximum limit in

SharePoint. In such case, the exceeded number of items get failed during migration in Tzunami Deployer. To overcome such limitation, the items in the source list should be split.

Tzunami Deployer provides a feature to split the number of items of a source to a user defined value during the loading of source content in Tzunami Deployer Migration Project.

Steps for Spit Content in Deployer migration project

1. Create or open the Deployer Migration Project, then load the tdx file in source panel.A tdx file browsing window appears.

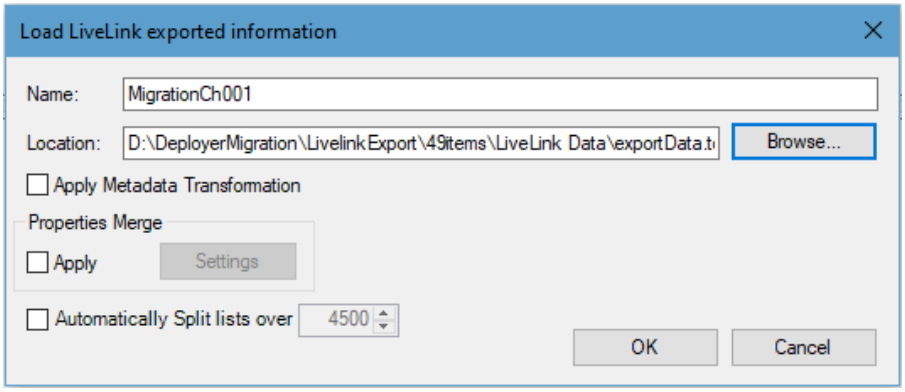


Figure 4-18 TDX File Browsing Window

Enter the name, browse the tdx file.

2. Check **Automatically Split lists over** check box, and specify the value from which items should be split in the list. Then, click on **OK** button.

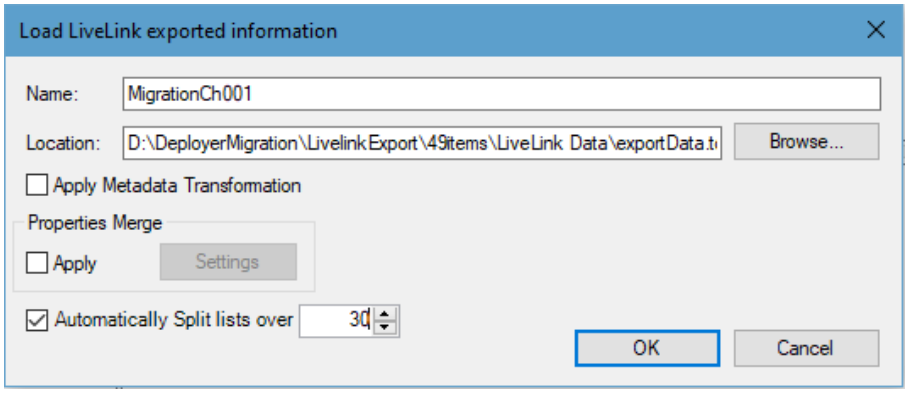


Figure 4-19 Settings for Split Content

If you do not want to use the Split Content feature, click on **OK** button then, the source data will load in the source panel.

3. The source panel will load the tdx with divided content. The number of items will consider the sub-folders as well in the count.

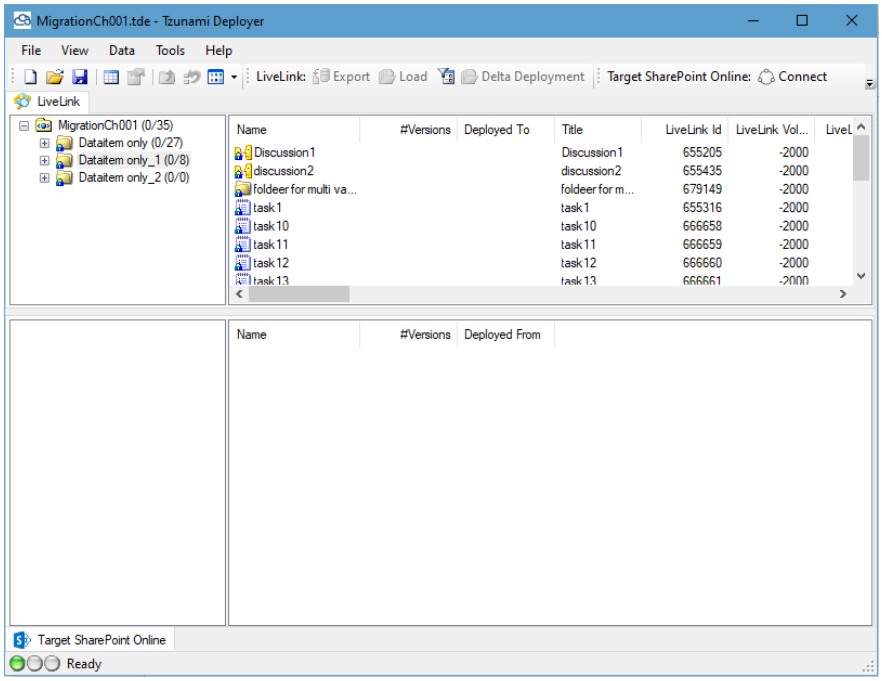


Figure 4-20 Split Content

4.2 Connecting and Loading Target Server

In this step, you load the structure information describing the content of the target SharePoint Servers (2003, 2007, 2010, 2013, 2016 or 2019) or SharePoint Online. Tzunami Deployer loads the SharePoint structure information, including portal areas, sites, lists, libraries, folders, documents, items, wiki page, etc. as well as security and metadata information. This information is displayed at the bottom of the Project window in the Target SharePoint tab.

The target SharePoint is not modified until the migrating step.

You first connect to the SharePoint server and then specify what information you want to load into your Tzunami Deployer project. When you load a SharePoint target, you can choose to load only some of the items and then load additional items at a later stage.

You can also remove the SharePoint information from the Tzunami Deployer project and load SharePoint again. This is especially useful for loading a different SharePoint server into the current Tzunami Deployer project, or for reloading SharePoint content.

Information loaded from SharePoint captures the SharePoint content at the time it is loaded. If SharePoint is modified after being loaded, these modifications are not reflected in your Tzunami Deployer project. Tzunami recommends that you do not modify the SharePoint content that is currently being processed by Tzunami Deployer. To access the up-to-date content of the SharePoint store, you can either remove the SharePoint from your Tzunami Deployer project or refresh a particular location by reloading it.

Load the SharePoint target smartly – plan the migration destination and nature to make it easier for you to choose which sites and lists you want to load in the target SharePoint. Loading the entire farm into a single project may be a redundant and time consuming operation. A template project(s) should contain only the destination top site collection loaded with no lists or sub sites (un-loaded lists or sub sites appear grayed-out in Tzunami Deployer project and you can reload them later).

4.2.1 SharePoint on premise Server

4.2.1.1 Connecting and Loading SharePoint Server (2007-2019)

You can connect and load SharePoint Server (SharePoint 2007, SharePoint 2010, SharePoint 2013, SharePoint 2016 or SharePoint 2019) servers as a source or target in Tzunami Deployer. To load SharePoint Server, you must first connect to a SharePoint server from Tzunami Deployer for which you need a user account with the following permissions:

- The user running Tzunami Deployer needs to be a Local Administrator (to get Registry and File System access).
- The user provided in Deployer must have permission to connect to the machine where Tzunami Deployer Remote Service is installed (unless the source Remote Service has problems downloading files from the source which results in the Deployer-provided credentials being used).

To connect and load SharePoint target (connecting SharePoint 2013 as an example)

1. Click Data > Target SharePoint 2013 > Connect to SharePoint Or

   Right-click in the **Target SharePoint 2013** tab and select **Connect to SharePoint**. The SharePoint 2013 Connection Wizard appears.

2. Click **Next**. The Connection Wizard progresses to the Access SharePoint Server screen.

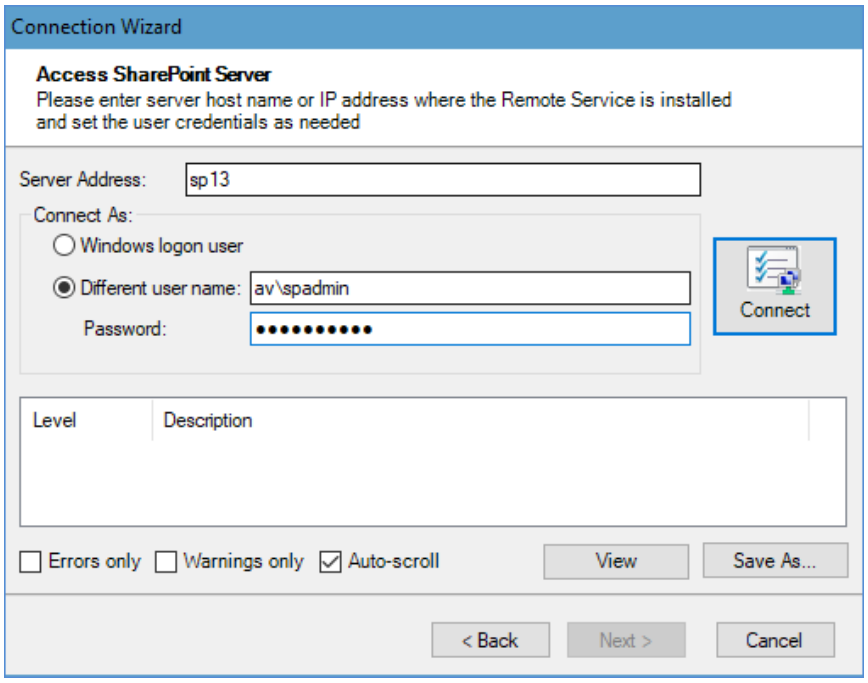


Figure 4-21: SharePoint Connection Wizard – Access SharePoint Server Screen

3. Enter the name or Fully Qualified Name (FQN) of the SharePoint front-end server in the Server Address field. Use the name or IP Address of the front-end server running the Tzunami Deployer Remote Service.

The Tzunami Deployer evaluation version only allows you to connect to the local server. The local machine name is automatically selected. The fully licensed version of Tzunami Deployer does not have this restriction and allows you to connect remotely to any SharePoint server.

4. Specify the user account to be used by Tzunami Deployer to login and access the SharePoint server. You can choose between two options:

   - **Windows logon user** – Use the currently logged on user.

   - **Different user name** – Specify a different user and enter a password in the Password field. When specifying a user, use the following formats: DOMAIN\user or COMPUTERNAME\User or user@DOMAIN or user@COMPUTERNAME.

If Tzunami Deployer fails to connect to SharePoint, verify that you provided all the required permissions to the user, as specified in the Tzunami Deployer Installation Guide.

Clicking Auto-scroll scrolls down to display the latest progress messages, as they appear.

Clicking Errors only filters the displayed progress messages to show error messages only.

Clicking Warnings only filters the displayed progress messages to show warning messages only.

5. Click **Next**. The Connection Wizard progresses to the Web Applications screen.

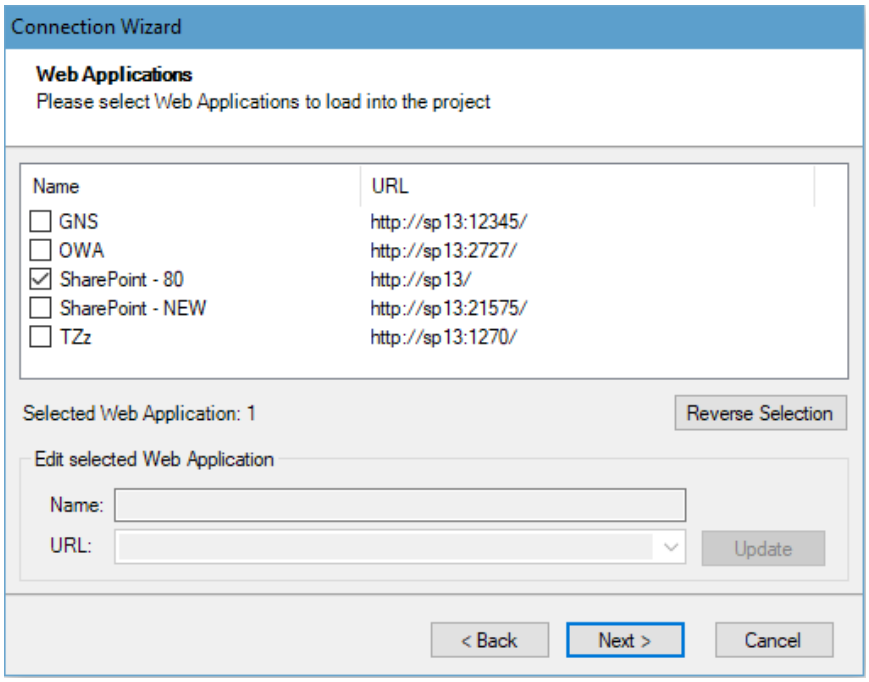


Figure 4-22: SharePoint Connection Wizard – Web Applications Screen

If a URL of the virtual server displayed in the screen is not the same as it is in IIS or in SharePoint, you can change it from the list of alternative URLs, or configure it manually in the URL field. Click Update to use the selected URL. When connecting to SharePoint as target, it is not necessary to load versions of documents.

6. Select one or more Web Applications to load and click **Next**. The SharePoint Structure appears with three tabs: Sites, Content and Active Directory.

Sites Tab

The **Site** tab allows you to select site collection to load into the Deployer Project.

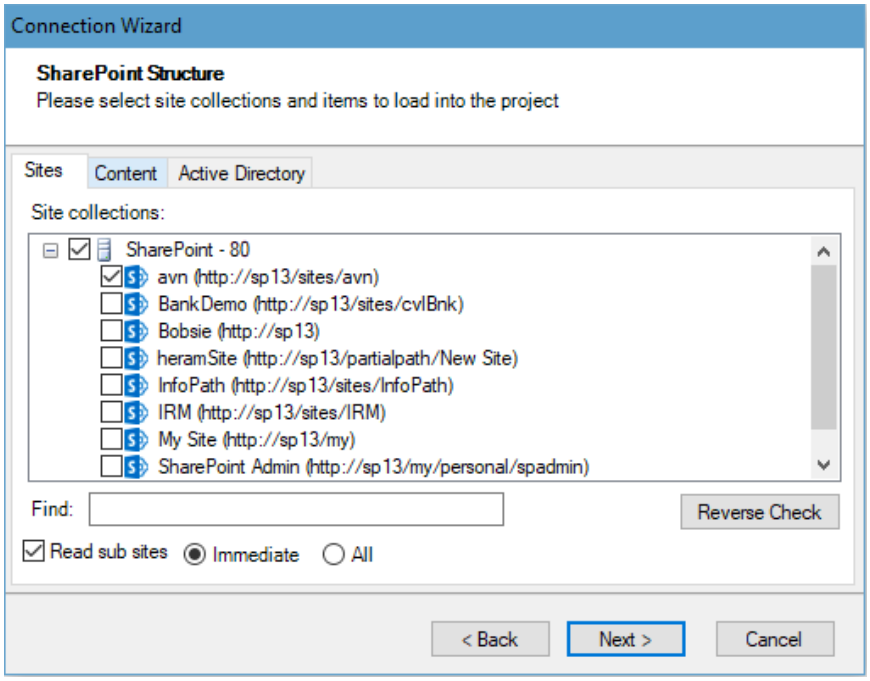


Figure 4-23: SharePoint Connection Wizard – SharePoint Structure - Sites Tab

Loading of SharePoint content may be a lengthy process, depending on the amount of content, the type of network, and the workload of the SharePoint server.

When connecting to SharePoint, it is not necessary to select site collection and item to load into the project. Tzunami recommends that you only load the site collection and portal sites that are the targets for your current project.

Site collection and Items that are not loaded at this stage appear grayed out in the Project window. Such items can be reloaded at a later time.

Click **Content Tab** to load the Site contents.

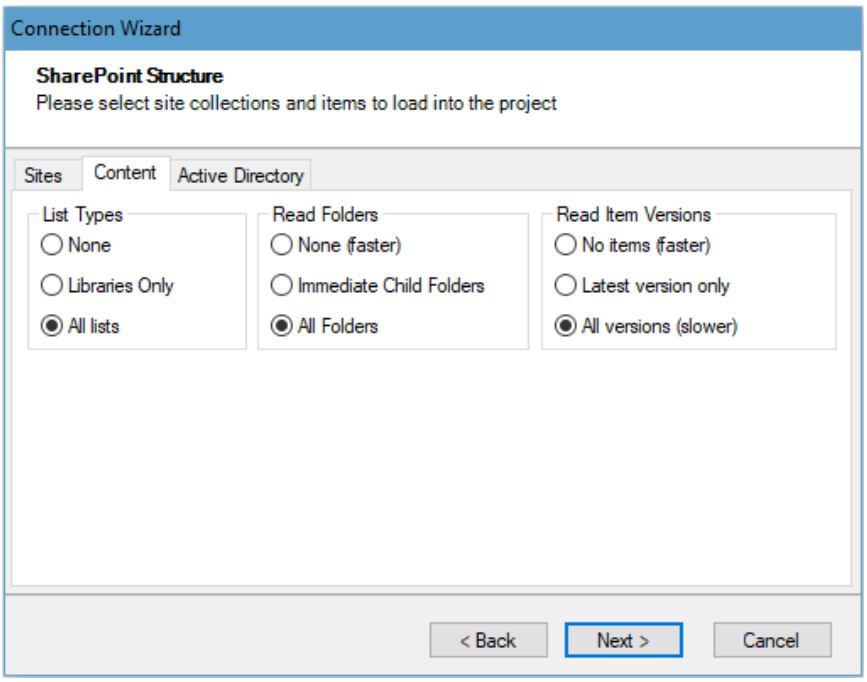


Figure 4-24: SharePoint Connection Wizard – SharePoint Structure - Content Tab

Active Directory Tab

The **Active Directory** tab allows you to load user and groups from Active Directory domains.

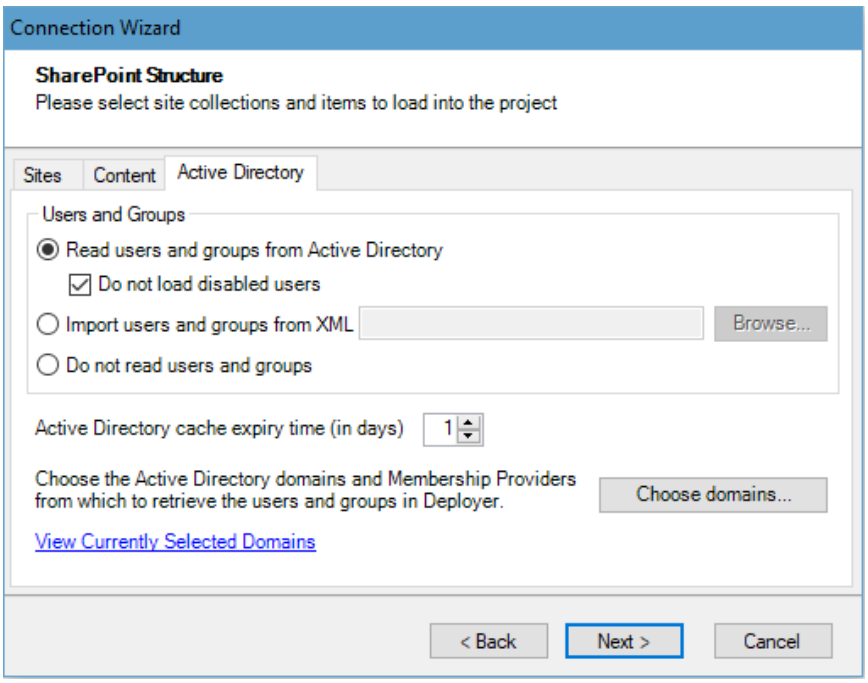


Figure 4-25: SharePoint Connection Wizard – SharePoint Structure - Active Directory Tab

Active Directory tab is only available when connecting to the Target SharePoint Structure.

Table 4-1: SharePoint Structure – Active Directory Tab

Field	Description
Users and Groups	Specify how to load users and groups from Active Directory domains.
Read users and groups from Active Directory	Allows you to read users and groups from Active Directory. • **Do not load disabled users from Active Directory –** Select this option to skip disable users and groups when reading Active Directory.
Import users and groups from XML	Allows you to import users and groups from an XML file.
Do not read users and group	Allows you to skip loading users and groups from Active Directory.
Active Directory cache expiry time (in days)	Allows you to specify expire time for remove Active Directory cache files.
View Currently Selected Domains	Allows you to view currently selected domains. When mouse pointer is hovered on it, the currently selected domain(s) are displayed as tool tips.

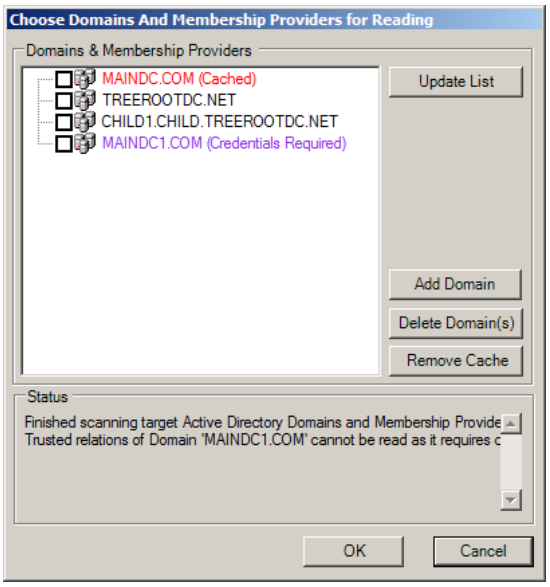
Choose domains…

Opens the Choose Domains for Reading window, which displays the domain to which the SharePoint machine belongs and any sub-domains and additional domains with a trusted relationship to that domain.

Click **Update List** to display domains. The **Domain** that is part of SharePoint server, any **Sub-Domains** and **Additional Domains** with trusted relationship with main domain appears in **BLACK COLOR**.

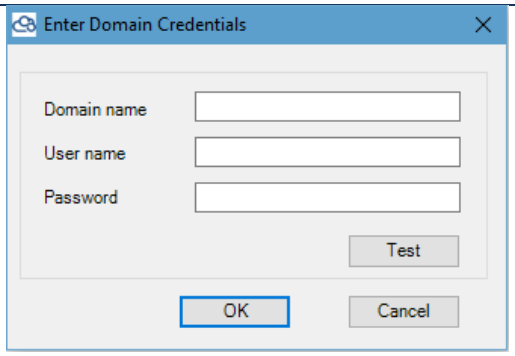
Cached Domains have their user information stored in a local cache file, and will be read without probing the domain controllers for information. The **Cached Domains** are displayed in **RED COLOR**.

Any domains with incoming trust relationship are displayed in **PURPLE COLOR**. You must enter domain credentials to read users from incoming trusted relationship domains.



If you select an Active Directory domain, Tzunami Deployer retrieves all the users and groups from that domain.

Click **Add Domain** to add custom domains that do not appear in the Domains tree. Enter Domain Credentials window appears.



Specify the **Domain name** and enter **User name**, **Password** and **Confirm password** in their respective fields. Click **Test** to verify domain credentials to connect with the custom domains.

Click **Delete Domain(s)** to delete selected domains from the list.

Tzunami Deployer caches the results from previous connections to SharePoint. You can delete the cached information by selecting a domain and clicking **Remove Cache**.

7. Click **Next**. The Thank you for using the Connection Wizard screen appears.
8. Click **Done**. Tzunami Deployer begins scanning the SharePoint server and loads information about the selected site collection, including sub sites, lists, folders, files and list items.

   A Results window appears, displaying the load progress.

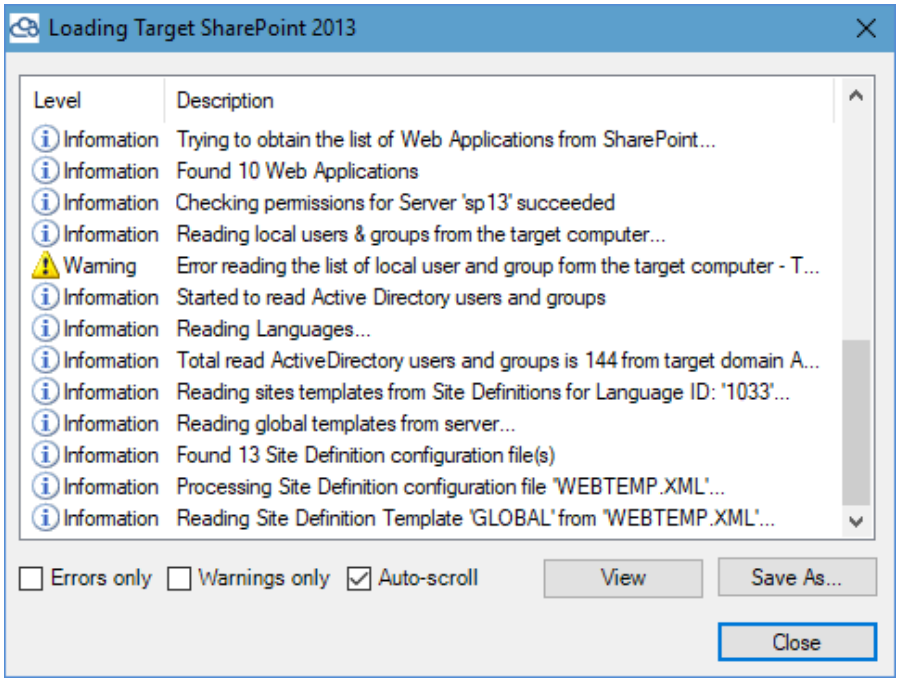


Figure 4-26: Loading SharePoint 2013 – Results Window

You can stop the loading process at any time by closing the Results window, right-clicking in the SharePoint area, and selecting **Stop Loading SharePoint**.

When the loading process is complete, you can browse the SharePoint structure in the Project window. **For example**:

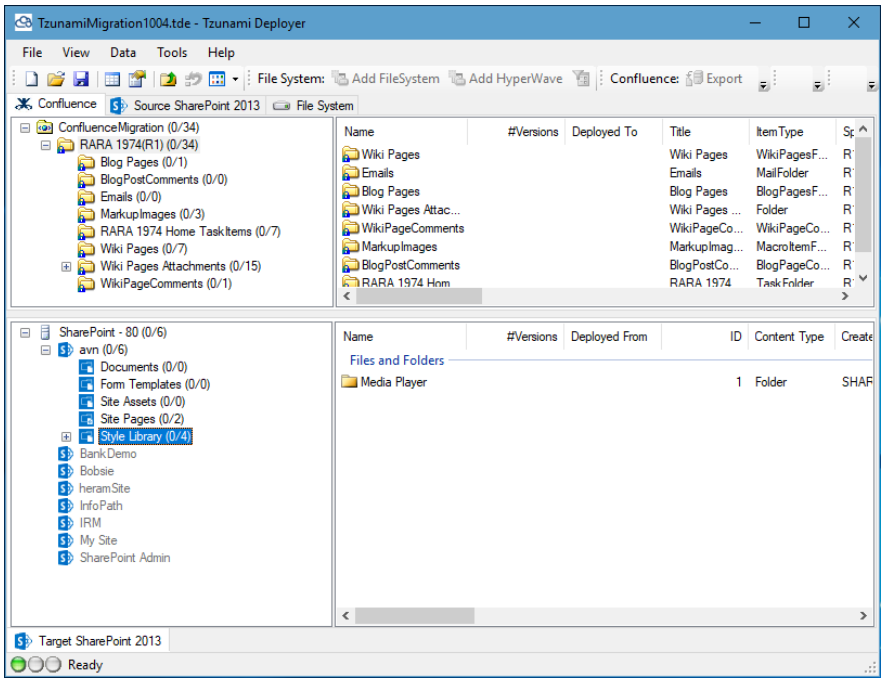


Figure 4-27**: Loaded Target SharePoint 2013**

The following table displays the various icons used by SharePoint 2013 to represent various types of items.

Table 4-2: SharePoint 2013 Icons

Icon	Description
	Web Application
	SharePoint Site
	List
	Document Library
	Picture Library
	Folder

Each item in the structure tree is followed by two numbers. The first number is the number of documents and list items deployed, but not yet migrated to the target SharePoint. The second number is the total number of documents and list items in that particular location and all its nested hierarchy.

Clicking a location in the tree displays the list of items in that location. The name of the item appears in the first column. Metadata property values and other information appear in the adjacent columns.

To activate the various actions in Tzunami Deployer, select an item and choose a menu option or right-click an item to display a context-sensitive menu. All the actions in the context-sensitive menus are also available in the Data menu. When you select an item, only the options that are relevant to the selected item are made available for activation. All other options are deactivated. You can right-click an item and select Open to view it. In lists that support document versioning, you can view the versions of an item by right-clicking the item and selecting Versions.

4.2.1.2 Connecting and Loading SharePoint 2003

SharePoint 2003 can be connected and loaded as either a source or a target in Tzunami Deployer. In order to load a SharePoint 2003 target, you must first connect to a SharePoint 2003 server, for which you need a user account with the following permissions:

- Administrative permissions on the SharePoint front end server (member of the local Administrators group).
- Administrative permissions on the SharePoint sites.
- Read permissions on the SQL Server Configuration Database of both source and target SharePoint.
- Read permissions on the SQL Server Content Databases of source SharePoint sites.
- Read/Write permissions on the SQL Server Content Databases of target SharePoint sites.
- Read rights on the related Active Directory forest (recommended).
- Execute permissions for the SQL Server stored procedure (in case of SQL Server 2005 only).
- Administrative share "\\<SharePoint machine>\c$\Program Files\Common Files\Microsoft Shared\web server extensions" and all subfolders (if not granted to the Administrators group).
- Remote registry access to "Local Machine\SOFTWARE\Microsoft\Shared Tools\Web Server Extensions\" and all sub keys (if not granted to the Administrators group).

Tzunami Deployer cannot remotely access SPS2003/WSS2.0 servers when the backend database of SharePoint is built on the WMSDE edition of SQL Server. In this case Tzunami Deployer must be installed locally on the SharePoint machine.

Missing DNS settings may hinder Tzunami Deployer's ability to access SharePoint front end servers, SQL servers, or domain servers. In such case, copy the DNS servers' definitions from the SharePoint servers.

4.2.2 Office365 - SharePoint Online

SharePoint Online can be connected and loaded as a target in Tzunami Deployer. In order to load SharePoint Online as a target, you must first connect to SharePoint Online for which you need a user account with the following role and permissions:

- The login user in Deployer must be a Site Collection Administrator of SharePoint Site Collection to read and write data in SharePoint sites.
- The login user in Tzunami O365 Active Directory service must be a member of Global administrator in Office 365 for your organization to provide consent for Tzunami azure app (TzunamiDeployerforOffice365) to read Users and Groups from Office 365 using TzunamiO365ADService service.

Once, consent is provided for TzunamiDeployerforOffice365 azure app in Office 365, the TzunamiDeployerforOffice365 can be logged in with user having SharePoint Administrator role in Office 365.

The user running Tzunami Deployer needs to be a Local Administrator (to get Registry and File System access).

Tzunami Deployer can connects Microsoft Teams (i.e. the SharePoint Online site created for Microsoft Teams), OneDrive (i.e. the SharePoint Online site created for OneDrive) and the login user in Deployer must be a site collection administrator in respective sites.

4.2.2.1 Connecting and Loading Microsoft Teams

Tzunami Deployer can communicate with the Microsoft Teams SharePoint Online. When Microsoft Teams SharePoint Online is connected through this mode, the Remote Service is no longer used.

1. Click **Data > Target SharePoint Online> Connect to Microsoft Teams** Or

   Right-click on the **Target Microsoft Teams** tab and select **Connect to Microsoft Teams**. The **Microsoft Teams Connection** Wizard appears.

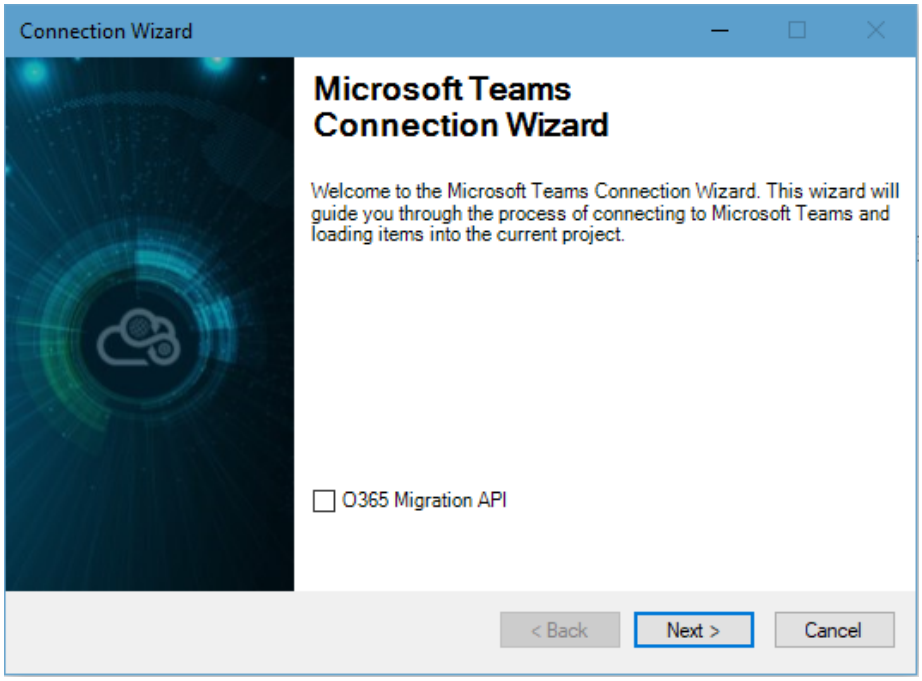


Figure 4-28 Microsoft Teams Connection Screen

2. Click **Next**. The Connection Wizard progresses to the Access SharePoint Server screen.

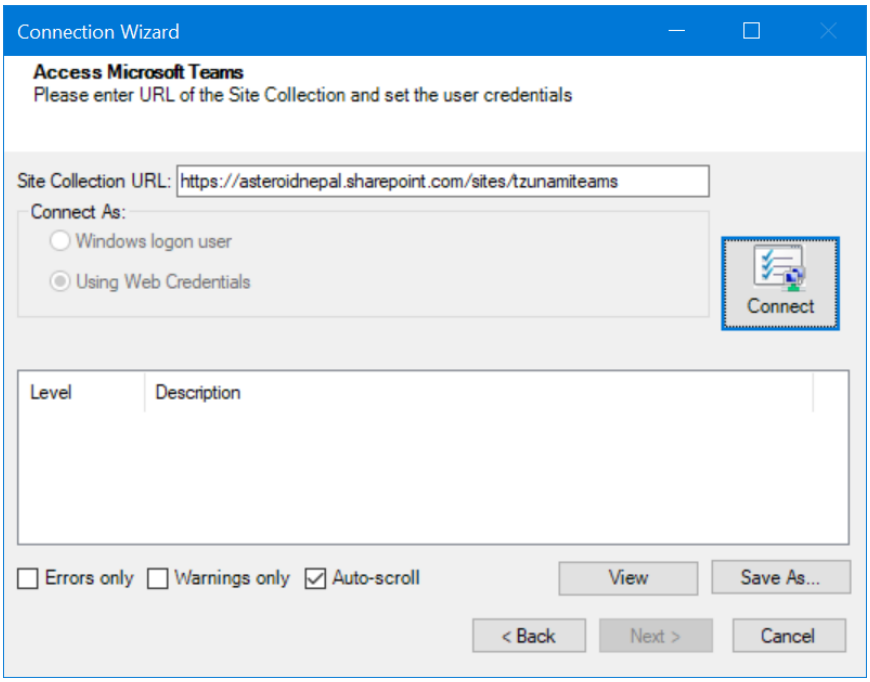


Figure 4-29: Access Window for Microsoft Teams (SharePoint Online)

3. In the Site Collection URL field, enter the URL of the Site Collection. For example: https://asteroidnepal.sharepoint.com/sites/TzunamiTeams.
4. Click on **Connect** button. User does not need to provide login credential when using Azure Application with Applications. When using Delegated based Azure Application, a browser will be opened for credential to connect to the SharePoint site. Please, provide the credential for login. After successful login a SharePoint Structure screen appears.

The browser will be opened based on the configuration in **Deployer.exe.Config** file which is located in the Tzunami Deployer installation location.

By default, Edge browser is set. User can change the browse available in their system. The supported browsers are: "**Edge**", "**Firefox**", "**Chrome**" and "**Internet Explorer**" only. Please, open the **Deployer.exe.Config** file in elevated mode. Then, find **<add key="WebAuthBrowser" value="Edge" />** key in the file. You can change the value for opted supported browser prior to run the Tzunami Deployer.

Content Tab

The **Content** tab allows you to select site collection and List Types content to load into the Tzunami Deployer and whether to load items and their versions.

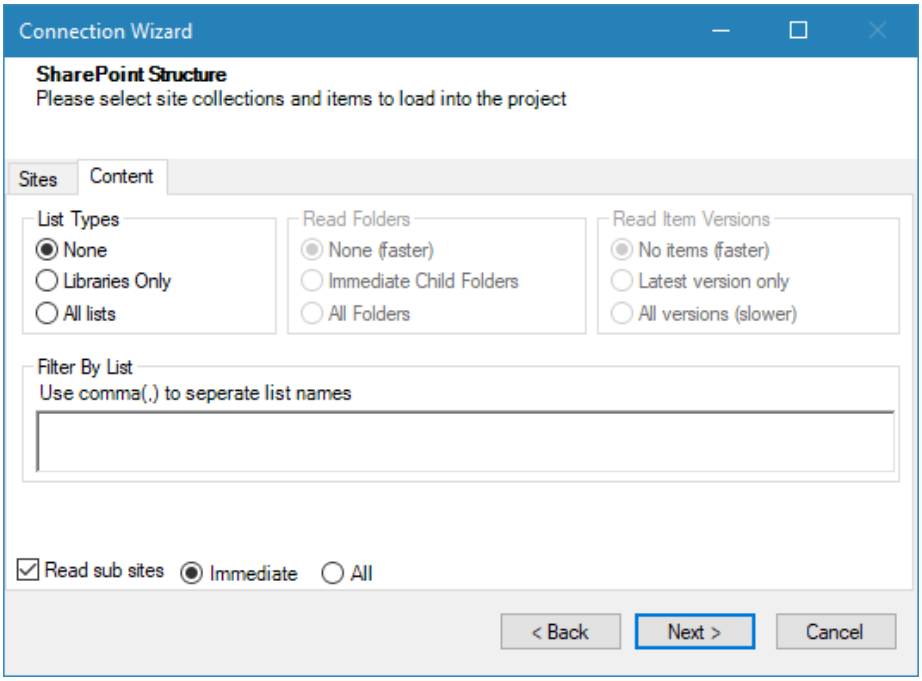


Figure 4-30: Microsoft Teams Connection Wizard – SharePoint Structure - Content Tab

When connecting to target, it is not necessary to load versions of documents.

Content Tab to load the Site contents.

Table 4-3: SharePoint Structure – Content Tab

Field	Description
List Types	
None	No lists are loaded.
Libraries Only	Only libraries are loaded.
All Lists	All types of lists are loaded.
Read Folders	
None (faster)	No folders of lists and libraries are loaded.
Immediate Child Folders	Only immediate folders are loaded.
All Folders	All folders are loaded.
Read Items Versions	
No items (faster)	No item versions are loaded.
Latest version only	Only the latest item versions are loaded.
All versions (slower)	All item versions are loaded.
Filter By List	
Use Comma(,) to separate list	Enter name of Lists to load even if **None** option selected

5. Click **Next**. The Thank you for using the Connection Wizard screen appears.
6. Click **Done**. Tzunami Deployer begins scanning the SharePoint Online and loads information about the selected site collection, including sub sites, lists, folders, files and list items.

   A Results window appears, displaying the load progress.

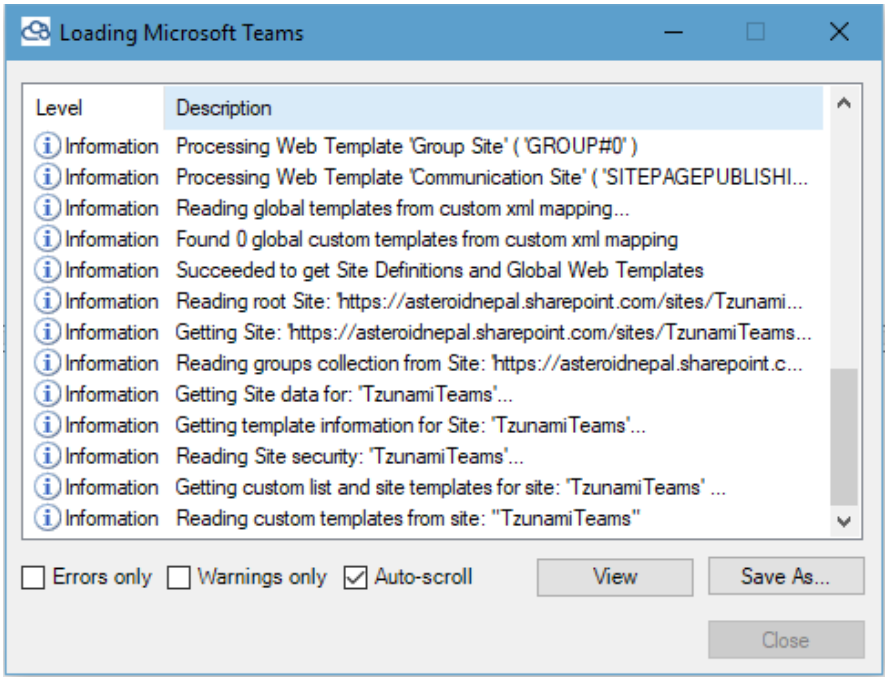


Figure 4-31: Loading Target Microsoft Teams – Results Window

You can stop the loading process at any time by closing results window, Right-clicking in the SharePoint area,& selecting Stop loading SharePoint to" You can stop the loading process at any time by closing results window, Right-clicking in the SharePoint area,& selecting Stop loading Microsoft Teams.

When the loading process is complete, you can browse the SharePoint Online structure in the Project window. **For example**:

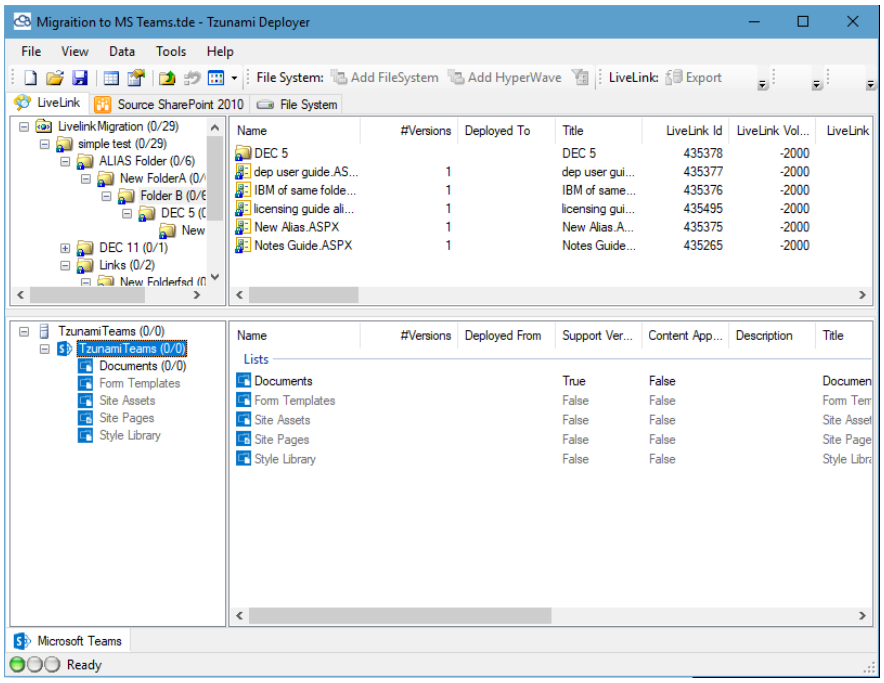


Figure 4-32: Loaded Target Microsoft Teams SharePoint Online

The following table displays the various icons used by SharePoint Online to represent various types of items.

Table 4-4: SharePoint Online Icons

Icon	Description
	Web Application
	SharePoint Site
	List
	Document Library
	Picture Library
	Folder

Each item in the structure tree is followed by two numbers. The first number is the number of documents and list items deployed, but not yet migrated to the target SharePoint. The second number is the total number of documents and list items in that particular location and all its nested hierarchy.

Clicking a location in the tree displays the list of items in that location. The name of the item appears in the first column. Metadata property values and other information appear in the adjacent columns.

To activate the various actions in Tzunami Deployer, select an item and choose a menu option or right-click an item to display a context-sensitive menu. All the actions in the context-sensitive menus are also available in the Data menu. When you select an item, only the options that are relevant to the selected item are made available for activation. All other options are deactivated.

You can right-click an item and select Open to view it. In lists that support document versioning, you can view the versions of an item by right-clicking the item and selecting Versions.

4.2.2.2 Connecting and Loading OneDrive

Tzunami Deployer can communicate with the OneDrive SharePoint Online. When OneDrive SharePoint Online is connected through this mode, the Remote Service is no longer used.

1. Click **Data > Target SharePoint Online> Connect to OneDrive** Or

   Right-click on the Target **OneDrive** tab and select **Connect to OneDrive**. The **OneDrive Connection** Wizard appears.

Figure 4-33 OneDrive Connection Screen

2. Click **Next**. The Connection Wizard progresses to the Access SharePoint Server screen.

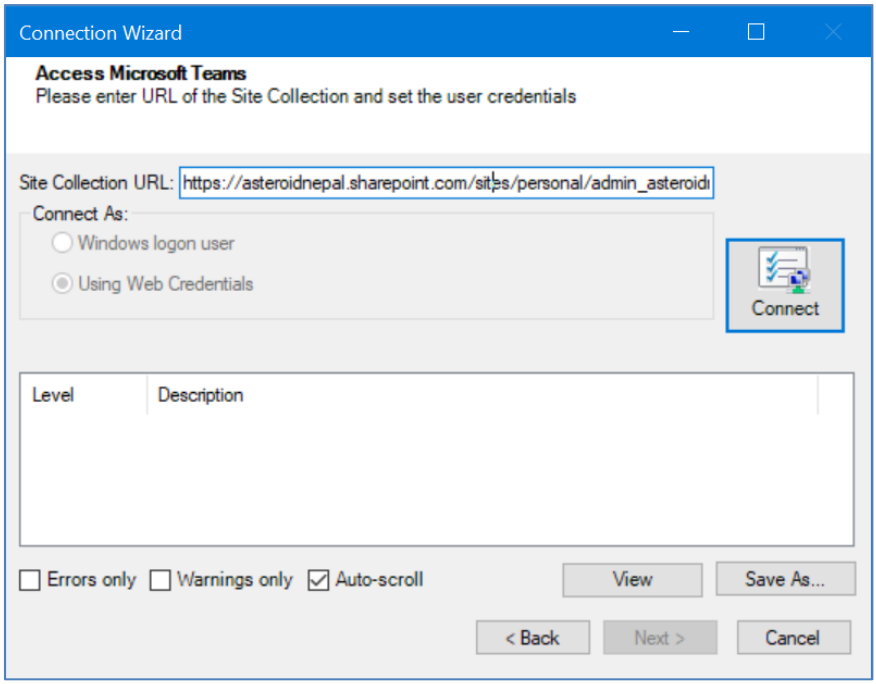


Figure 4-34: Access Window for OneDrive- SharePoint Online

3. In the Site Collection URL field, enter the URL of the Site Collection. For example: https://asteroidnepal-my.sharepoint.com/personal/admin_asteroidnepal_com.
4. Specify a **Different user name** and enter a password in the **Password** field.
   Or, select option **Using Web Credentials**. When **Connect** button is pressed, User does not need to provide login credential when using Azure Application with Applications. When using Delegated based Azure Application, a browser will be opened for credential to connect to the SharePoint site. Please, provide the credential for login. After successful login a SharePoint Structure screen appears.

Content Tab

The **Content** tab allows you to select site collection and List Types content to load into the Tzunami Deployer and whether to load items and their versions.

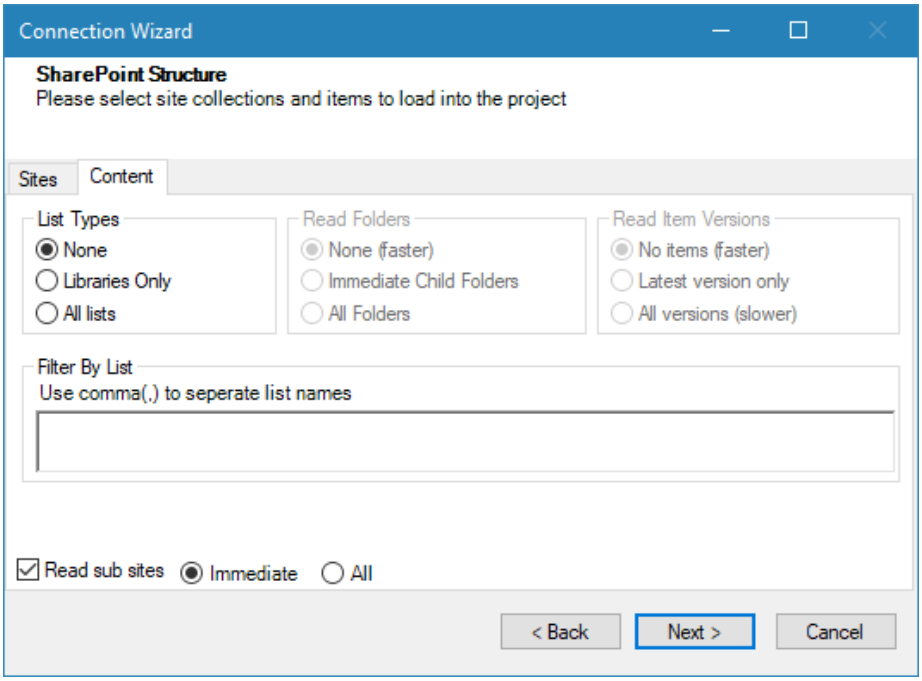


Figure 4-35: OneDrive Connection Wizard – SharePoint Structure - Content Tab

Content Tab to load the Site contents.

Table 4-5: SharePoint Structure – Content Tab

Field	Description
List Types	
None	No lists are loaded.
Libraries Only	Only libraries are loaded.
All Lists	All types of lists are loaded.
Read Folders	
None (faster)	No folders of lists and libraries are loaded.
Immediate Child Folders	Only immediate folders are loaded.
All Folders	All folders are loaded.
Read Items Versions	
No items (faster)	No item versions are loaded.
Latest version only	Only the latest item versions are loaded.
All versions (slower)	All item versions are loaded.
Filter By List	
Use Comma(,) to separate list	Enter name of Lists to load even if **None** option selected

5. Click **Next**. The Thank you for using the Connection Wizard screen appears.
6. Click **Done**. Tzunami Deployer begins scanning the SharePoint Online and loads information about the selected site collection, including sub sites, lists, folders, files and list items.

   A Results window appears, displaying the load progress.

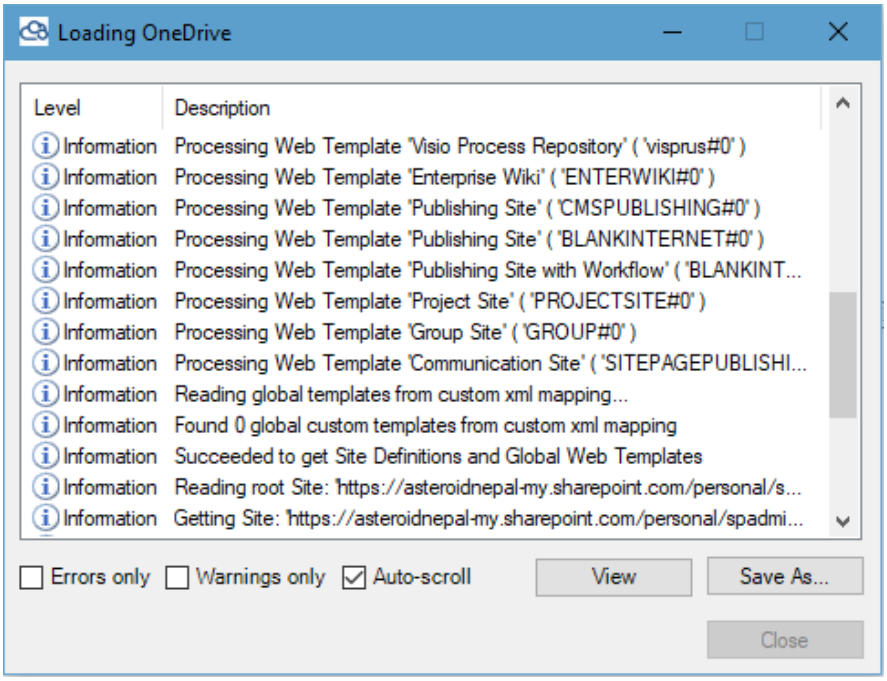


Figure 4-36: Loading Target OneDrive – Results Window

You can stop the loading process at any time by closing results window, Right-clicking in the SharePoint area,& selecting Stop loading SharePoint to" You can stop the loading process at any time by closing results window, Right-clicking in the SharePoint area,& selecting Stop loading OneDrive.

When the loading process is complete, you can browse the OneDrive structure in the Project window. **For example**:

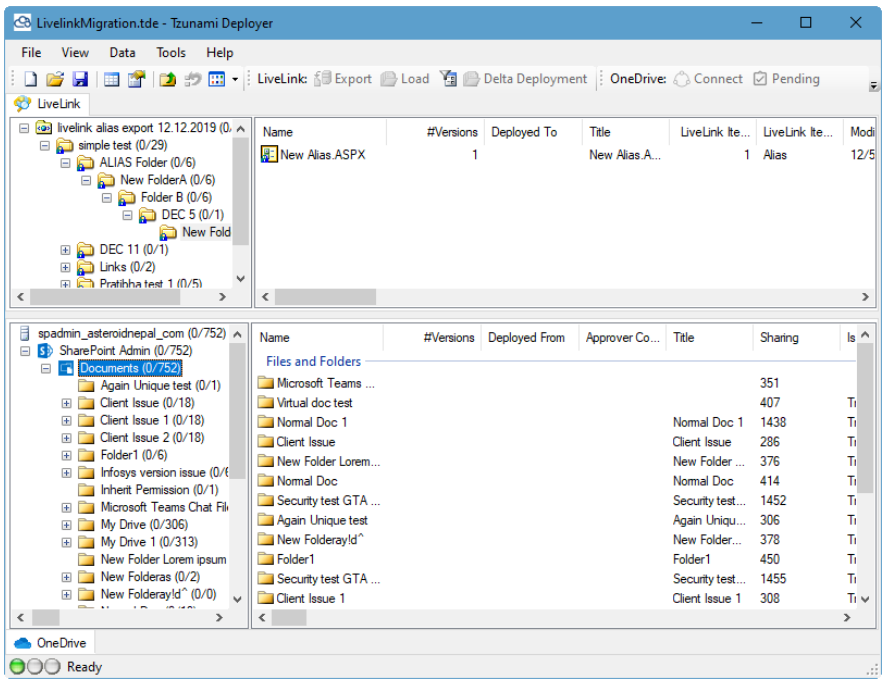


Figure 4-37: Loaded Target OneDrive- SharePoint Online

The following table displays the various icons used by SharePoint Online to represent various types of items.

Table 4-6: SharePoint Online Icons

Icon	Description
	Web Application
	SharePoint Site
	List
	Document Library
	Picture Library
	Folder

4.2.2.3 Connecting and Loading SharePoint Online

Tzunami Deployer can communicate with the SharePoint Server Online. When SharePoint Server Online is connected through this mode, the Remote Service is no longer used.

1. Click **Data > Target SharePoint Online> Connect to SharePoint** Or

   Right-click on the **Target SharePoint Online** tab and select **Connect to SharePoint**. The **SharePoint Online Connection** Wizard appears.

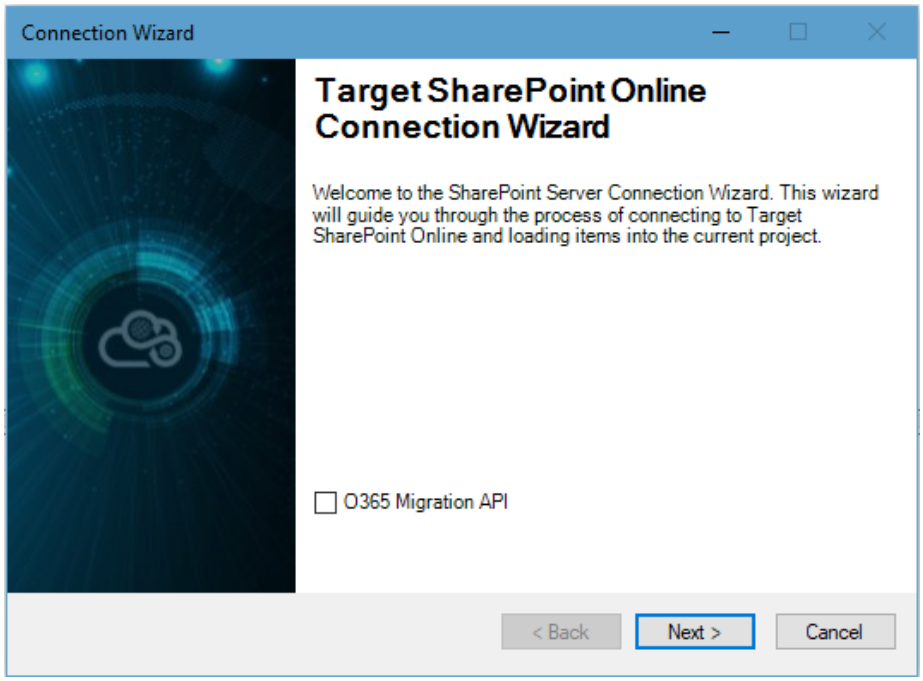


Figure 4-38 SharePoint Online Connection Screen

In this mode, Remote service is not used to communicate with SharePoint On-Premise Server. However, user needs to configure the Blocked Extensions file relevant to SharePoint On-Premise server.

2. Click **Next**. The Connection Wizard progresses to the Access SharePoint Server screen.

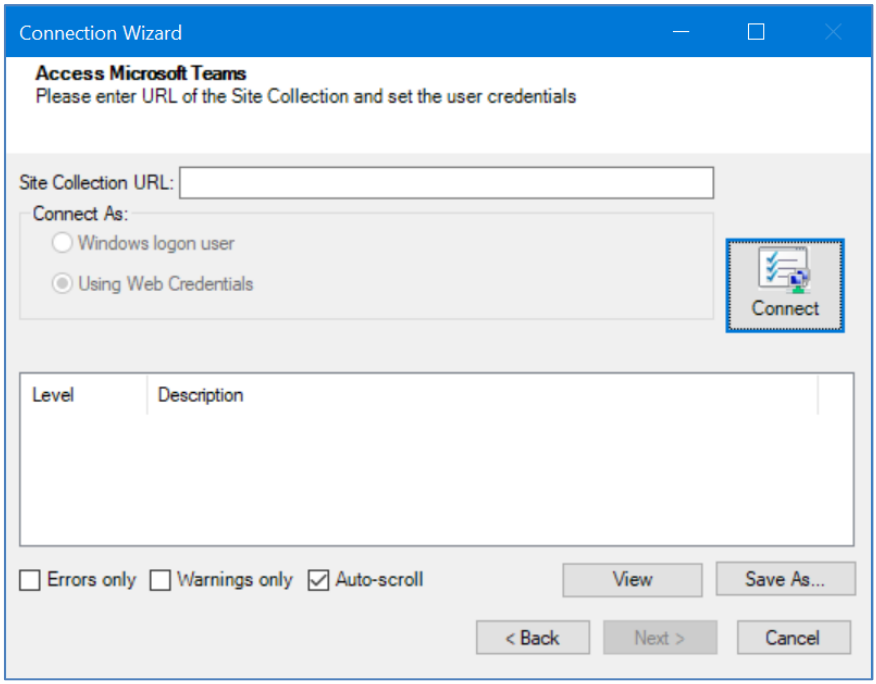


Figure 4-39: Access Window for SharePoint Online

3. In the Site Collection URL field, enter O365 admin URL. For example: **https://asteroidnepal-admin.sharepoint.com**.
   You can enter the full URL of a SharePoint site collection as well for example: https://asteroidnepal.sharepoint.com/sites/tzuanami.

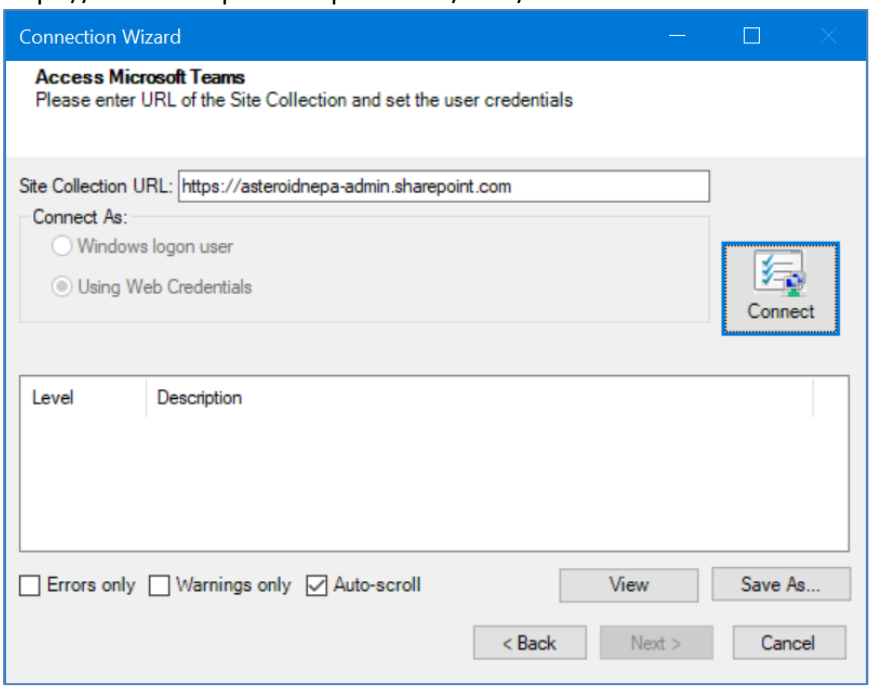


Figure 4-40 O365 admin url in SharePoint Online connection

4. Select option **Using Web Credentials**. When **Connect** button is pressed, User does not need to provide login credential when using Azure Application with Applications. When using Delegated based Azure Application, a browser will be opened for credential to connect to the SharePoint site. Please, provide the credential for login. After successful login a SharePoint Structure screen appears.

Sites Tab

The Sites tab allows you to select List of active site collections in O365.

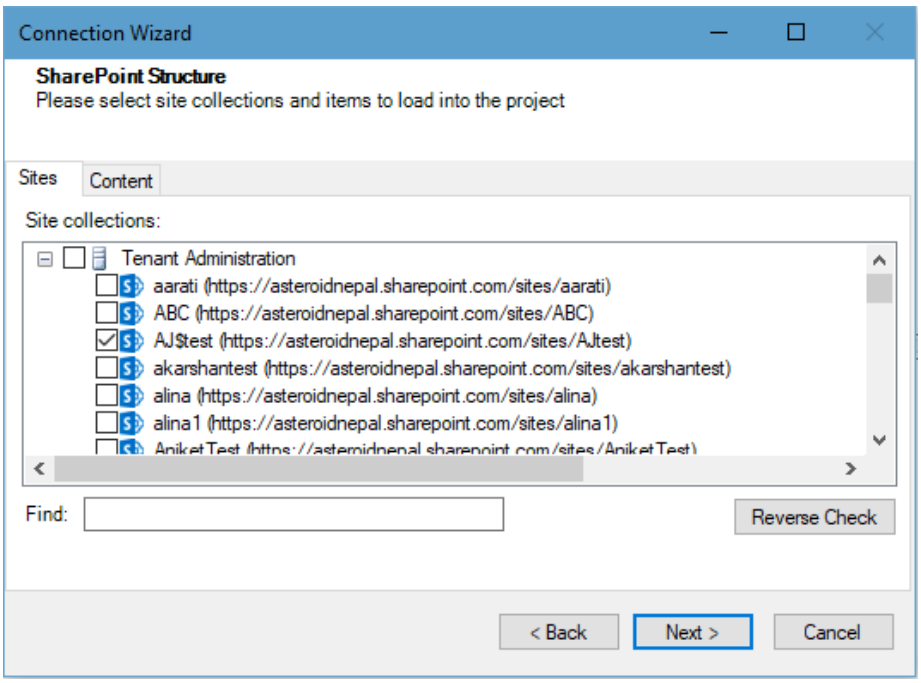


Figure 4-41 SharePoint Connection Wizard - Sites Tab

Select the site from the list and go to **Content Tab**.

Content Tab

The **Content** tab allows you to select site collection and List Types content to load into the Tzunami Deployer and whether to load items and their versions.

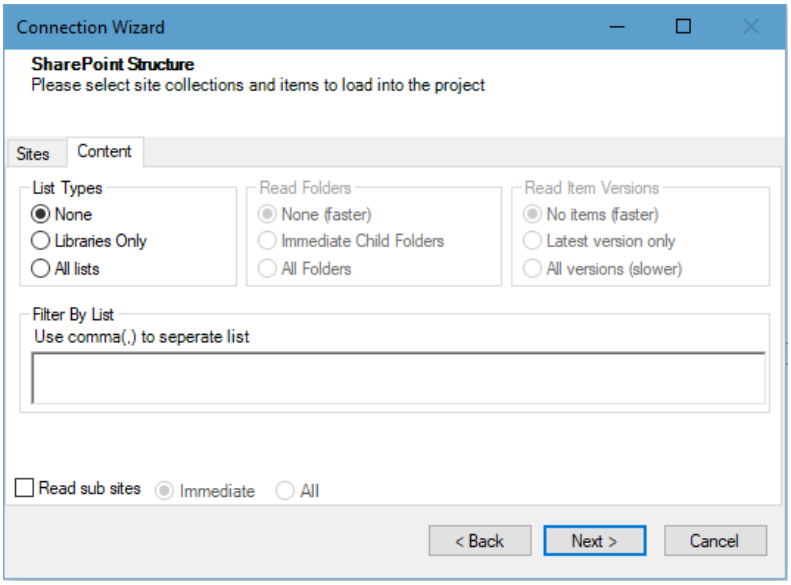


Figure 4-42: SharePoint Connection Wizard - Content Tab

When connecting to target, it is not necessary to load versions of documents.

Content Tab to load the Site contents.

Table 4-7: SharePoint Structure – Content Tab

Field	Description
List Types	
None	No lists are loaded.
Libraries Only	Only libraries are loaded.
All Lists	All types of lists are loaded.
Read Folders	
None (faster)	No folders of lists and libraries are loaded.
Immediate Child Folders	Only immediate folders are loaded.
All Folders	All folders are loaded.
Read Items Versions	
No items (faster)	No item versions are loaded.
Latest version only	Only the latest item versions are loaded.
All versions (slower)	All item versions are loaded.
Filter By List	
Use Comma(,) to separate list	Enter name of Lists to load even if **None** option selected

5. Click **Next**. The Thank you for using the Connection Wizard screen appears.
6. Click **Done**. Tzunami Deployer begins scanning the SharePoint Online and loads information about the selected site collection, including sub sites, lists, folders, files and list items.

   A Results window appears, displaying the load progress.

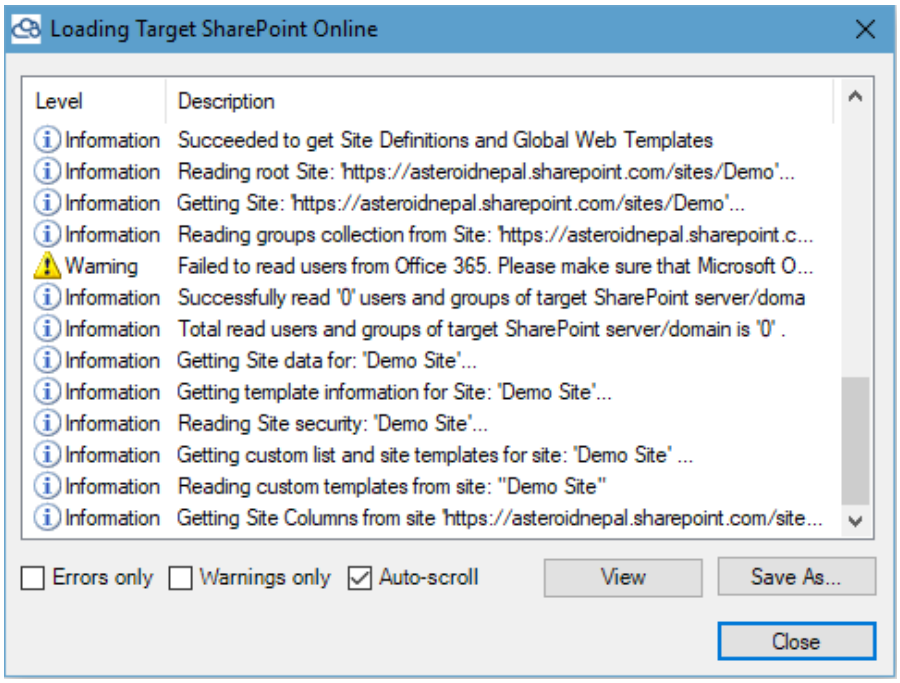


Figure 4-43: Loading Target SharePoint Online – Results Window

You can stop the loading process at any time by closing the Results window, right-clicking in the SharePoint area, and selecting **Stop Loading SharePoint**.

When the loading process is complete, you can browse the SharePoint Online structure in the Project window. **For example**:

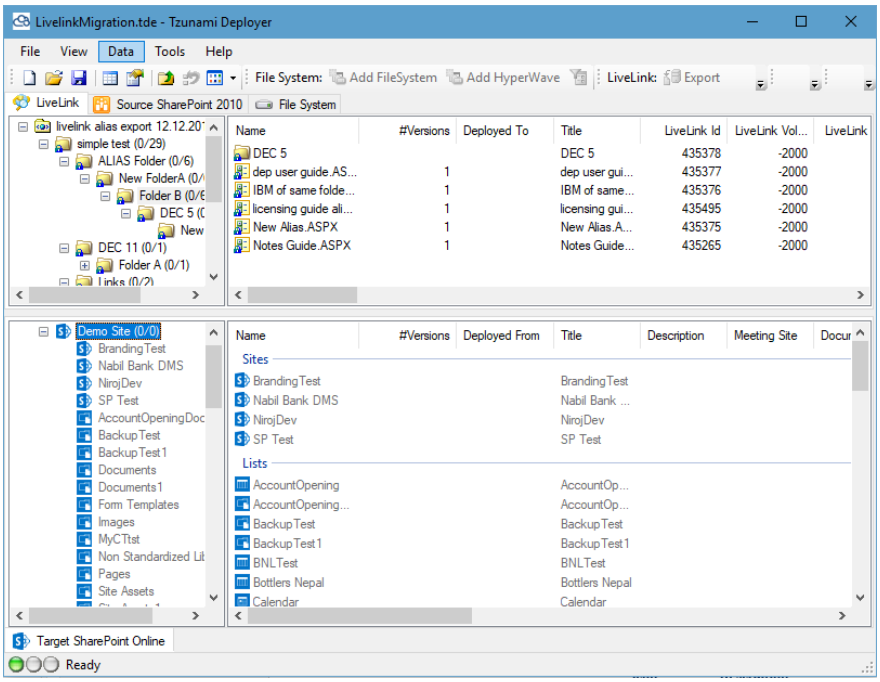


Figure 4-44: Loaded Target SharePoint Online

The following table displays the various icons used by SharePoint Online to represent various types of items.

Table 4-8: SharePoint Online Icons

Icon	Description
	Web Application
	SharePoint Site
	List
	Document Library
	Picture Library
	Folder

Each item in the structure tree is followed by two numbers. The first number is the number of documents and list items deployed, but not yet migrated to the target SharePoint. The second number is the total number of documents and list items in that particular location and all its nested hierarchy.

Clicking a location in the tree displays the list of items in that location. The name of the item appears in the first column. Metadata property values and other information appear in the adjacent columns.

To activate the various actions in Tzunami Deployer, select an item and choose a menu option or right-click an item to display a context-sensitive menu. All the actions in the context-sensitive menus are also available in the Data menu. When you select an item, only the options that are relevant to the selected item are made available for activation. All other options are deactivated.

You can right-click an item and select Open to view it. In lists that support document

versioning, you can view the versions of an item by right-clicking the item and selecting Versions.

4.2.2.4 Connecting and Loading SharePoint Online using Migration API

Tzunami Deployer supports Azure Storage subscribed by the organization (or other vendors) and provided by the Microsoft as well. For the Azure Storage subscribed by the organization, user should manually configure the storage account details and provide the parameter in Deployer whereas for the Microsoft provided azure storage no such parameters should be provided in Deployer. Please, contact your SharePoint Administrator for more about Azure Storage configuration.

Before proceeding, configure the Migration API settings in Deployer Options. Please, refer section ***Migration API***.

To connect to SharePoint Online using Microsoft Azure Storage Account

1. Click **Data > Target SharePoint Online> Connect to SharePoint** Or

   Right-click in the **Target SharePoint Online** tab and select **Connect to SharePoint**. **The SharePoint Online Connection** Wizard appears.

   Then check on **Migration API** check box.

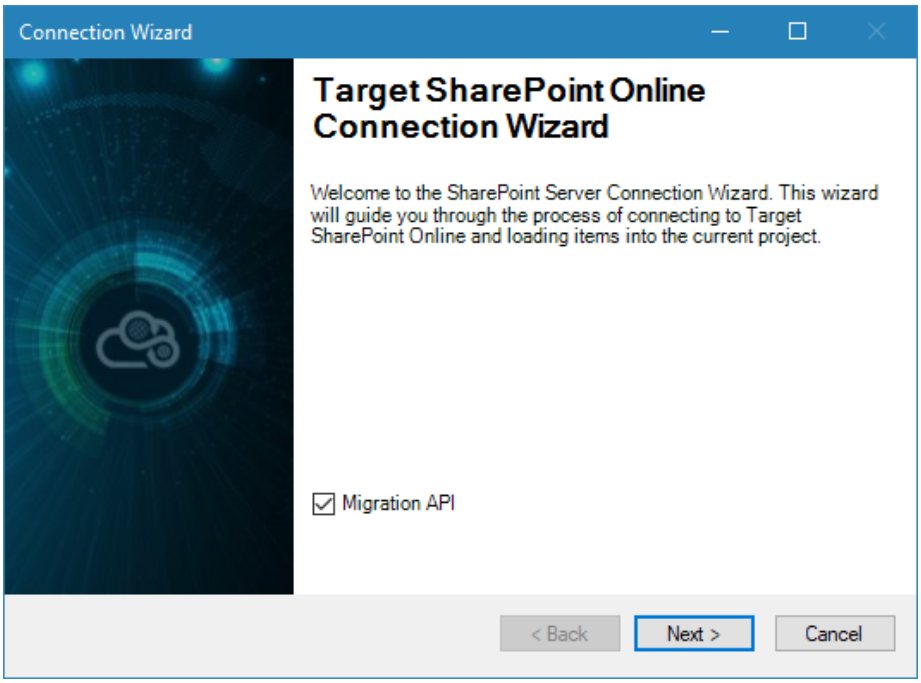


Figure 4-45: SharePoint Online– Welcome Screen

Table 4-9: SharePoint Online Connection Wizard

Field	Description
Migration API	Select this option to connect to SharePoint Online using Microsoft Azure Storage Account. If this option is not checked, Tzunami Deployer will connect to SharePoint Online without using Migration API.

2. Click **Next**. The Connection Wizard progresses to the Access SharePoint Server screen.

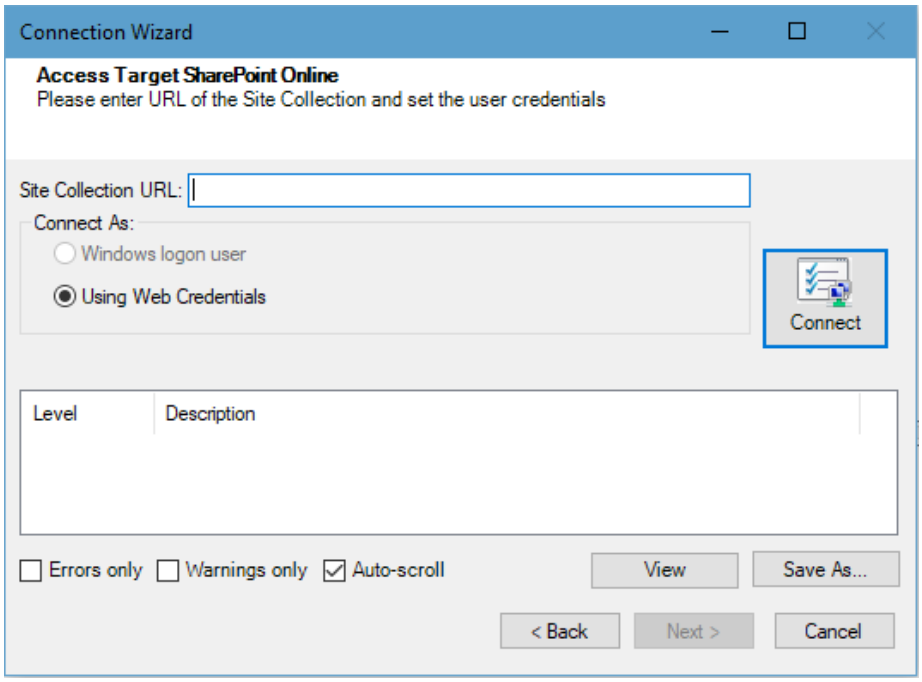


Figure 4-46: Access Window for SharePoint Online using Migration API

3. In the Site Collection URL field, enter O365 admin URL. For example: ***https://asteroidnepal-admin.sharepoint.com***.
   You can enter the URL of a SharePoint site collection as well for example: https://asteroidnepal.sharepoint.com/sites/tzuanami.

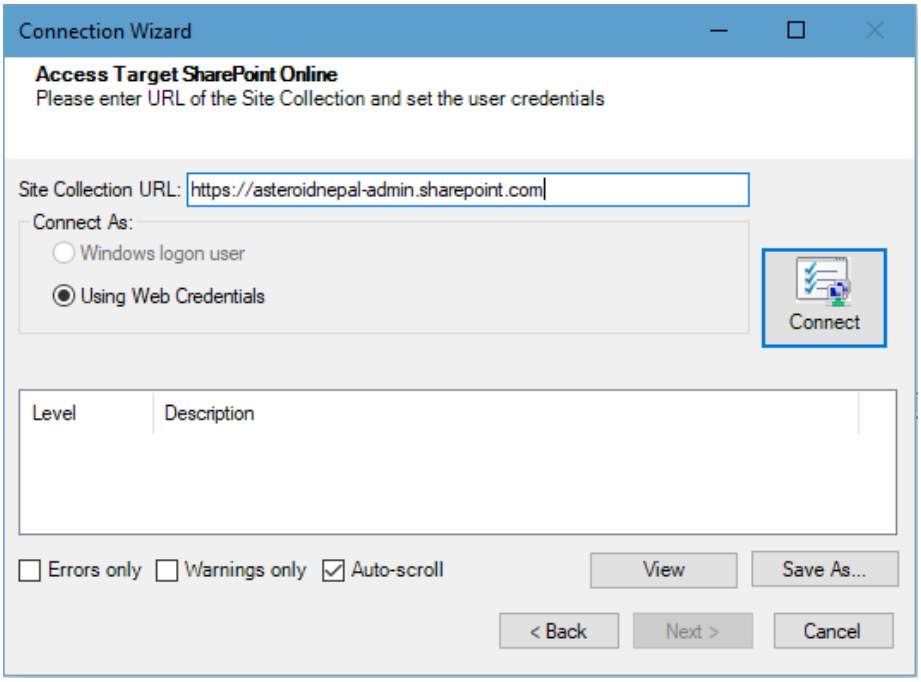


Figure 4-47 SharePoint Connection Wizard – Connection Screen

4. Select option **Using Web Credentials**. When **Connect** button is pressed, User does not need to provide login credential when using Azure Application with Applications. When using Delegated based Azure Application, a browser will be opened for credential to connect to the SharePoint site. Please, provide the credential for login. After successful login a SharePoint Structure screen appears.
5. Click **Next**. The Connection Wizard progresses to the Web Applications screen. Continue following the wizard

4.2.3 On-premise As Online

Tzunami Deployer connects with SharePoint On-Premise server using **Tzunami Remote Service** which should be installed in the SharePoint server. However, Tzunami Deployer provides a feature in which **Tzunami Remote Service** in not used. Hence, Tzunami Deployer connects with SharePoint On-Premise server like SharePoint online. This feature is worthwhile, in case, your organization does not allow to install **Tzunami Remote Service** in SharePoint server.

You must have valid license for **SharePoint Online** from Tzunami Inc. to use this feature.

4.2.3.1 Connecting and Loading SharePoint 2019 As Online

Tzunami Deployer can communicate with SharePoint Server 2019 through SharePoint Online connection wizard. When SharePoint Server 2019 is connected through this mode, the Remote Service is no longer necessary.

1. Click **Data > Target SharePoint Online> Connect to SharePoint 2019 As Online** Or

   Right-click on the **Target SharePoint 2019 As Online** tab and select **Connect to SharePoint 2019 As Online**. The **SharePoint 2019 As Online Connection** Wizard appears.

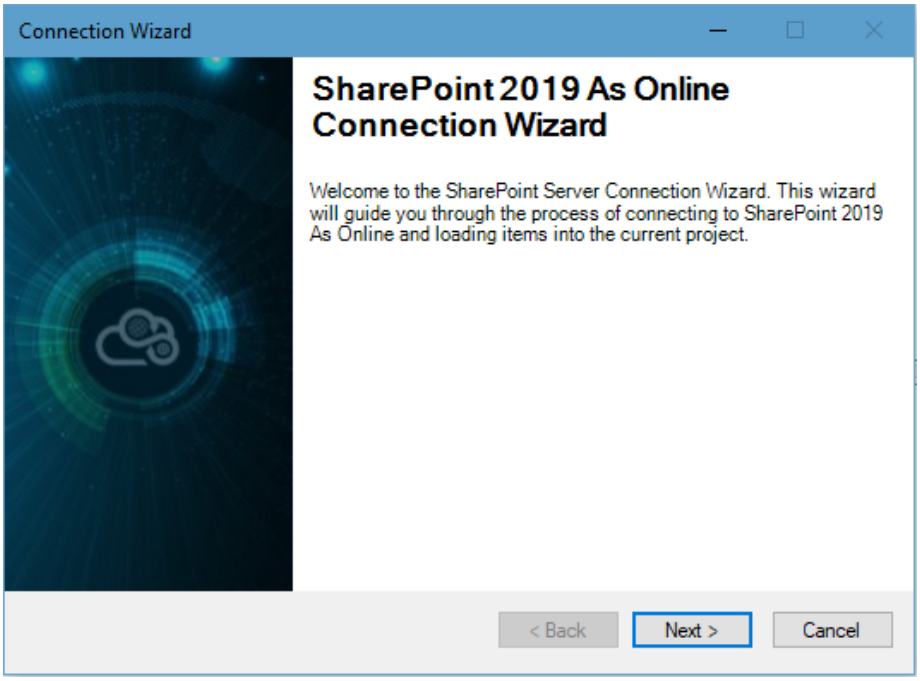


Figure 4-48 SharePoint 2019 As Online Connection Screen

2. Click **Next**. The Connection Wizard progresses to the Access SharePoint Server screen.

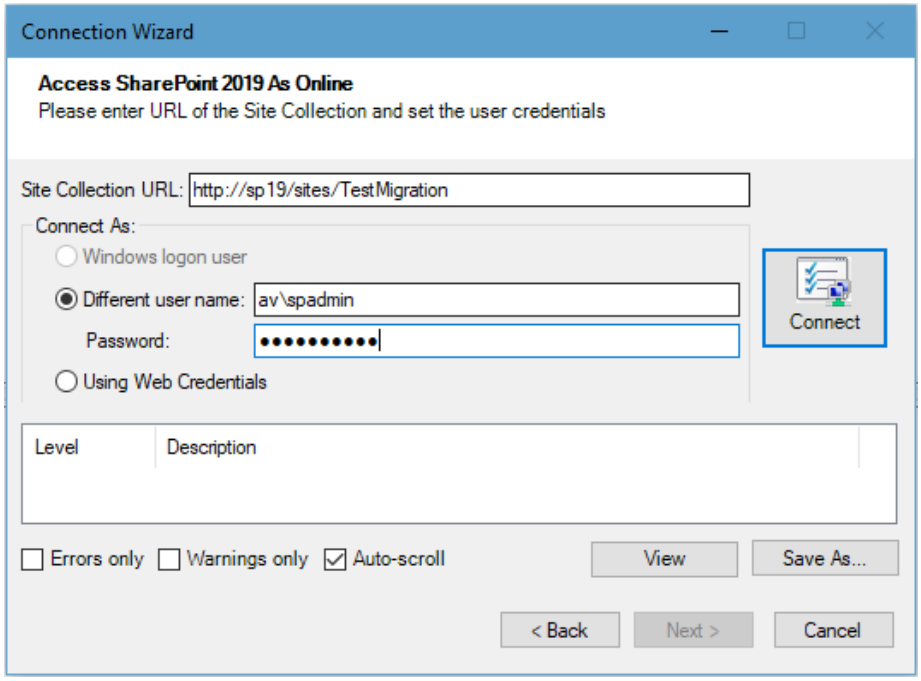


Figure 4-49: Access Window for SharePoint 2019 As Online

3. In the Site Collection URL field, enter the URL of the Site Collection.
4. Specify a **Different user name** and enter a password in the **Password** field.

If Tzunami Deployer fails to connect to SharePoint, verify that you provided all the required permissions to the user, as specified in the Tzunami Deployer Installation Guide.

Clicking Auto-scroll scrolls down to display the latest progress messages, as they appear.

Clicking Errors only filters the displayed progress messages to show error messages only.

Clicking Warnings only filters the displayed progress messages to show warning messages only.

5. Click **Next**. The Connection Wizard progresses to the Web Applications screen.

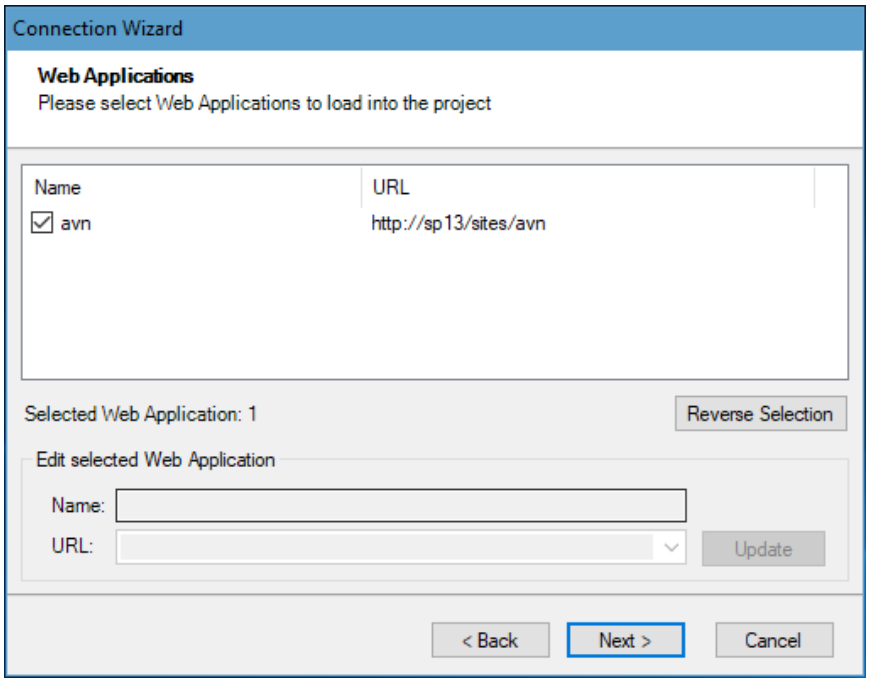


Figure 4-50: SharePoint Connection Wizard – Web Applications Screen

6. Select one or more Web Applications to load and click **Next**. The SharePoint Structure appears with tabs: Sites, Content, and Active Directory.

Sites Tab

The **Sites** tab allows you to select site collection to load into the Deployer Project.

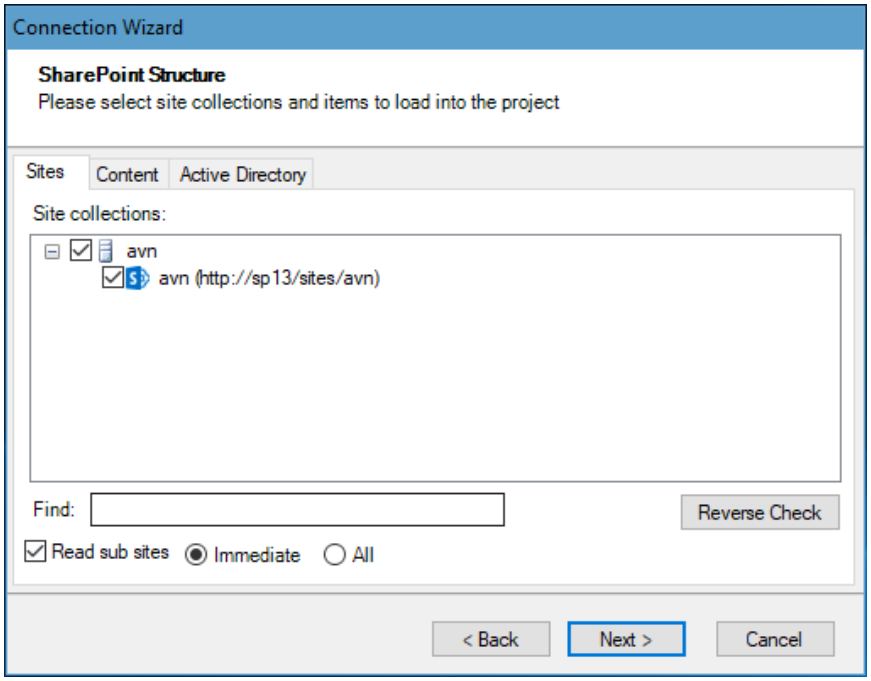


Figure 4-51: SharePoint Connection Wizard – SharePoint Structure - Sites Tab

Loading of SharePoint content may be a lengthy process, depending on the amount of content, the type of network, and the workload of the SharePoint Online.

When connecting to Microsoft SharePoint Online, it is not necessary to select site collection and item to load into the project. Tzunami recommends that you only load the site collections and portal sites that are the targets for your current project.

Site collection and Items that are not loaded at this stage appear grayed out in the Project window. Such items can be reloaded at a later time.

7. Click **Sites Tab** to load the SharePoint site collection and portal sites.

Table 4-10 SharePoint Structure – Sites Tab

Field	Description
Find	Enables you to Find the site collection containing the text in the site collection by typing in the text box.
Read sub sites	• Immediate – Reads immediate sub sites of selected Site Collections • All – Reads all sub sites of selected Site Collections.
Reverse Check	Enables to toggle the selection of sites.

Content Tab

The **Content** tab allows you to select List Types content to load into the Tzunami Deployer and whether to load items and their versions.

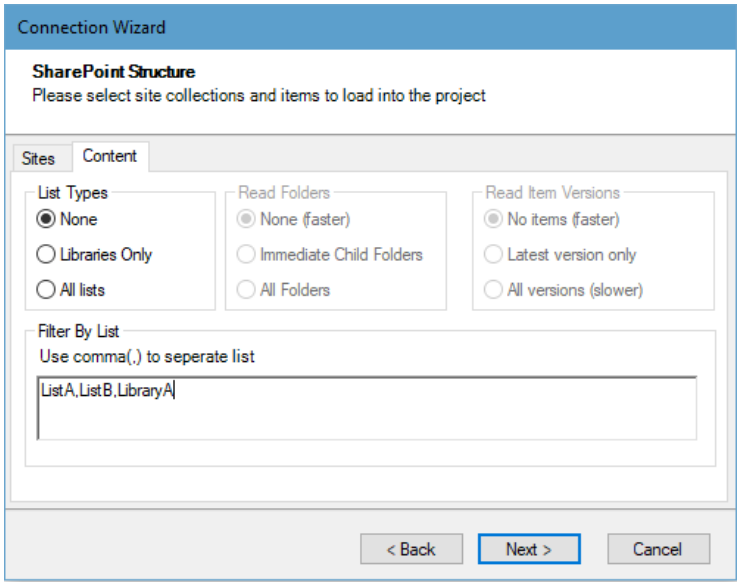


Figure 4-52: SharePoint Connection Wizard – SharePoint Structure - Content Tab

Active Directory Tab

The **Active Directory** tab allows you to load user and groups from Active Directory domains.

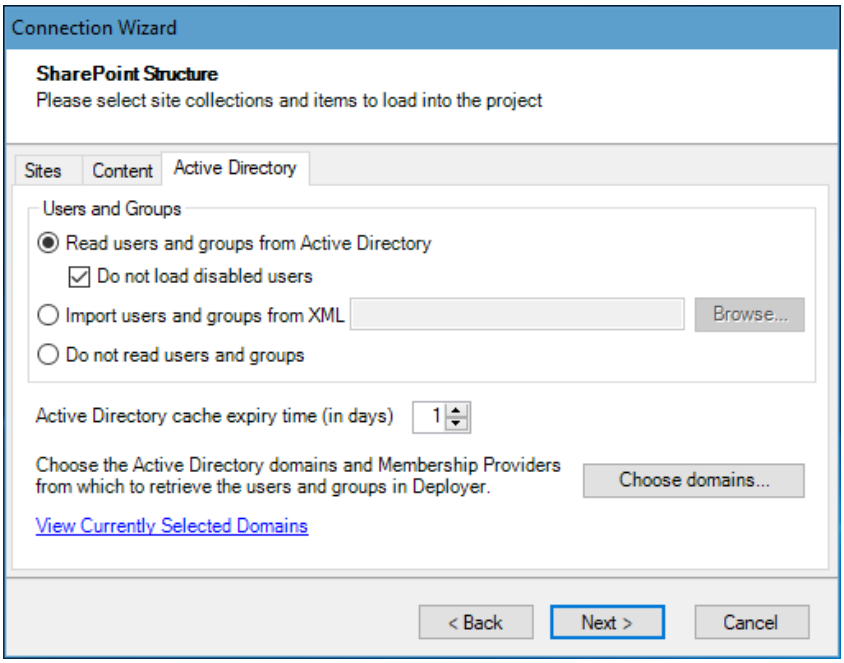


Figure 4-53: SharePoint Connection Wizard – SharePoint Structure - Active Directory Tab

8. Click **Next**. The Thank you for using the Connection Wizard screen appears.
9. Click **Done**. Tzunami Deployer begins scanning the SharePoint Online and loads information about the selected site collection, including sub sites, lists, folders, files and list items.

   A Results window appears, displaying the load progress.

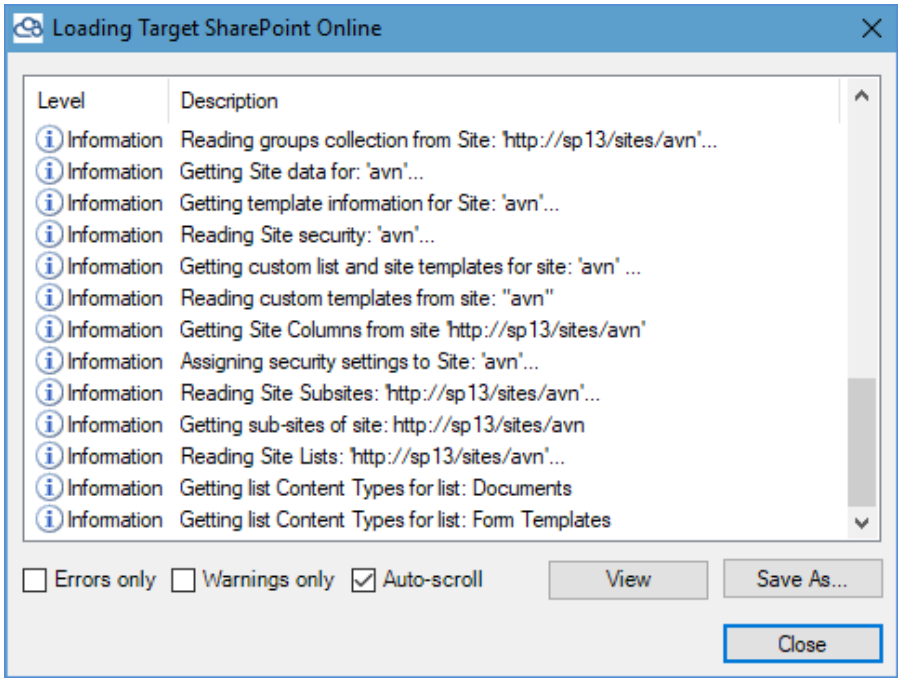


Figure 4-54: Loading Target SharePoint On-Premise– Results Window

You can stop the loading process at any time by closing the Results window, right-clicking in the SharePoint area, and selecting **Stop Loading SharePoint**.

When the loading process completes, you can browse the SharePoint structure in the Project window.

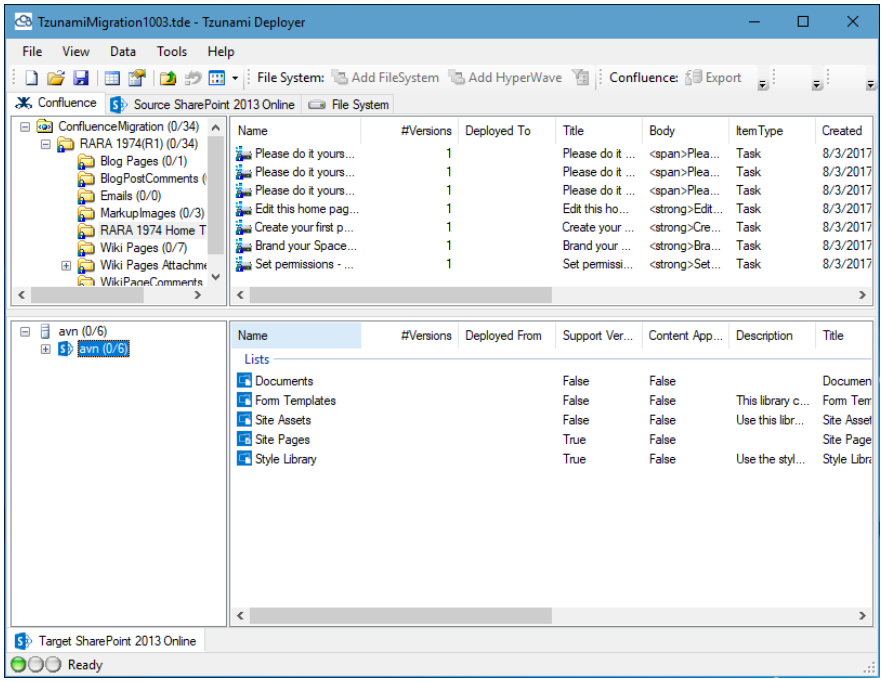


Figure 4-55: Loaded Target SharePoint

The following table displays the various icons used by SharePoint Online to represent various types of items.

Table 4-11: SharePoint Online Icons

Icon	Description
	Web Application
	SharePoint Site
	List
	Document Library
	Picture Library
	Folder

Each item in the structure tree is followed by two numbers. The first number is the number of documents and list items deployed, but not yet migrated to the target SharePoint. The second number is the total number of documents and list items in that particular location and all its nested hierarchy.

Clicking a location in the tree displays the list of items in that location. The name of the item appears in the first column. Metadata property values and other information appear in the adjacent columns.

To activate the various actions in Tzunami Deployer, select an item and choose a menu

option or right-click an item to display a context-sensitive menu. All the actions in the context-sensitive menus are also available in the Data menu. When you select an item, only the options that are relevant to the selected item are made available for activation. All other options are deactivated.

You can right-click an item and select Open to view it. In lists that support document versioning, you can view the versions of an item by right-clicking the item and selecting Versions.

4.3 Reloading SharePoint Items

If you choose not to read all the sites or lists in the SharePoint Structure screen of the SharePoint Connection Wizard, they appear in the SharePoint tree, grayed out and unavailable. Similarly, if changes are made to SharePoint after it is loaded into Tzunami Deployer, those changes are not reflected in your Tzunami Deployer project. In both cases, you can refresh the SharePoint information in the Tzunami Deployer project by reloading selected items. Moreover, Tzunami Deployer provides an option **Update Migration DB** to check. So, the user may reload items in current project only or may reload the items in current project along with updating information in Link Resolver Service's database, too.

4.3.1 Reload SharePoint items to Current project only

The reload operation in Tzunami Deployer can be performed to get the latest data from the SharePoint Site or selected item as required. To update the information in the current Deployer project only, perform the following steps:

1. In the Target SharePoint tab, right-click the desired item and select **Reload Item**. The Load SharePoint Items window appears.

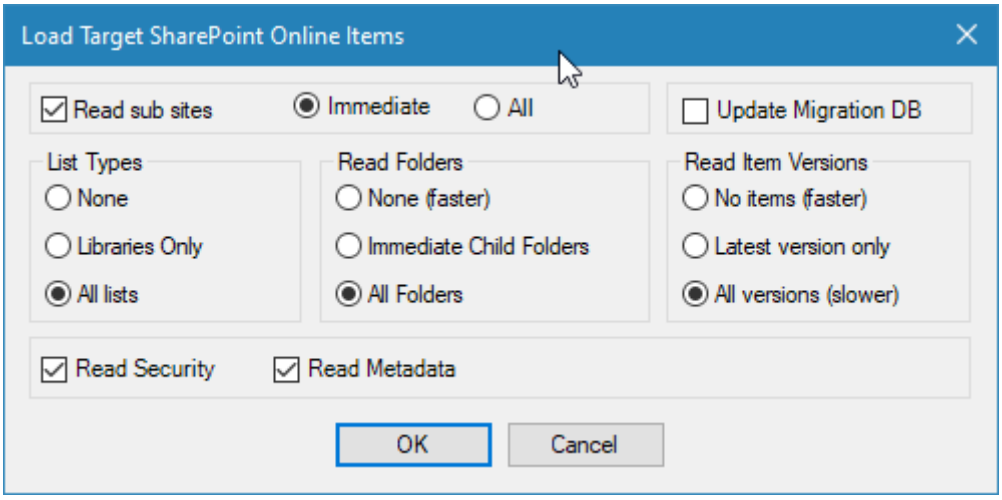


Figure 4-56: Load SharePoint Items Window

2. Select which items you wish to reload and whether to load all document versions.

3. Select option to read sub sites and select radio button to read immediate only or all as required.

4. Check option to read security and metadata or not.

5. Make sure **Update Migration DB** option is unchecked to reload items in Deployer tree only. If this option is checked, then Migration DB also gets updated.

6. Click **OK**. A Results window appears, displaying the load progress. The items are reloaded into your project window.

4.3.2 Reload SharePoint items to Current project including update in Migration Database

The reload operation in **Tzunami Deployer** can be performed to get the latest data from the SharePoint Site or selected item as required. The latest information for selected site/item is updated in the current Deployer project by default. Moreover, when **Update Migration DB** option is checked, the information is stored in the **migration** database, too. The migration DB is located at **C:\ProgramData\Tzunami\Tzunami SPO Migration**.

To reload item in the current Deployer project as well as update the information in **Migration DB** database, perform the following steps:

1. In the Target SharePoint tab, right-click the desired item and select **Reload Item**. The Load SharePoint Items window appears.

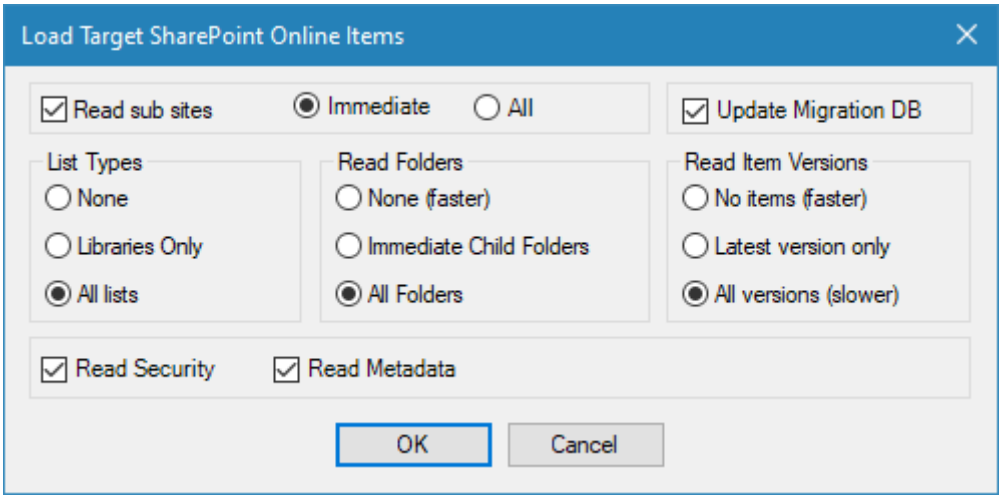


Figure 4-57: Load SharePoint Items Window

2. Select which items you wish to reload and whether to load all document versions.

3. Check **Update Migration DB** option.

4. Click **OK**. A Results window appears, displaying the load progress. The items are reloaded into your project window and updated the same in Link Resolver Services database.

4.3.3 Clear Migration Database

Tzunami Deployer provides an option to clear the data from migration database. If test data need or old data from migration database should be removed, user can perform the action from the target tree view of the Deployer migration project.

Perform the following steps in target source tree view of the project:

1. Right click on item in the target source. A Lists/Libraries can be selected as required.
2. Click on **Clear Migration DB** option.

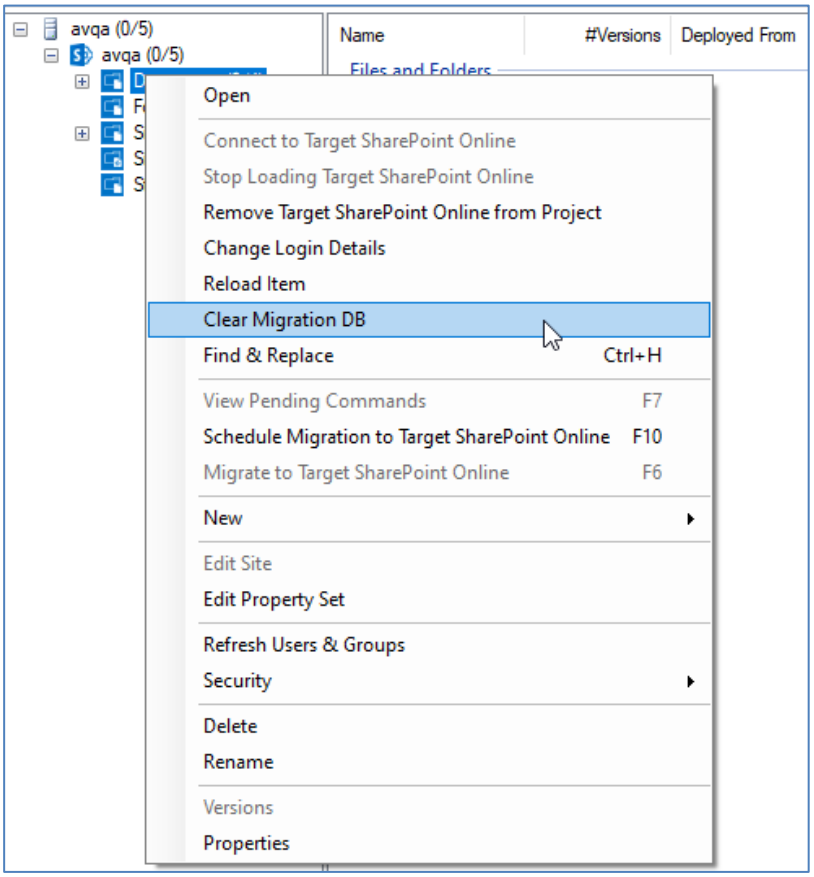


Figure 4-58 Clear Migration DB option

3. In the confirmation window, click on **Yes** button.

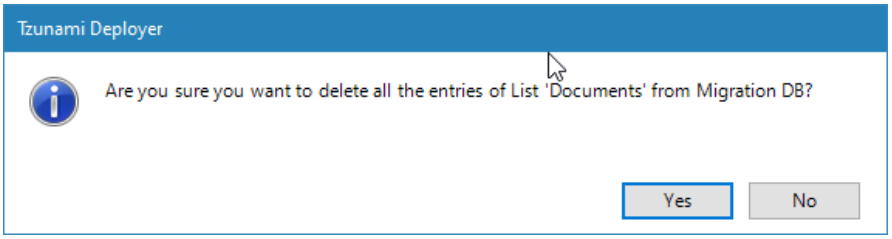


Figure 4-59 Confirmation to clear migration database

The information for updated action is displayed.

4.3.4 Benefits of using Update Migration DB option

Tzunami Deployer provides an option **Update Migration DB**. When this option is checked, henceforth the items migrated successfully are updated in the migration database. Any instance of Tzunami Deployer in the same machine can identify the migrated items from other instances of Deployer at the runtime without reloading. Therefore, following benefits are achieved.

1. Information of successfully migrated items from an instance of Tzunami Deployer is available to other instances of Tzunami Deployer instantly. Therefore, there is no need of reloading process for the information of latest changes made in target through other instances of Tzunami Deployer.
2. The reloaded information of target from an instance of Tzunami Deployer is available to other instances of Tzunami Deployer instantly. So, reloading items in each Tzunami Deployer is no longer needed.
3. Since the reloaded information of target items from an instance of Tzunami Deployer is available to all other instances of Tzunami Deployer, the operational cost of reloading needed in each instance of Tzunami Deployer is reduced.
4. Incremental migration of same item in same library can be accomplished with reloading library only (not all items necessarily).

4.4 REFRESH O365 USERS AND GROUPS

Tzunami Deployer loads the users and groups from O365 Azure Active Directory as well while connecting to SharePoint Online target. There are two options: one using O365 AD Service and another is using Rest API to load users and groups. Based on the options, latest updates of users and groups are loaded in SharePoint Online target panel of the project.

When there are recent changes in the users and groups in O365 Azure Active Directory that changes are updated in O365 AD Service. User can reflect those changes in SharePoint Online target panel for pre-load target source. To do so, perform the following steps:

1. Right click on target source tree view
2. Click on **Refresh Users & Groups** option

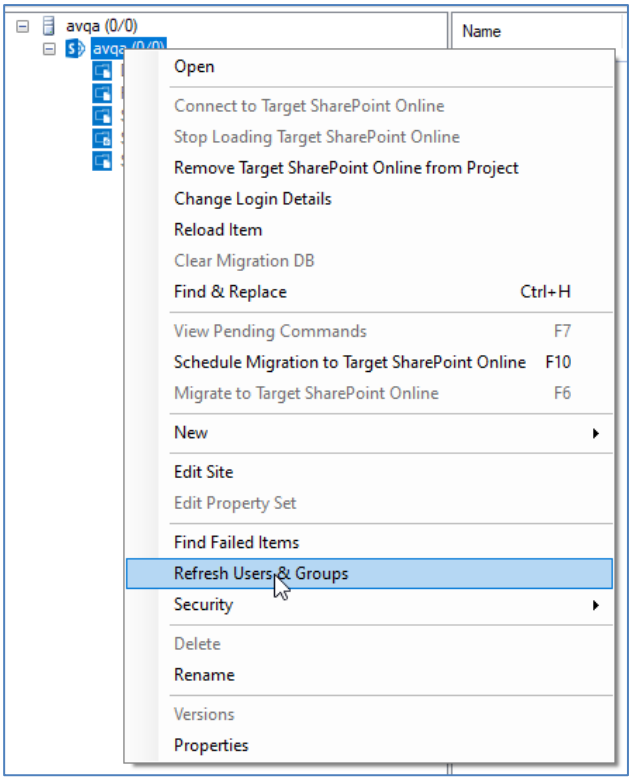


Figure 4-60 Refresh Users and Groups

3. Number of recently updated users and groups are displayed

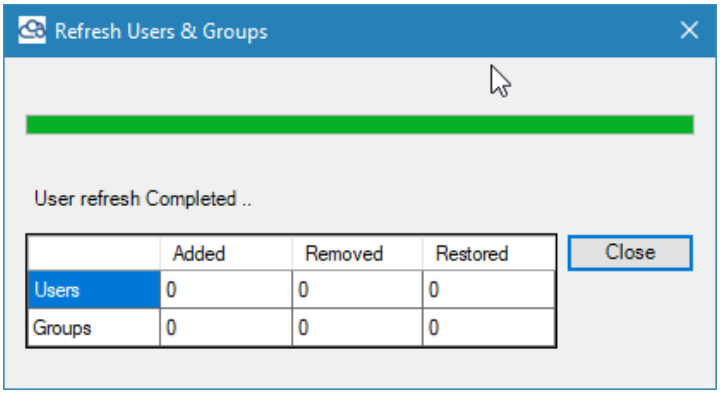


Figure 4-61 Number of updated users and groups

The recently updated users and groups are displayed in three categories.

- Added: recently added users and groups.
- Removed: recently deleted/sign-in blocked users and groups.
- Restored: recently restored deleted/sign-in enabled users and groups.

The added and restored users and groups are now available in users and groups mapping, whereas removed users and groups are not available in users and groups mapping.

4.5 Removing SharePoint Project

You can load a different SharePoint server into the current Tzunami Deployer project or you can reload SharePoint content in all the virtual servers by removing the SharePoint information from the Tzunami Deployer project and loading a new SharePoint target.

To remove a SharePoint target:

- Right-click in the **Target SharePoint** tab and select **Remove SharePoint from Project**. All target SharePoint information is removed from the project.

The project is automatically saved after the SharePoint is removed.

4.6 Handle Throttling with SharePoint Online

SharePoint online maintains optimal performance and reliability of the SharePoint Online service through throttling. Throttling limits the number of user actions or concurrent calls to prevent overuse of resources. It's very rare to get throttled while using Tzunami Deployer. But, a very large number of CSOM calls might be requested while running multiple instances of Deployer or large number of items loaded/migrated at once. In such scenarios, some requests may get throttled and encountered errors for some operations.

To get rid of errors due to throttling, Tzunami Deployer provides configurable settings in **Deployer.exe.config** file. User need to carry out the following steps to configure the settings:

1. Navigate to the directory where Tzunami Deployer is installed.
   (for example: C:\Program Files (x86)\Tzunami\Deployer 4.0)
2. Open the **Deployer.exe.config** file in edit mode.
3. Locate the settings **<!--Setting for handling the case of Throttling for CSOM call in case of Online-->** under **appSettings** node.
4. Increase the value for **NumberofRetry** and/or **MaximumDelay**

```
<!--Setting for handling the case of
Throttling for CSOM call in case of Online-->
<add key="NumberofRetry" value="3"></add>
<!--Maximum amount of retries-->
<add key="MaximumDelay" value="5000"></add>
```

Figure 4-62 Settings for Handling the case of Throttling for CSOM call.

5. Save the file.
6. Run the Deployer.

4.7 Split Source Content

In any ECM system, a folder may have a fixed number of maximum data items. This value differs from one ECM system to another ECM system. Therefore, the source ECM system and SharePoint may have the different value for maximum number of items limit in a list. If the source ECM system supports greater number of maximum number of items in a list, then a case may encounter where the number of items in a list crosses the maximum limit in SharePoint. In such case, the exceeded number of items get failed during migration in Tzunami Deployer. To overcome such limitation, the items in the source list should be split.

Tzunami Deployer provides a feature to split the number of items of a source to a user defined value during the loading of source content in Tzunami Deployer Migration Project. If the target lists already have the data items that items should be considered for the item count.

Steps for Spit Content in Deployer migration project considering the items in target lists

1. Create or open the Deployer Migration Project, then load the tdx file in source panel. A tdx file browsing window appears.

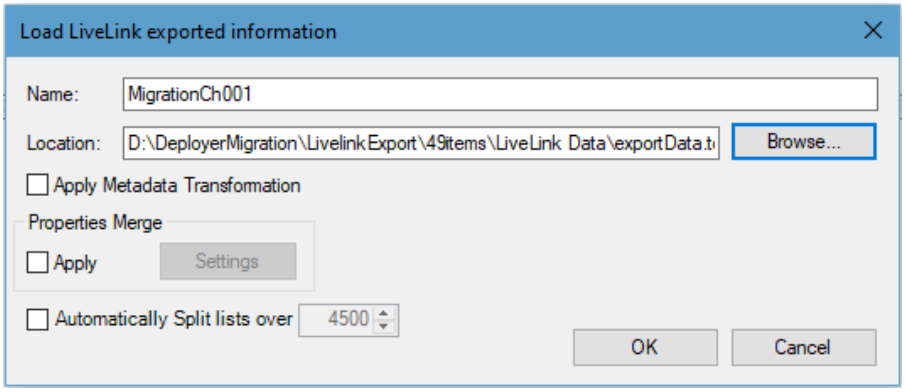


Figure 4-63 TDX File Browsing Window

Enter the name, browse the tdx file.

2. Connect the target site and load the contents.

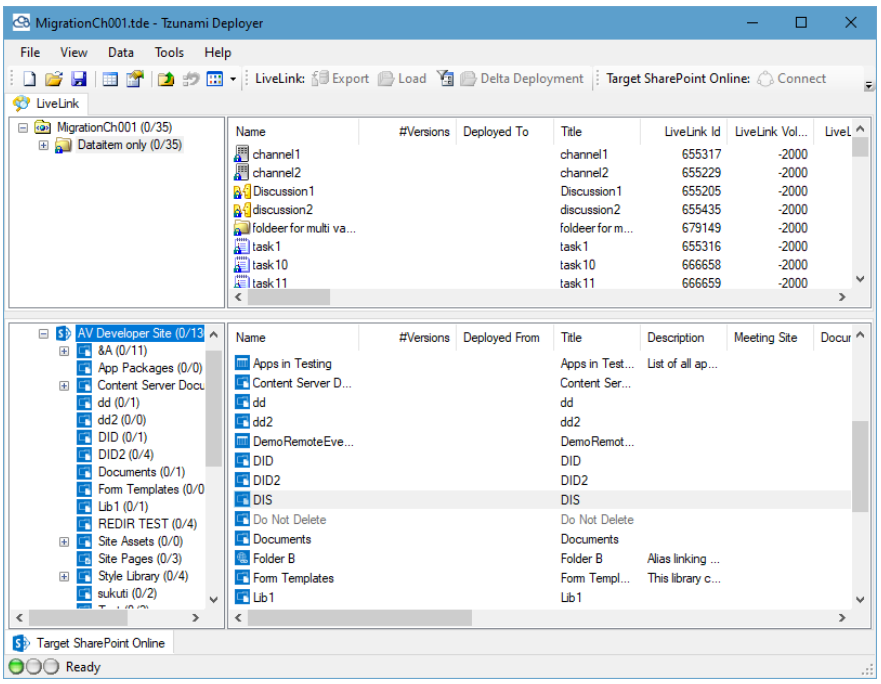


Figure 4-64 Deployer Migration project

3. Select a list in source item in source panel, then click on **List threshold split** option.

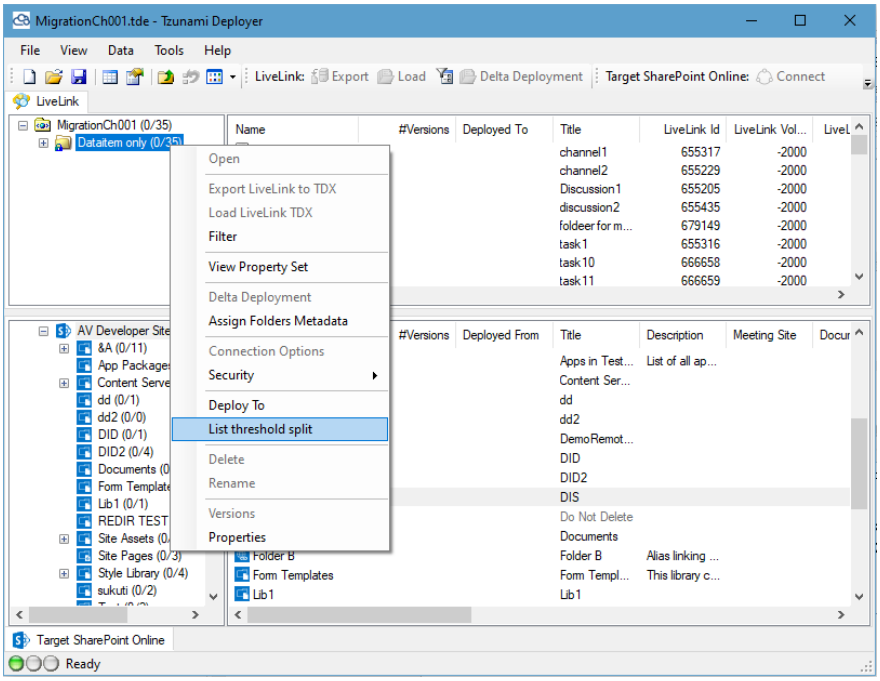


Figure 4-65 List Split Option

4. In target Items window, select the list in which source data to be migrated. Then, click on **OK** button.

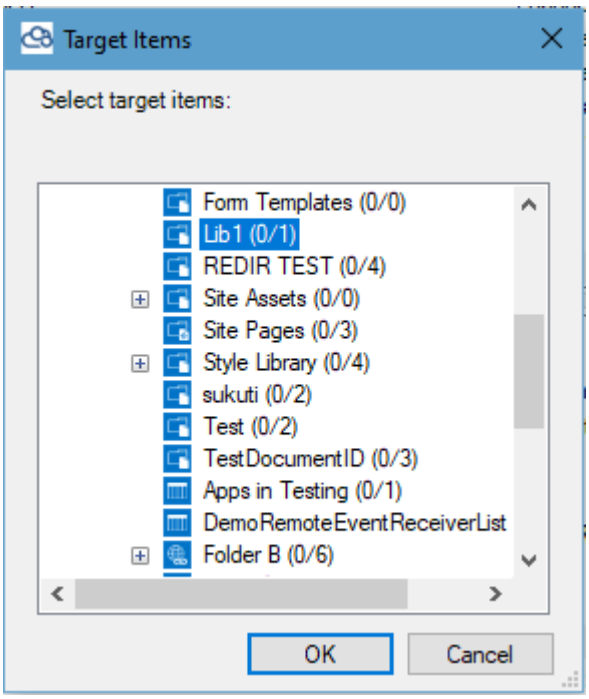


Figure 4-66 Deploy in Target.

5. In the **Split For Target** screen, number of items deployed from source is displayed in Source section. Number of items in target list is displayed in Target section.

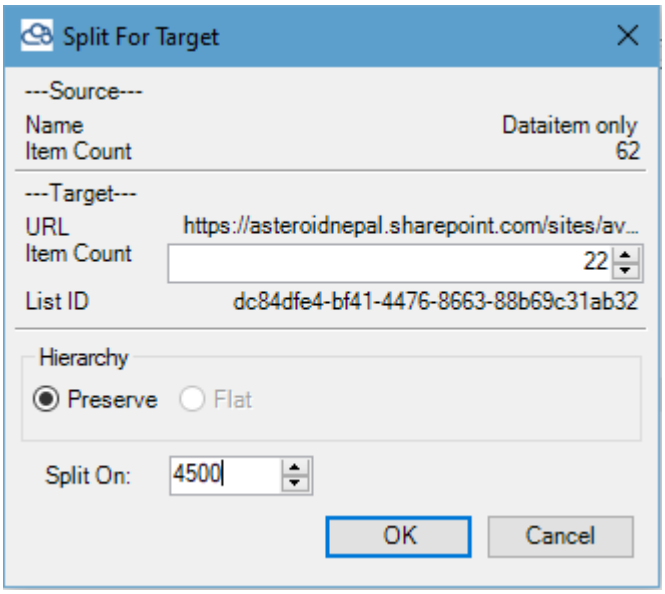


Figure 4-67 Items counts in Source and Target lists

6. Select appropriate value to split the content. Consider the value appeared in Target section while specifying the value. Sum of Split on and Target Item count should not exceed the SharePoint list threshold value. Then, click on **OK** button.

7. In the Reload Project confirmation window, click on **Yes** button.

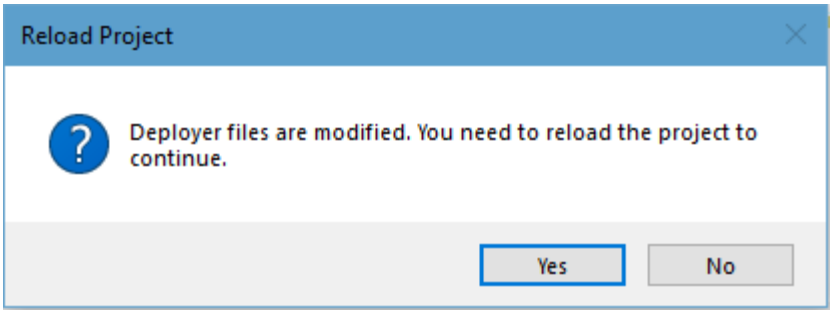


Figure 4-68 Confirmation screen for split content.

8. The Deployer migration project is reloaded. The source panel displays the divided content in the source panel.

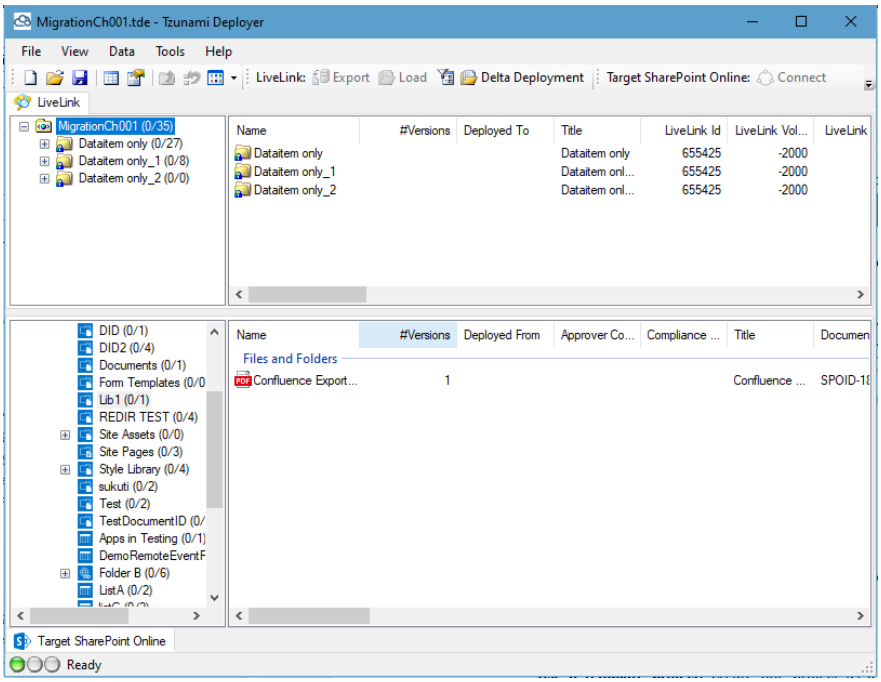


Figure 4-69 Split content screen

4.8 GLOBAL ACL MAPPING

Tzunami Deployer provides a feature to map the source Users, Groups and Roles mapping in Deployer Migration project. This mapping should be performed before starting the deployment process. Once mapping for source's Users, Groups and Roles and save in global mapping location, the ACL will be automatically mapped in deployment process.

This feature is only supported for Target SharePoint Online, OneDrive and Teams. It is disabled for the target SharePoint On premise.

Steps for Global ACL Mapping in Deployer migration project

1. In Deployer Options, make sure Global **Use Global Mapping** option under **Mapping** is configured.

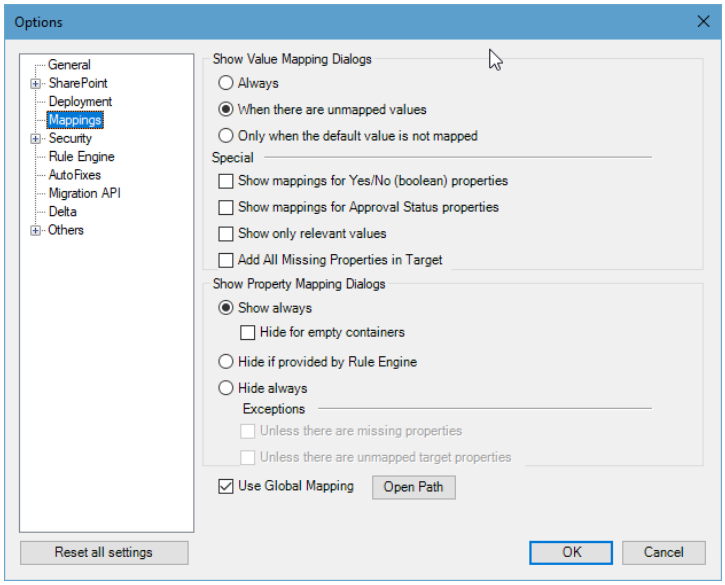


Figure 4-70 Option Mapping: Use Global Mapping option

2. In tool bar of Deployer Migration project, click on **Global ACL** or right click on source pane, then click on **Export ACL** option.

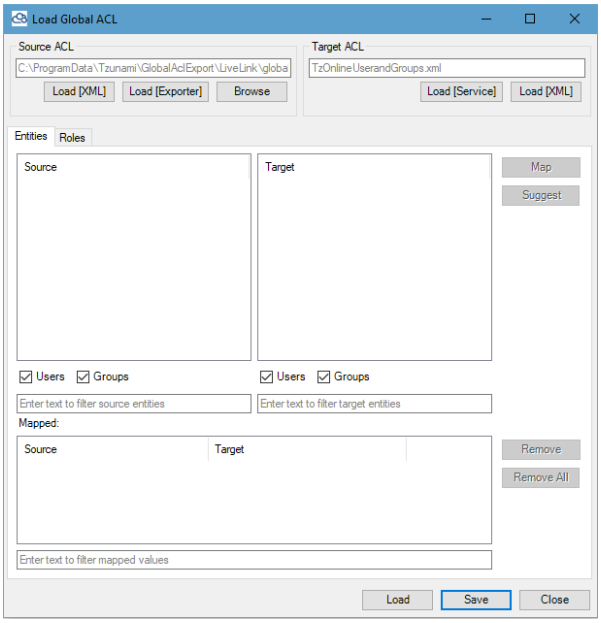


Figure 4-71 Global ACL: Load Global ACL screen

3. In Load Global ACL window, click on **Load [Exporter]** button.
   The Tzunami Exporter application opens. Proceed the application by clicking on **Next** button with valid credential until tree view of source items appears in screen with **Export Global ACL** option is displayed.

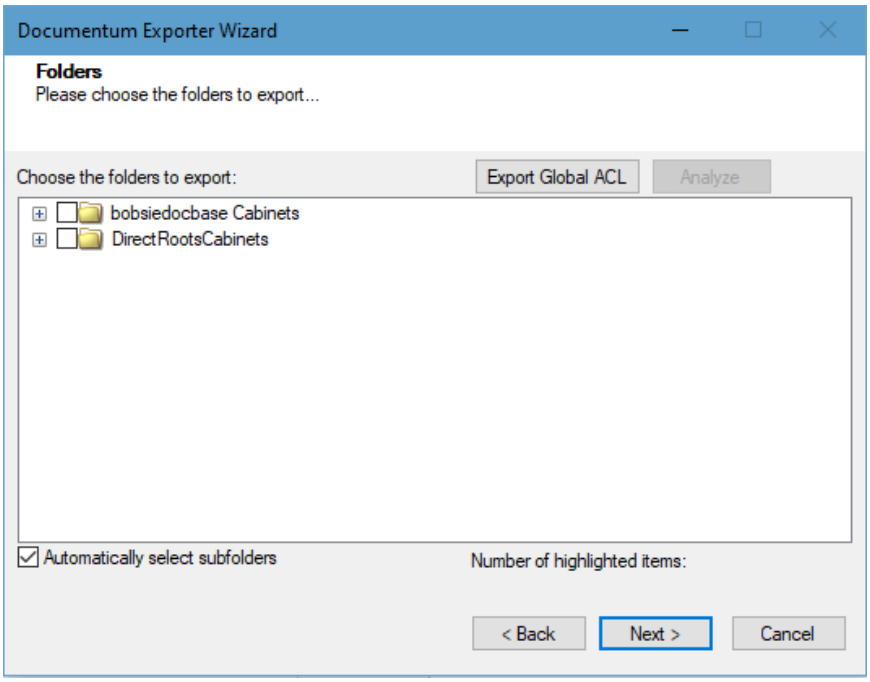


Figure 4-72 Global ACL: Export Global ACL screen in Exporter

4. Click on **Export Global ACL**.

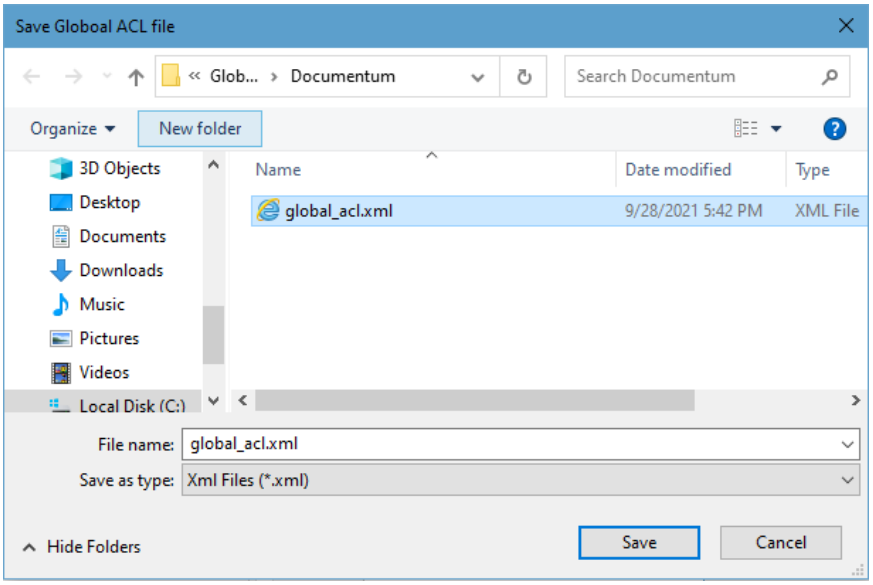


Figure 4-73 Global ACL: Global_ACL of Source ECM

The Users, Groups and Roles from source ECM is exported to a file and saved in a folder. Save the file in default location.

5. A confirmation window appears for exported source ACL in file. Click on **OK** button.

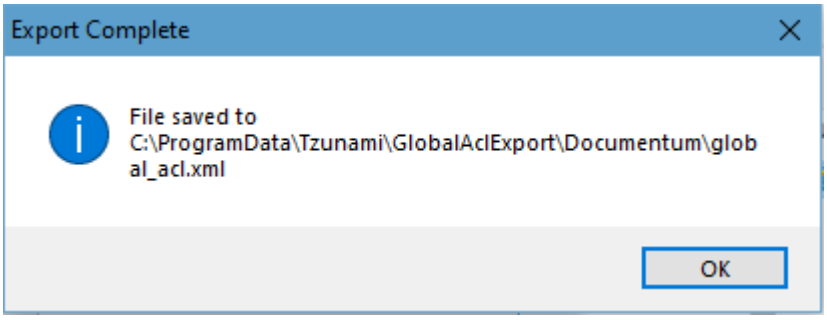


Figure 4-74 Global ACL: Source ECM Global ACL file.

6. Now, cancel the Tzunami Exporter screen by clicking on **Cancel** button as we have exported global ACL information and do not want to proceed to export the data at this point. Proceed the cancel process as guided through the wizard.

7. Click on **Load [XML]** button in the Load Global ACL window. The Users, Groups and Roles are loaded.

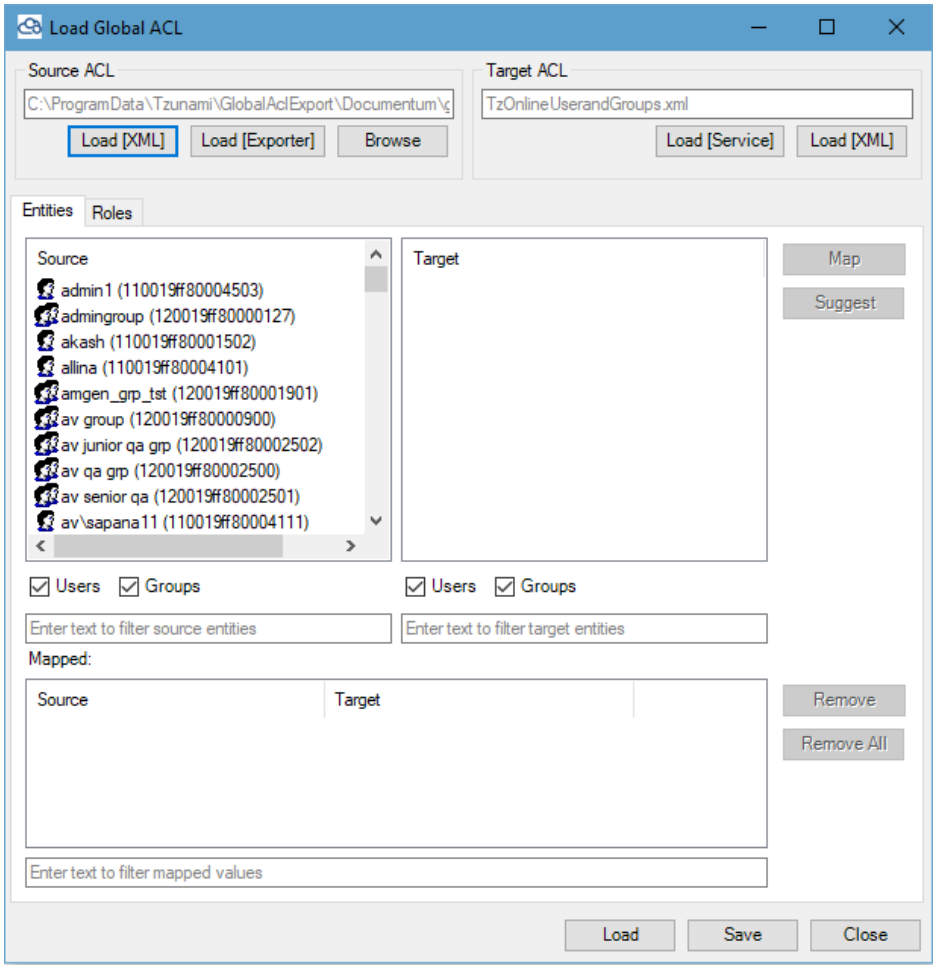


Figure 4-75 Global ACL: loading source ACL

8. In Target ACL, enter the target SharePoint site collection URL. To load the target Users, Group and Roles, clicking on **Load [Service]** or **Load [XML]** in target ACL using Tzunami O365 AD Service or **Rest API** configured for **API Settings** under **Security>Active Directory** in Deployer options.

—

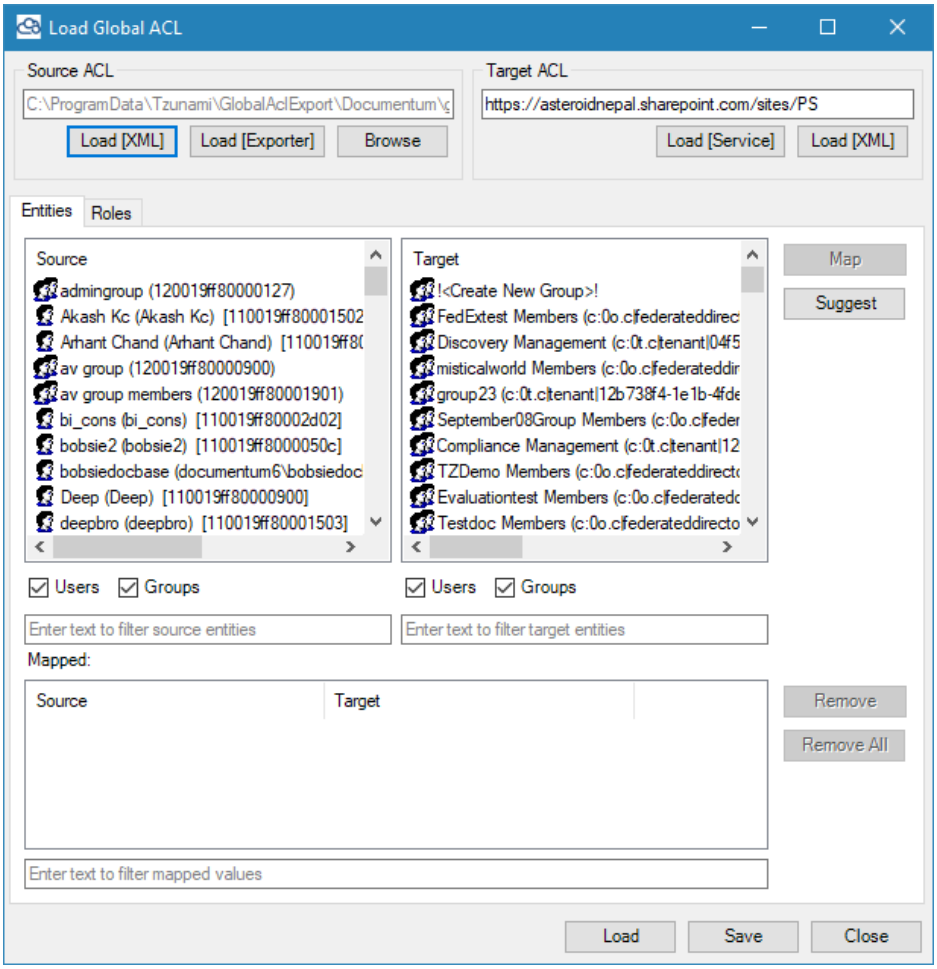


Figure 4-76 Global ACL: loading target ACL

The **Entities** tab displays the Users and Groups whereas the **Roles** tab shows the roles of source and target in respective left and right panels. The **Users** and **Groups** check boxes are available to filter the users and groups in the list and search boxes are available to filter the users, groups and roles by typing the name. Also, the **Load** button on the button will load the already mapped users, groups and roles in mapping panel if exists.

9. In **Entities** and **Roles** tabs, select the user, group or role from source and target as required and click on **Map** button in right side of the panel. All users, groups and roles mapped are displayed in mapping panel in respective panel. The mapped users, groups and roles can be selected and removed one by one if required by clicking **Remove** button on or can be removed all by clicking on **Remove All** button at once.

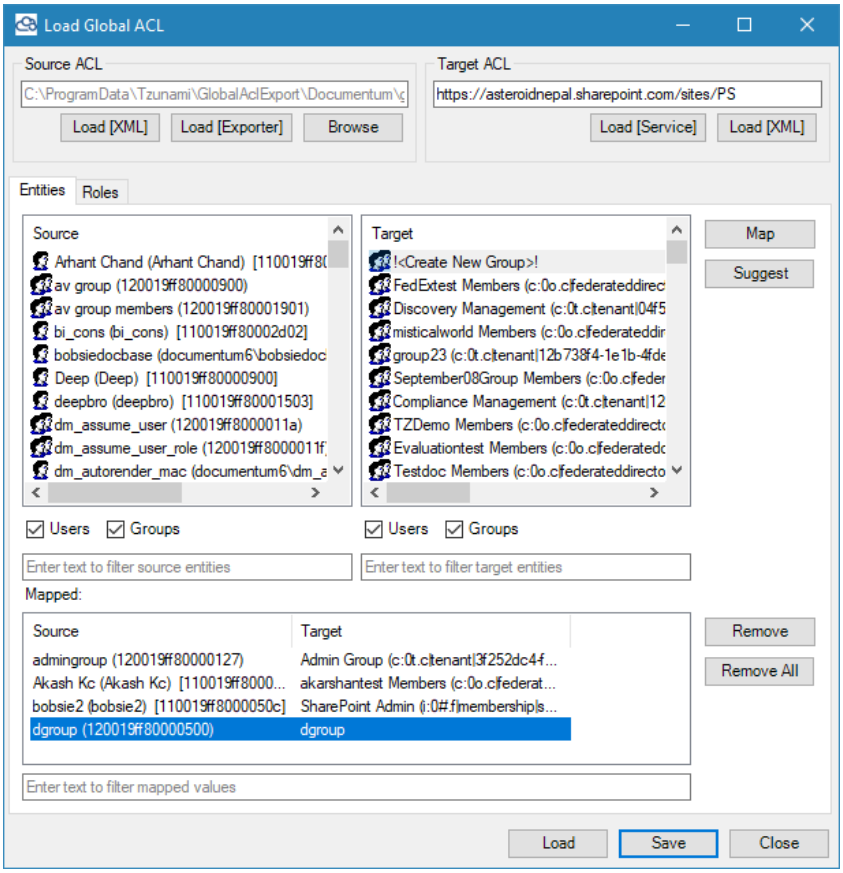


Figure 4-77 Global ACL: Mapped Users, Groups and Roles

User can map source group to **Create New Group**. Mapping to create new group will create the same group name in target SharePoint site. Mapping multiple source groups to single create new group will create a single group having first mapped group name in the target SharePoint site.

10. After mapping all users, groups and roles as required, click on **Save** button. The confirmation window shows the mapping files created and saved location. Click on **Yes** button.

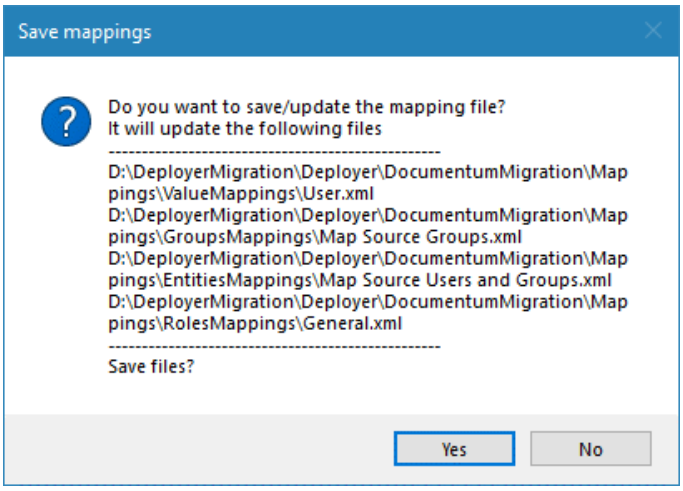


Figure 4-78 Global ACL: Confirmation for saving global acl mapping

In case of source group mapped with **Create New Group**, new group with same name as source group is created in target SharePoint immediately while saving. User can click on **Yes** button to create new group to load the newly create group in target ACL panel of **Load Global ACL** window so that user can map another source group to the newly created group in target SharePoint.

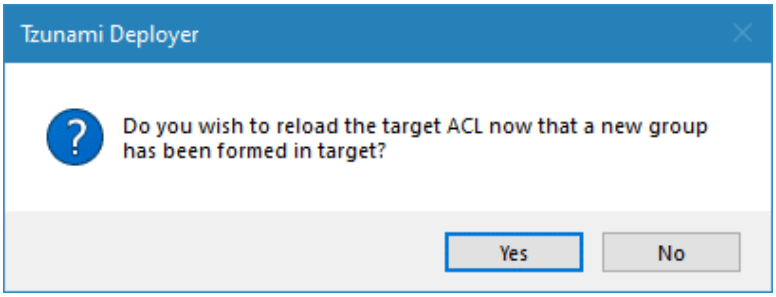


Figure 4-79 Reload newly created group confirmation

When new group is created, user needs to load/reload the target SharePoint in Deployer project to reflect the changes.

11. In the confirmation window for saved files, click on **OK** button.

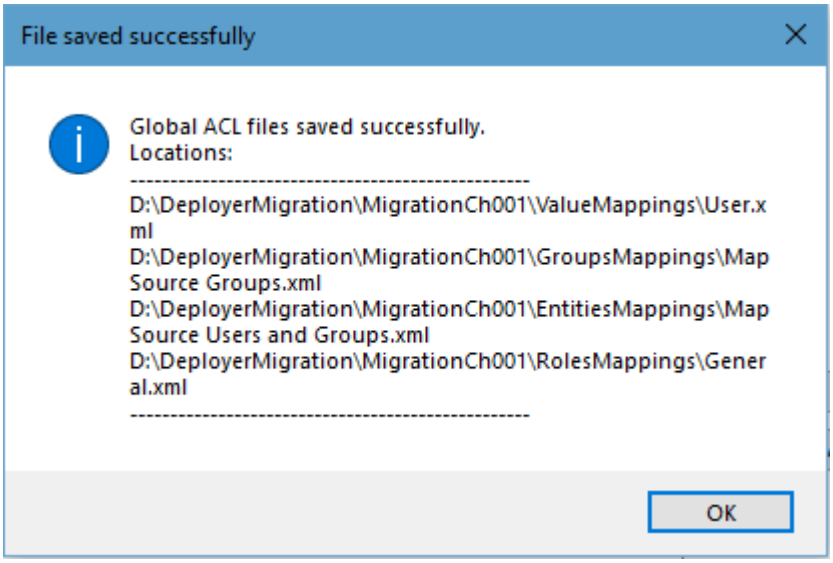


Figure 4-80 Global ACL: Confirmation for saved global ACL

12. Click on **Close** button. Then, in every Deployer migration project, make sure that **Use Global Mapping** option is used and location for mapping files are pointing correctly. The mapping wizards for Users, Groups and Roles will automatically references the required files and shows the mapped data accordingly in respective wizard screens.

4.9 BEST PRACTICE

- **Use a template project**: Create one project as a template, preferably with the SharePoint target loaded. Clone this project (using the Save As option) multiple times – in accordance to the data exported in the export phase.
- **Be organized**: Verify that your project files are saved under a well-organized file system hierarchy.
- **Prepare a project for Deploying**:
  - Open one of the projects you have created.
  - Load the source data into that project. Load the structure and then reload desired content within it.
  - Reload the target destination site/sub-site/list which may not be fully loaded (if you loaded it only partially). If there are many documents in a target list, for example, it may be unnecessary to load all the existing documents when reloading that list. However, choosing not to load this could prevent Tzunami Deployer from identifying duplicate file names.
  - Document versions for target need not be loaded.
  - Work on multiple projects in parallel. You can run 3 instances of Deployer on one front end server (assuming 4GB RAM, 2 GHz Xeon processor server configuration). However it is recommended that the instances be increased or decreased based on server load.

5 MODELING TARGET SHAREPOINT

This chapter explains how to model target SharePoint and deploy the source content. This chapter contains the following topics:

- ***Modeling Target SharePoint***

5.1 MODELING TARGET SHAREPOINT

Tzunami Deployer enables you to model your target SharePoint, into which the source content will eventually be migrated. You can model:

- **Structure** – Create or modify site collection, sites, portal areas (SPS2003 only), libraries, lists and folders.
- **Metadata** – Design the property sets and properties that comprise the columns of the target SharePoint lists.
- **Security and Permissions** – Create or modify groups and permissions levels, add users and assign permissions. If you are satisfied with your existing target SharePoint structure and do not wish to make any modifications to it, you can skip this section and proceed to the deploying step.

After loading a target SharePoint, you can model your target SharePoint.

Modeling a SharePoint target does not actually modify your server. All changes are made in your Tzunami Deployer project and are only applied to the target SharePoint when you migrate them.

5.1.1 Modeling SharePoint Structure

Tzunami Deployer enables you to use its simple and intuitive interface to create, delete, or modify items in the target SharePoint structure. SharePoint 2007/2010/2013/2016/2019 or SharePoint Online supports creating folders under lists. SharePoint 2003 only supports creating folders under libraries. Tzunami Deployer also enables you to edit the properties of existing SharePoint items. You can right-click the following items and select an action from the context sensitive menu:

- Sites
- Portal Areas
- Lists
- Folders
- Items

You can also rename an item by selecting it and pressing F2. SharePoint imposes some character and length limitations on item names. Tzunami Deployer may rename folders or documents by replacing invalid characters with an underscore (_).

These procedures are similar to the procedures used in the native SharePoint environment. Any SharePoint item can be deleted, except for virtual servers and some built-in lists.

The icons of newly created items in Tzunami Deployer are displayed with a star ( ) overlay. Similarly, the icons of modified items in Tzunami Deployer are displayed with a pencil ( ) overlay. The overlays signify that the particular item exists or is modified in the Tzunami Deployer project only, and not in SharePoint. **For example**:

– Existing unmodified document library.

– Existing modified document library.

– New document library.

The overlays are removed after the changes are migrated.

5.1.1.1 Creating a New Site

Tzunami Deployer allows you to create new sites on the target SharePoint Structure. New site can be added as a site collection, if created under the virtual server or a web application, or as a sub-site, if created under another site, from the templates (like Blogs, My Sites, Team Sites, Meeting Workspaces etc.) and according to the location you selected in the target SharePoint.

To create a SharePoint site in Tzunami Deployer:

1. Right-click the location in the target SharePoint in which to create the new site and select **New > Site**. The New WSS Site window appears.

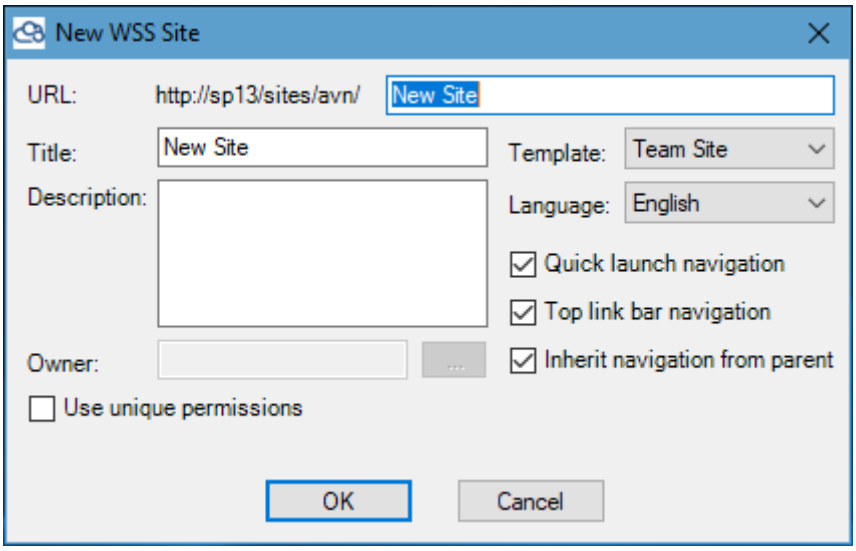


Figure 5-1: New WSS Site Window

When you create a site collection, the Owner field is enabled (since only site collection have owners) and the Use unique permissions checkbox is disabled (since site collection always have unique permissions – they cannot inherit permissions from their parent, for they do not have a parent). When you create a sub-site, the opposite is true.

2. Enter **information** describing the URL. A SharePoint site URL is comprised of the following:
    - **Server address** – The server URL, such as ***http://moss.tzunami.net***. This value can also be an IP address.
    - **Managed path** – Typically sites/ or personal/. Additional managed paths can be configured in SharePoint.
    - **Hierarchy of site group and parent sites** – Relevant for sub sites only.
    - **Site name** – For a site collection, enter a site name and select the managed path from the drop-down list. For any other site, enter the site name.
3. Enter a **Title** and **Description** to be used for the new SharePoint site.
4. Select the Site Template to be used. When you select a template, a short description is displayed below it.

For a site collection, enter the owner account.

For sub sites, select whether the site should use unique permissions. If you do not select Use unique permissions, the site inherits the permissions of its parent site.

5. Click **OK**.

   The new SharePoint site is added to the target SharePoint tree. The configuration of the new site is determined by the SharePoint site template you selected.

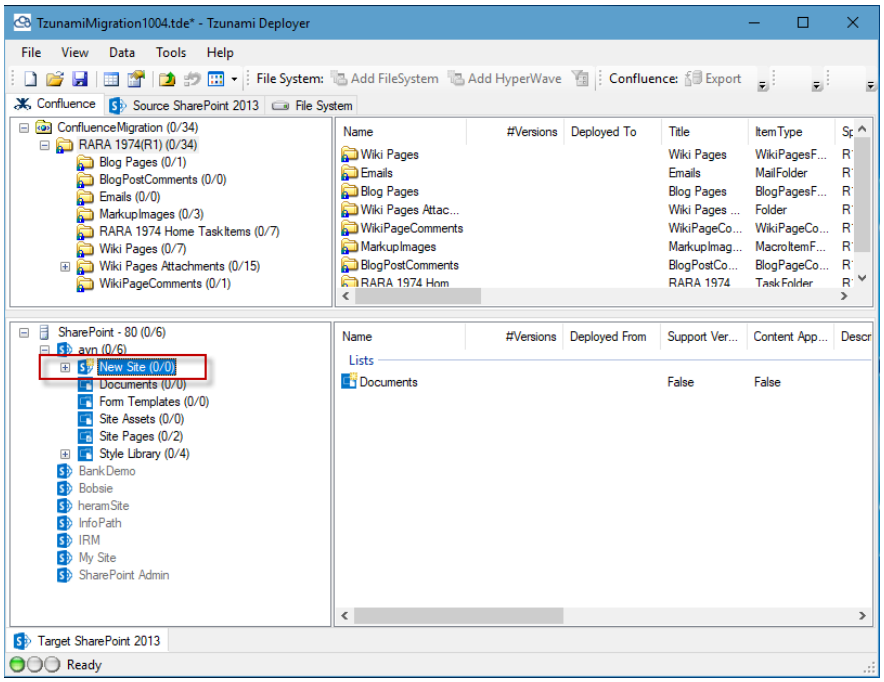


Figure 5-2: Tzunami Deployer Project Window – Target SharePoint Site

5.1.1.1.1 *Creating a New List in a SharePoint Site*

Tzunami Deployer allows you to create new lists on the target SharePoint Structure. New list can be created in a site or portal area from the templates in the target SharePoint.

To create a new list in a SharePoint site:

1. Right-click a site or portal area and select **New** > **List**. The New SharePoint List window appears.

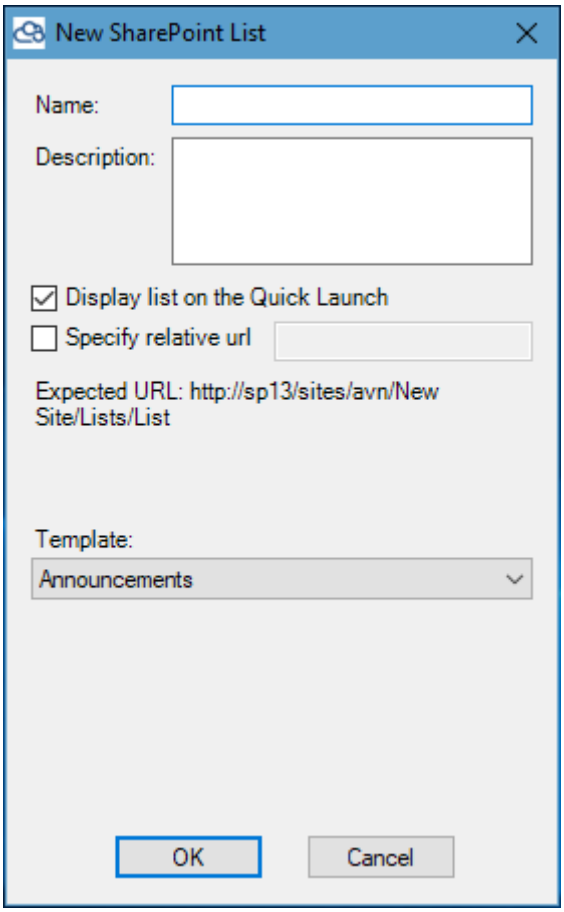


Figure 5-3: New WSS List Window

2. From the Template drop-down list, select the list template you want to use (**For e.g.** Document Library).
3. Enter a name and description for the new library and click **OK**.
   The new library is created.

You can select **Display list on the Quick Launch** for quick launch display. You can also select Specify relative URL, and specify the URL of the list. This is not a SharePoint option.

5.1.1.1.2 *Editing Properties of SharePoint Item*

Different types of items have different properties and settings that can be edited, as follows:

- Sites that are created in Tzunami Deployer and have not yet been migrated to the target SharePoint can be edited using the Edit Site option. Properties of all sites can be viewed using the Properties window. The URL, language, and template of the site cannot be edited.
- Lists, folders, files, and list items can be edited using the Properties window.

The Properties window can remain open while you work in the Project window. It reflects the properties of the currently selected item.

Several items can be simultaneously edited using the Properties window.

You can edit the properties of new sites till they are migrated to the target SharePoint. However, you cannot edit the properties of sites that already exist in SharePoint. Such existing sites can only be viewed in the Properties window.

To edit properties of a new site:

1. Right-click a new site in the target SharePoint tree and select **Edit Site**. The New WSS Site window appears (**Figure 5-1**) with the non-editable fields disabled.
2. Modify all the enabled properties and click **OK**.

   The site's properties are edited.

5.1.1.1.3 *Find and Replace Folder or File Names*

The Find and Replace window is used to make naming corrections to files and folders within Document Libraries.

To correct file and folder names within Document Libraries:

1. Right-click on the target SharePoint tree and select **Find & Replace**.

The Find and Replace window is displayed.

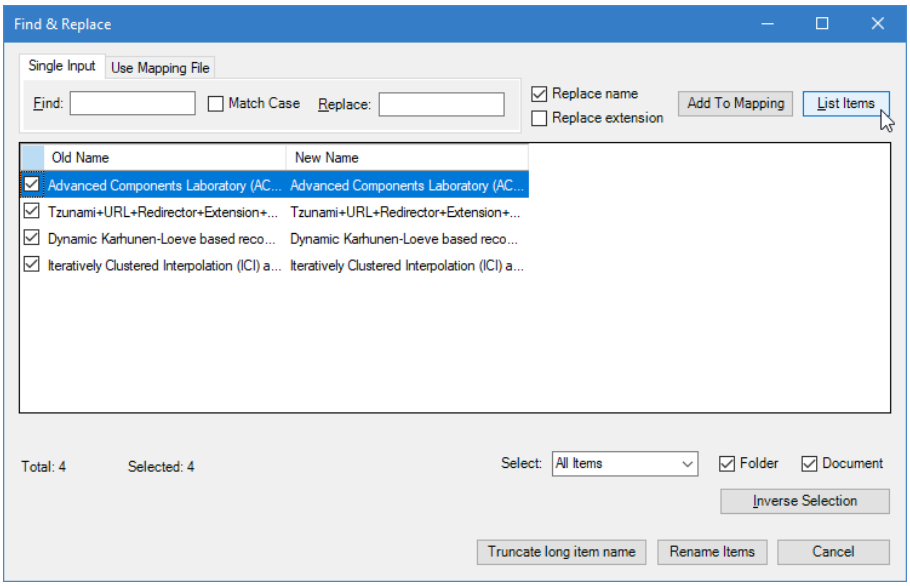


Figure 5-4 Find and Replace window for 'Single Input' option.

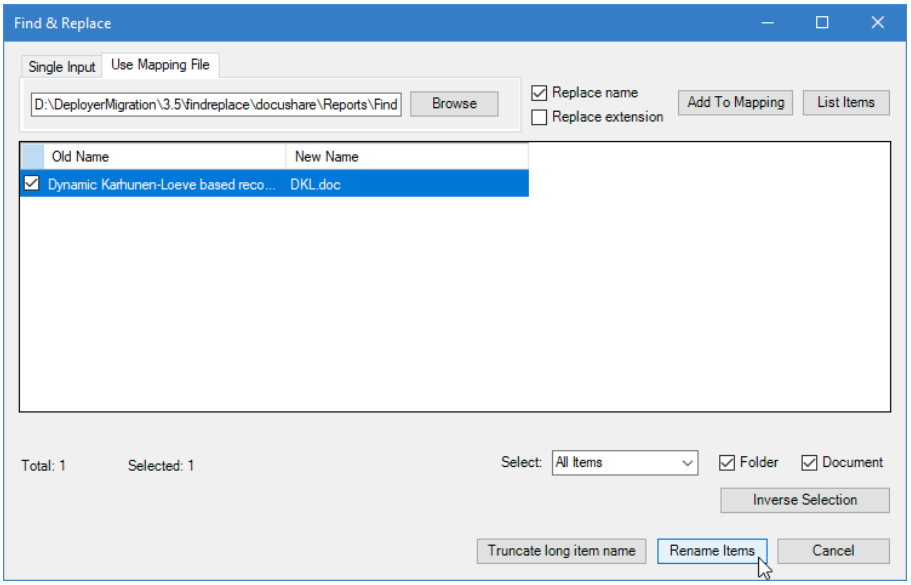


Figure 5-5: Find and Replace Window for Use Mapping File option.

2. Click on **Single Input** tab.

   OR

   Click on **Use Mapping File** tab. Click on **Browse** button. Locate the **FindAndReplaceSample.xml** file. The **FindAndReplaceSample.xml** file has to be configured before browsing it. This file provides the options to configure the text to be found and replaced with. Also, there are options to apply find and replace for Folders or Files or both separately along with using RegEx pattern and match-case or not.

```
<FindReplaceList>
  <!--FindReplace Nodes that are outside Folder and Document Node will be applied
  for both folders and documents-->
  <FindReplace RegEx="true" MatchCase="false">
    <Find>\s+</Find>
    <!-- Replace multiple space with single space -->
    <Replace></Replace>
  </FindReplace>
  <!--FindReplace Nodes inside Document node will be applied to Documents only-->
  <Document>
    <FindReplace RegEx="false" MatchCase="true">
      <Find>customers</Find>
      <Replace>User</Replace>
    </FindReplace>
  </Document>
  <!--FindReplace Nodes inside Folder node will be applied to Folder only-->
  <Folder>
    <FindReplace RegEx="false" MatchCase="false">
      <Find>customers</Find>
      <Replace>Deployer User Guide</Replace>
    </FindReplace>
  </Folder>
</FindReplaceList>
```

Figure 5-6: Configuration of FindAndReplaceSample.xml file

   Then, proceed to step no 6.

3. Enter text in **Find** field.

4. Select the **Match Case** checkbox for case-sensitive searches.

5. Type the replacing text in the **Replace** field.

6. Click **List Items**.

   A list of folders and files containing the text you entered in the **Find** field, along with their expected name, appears.

7. Select the files or folders you want to change by selecting their corresponding checkboxes.

   Select **All Items** under **Select** dropdown, to list all items, based on search criteria.

   OR

   Select **Problematic Items** under **Select** dropdown, to list problematic items only, based on search criteria

   AND/OR

   Check **Folder** checkbox, to list all folders only, based on search criteria.

AND/OR

Check **Document** checkbox, to list files only, based on search criteria.

8. Click **Truncate long item name**.

   Long file names and folder names will get truncated to the **Maximum filename length** set in the Deployer Options Auto Fixes settings. Click **Rename Items**.

   The names are renamed.

If Automatic truncation option is enabled in Tools>Options…>AutoFixes, a confirmation message will be displayed. User can confirm to discard automatic truncation by clicking on **No** button or to apply automatic truncation as well (if applicable) by clicking on **Yes** button**.**

9. Select **Replace name** checkbox to replace folder/file names.
10. Select **Replace extension** checkbox to replace file extensions.
11. Click on Close icon ☒ to close the window.

You can leave the **Replace** field empty to remove the searched value from all names. If all characters in name are replaced with empty value, Deployer will keep "_" in name by default.

The Select Problematic Items is very useful if you have just deployed content but have yet to migrate it, and would like to prevent illegal naming, blocked extensions, and long URLs in SharePoint. For example, replacing "Business Intelligence" with "BI" is a good solution for handling long URLs.

5.1.1.1.4 Generate mapping file for find and replace for migration project.

Steps to auto generate Find_Replace.xml file in Project Location:

1. Right click on the target library., then click on to Find and Replace the items which are exceeding the SharePoint limitations.

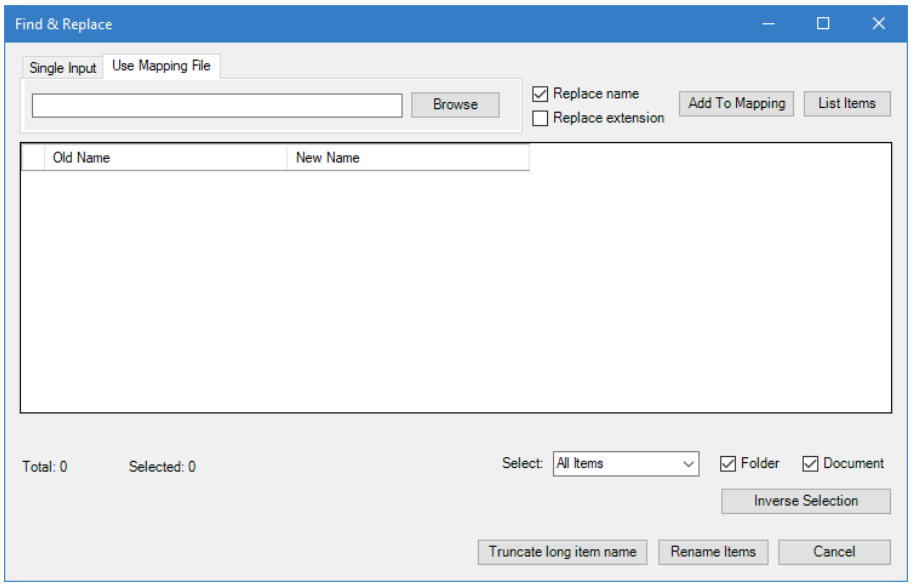


Figure 5-7 Find and Replace Window

Find and Replace window opens with **Single Input** and **Use Mapping File** tabs.

2. In the **Single** Input tab,
   Enter the characters that you want to replace in the **Find** field for the problematic items, then enter the characters that you want to replace with. Then click on button **Add to Mapping** button.

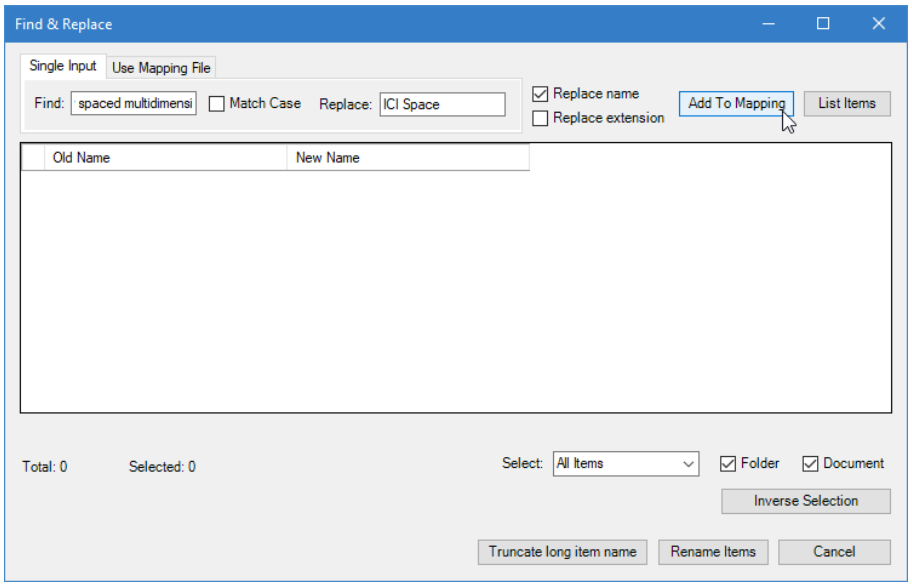


Figure 5-8 Create Find and Replace file in project location.

In the confirmation window, click on **OK** button.

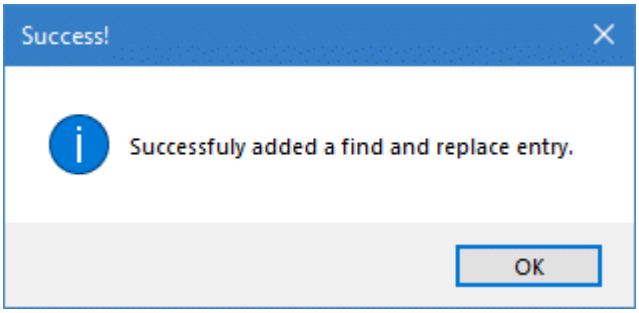


Figure 5-9 Added Find and Replace entry.

A **Find_Replace.xml** is created and the entry is updated in the **Reports** folder in the project location.

3. Find_Replace.xml file looks as below:

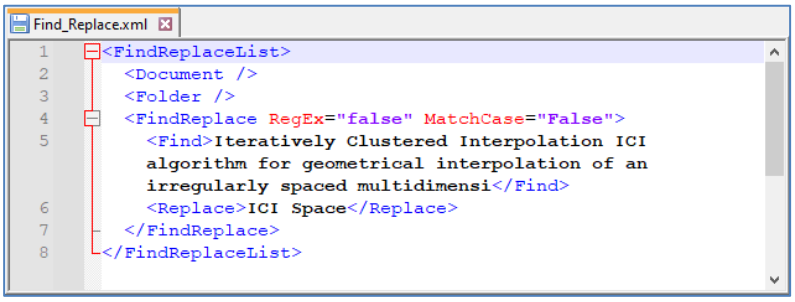


Figure 5-10 Find and Replace file.

4. Repeat step 2 as necessary for other entries that you want to create.
5. Once the entries are updated the in **Find_Replace.xml** file, browse it file from the **Reports** folder in project location as shown in below screenshot. You can re-use the xml file if there is issue in initial migration and must re-migrate same set of data.

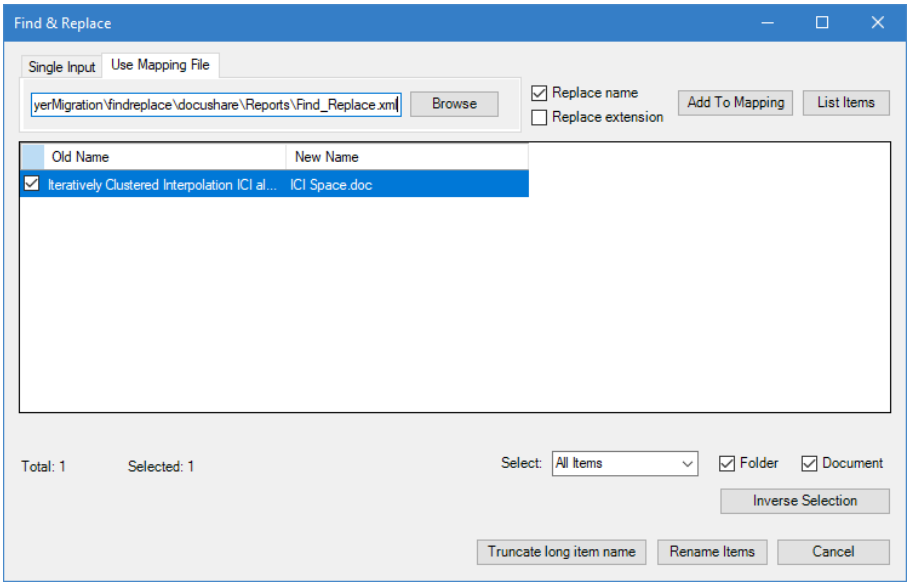


Figure 5-11 Import Find and Replace xml file.

6. Click on **List Items** button to list the problematic items and **Rename Items** button to replace in the selection items.

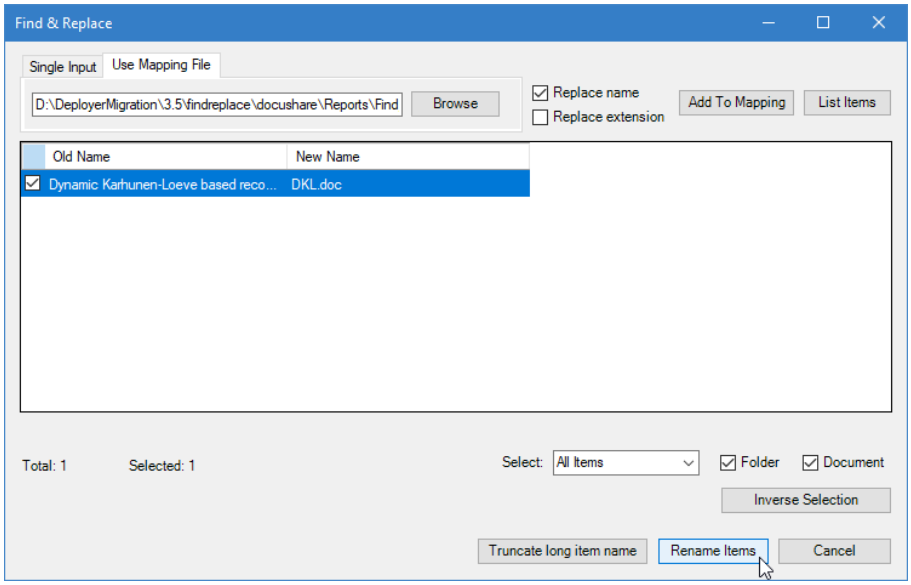


Figure 5-12 Replace the problematic items.

You must click on **Add to Mapping** button before renaming the items to map the renamed items in **Find_Replace.xml** file on each Find and Replace action.

5.1.1.2 Find and View Items

5.1.1.2.1 Viewing Item Properties

You can view the metadata properties or other attributes of various objects in Tzunami Deployer. The Properties window displays the properties of the currently selected item. If more than one item is selected, a property whose value is not the same for all items appears empty. Editing such a property affects all the selected items. Read-only properties are grayed out in the Properties window. The Properties window can remain open while you work in the Project window.

To view an object's properties:

- Right-click an item and select **Properties**.

  Or

  Click .

  Or

  Press **F4**.

  The Properties window appears.

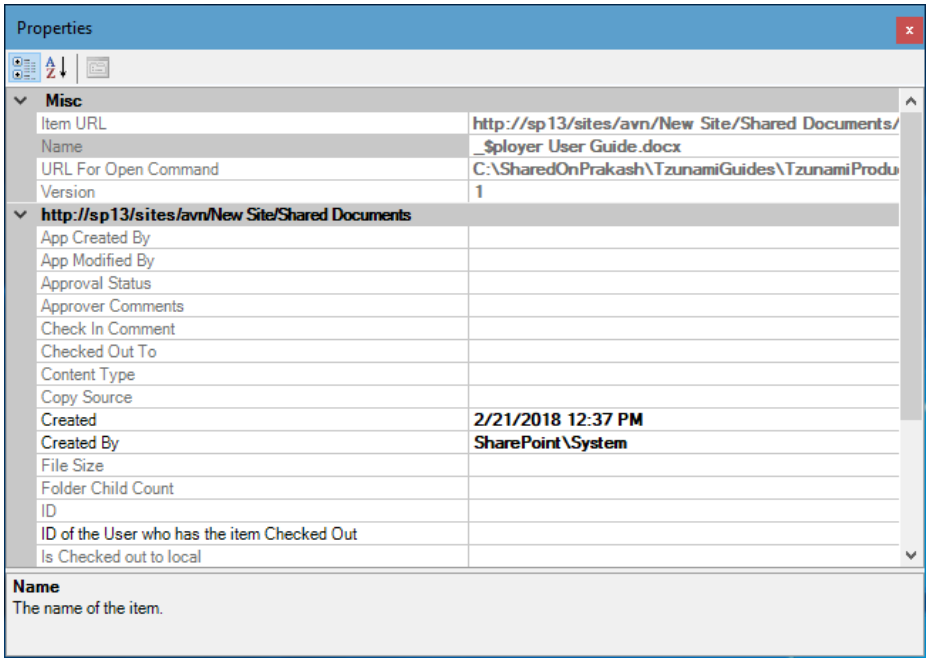


Figure 5-13: Properties Window

Only items that appear in **Bold** can be edited.

You can modify user or multi user type properties (**For e.g.** Created By, Modified By)

To modify user type properties from Select People window.

1. Select the user type property and click button in Properties window. The **Select People** window will appear.
2. Click Search and select users that you want to add and then click Add->.
3. Click OK.

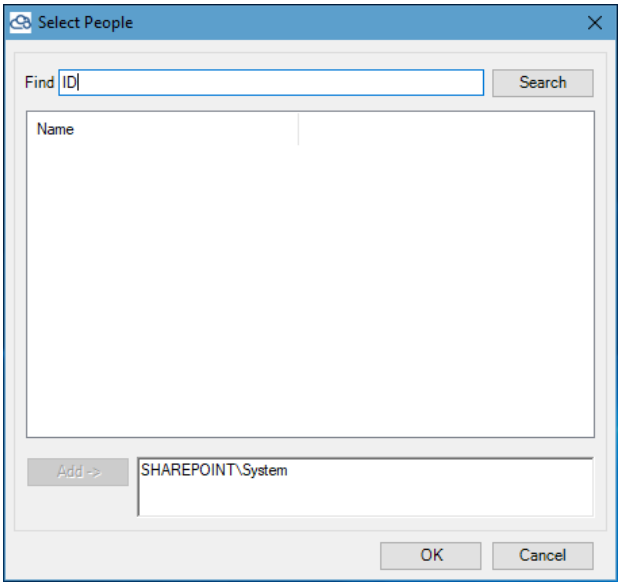


Figure 5-14: Select People Window

5.1.1.2.2 Finding Item Versions

You can view the versions of various items in Tzunami Deployer. The Versions window displays the properties of each version of the item.

To view an item's versions:

- Right-click an item and select **Versions**.

  The Versions window appears.

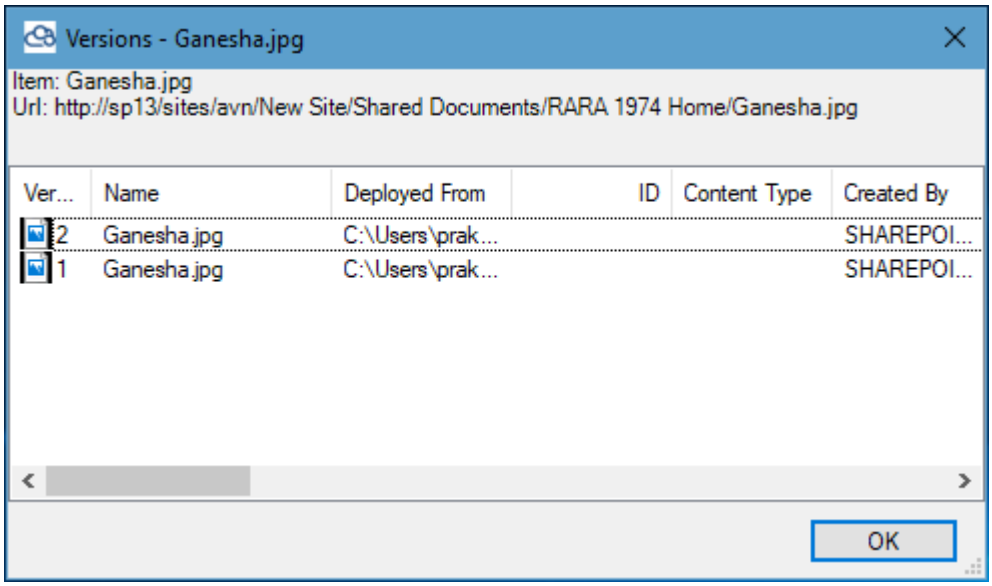


Figure 5-15: Versions Window

5.1.1.2.3 Finding Items

You can find one or more items in a project. The Find window enables you to find items based on different criteria and properties.

To find items:

- Select **View > Find > Find** or **Find All**.

  The Find window appears.

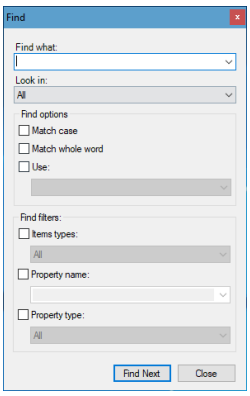


Figure 5-16: Find Window

Table 5-1: Find window Fields

Field	Description
Find what	The text to search
Look in	Select a search scope from this list: • All • Sources Only • Currently Selected Source • Target Only
Find options	
Match case	Only find instances of the Find what texts that are matched both by content and by case. For example, searching for "MyObject" with Match case selected finds "MyObject" and not "myobject" or "MYOBJECT."
Match whole word	Only displays instances of the Find what text that are matched in complete words. For example, searching for "MyObject" returns "MyObject" and not "CMyObject" or "MyObjectC".
Use	Indicates how to interpret special characters entered in the **Find what** text box. The options include: • **Wildcards** – Special characters such as asterisks (*) and question marks (?) represent one or more characters. • **Regular expressions** – Special notations define patterns of text to match.
Find filters	
Items types	Select a results scope from this list: • **All** • **Items only** – Results include only items and documents. • **Containers** – Results include only containers, such as folders, lists, and sites.
Property name	The Find what text is searched only in a specific property.
Property type	Indicates that only properties of a certain type are searched. • All • Boolean • Choice • Currency • Date Time • GUID • Multiple Choice • Number • Text • User

5.1.2 Modeling SharePoint Metadata Service

Documents and data items are associated with metadata properties (also referred to as fields or attributes) such as creation date, author, title, keywords, status, and so on.

In SharePoint, the metadata is managed via lists and libraries. Each list or library has its own property set – the collection of properties that is specific to the container.

The Metadata Editor provides you with a centralized authoring environment in which to define the columns of all lists and libraries in the entire target store. Using the Metadata Editor you can create new property sets, duplicate property sets, create new properties, and copy them from one property set to another.

To view the Metadata Editor:

1. Select **View > Metadata Editor**.

   Or

   Click

   Or

   Press **F9**.

The Metadata Editor window appears. The top half of the window displays the property sets of the selected source system. The bottom half displays the property sets of the target SharePoint store.

The Metadata Editor window displays the property sets on the left and the properties of the currently selected property set on the right.

While the cursor hovers over a property set, a hint appears displaying the number of containers that are using the property set.

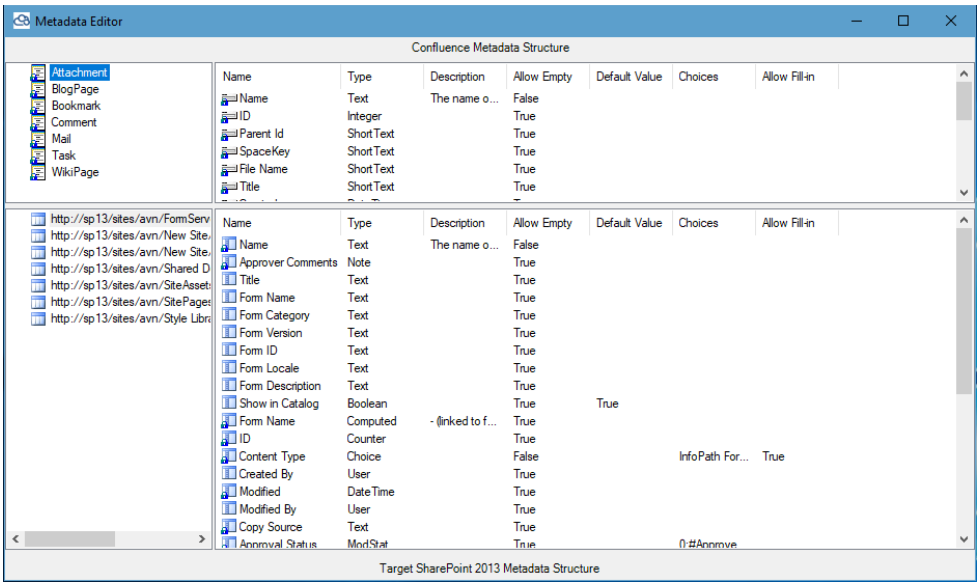


Figure 5-17: Metadata Editor Window

The Metadata Editor only displays one source system's metadata information at a time. As you navigate between the source systems tabs in the Project window, the displayed metadata changes accordingly.

All source metadata is read-only as well as some of the properties in the target. The

icons of these items are displayed with a blue lock ( ) overlay.

2. If you right-click a property set in the left half of the screen and select **Show usage**, the File Property set window appears, displaying the containers that use the selected property set.

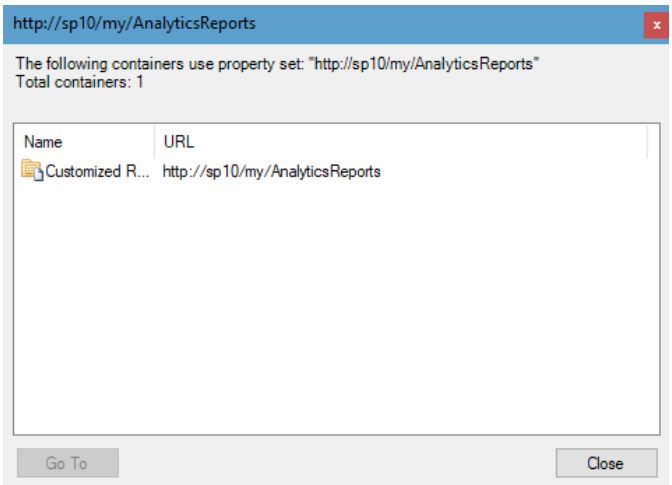


Figure 5-18: File Property Set Window

3. Select an item and click **Go To**. Tzunami Deployer displays the selected item in the Project window.

5.1.2.1 Creating Property Sets

New property sets can be created to define the target SharePoint metadata.

To create a property set:

1. In the Metadata Editor Window (**Figure 5-17**), right-click a property set (or an empty area in the properties list on the right) and select **New > Document Library Property Set** or **New > Picture Library Property Set**.

   A new property set is added in rename mode.

2. Type a logical name for the property set and presses **Enter**.

   You can define new properties for this property set.

In order to create property sets for other types of lists (e.g. Contacts, Tasks, and so on), you can duplicate an existing property set.

5.1.2.2 Creating and Editing Properties

You can create a new property or edit the existing properties for the property set.

To create a property:

1. In the Metadata Editor window (**Figure 5-17**), right-click a property set.
2. Select **New > Property**. The Add Property window appears.

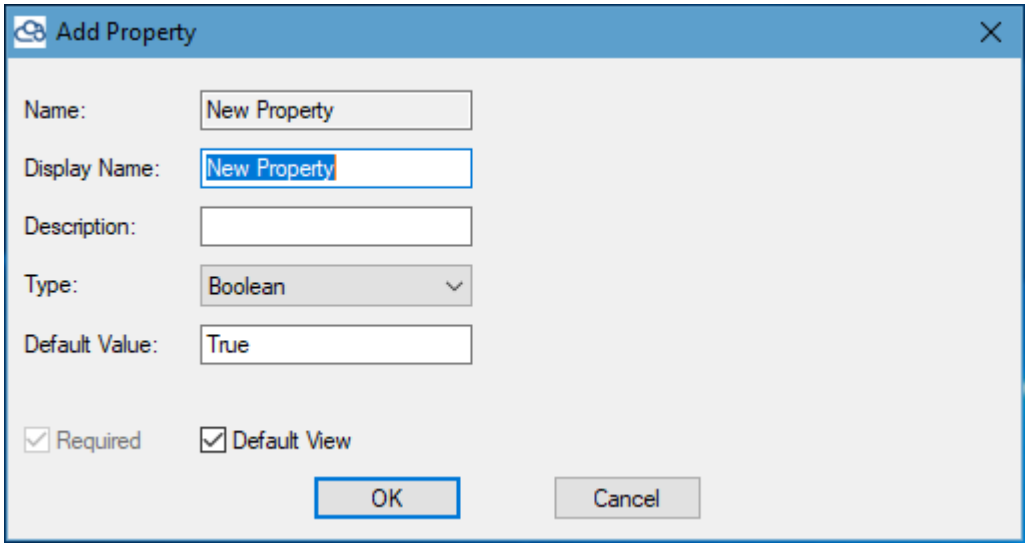


Figure 5-19: Add Property Window

3. Fill in the fields according to the information in the following table and click **OK**.
   The property is added as a new column in the list using this property set.

Table 5-2: Add Property Window Fields

Field/Item	Description
Name	This is an internal technical name that is not shown in SharePoint. This field is read-only.
Display Name	The name that appears in the list and in SharePoint
Description	A textual description of the property
Type	Select a standard data type: • Boolean • Date Time • Hyperlink • Choice • Multiple Choices • User • User Multi • Text • Note • Lookup • Lookup Multi • Number • Currency • Outcome Choices

Field/Item	Description
Default Value	Specify a default value for this property. The default value must be a legal value, based on the type of the property. For e.g., if the property type is set to Date Time, the default value must be a valid date.
Required	Select this check box to specify that a value must be entered for this property.
Choices	Specify the values that appear as choices for this property. You can add a value by entering it in the Choices field and clicking **Add**. This option only applies to properties of type Choice and Multiple Choice.
Allow other choices	Select this check box to specify whether values for this property are limited to the supplied list of choices or whether it is permitted to specify other values for the property. This option only applies to the following property types: Choice and Multiple Choice.
Currency Format	Select the currency to use for this property. The selected currency format must be a legal format on the target SharePoint. This option only applies to the following property type: Currency.

To edit a property:

1. In the Metadata Editor window (**Figure 5-17**), right-click a custom property set.
2. Select **Edit Property**. The Edit Property window appears.

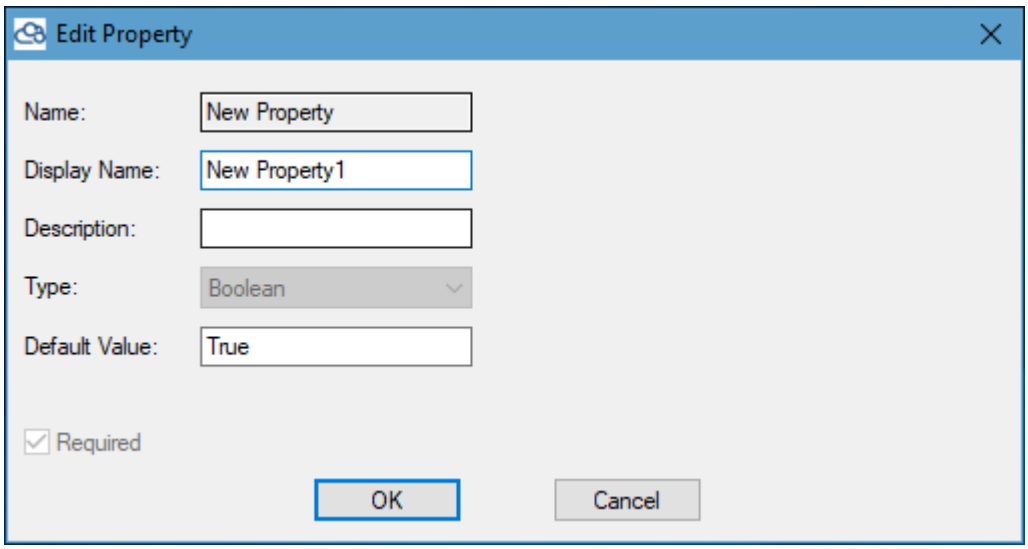


Figure 5-20: Edit Property Window

5.1.2.3 Assigning Property Sets

Property sets have underlying types that must match the list to which you assign them, so that a document library property set can only be assigned to a document library and not to a different library (**For e.g.** an image library) or to a different type of list. A property set cannot be used on more than one list or library. This section is relevant to property sets that are not in use (new or duplicated).

To assign a property set to a list:

1. Drag and drop a property set from the Metadata Editor onto a library or list in the Project window.

   Or

   Right-click the property set and select '**Assign To...**'. The Target Items window appears.

While you drag a property set to a valid location, the cursor changes to a link. If the target location is not valid, either because it is already assigned with the same property set, or because it is of a different type than the property set underlying type, the cursor changes to a 'not allowed' symbol (⃠).

Created property set can be assigned to list or library.

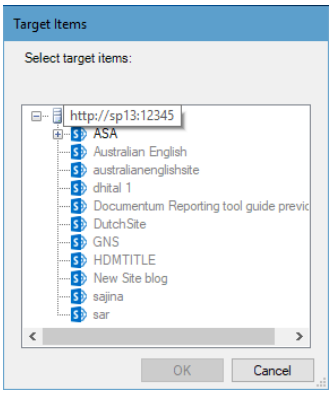


Figure 5-21: Target Item Window

2. Select a target list to which to assign this property set and click **OK**.

   A confirmation window appears indicating which property set will be assigned to which list.

3. Click **Yes**.

   The Assign Property Set window appears, displaying property mapping information.

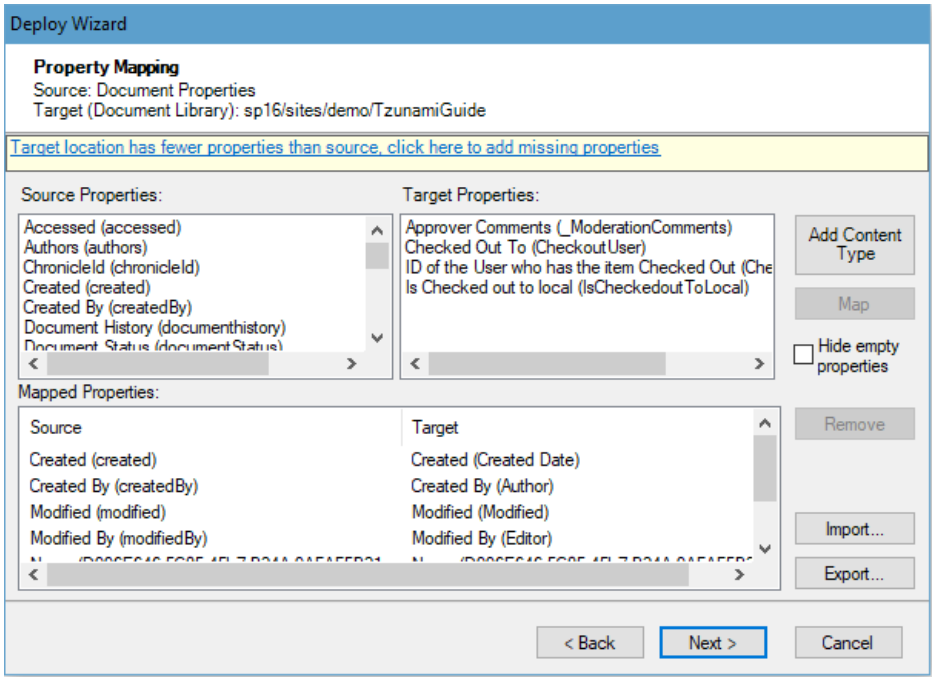


Figure 5-22: Assign Property Set Window – Property Mapping

4. Select a source property (top left) and a corresponding target property set (top right) and click **Map**. Repeat this step for each property you want to map.
5. Click **Next**. The Assign Property Set window displays value mapping information based on the property mapping performed in the previous set.

This step may appear multiple times, based on the property mapping. This step will appear for each Choice / Multi Choice type target property that was mapped and once for all the User type properties. Based on the source values and the general options of Tzunami Deployer, this step may not be displayed.

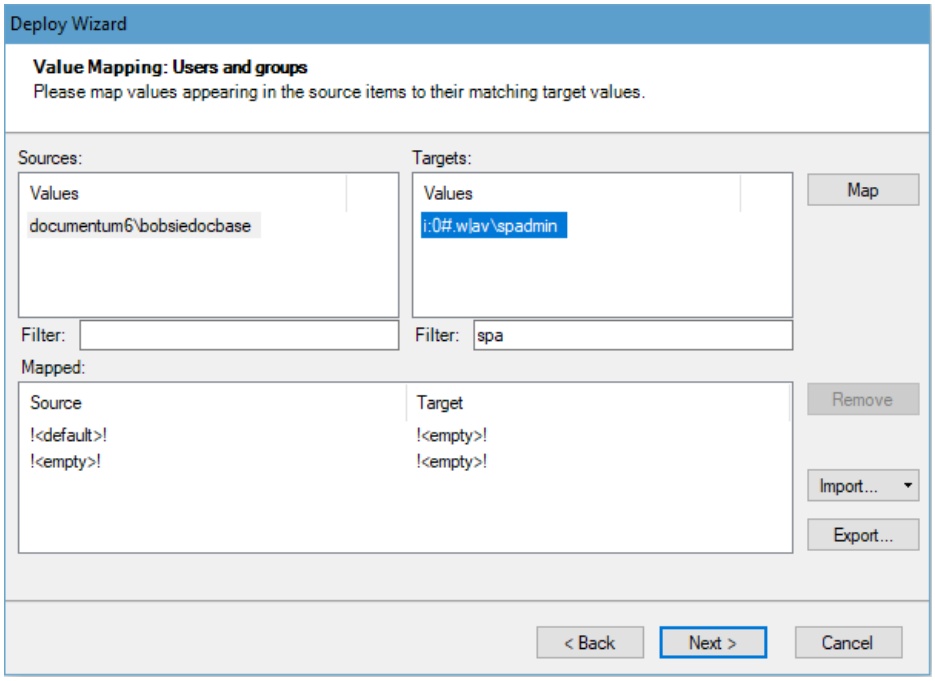


Figure 5-23: Assign Property Set Window – Value Mapping

6. Select a source property value (top left) and a corresponding target value (top right) and click **Map**. Repeat this step for each property value you want to map. Check **Add all unmapped values as legal target property values** for adding unmapped value to target. Similarly Check **Remove unmapped target values** for removing the unmapped target values.
7. Click **Next**.

   The property set is assigned. Since modifying the property set modifies the columns of the target list and pencil overlay appears on the target location icon (for example).

The property set in use by a SharePoint list is displayed in the Properties window. You can navigate directly to the property set by right-clicking the SharePoint item and selecting Edit Property Set.

5.1.3 Modeling SharePoint Security and Permissions

5.1.3.1 SharePoint Web Front End server and SharePoint Online Security

Each site collection in SharePoint Web Frond End server and SharePoint Online has its own list of users and groups. Once you grant certain user permissions on content or sub content of the site collection, the user is added to the site user list. Also, new groups that are created are added as site collection groups.

In SharePoint 2007/2010/2013/2016/2019 and SharePoint Online content can be secured at all hierarchy levels: site, list, library, folder, or item. Each user is granted permission for the specific content, either directly or by being a member of a site group which has permissions for that content.

Once you create sub content, the default security settings to this sub-content are inherited from the parent content. Using the SharePoint user interface, you can change these default settings and assign unique permissions to the sub-content.

SharePoint 2007/2010/2013/2016/2019 and SharePoint Online have used the concept of permission-levels, which are permission sets. Each user or group can be assigned with one or more permission-levels. Permission-levels are managed in sites and can be inherited from a parent site.

5.1.3.2 SharePoint 2003 Security

In SharePoint 2003, site group is used as a role. This means that if you wish to grant a user certain permission, you add that user as a member of a site group that has those permissions. Each site that breaks inheritance has its own set of groups.

In SharePoint 2003, content can be secured only at the site, list, or library level. A user could be granted site permissions only by being a member of one of the site groups. Also, a user can get explicit permissions on a list or library.

Active Directory groups are represented as SharePoint users.

A SharePoint group cannot contain another SharePoint group. Each group represents a collection of SharePoint users.

Tzunami Deployer enables you to perform the following security and permissions customizations:

- **Create groups**
- **Assign permissions to users**
- **Modify or delete groups**
- **Modify permissions**
- **Edit Permission Levels (SharePoint 2007 only)**
- **View the Users Permissions report**
- **Import/Export users**

5.1.3.3 Creating Groups

In order to assign permissions to an Active Directory user or group, you must first add the user or group to the site, either directly or as part of a SharePoint group.

To create a group:

1. Right-click a SharePoint site and select **Security > Edit Users & Groups**. The Manage Security window appears, listing all SharePoint groups ( ) and all Site Collection users ( ).

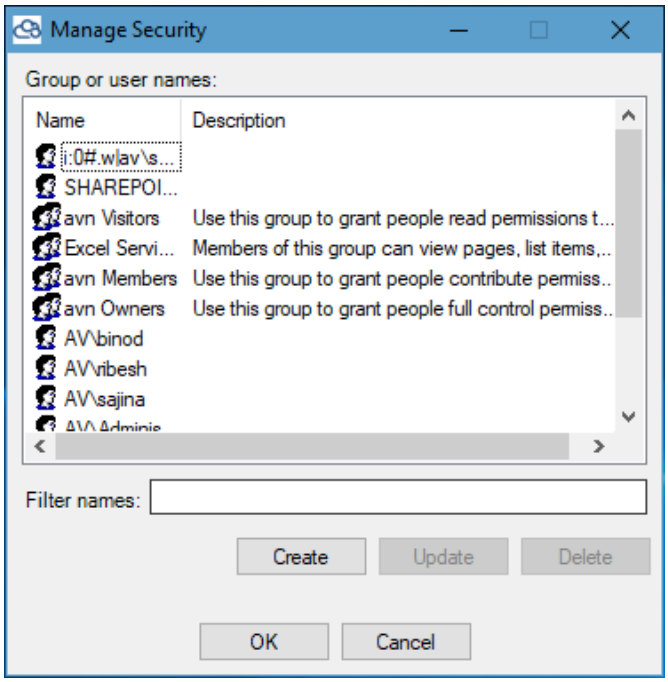


Figure 5-24: Manage Security Window

2. Click **Create** and select **Group**.

In SharePoint 2003, select User, Site Group, or Cross Site Group.

The Create Group window appears.

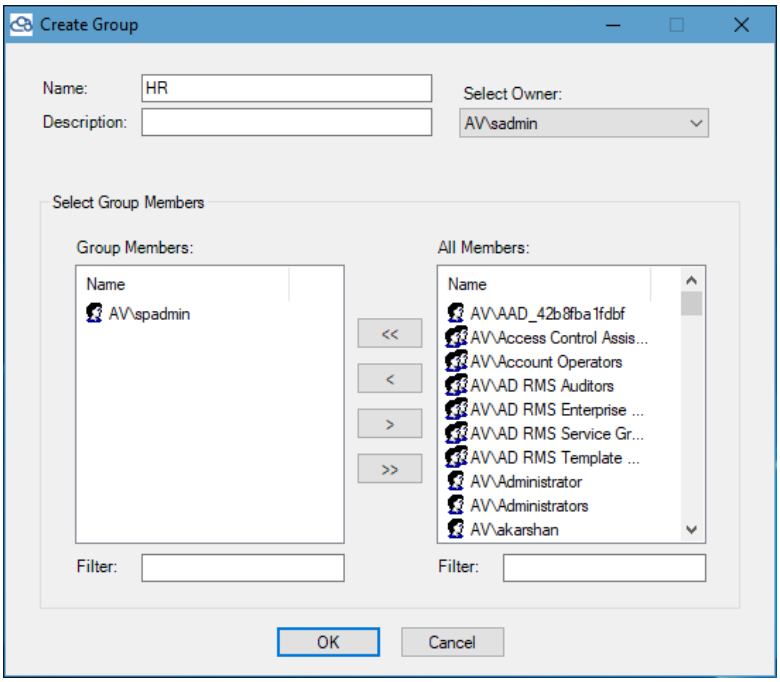


Figure 5-25: Create Group Window

3. Enter a name and description for the group and select a user to be the group owner.
4. Add members to your group and click **OK**.

In SharePoint 2003, setting a group owner is available only for Cross-site groups.

The new group is added to the Manage Security window.

5.1.3.4 Assigning Permissions to Users and Groups

In order to assign user permissions, you must add users to a group or Cross-site group.

To assign user and group permissions:

1. Right-click a SharePoint item and select **Security > Edit Permissions**. The <Item Name> Permissions window appears.

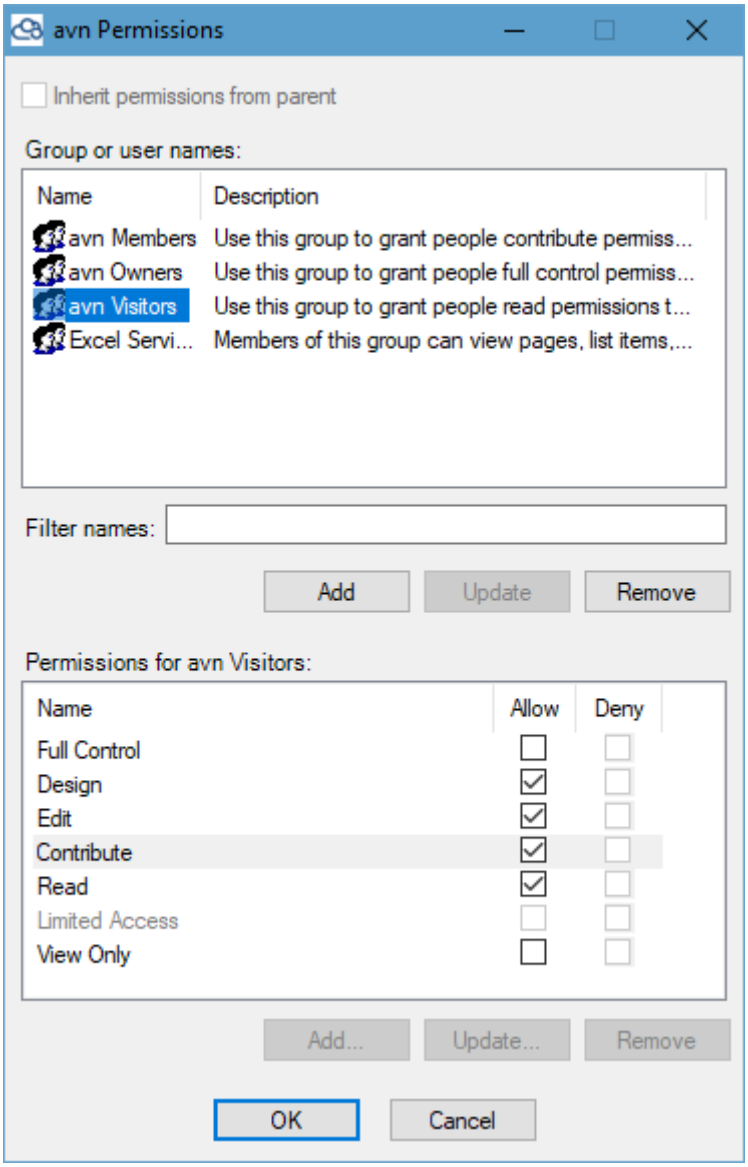


Figure 5-26: <Item Name> Permissions Window

2. Click **Add**. The Users / Groups window appears displaying all the available users and groups.

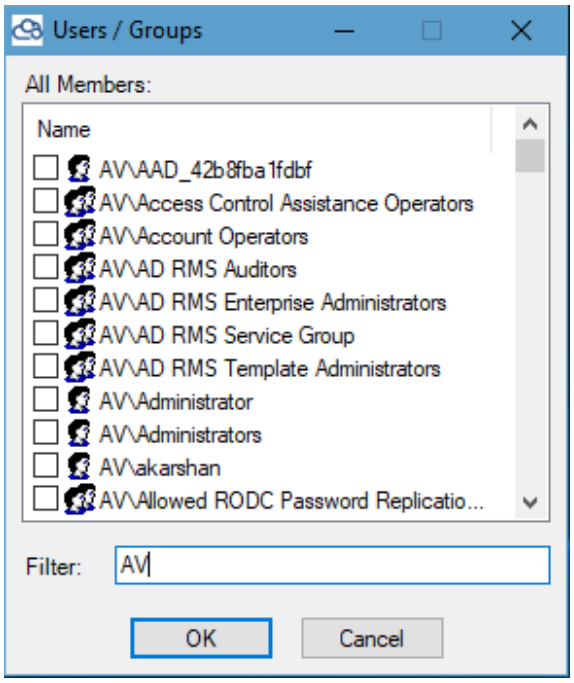


Figure 5-27: Add User Window

3. Select the relevant users and/or groups and click **OK**. The selected users/groups appear in the <Item Name> Permissions window (**Figure 5-26**).
4. Select a user/group and assign the various permission / permission-levels in the Permissions area.
5. Click **OK**.

5.1.3.5 Modifying Groups

To modify a group:

1. Right-click a SharePoint site and select **Security > Edit Users & Groups**. The Manage Security window appears (**Figure 5-24**).
2. Select the group to be modified and click **Update**. The Update Group window appears (**Figure 5-25**).
3. Modify the information as necessary and click **OK**.

   The groups are modified.

5.1.3.6 Modifying Permission Levels

This option is available only for SharePoint Server 2007, SharePoint Server 2010, SharePoint Server 2013, SharePoint Server 2016, SharePoint Server 2019 and SharePoint Online.

You can modify any of the permission levels, except for Full Control and Limited Access. The permissions are inter-dependent. Selecting certain permissions might select other permissions that are required in permission levels.

To modify a permission level:

1. Right-click a SharePoint site and select **Security > Edit Permission Levels**. The Permissions Levels window appears.

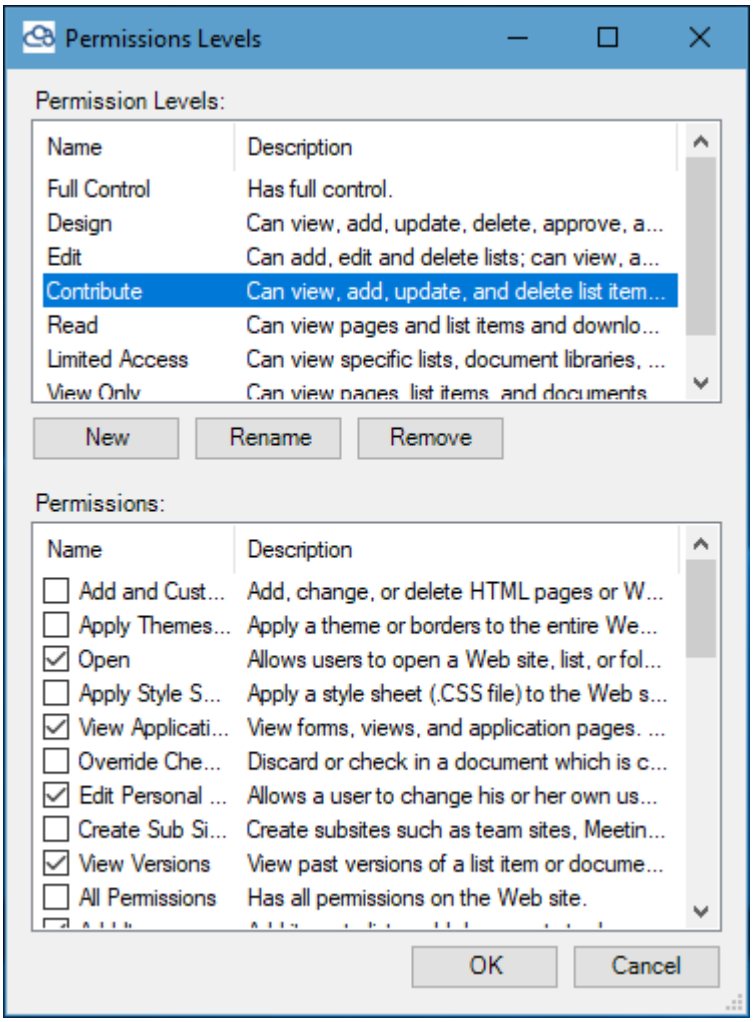


Figure 5-28: Permissions Levels Window

2. Select a permission level and select which permissions to assign to the permission level.
3. Click **OK**.

   The permission level is modified.

5.1.3.7 Import/Export Users & Groups

Tzunami Deployer enables you to export or import Active Directory users and groups to an XML file. For organizations with a large Active Directory, you can connect and read the entire Active Directory domain users and groups once and then export it. Future projects can then import the XML file instead of rereading the Active Directory domain.

To export users and groups:

1. Right-click an item and select **Security > Import/Export Users & Groups**. The Import/Export Users & Groups window appears.

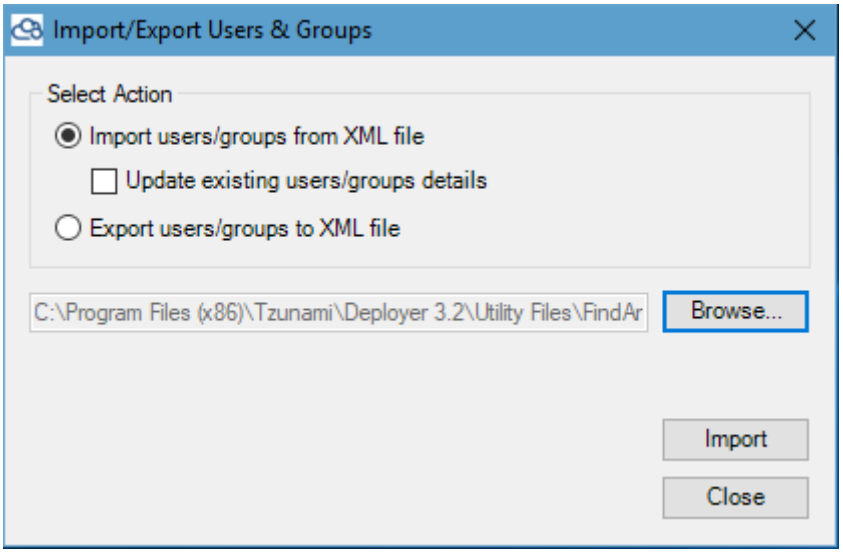
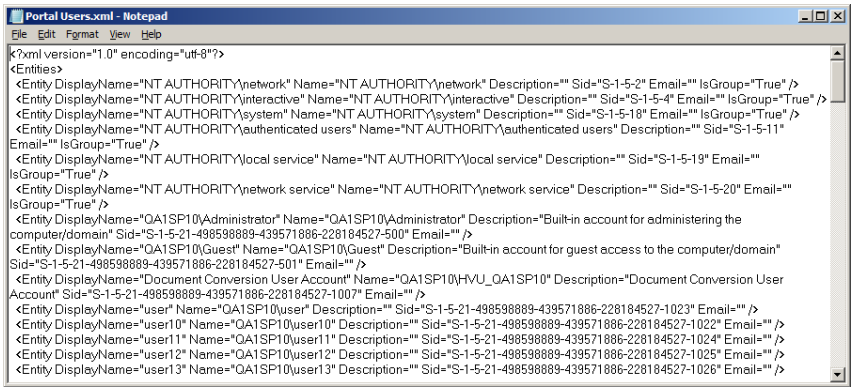


Figure 5-29: Import/Export Users Window

2. Select **Export users/groups to XML file** and click **Browse…**
3. In the **File Name** list, type or select a name for the file.
4. Click **Export**. The users are exported to the XML file.

You can manually create your own users/groups based XML file or edit existing ones, and add other users/groups (using Excel or any other tool that generates XML files) and import it.



To import users/groups:

1. Right-click an item and select **Security > Import/Export Users & Groups**. The Import/Export Users & Groups window appears.

2. Select **Import users/groups from XML file** and click **Browse…**
3. Select the XML file containing users/groups and click **Import**.

   The users/groups will be available in Deployer project target as normal AD users/groups.

5.1.3.8 Viewing Security Information

Security information is part of the content loaded into Tzunami Deployer projects. Several views and reports are available to assist you during the migration process.

5.1.3.9 View Permissions

Viewing permissions enables you see an item's users and groups (on the top pane) and the security permissions assigned to each user/group (on the bottom pane).

To view permissions:

- Right-click an item and select **Security** > **View Permissions**.

  The View Permissions window is displayed.

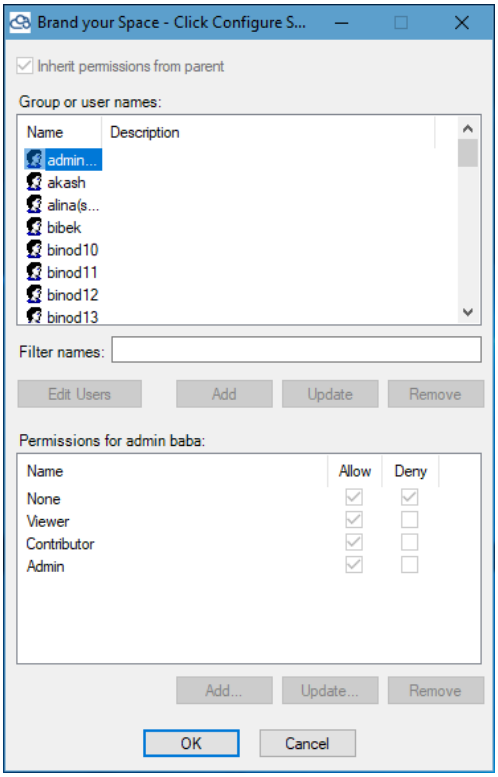


Figure 5-30: View Permissions Window

5.1.3.10 Edit Roles

Editing roles allows you to add, remove, or edit roles and assign specific permissions to each role. Roles are used during the migration of security settings.

To edit roles:

- Right-click an item and select **Security** > **Edit Roles**.

  The Edit Roles window is displayed.

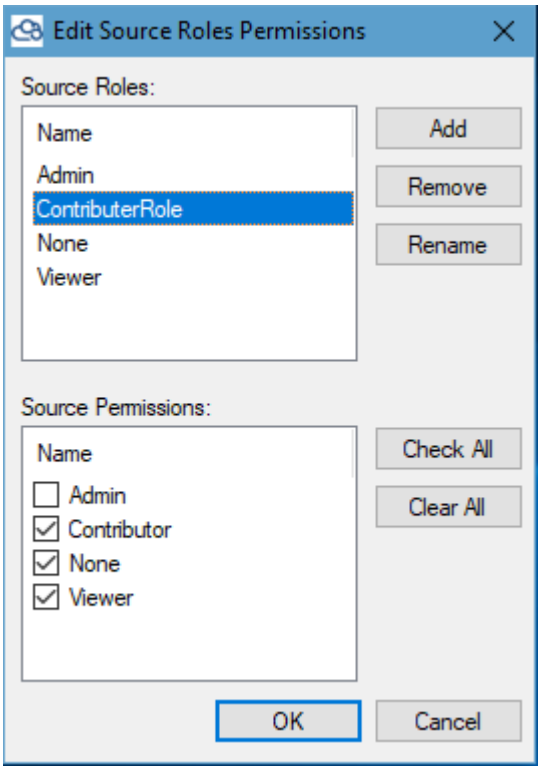


Figure 5-31: Edit Source Roles Permissions window

If the source system uses the concept of roles, those roles are read from the system and cannot be modified. For systems that do not use roles, Tzunami Deployer generates a default set of roles to facilitate the migration process.

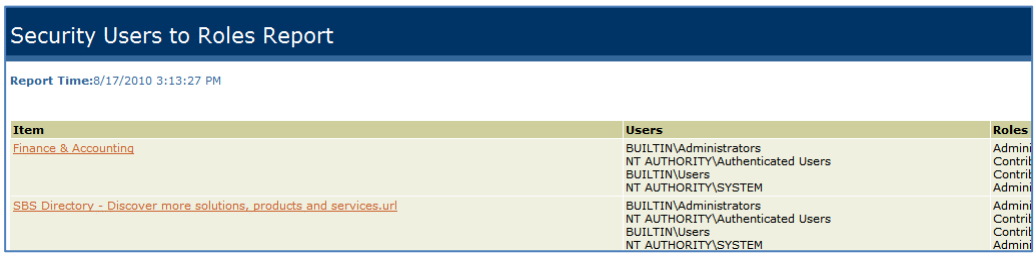
5.1.3.11 View Users Roles

View User Roles displays users' roles report for each item, the security entities that have permissions on the item and their matching role.

To view the Users Roles report:

- Right-click an item and select **Security** > **View Users Roles**.

  The Users Roles report is displayed.



Security Users to Roles Report

Report Time:8/17/2010 3:13:27 PM

Item	Users	Roles
Finance & Accounting	BUILTIN\Administrators NT AUTHORITY\Authenticated Users BUILTIN\Users NT AUTHORITY\SYSTEM	Admini Contrib Contrib Admini
SBS Directory - Discover more solutions, products and services.url	BUILTIN\Administrators NT AUTHORITY\Authenticated Users BUILTIN\Users NT AUTHORITY\SYSTEM	Admini Contrib Contrib Admini

Figure 5-32: Users to Roles Report

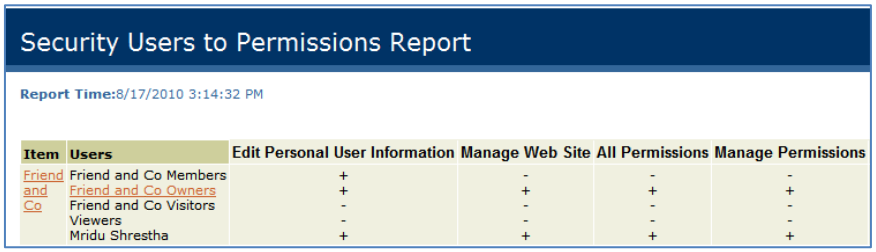
5.1.3.12 View Users Permissions

View Users Permissions displays user permissions report, for each item, the security entities and their permissions.

To view the Users Permissions report:

- Right-click an item and select **Security** > **View Users Permissions**.

  The User's Permissions report is displayed.



Security Users to Permissions Report

Report Time:8/17/2010 3:14:32 PM

Item	Users	Edit Personal User Information	Manage Web Site	All Permissions	Manage Permissions
Friend and Co	Friend and Co Members	+	-	-	-
	Friend and Co Owners	+	+	+	+
	Friend and Co Visitors	-	-	-	-
	Viewers	-	-	-	-
	Mridu Shrestha	+	+	+	+

Figure 5-33: Users to Permissions Report

5.1.3.13 Import/Export Role Definitions

Since roles can be modified, it is often useful to have the ability to export and import the roles definitions to a file. The roles can then be imported for use in a different project.

To Import/Export role definitions:

- Right-click an item and select **Security** > **Import/Export role definitions**.

  The Import/Export Role Definitions window is displayed.

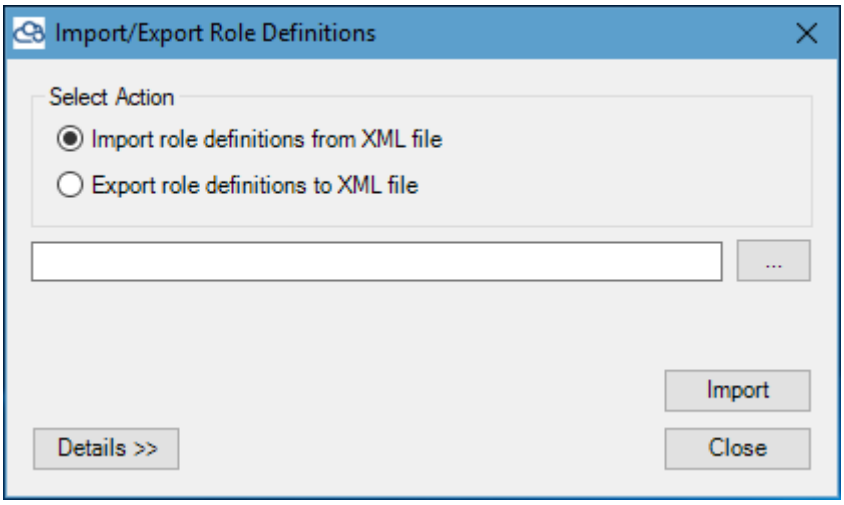


Figure 5-34: Import/Export Role Definitions Window

6 DEPLOYING SOURCE DATA FOR MIGRATION

This chapter explains how to deploy source content to the target source content. This chapter contains the following topics:

- ***Deploy Source Data***

6.1 Deploy Source Data

The deployment stage specifies which source folders, files, and items are to be migrated to which SharePoint site collection, sites, lists, and folders on the target SharePoint server. Similar to the modeling stage, Tzunami Deployer does not immediately migrate the source items to the SharePoint server during deployment, but only stores the migration instructions in the current Tzunami Deployer project. The Tzunami Deployer content migration changes are only applied to the target SharePoint server in the migrating stage.

In the modeling stage, you can define the SharePoint structure into which you can deploy the source folders and files. If you wish, you can design and define the entire model of the SharePoint structure and only then deploy your first folders and files. Alternatively, you can iteratively design parts of the SharePoint structure, deploy the items into those parts and then go back and repeat this process as many times as required.

In some cases, not all source items are to be migrated. For example, executable files such as EXE and DLL are usually not stored in SharePoint. In other cases, the target location for items is determined by their metadata properties. For example, you may want items created in the year 2001 to be placed in a corresponding folder in SharePoint. In both cases, you can filter the source so that only relevant items will be affected by the current deployment operation.

After completing the deployment stage, the target items appear with an upload overlay ( ). To remove the item assignment, find the location in which the item is deployed (in the target SharePoint) and delete it.

The following steps describe how to deploy source items to a target SharePoint:

- Select the actual items to be deployed from the source to the target SharePoint.
- Specify the various deployment options, related to structure, files, and security, using the Deploy Wizard.
- Keep track of the deployment process to ensure that you have deployed all the items that are required.

SharePoint imposes some character and length limitations on item names. Tzunami Deployer may rename folders or documents by replacing invalid characters with an underscore (_).

6.1.1 Deploying Selected Source Items to a Target SharePoint Locations

When you select to deploy a source item to a target SharePoint item, some items may not be deployed for the following reasons:

- The file extension appears in the blocked extensions list, as defined by the SharePoint administrator (For Example: .exe, .bat, .mdb, and so on). You can ignore this warning and deploy the items. However, the migration will fail unless the items are renamed or the SharePoint server is modified to accept the files.
- The item has already been deployed into SharePoint. Tzunami Deployer does not allow the same item to be deployed more than once into SharePoint.

To select the source items and target locations:

1. In the top half of the Project window, select the source files or folders to be deployed.
2. Drag the selected items to the target location in the SharePoint, in the bottom half of the Project window.

   Or

   Right-click the selected items in the source store and select **Deploy to**. The Target items window appears displaying the target SharePoint store.
3. Select the target location and click **OK**.

Tzunami recommends that you to drag and drop selected items. By this stage, you should already know exactly what you are dragging, where you are dragging to, as what (site, list, or document), and which properties you want to add.

Tzunami Deployer may inform you that some items will not be deployed. You can display these items by clicking **Yes**.

6.1.2 Defining Deployment Options

After selecting the source items and target location for deployment, the next step is to define the behavior of the deployment. This is done using the Deploy wizard, which guides you through the following:

- Specify how Tzunami Deployer handles item versions, duplicate names, and lists.
- Specify whether source folders are created in the target SharePoint as sites, lists, or folders, and how subfolders and content items are handled.
- Map source users and groups to the appropriate corresponding users and groups used in the target SharePoint.
- Map source security permissions and roles to the appropriate SharePoint roles / permission-levels.
- Map source metadata properties to the appropriate columns in the target SharePoint.
- Map source item property values to the appropriate property values in the target SharePoint.
- Complete the deployment process.

6.1.2.1 Defining Deploy Options

You can check the deployment option(s) to deploy structure, files, and security.

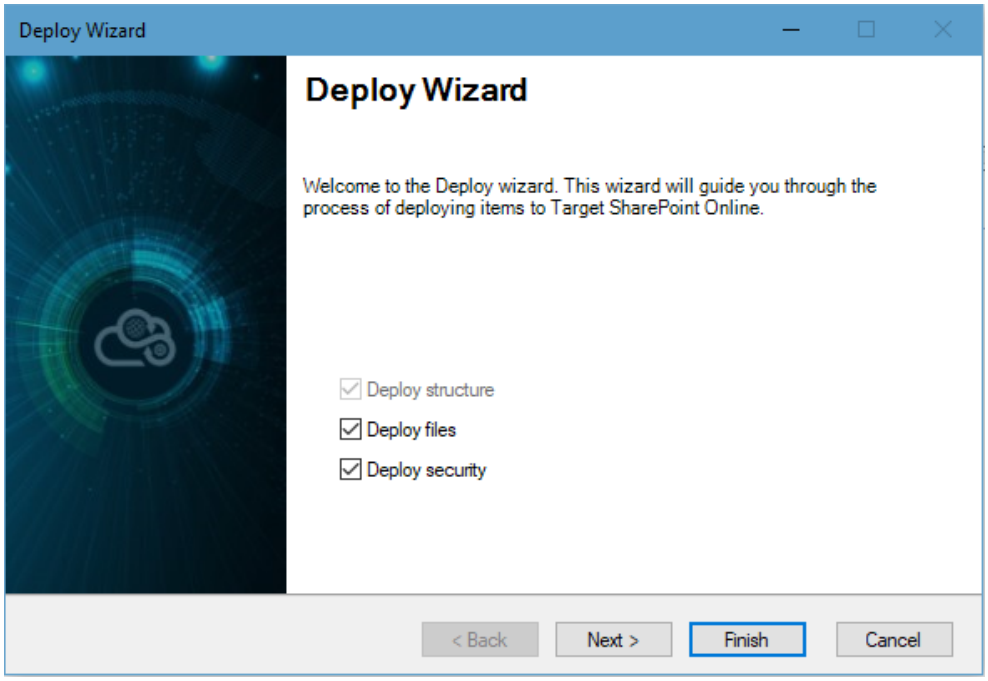


Figure 6-1 Deploy Wizard

To define the deployment behavior:

1. Select one or more of the following deployment options specified in the following table.

Table 6-1 Deployment option

Field	Description
Deployment Option	Tzunami Deployer will deploy the structure, file and security based on the selection.
Deploy structure	Copies the source content folder hierarchy to the target SharePoint. If no folders are selected for deployment, this option is disabled. If the target location cannot directly contain files, for example a SharePoint site, this option is selected and cannot be modified.
Deploy files	Copies the source files and items to the target SharePoint. If only files and items are selected for deployment, this option is selected and cannot be modified.
Deploy security	Copies source content security settings to the target SharePoint.

2. Click **Next**. The Deploy wizard displays the Global Settings screen.

6.1.2.2 Defining Global Settings

You can define the global setting of items, lists and advanced folder hierarchy in the Global Setting Screen.

Items:

This tab provides various options to be made for handling duplicate file names, versions and web-parts on pages.

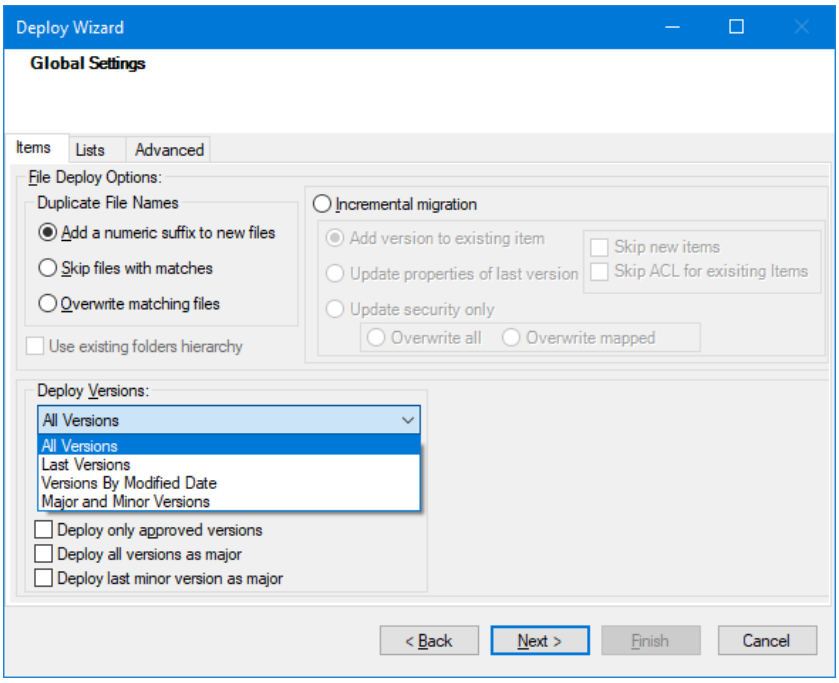
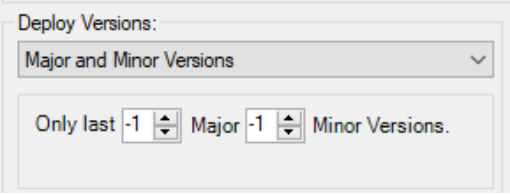


Figure 6-2 Deploy Wizard - Global Settings Items

3. Select the various global setting items from **Items Tab** and according to the information in the following table.

Table 6-2: Deploy Wizard –Global Settings Items

Field	Description
Duplicate File Names	Specify how Tzunami Deployer handles multiple items with the same name in a target location.
Add a numeric suffix to new items	Item(s) is deployed with a numeric suffix appended in file name.
Skip items with matches	Item(s) does not get deployed.
Overwrite matching items	Item(s) is deployed by overwriting the existing item(s).
Incremental migration	Item(s) is deployed with behavior specified as I or II. The incremental migration allows updating properties of existing items. Depending on version settings of a library the item version number may change.
I. Add version to existing item	Item(s) is deployed as new version in the existing item(s).
II. Update properties of last version	Item(s) is deployed and properties get updated in the last (highest) version of the existing item(s).
III. Skip New Items	When this option is checked, Tzunami Deployer skips all the newly added items and only deploy the updated items in source system, which where migrated in previous migration.

IV.	Skip ACL for Existing Items	When this option is checked, Tzunami Deployer skips ACL update of existing items in target, but not for the new items.
V.	Update security only	Use this option to update security only for previously migrated data.
VI.	Overwrite all	When this option is checked, target security will be removed and created new security.
VII.	Overwrite mapped	When this option is checked, target security will be updated from mapped securities only.
Use existing folders hierarchy		Tzunami Deployer will ignore the duplicate items handling for folders, and use the existing folder structure. This option is only available when the target of the deployment is a list or a folder
Deploy Versions		Specify which item versions to copy when the deployment is migrated. The item versions you specified to deploy are selected by default. You can deploy
All versions		All document versions are deployed.
Only last <#> versions		Only the specified number of latest document versions are deployed
Versions By Modified Date		Only those documents versions that match the modified date are deployed
Major and Minor Versions		Selecting this option facilitates to specify the number of latest major and minor versions in dropdowns as shown below:  Last Major versions can be specified from -1 or 1 or onwards. '-1' indicates to migrate all major versions. '1' indicates to migrate only one latest major version and so on. Last Minor versions can be specified from -1 or 0 or 1 or onwards. '-1' indicates to migrate all minor versions associated with specified major versions. '0' indicates not to migrate any minor versions and '1' indicates to migrate one last minor version associated with the specified major versions.
Deploy only approved versions		Only those document versions marked as approved (non-draft) are deployed
Deploy all versions as Major		All document versions (including minor versions) are deployed as major versions.
Deploy last minor version as major		Last minor version is deployed as major version.
WebParts		Specify whether to deploy WebParts on Pages or not.
Deploy WebParts on Pages		Select this option to deploy WebParts on Pages.

Lists:

This tab provides various options to be made for handling List configuration and Views.

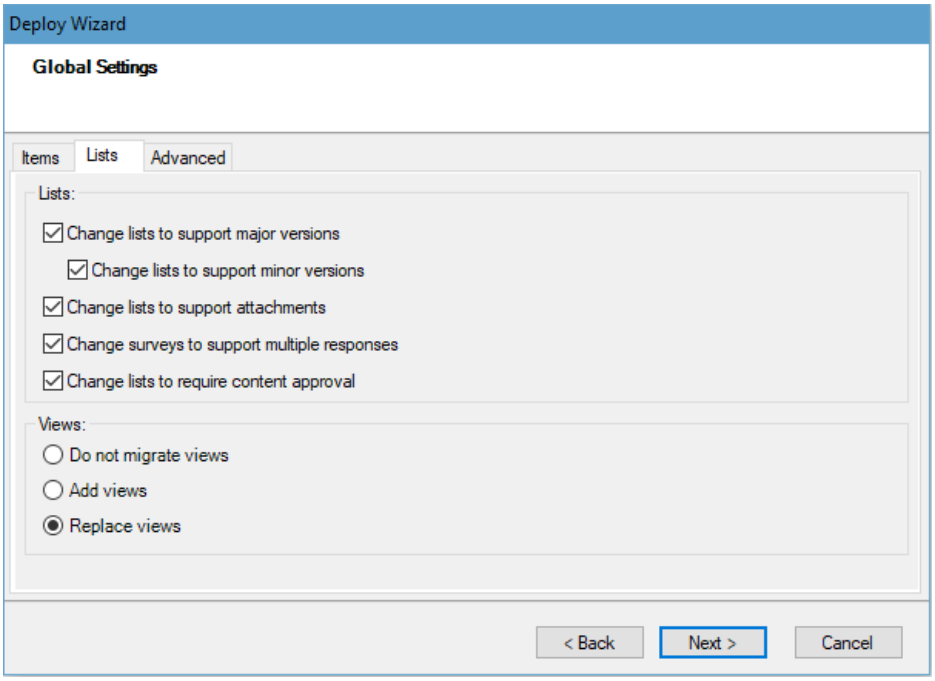


Figure 6-3: Deploy Wizard - Global Setting Lists

4. Select the various global setting lists from **Lists Tab** and according to the information in the following table.

Table 6-3: Deploy Wizard - Global Setting Lists

Field	Description
Lists	Select whether to automatically update lists so that they support the deployed source items. • Change list to support major versions • Change list to support minor versions • Change lists to support attachments • Change surveys to support multiple responses • Changes list to require content approvals
Views	Select how to migrate views in the target. • Do not migrate views • Add views • Replace views This Views is applicable when migrating from SharePoint Source.

Advanced:

This screen enables you to create folder hierarchy by grouping the files based on the selected property into a folder. **For e.g.** if organizations have documents in a folder are

separated by the 'Document Type' property according to the departments (Marketing, Sales, HR, Account, Finance, etc.). When deploying, a new folder will be created for each 'Document Type' property and all documents the same property at that level will be migration into the new folders (Marketing, Sales, HR, Account, Finance etc.).

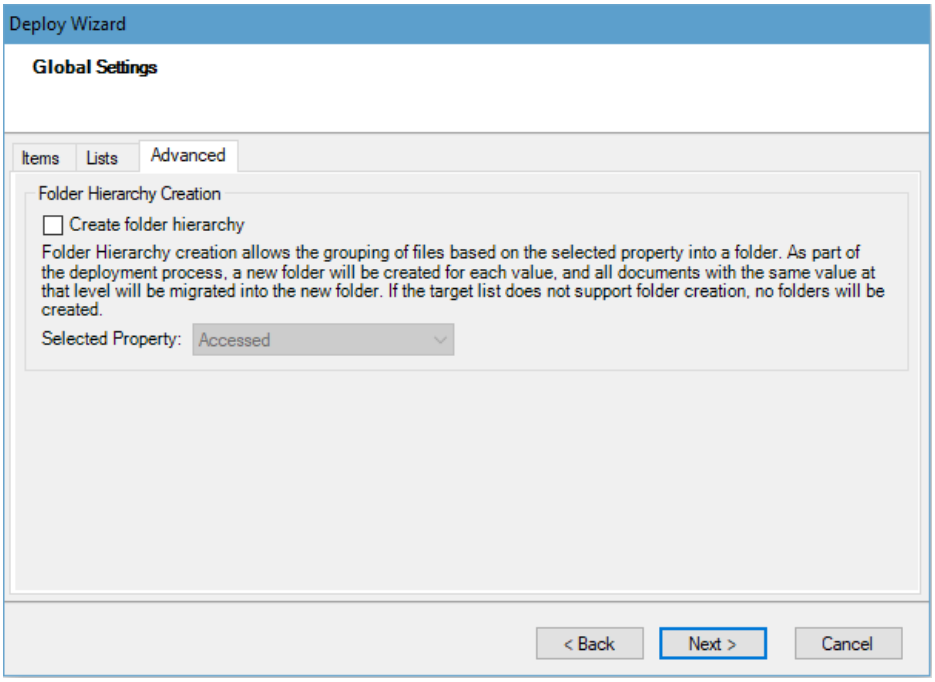


Figure 6-4: Deploy Wizard - Global Setting Lists

5. Select Folder Hierarchy Creation to select property of folder.
6. Select Folder Property and Click **Next**. The Deploy wizard displays the Define deployment structure screen (**Figure 6-5**).

6.1.2.3 Defining the Deployment Structure

You can define the deployment behavior of folders and container hierarchies in the Define deployment structure screen. The options in this screen differ according to the type of SharePoint target location into which you are deploying. In addition, the type of item you select in the tree determines the options in the Set selected item parameters area.

For example:

- When deploying into a folder or a list, you can only create sub-folders.
- When deploying into a site, you can create sub sites or lists.

The configuration that you set for any item overrides the configuration of its sub-items. **For e.g.** when deploying into a site, if you deploy a folder as a library, you can deploy its sub-folders only as sub-folders of the library, and not as sub sites.

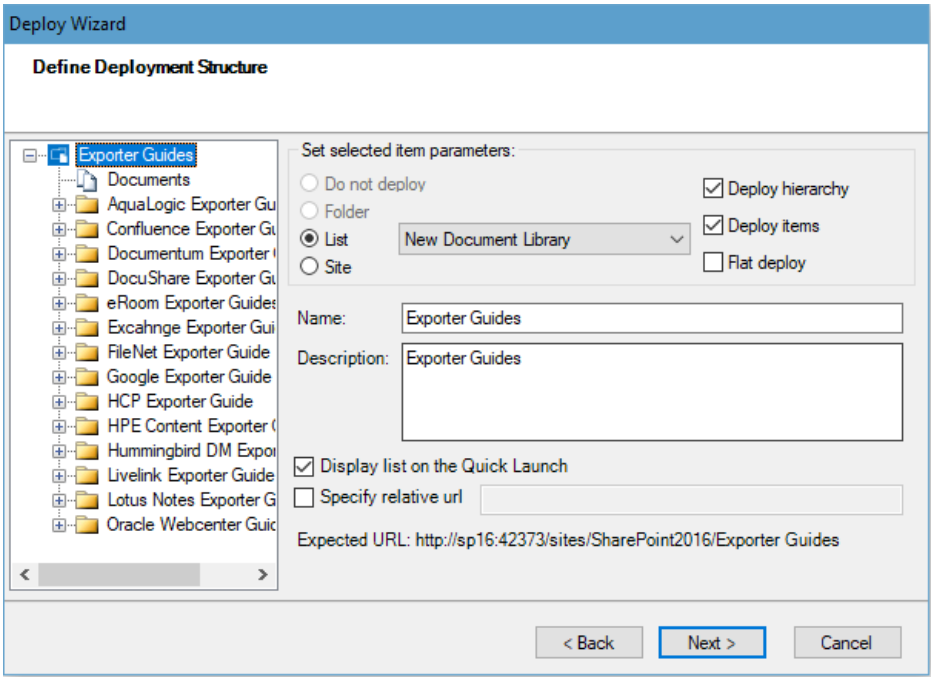


Figure 6-5: Define Deployment Structure Screen

This screen enables you to specify which type of items will be created in SharePoint and to set various deployment parameters. You can select and configure each branch of the deployment structure tree. **For e.g.** you can specify that a folder from the source file system is deployed as a new site, and that its sub-folders are deployed either as sub sites of the new site, as lists of that site, or as sub folders of the new site's default document library.

To define the deployment structure:

1. Define the deployment structure options according to the information in the following table.

Table 6-4: Deploy Wizard – Items Handling Window Fields

Field	Description
Deployment structure tree	Select the item for which to define deployment configuration.
Set selected item parameters	Select the type of item to create in SharePoint: • Folder • List • Site • Portal area. (Available only in SPS2003, and only when the target location is a descendant of the Home Area.) When deploying as a list you must select the appropriate list template from the available templates in the site. When deploying as a site, you must enter the site properties.

Field	Description
Deploy hierarchy	Select this option to deploy all sub-folders. If you do not select this option, only the folder whose options are currently edited and its content will be deployed. No sub-folders (and no items in the sub-folders) are deployed.
Deploy items	Select this option to deploy the files and items in each source folder. Selecting this option affects only the selected folder, not its sub-folders. If you do not select this option, only the sub-folder hierarchy is created and no documents are deployed to the target location. When selected, a Documents branch ( ) appears under the folder in the deployment structure tree.
Flat deploy	Select this option to ignore the source folder hierarchy and create a flat structure in which all documents in the source folder and its sub-folders are deployed to the same target location. This option is only available if **Deploy hierarchy** is selected. When selected, an All Documents branch ( ) appears under the folder in the deployment structure tree and all sub-folders are hidden.
Quick launch navigation	Select this option to deploy source sites Quick Launch navigation.
Top link bar navigation	Select this option to deploy source sites Top link bar navigation
Inherit navigation from parent	Select this option to inherit navigation from parent during deployment.
Use unique permissions	Select this option to deploy sites using unique permissions.
Display list on the Quick Launch	Select this option to display lists/libraries on the Quick Launch bar.
Specify relative Url	Specify relative Url for lists/libraries.

2. Click **Next**. If Security is deployed, the Deploy wizard displays the Map source users and groups screen (**Figure 6-19**). If Security is not deployed, the Deploy wizard displays the Property Mapping screen (**Figure 6-7**).

6.1.2.4 Mapping Term Store in XML file

When source property is of type **Managed Metadata** and linked with a term set, the property can be migrated as Choice/Multichoice or source term set can be mapped with a target term set.

Mapping Term Store in XML file enables to preserve source term store in target.

Mapping term store is applicable when the **Commit Managed Metadata field preserving term hierarchy** option is selected under **Options>SharePoint Connectivity** in the **Tools** menu of the Deployer.

To map term store:

1. Open **TermMapping.xml** file located in Deployer's installation directory (e.g. C:\Program Files (x86)\Tzunami\Deployer 4.0) with write privilege.
2. Mapp the **Unique Identifier** assigned by SharePoint for term store hierarchy in <**TermStoreMapping**>, <**TermGroupMapping**>, <**TermSetMapping**> and <**TermMapping**> for the source and target. Then, save the file.

TermMapping.xml - Notepad

File Edit Format View Help

```
<?xml version="1.0" encoding="utf-8" ?>
<TermManagement>
    <TermStoreMapping>
      <Pair>
        <Source SspId ="baaffad846b34af28f4b9a0d79390e37"/>
        <Target SspId ="93a5d40894544dad86f2ec6f39da750a"/>
      </Pair>
    </TermStoreMapping>

  <TermGroupMapping>
    <Pair>
      <Source GroupId ="46306a38-7581-4dd7-9d1e-9b9f3b4d1135"/>
      <Target GroupId ="cb4e9202-78db-404a-89dd-ccf320cb2844"/>
    </Pair>
  </TermGroupMapping>

    <TermSetMapping>
      <Pair>
        <Source Guid ="b14913e2-87de-4f48-b56a-855b972c7e5b"/>
        <Target Guid ="68c88781-3634-47d5-9748-7b370d2fc34c"/>
      </Pair>
    </TermSetMapping>

  <TermMapping>
    <Pair>
      <Source Guid=""/>
      <Target Guid =""/>
    </Pair>
  </TermMapping>

</TermManagement>
```

Figure 6-6: Term store mapping example

The TermMapping.xml file should be configured as mentioned above before running the Deployer. The target Term Set should be **Open** type.

This feature is available for SharePoint Online only.

The user should be listed in **Term Store Administrators** in term store management.

6.1.2.5 Mapping Properties

Items are associated with metadata properties (sometimes referred to as fields or attributes), such as creation date, last modification date, author, title, keywords, status, and so on.

When the source property set (sometimes referred to as category or profile) does not match the target SharePoint property set (the columns in the target list or folder), Tzunami Deployer requests information regarding the mapping of source properties to target properties. The Property Mapping screen appears, as shown below. Properties with the same name and matching types are automatically matched and appear in the Mapped Properties area, as well as previously mapped properties.

Tzunami Deployer has an ability to add Content Types (that already exists on the Target Site Collection) to the lists/libraries during deployment.

If any source properties cannot be matched to any target property, a yellow notification bar at the top of the screen indicates that the target has fewer properties than the source. This may indicate that you might lose data, since source information is not deployed to target SharePoint columns. You can click the link in the notification bar to automatically add properties to your target SharePoint list. Alternatively, you can manually add the missing columns before starting the deployment process.

.

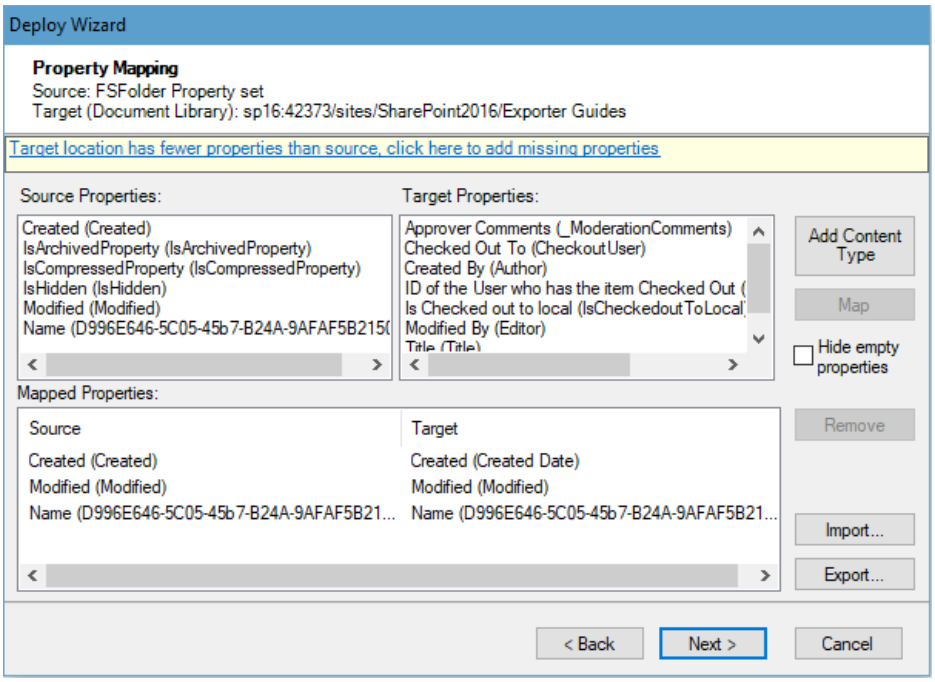


Figure 6-7: Property Mapping Screen

To map properties:

1. Select a source property and its corresponding target property and click **Map**. Repeat this step for each property you wish to map. The mapping is displayed in the bottom of the screen.

   If the source items use several different property sets, **For e.g.** documents with different profiles, or when deploying to several targets with different property sets or lists of different types, this step is repeated for each pair of source and target property sets.

   If you need to map the properties associated with content type, add the content type first using "Add Content Type" button, and then proceed for property mapping.

   Clicking **Import/Export** enables you to create a property mapping XML file, according to your current mappings, or load a different property mapping XML file. You can generate your own mappings (using Excel, or any other tool that generates XML files) and import the XML file.

2. Click **Next**. The Deploy wizard displays the Value Mapping screen (**Figure 6-17**).

   If you map properties of different types to each other (**For e.g.** a text property to a numeric property), a warning message is displayed. Clicking **Yes** instructs Tzunami Deployer to convert the values. If Tzunami Deployer fails, it assigns an empty value to the target property. Clicking **No** returns you to the Property Mapping screen, in which you must change the mapping.

   For user-type properties, such as Created By or Modified By, or for choice properties, the Map Property Values screens appear. In these screens you can map the values of choice type properties, if required.

6.1.2.6 Adding Content Type

Tzunami Deployer enables you to add Content Type to target during deployment. The **Adding Content Type to Target** window shows the list of Content Type from the Target Site collection, which allows you to select one or more Content Type from the lists that you want to add in lists\libraries during deployment. The added Content Types that you selected in this window will be available in the Content Type Value Mapping screen.

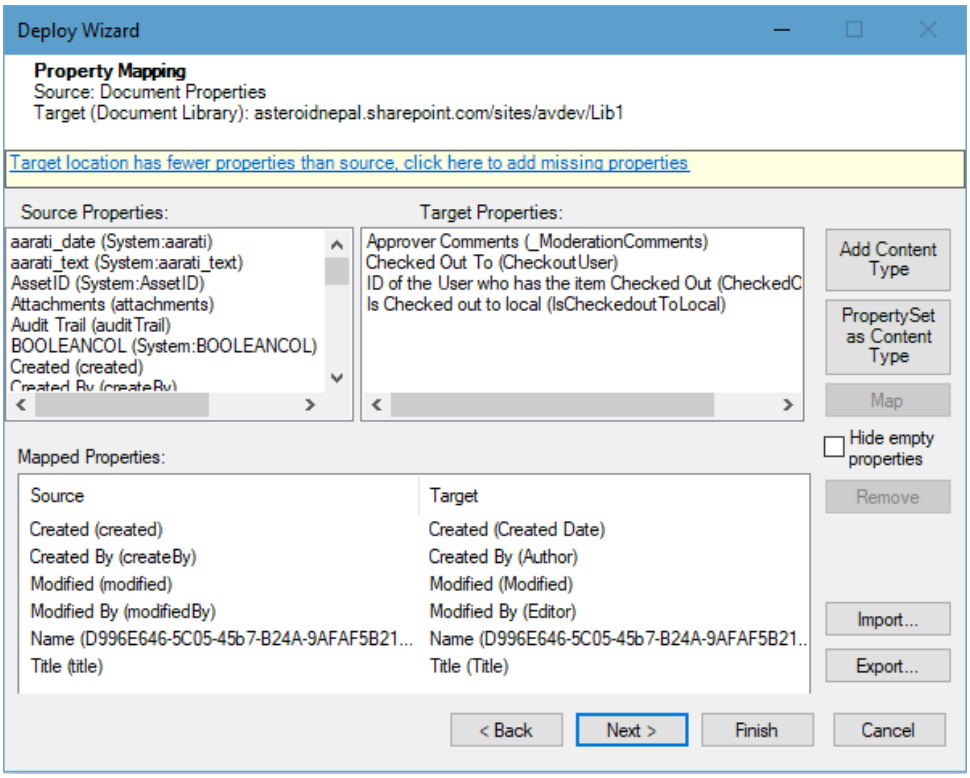


Figure 6-8: Adding Content Type to Target Window

To add content type

Deployer has a feature to create Content Type in Target SharePoint from Deployer and it allows to preserve the source categories as separate content type automatically in SharePoint by associating Source property set with Deployer created Content Type.

Steps for achieving it are given below:

1. Deploy the source data to any target library. During deployment in first property mapping wizard, a new button **PropertySet as ContentType** is added as below screenshot:

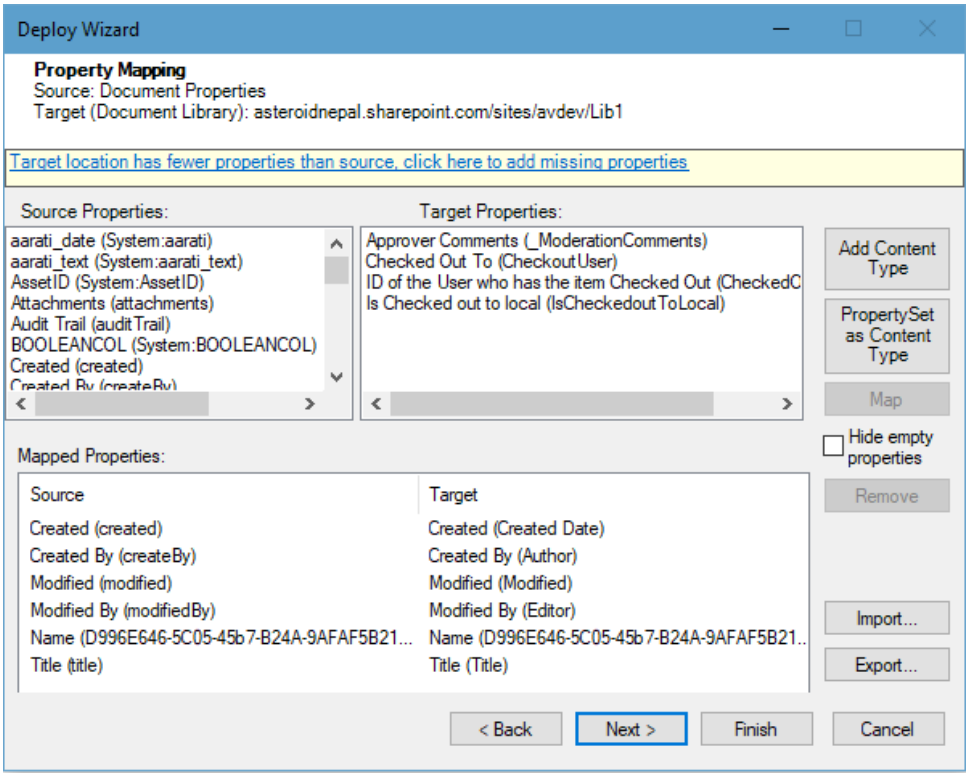


Figure 6-9 Add Content Type: option screen

2. Once clicked on button **PropertySet as ContentType** below window popups.

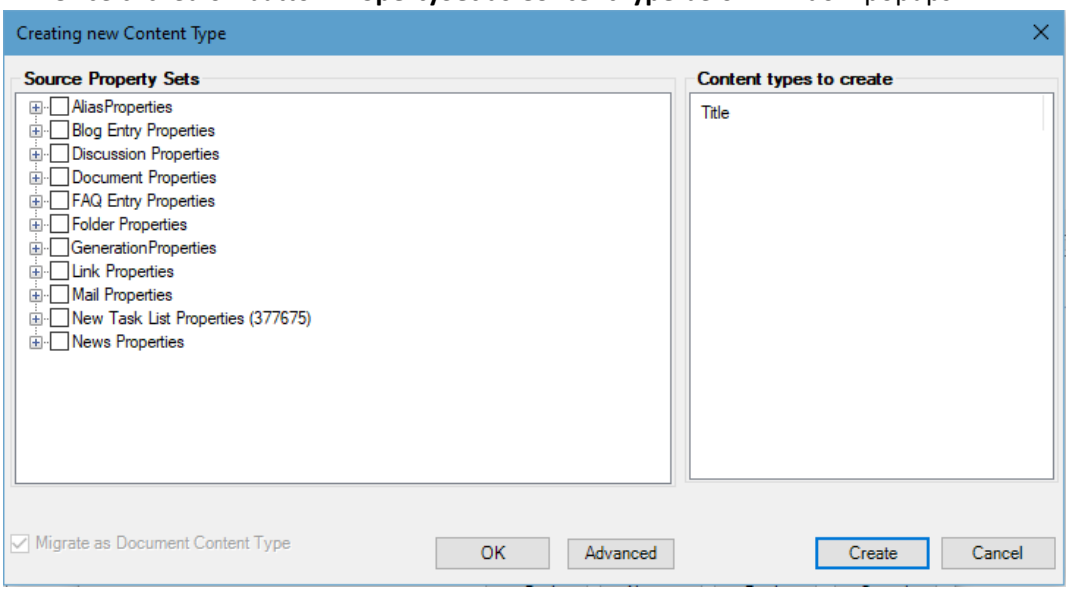


Figure 6-10 Add Content Type: select property sets

3. Now, check on the required Source Property Set or category property set and click **OK** button. Once **OK** button is pressed all the selected property set will be displayed on Content Type to Create box on right hand side as below:

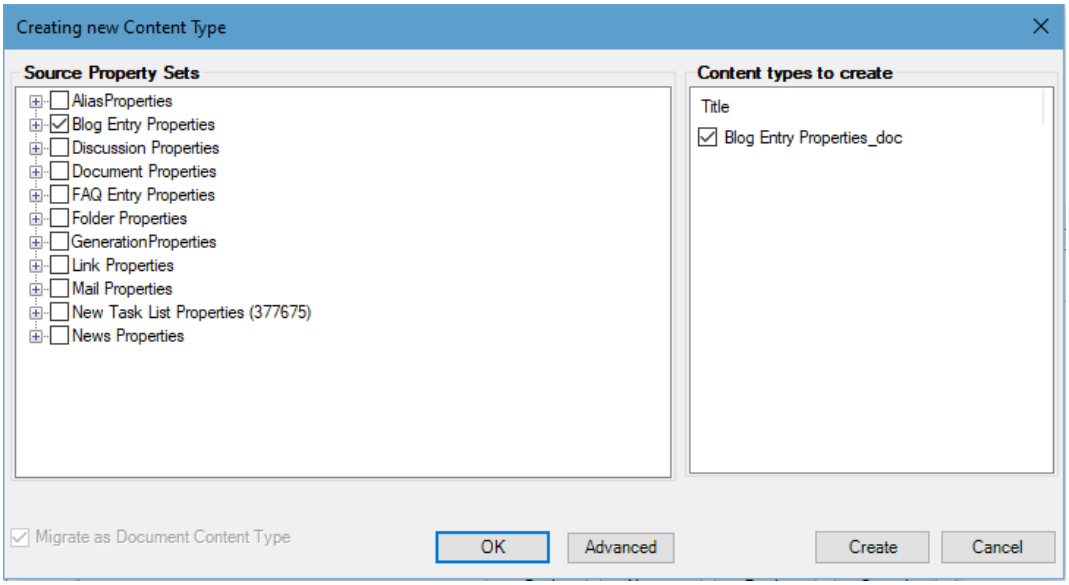


Figure 6-11 Add Content Type: selected property sets

Additionally, we can expand the source property set to view or select and deselect the property under property set.

4. Click on **Create** button. Now, all the selected source property set will be created as Content Type. Note that all the content type created from this window will have document as parent Content Type and item content type will also be migrated as parent document type.
5. We can validate the created content type by clicking on **Add Content Type** button. After clicking on **Add Content Type** button new window popups as below screenshot where all the recently created content type are listed under Deployer created Content Types with selected. This step is only for validation.

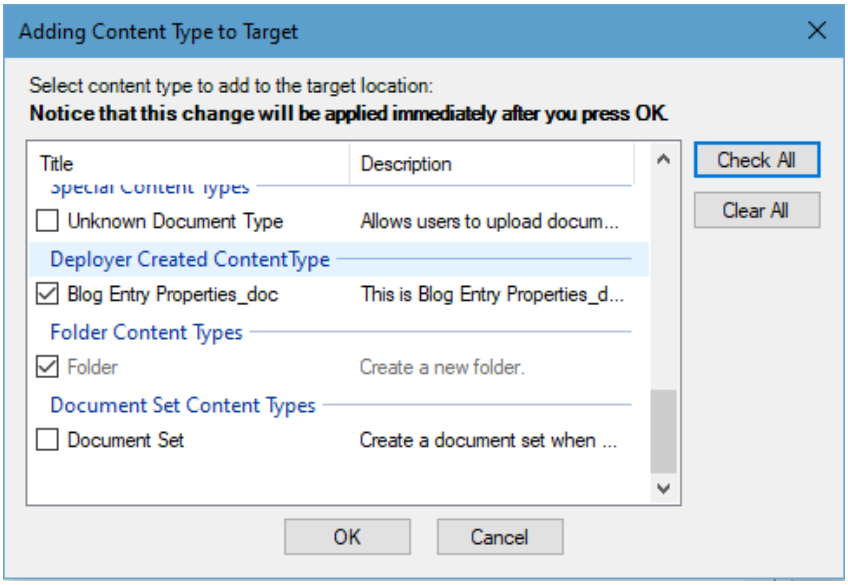


Figure 6-12 Add Content Type: Deployer added content types

6. Similarly, if you want to create source property set as Folder Content Type, then there is advanced window. Referring to screenshot in step no 3 there is another button named **Advanced**. Click on **Advanced** button and new window popups as below:

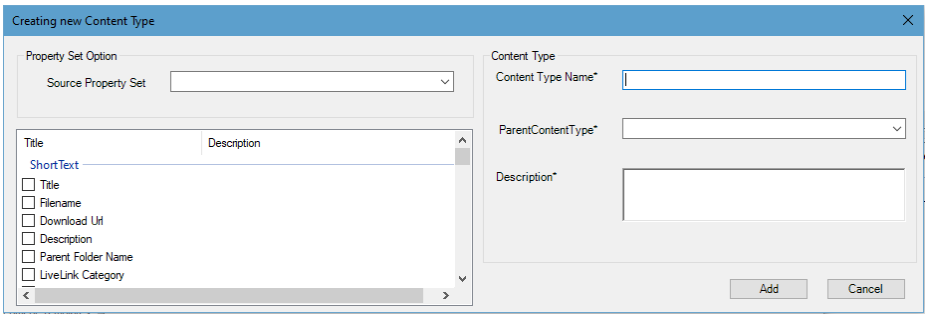


Figure 6-13 Add Content Type: Advance option

7. Select the source property set from the dropdown and make its ParentContentType as Folder as below screenshot:

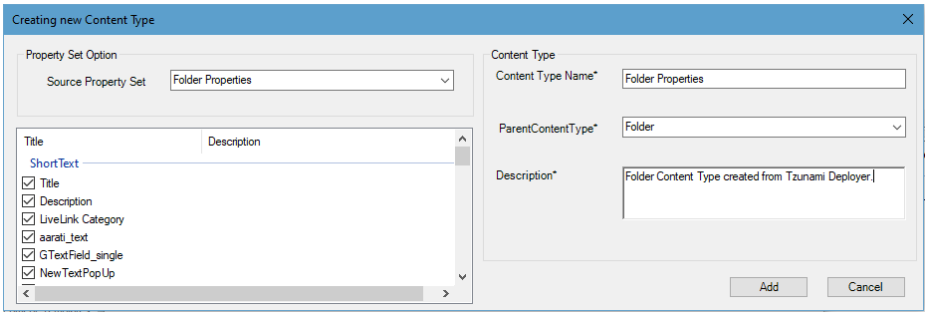


Figure 6-14 Add Content Type: add folder content type option

Click on **Add** button.

8. After clicking **Add**, content type will be added in first content type creation window as below:

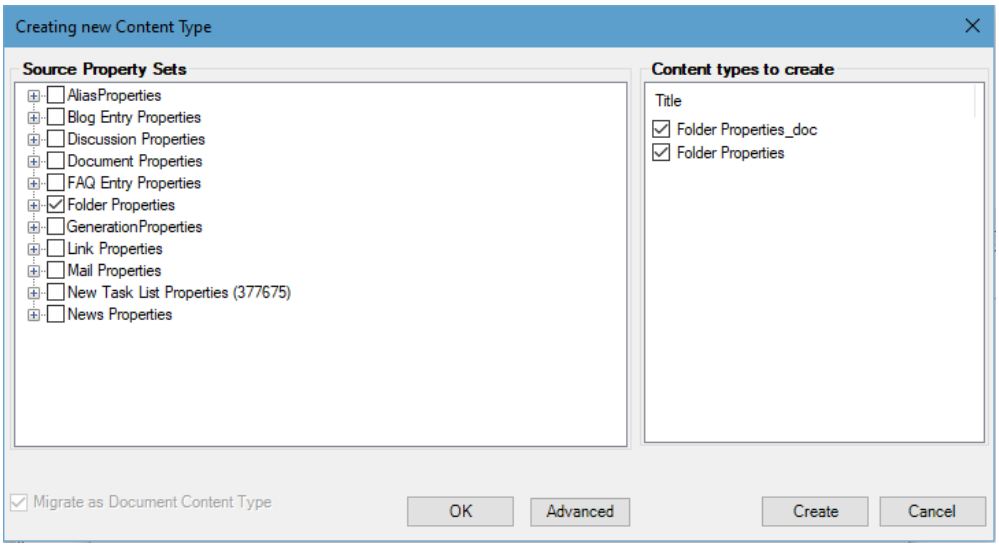


Figure 6-15 Add Content Type: Added folder content type

9. Click on **Create**. Content Type will be created as parent Folder type.

Now, you can click **Next** to proceed further and finish deployment.

When the Content Type 'Link to a Document' is added to a Document Library from the SharePoint web, the links get resolved irrespective of the approach used in the migration, i.e. CSOM or Migration API.

But, when the Content Type 'Link to a Document' is added to a Document Library from Deployer during the deployment, the links get resolved only when the CSOM approach is used for the migration.

6.1.2.7 Automatically Adding Properties

Tzunami Deployer enables you to automatically create the missing columns in your target SharePoint list if it has fewer properties than your source. The Missing Properties in Target window lists the properties that were not mapped and offers to create respective columns in the target. All the source properties that you select in this window are automatically mapped to their corresponding newly created SharePoint columns.

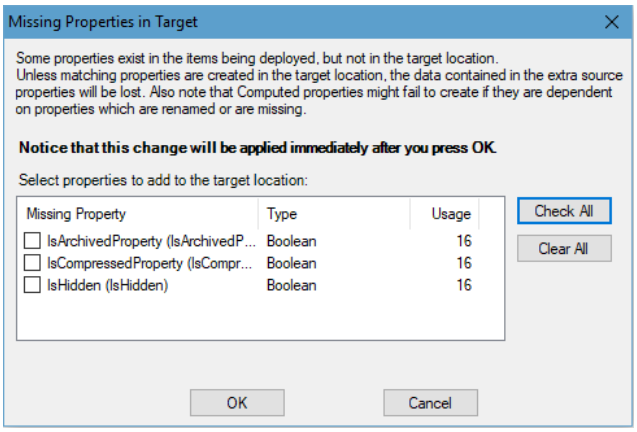


Figure 6-16: Missing Properties in Target Window

To automatically create and map properties:

1. Select the various options according to the information in the following table.

Table 6-5: Missing Properties in Target Window Fields

Field / Item	Description
Select properties to add to the target location	Select properties from the list of source properties that do not currently exist in the target location to automatically create a property in the appropriate target SharePoint list. You can click **Check All** or **Clear All** to select or deselect all the properties, respectively.

2. Click **OK**.

   The added target properties are automatically mapped with the respective source properties and are displayed in the Property Mapping screen (**Figure 6-7**).

If you add missing properties, the target location is modified (columns are added to it). As is the case with other modifications, a pencil overlay appears on the target location. For example, .

All property and value mappings that you perform are stored in the Tzunami Deployer project so that the next time you map from the same source property set to the same target property set or the same values appear in the source items, Tzunami Deployer automatically maps them.

If all properties and values are successfully mapped by Tzunami Deployer, the Value Mapping steps may not be displayed. You can determine if these steps are displayed in the Options window.

6.1.2.8 Mapping Property Values

In order to assign values to choice properties (properties that offer a list of specific possible values, For e.g. Status) and user properties (such as Created By and Modified By), Tzunami Deployer enables you to map values from the source items to specific target choice values.

After you map properties, as described in the previous section, the Value Mapping screen appears, once for users and once for each choice (and multi-choice) property in the target locations.

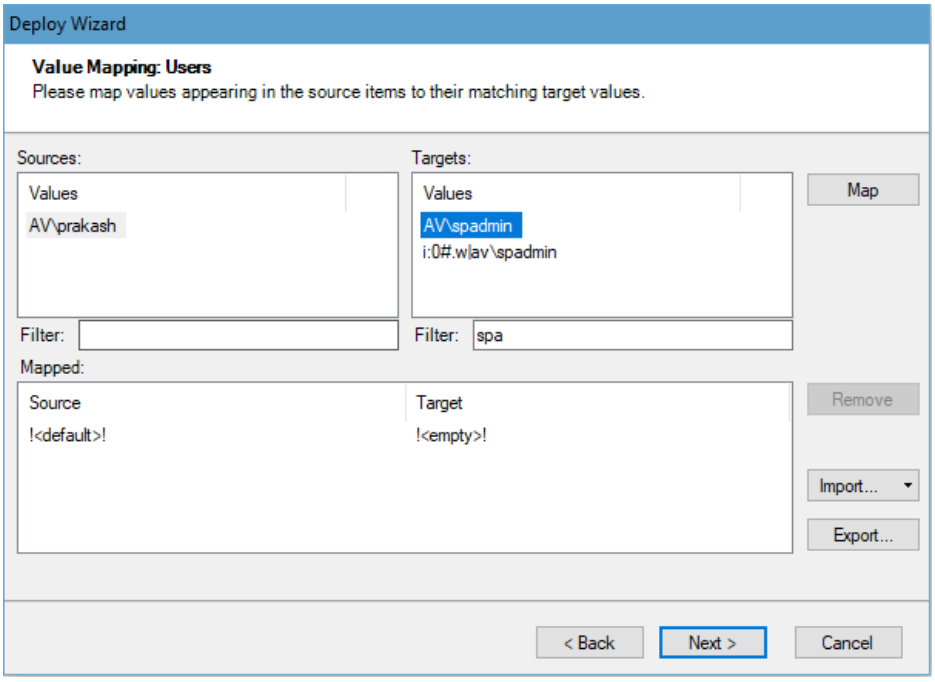


Figure 6-17: Value Mapping Screen

This screen displays the source property and valid target property values, as well as any existing mappings.

The Properties window can remain open while you work in the Project window. It reflects the properties of the currently selected item or items.

If the !<default>! value is mapped, you can leave source values unmapped. When deploying an item whose property value is unmapped, the corresponding deployed item property will be assigned with the same value as the !<default>! . If the !<default>! value is not mapped to a target value, all source values must be mapped.

Properties that are not marked as required can be assigned an empty value by mapping the source value to !<empty>!. To instruct Tzunami Deployer to assign an empty value in all cases, map!<default>! to !<empty>!.

Another special target value is !<Keep Original>!, which appears only if the target property allows fill-in values. Fill-in values enable you to add a value even if it is not included in the list of values).

After the new deployed items are created in the target SharePoint, you can override the values assigned to them in the Value Mapping step by using the Properties window.

To map source property values to target property values:

1. Select a source property value and a corresponding target property value and click **Map**. Repeat this step for all the property values you wish to map. The mapping is displayed in the bottom of the screen.

When handling long lists of values, you can enter a sub-string in the Filter fields. All values that do not contain this sub-string will be filtered from the corresponding list.

2. Click **Next**.

   This Value Mapping screen will reappear for each mapped target choice (and multi-choice) property, as well as once for User type properties. When all source property values are mapped, the Deploy wizard displays the Ready to deploy screen.

If you selected to add unmapped values as legal target property values, the unmapped source values will be added to the legal values list of the property.

Clicking Import/Export enables you to create a property mapping XML file, according to your current mappings, or load a different property mapping XML file. You can generate your own mappings (using Excel, or any other tool that generates XML files) and import the XML file.

6.1.2.9 Completing the Deployment Process

Tzunami Deployer is now ready to deploy the source items into the target SharePoint.

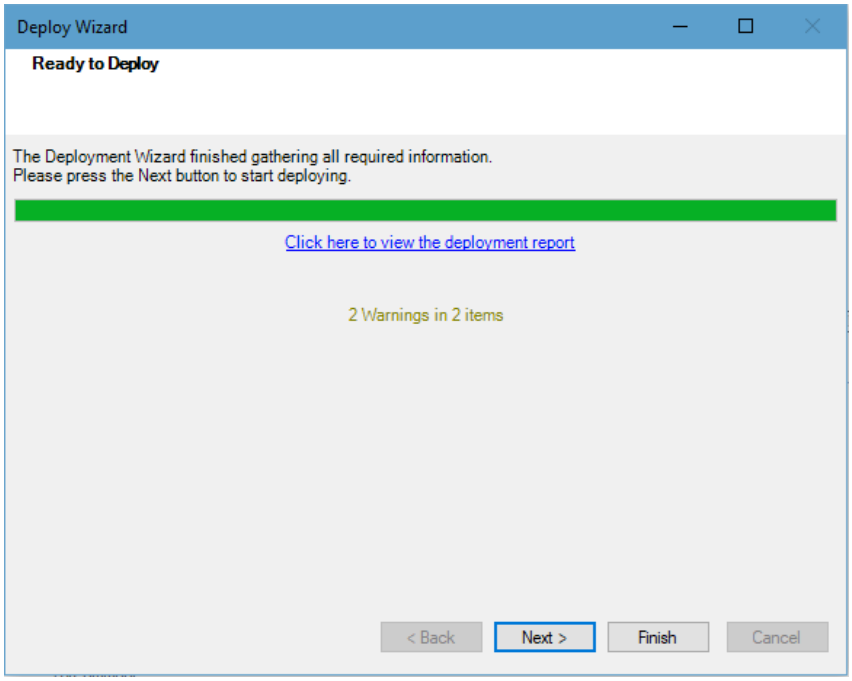


Figure 6-18: Ready To Deploy Screen

If Tzunami Deployer encounters errors or deployment failures, these errors are displayed in the deployment report and are announced in the next step of the wizard. You can navigate to report by clicking on the link.

To complete the deployment process:

1. Click **Next**. Tzunami Deployer begins deploying your source items into your target SharePoint.

   When the structure is created and the documents are added, the Ready to deploy screen displays a link to view the deployment report. If any warnings or errors were generated as part of the deployment process, icons with the relevant number of errors/warnings appear.

Tzunami recommends that you review this report carefully and search for any warnings.

2. Click **Next**. The Deploy wizard displays the Deploy security screen.
3. Click **Next**. The security deployment process begins.

The Properties window can remain open while you work in the Project window. It reflects the properties of the currently selected item or items.

You can skip the security deployment and manage the security at another time unchecking the Deploy security checkbox (Available only when migrating to SharePoint 2003) in the Deploy Wizard.

The Security Deployment report is stored in the following directory: <Project Folder>\Reports\Security Deploy Report.<Date>.<Time>.xml.

This report exists only when migrating to SPS2003, in which case a link to the report is displayed.

When Tzunami Deployer finishes deploying all items and settings, the Deploy wizard displays the Thank you screen.

4. Click **Done**. The new items are displayed in the bottom half of the Project window.

6.1.3 Mapping Security Information

The first page of the Deploy Wizard contains the **Deploy Security** checkbox. Selecting this checkbox enables you to also deploy the source security settings for your deployed containers and items.

If you select the **Deploy Security** checkbox, the following screens are added to the wizard:

- **Groups mapping** – Mapping of source groups to target groups as containers of users.
- **Entities mapping** – The concrete user mapping.
- **Roles Mapping** – Mapping of source roles (permissions sets) to target roles.

In the following example we review a deployment from LiveLink to SharePoint 2007.

Assuming we would like to deploy the following hierarchy as a Document Library into SharePoint 2007:

	<User_X>'s permissions	<User_Y>'s permissions	<Test Group>'s permissions
Documents	See, modify, add	See, modify, delete, add	See, modify, add
File A	See, modify	See, modify, delete	See
File B	See, modify	See, modify, delete	See
Sub Folder	See, modify, delete, add, modify permissions	See, modify, delete, add	See
File 1	See, modify, delete, modify permissions	See, modify, delete	See

Tzunami Deployer uses the concept of security roles, each representing a set of permissions. If the source system supports this concept, the roles are read from the system. Otherwise, Tzunami Deployer generates its own roles. You can add, remove and modify the roles used.

David's set of permissions qualify him the role of Contributor on the Documents folder and its content, but qualifies as an Administrator on Sub Folder and its child item. Ron's role is Web Designer on all the hierarchy and Test Group has the role of Reader on all content except for Documents, in which he is a Contributor.

6.1.3.1 Groups Mapping

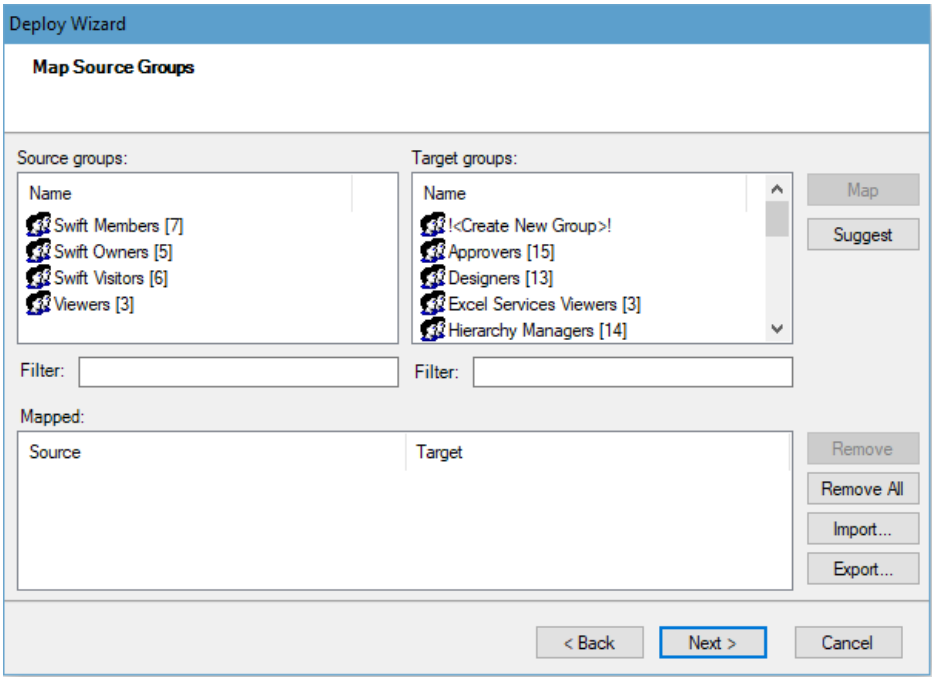


Figure 6-19: Group Mapping screen

The screen consists of three lists:

- **Source groups** – The source groups that are relevant to the items deployed.
- **Target groups** – The target groups that are relevant to the site into which we deploy.
- **Mapped** – Pairs consist of source groups and target groups that are already mapped.

In this step you can map a source group either to an existing site group, or to create a new site group bearing the same name.

In our example, we have only one source group (Test Group), and in the target we have the three default site groups (Members, Owners, and Visitors) and one user-created group named Target Group. We will map Test Group to Target Group. **This means the members of Test Group will be added as members of the Target Group.**

If the source is File System, this step is absent, since File System groups are treated as Active Directory groups, which can be mapped to SharePoint users.

6.1.3.2 Entities Mapping

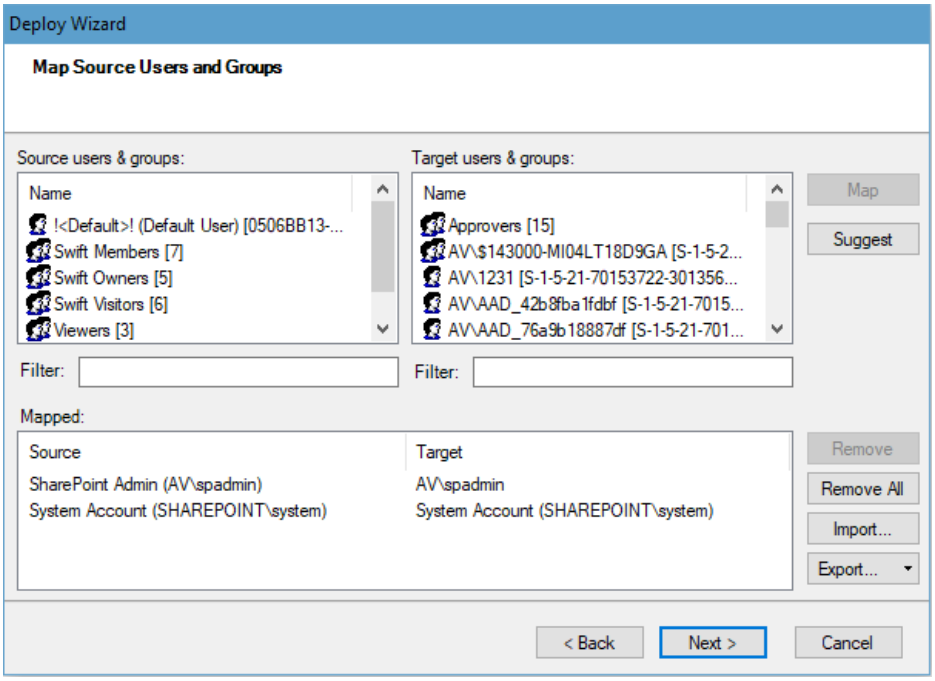


Figure 6-20: Entities Mapping screen

This screen also consists of three lists:

- **Source users & groups** – The source users and groups that are relevant to the specific items deployed. Included are users belonging to the groups.
- **Target users & groups** – All the local and domain users in the target. This means that also users that are not relevant to the target site are included (if you map to these users, they will be added to the target site).
- **Mapped** – Pairs consist of source user or group and target user or group each, that were already mapped.

In this step you can map each source user or group to a target user or group.

Mapping a source entity to a target entity means that the target entity will receive the same permissions that the source entity has. These permissions will be assigned based on the role mapping step. Also, when Tzunami Deployer performs the group mapping, group membership is migrated based on the entities mapping.

You can use the Filter field in order to drill down to a specific name.

Tzunami Deployer suggests some of the mappings based on the user names. Also Tzunami Deployer suggests the mapping of groups based on our mapping on the previous screen.

6.1.3.3 Role Mapping

After mapping the default user and the other users you wished to map, click **Next** to get to the third security screen: Role Mapping:

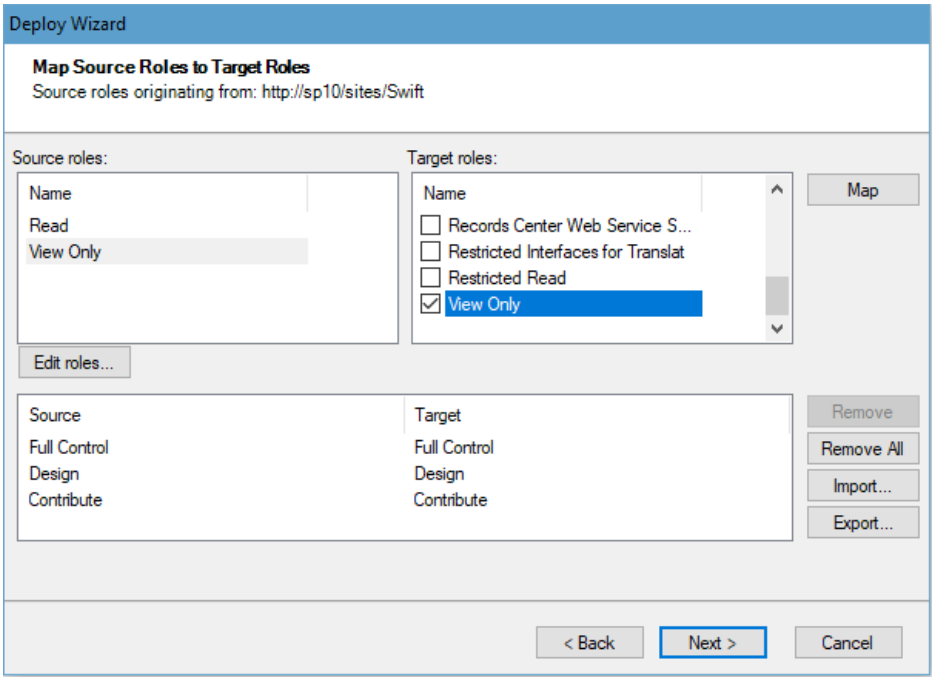


Figure 6-21: Role Mapping screen

This screen contains three lists:

- **Source roles** – The source roles (each role is a permissions set).
- **Target users & groups** – You can select more than one target role.
- **Mapped** – Pairs consist of a source role and its mapped target role(s).

Roles, as mentioned earlier, are sets of permissions. In this step you map a source role to a target role. This means that target entities that were mapped to a source entity with a certain role will be assigned with the corresponding role that will be mapped in this screen.

A sensible mapping would be: **Administrator > Full Control, Contributor > Contribute, Reader > Read, Web Designer > Design**.

You can check more than one target role.

When migrating from WSS2.0/SPS2003, Site groups are handled as both groups (containers of users), and roles (sets of permissions). This means that Site groups will appear in both the Groups mapping and the Roles mapping steps.

Following our example, the outcome of our security mapping will be:

	David's role	Ron's role	Test Group's role
Documents	Contribute	Design	Contribute
File A	Contribute	Design	Read
File B	Contribute	Design	Read
Sub Folder	Full Control	Design	Read
File 1	Full Control	Design	Read

6.1.3.4 Checking Deployed Items

Once you have finished the deployment, you can scan the hierarchy of items and search for problematic items.

To find problematic items:

- Select **View** > **Find** > **Find Problems**.

  Tzunami Deployer scans the hierarchy in the target system for problematic items. If there are no problematic items, a message is shown. If Tzunami Deployer encounters problematic items, the Problematic Items window appears (**Figure 6-22**).

The window updates itself as you modify items to handle their problems.

You can double-click (or click **Go To**) on an item to navigate to it directly.

Click Copy to clipboard and Export to retrieve the list of problematic items.

The following problems are checked:

- Name contains invalid character.
- Name and URL are too long
- Blocked extensions
- Files are too large
- Properties values are illegal (Hyperlinks start with a protocol schema, required properties have values, required properties do not have a default value).

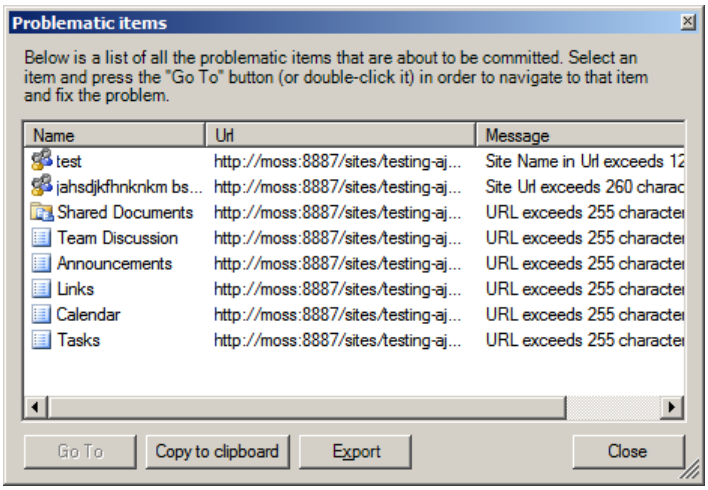


Figure 6-22: Problematic items window

6.1.3.5 Managing the Deployment Process

This section describes a variety of options that enable you to keep track of the deployment process. **For e.g.**, you can determine which source items are deployed to which target locations:

- **Item Counters** – Items in the container versus the number of items deployed. For example, the following shows that only one item of the 25 in this hierarchy is deployed:

The first number is the number of files and items deployed, but not yet migrated to the target SharePoint. The second number is the total number of files and items in that location and all its nested hierarchy. In the source system, this enables you to verify that all files intended for migration were indeed deployed. In the target SharePoint system, this indicates how many items currently in the specific location were deployed but were not yet migrated to SharePoint.

- **Icon Overlays** – Each item or folder can only be deployed once. After deployment, the icons of both source and target items appear with an upload overlay (). **For e.g.** .

  If you try to redeploy an item that is already deployed, a message is displayed. You can remove a deployed item by finding the location to which the item is deployed (in the target SharePoint) and delete it.

- **Find Source/Target Tool** – You can find the correlation between items in the source and their new location in the target:
  - Select a source item and click **Find Source/Target** to find the deployed target item.
  - Select a target item and click **Find Source/Target** to find the deployed source item.

- **Deployed To / Deployed From Column** – The source includes a Deployed To column that specifies the address of new item in the target SharePoint. The target SharePoint includes a Deployed From column that specifies the address of the source item that was deployed.

- **Find Problems** – You can instruct Tzunami Deployer to search for known problems (such as long URLs, which is a SharePoint limitation, blocked extensions, and so on) by selecting **View > Find > Find Problems**. This option can only be performed *before* the migrating stage, on not migrated items.

- **Filtering Source Items** – Tzunami Deployer enables you to filter the items that appear in the source system.

6.1.3.6 Filtering Source Items

When you apply a filter to a folder, the filter is automatically applied to all sub-folders. You can set a different filter for a sub-folder or disable filtering for it altogether by editing the sub-folder's filter settings.

To filter the source store list:

1. Click .

   Or

   Right-click a source folder you wish to filter and select **Filter**.

   The Edit Filter window appears.

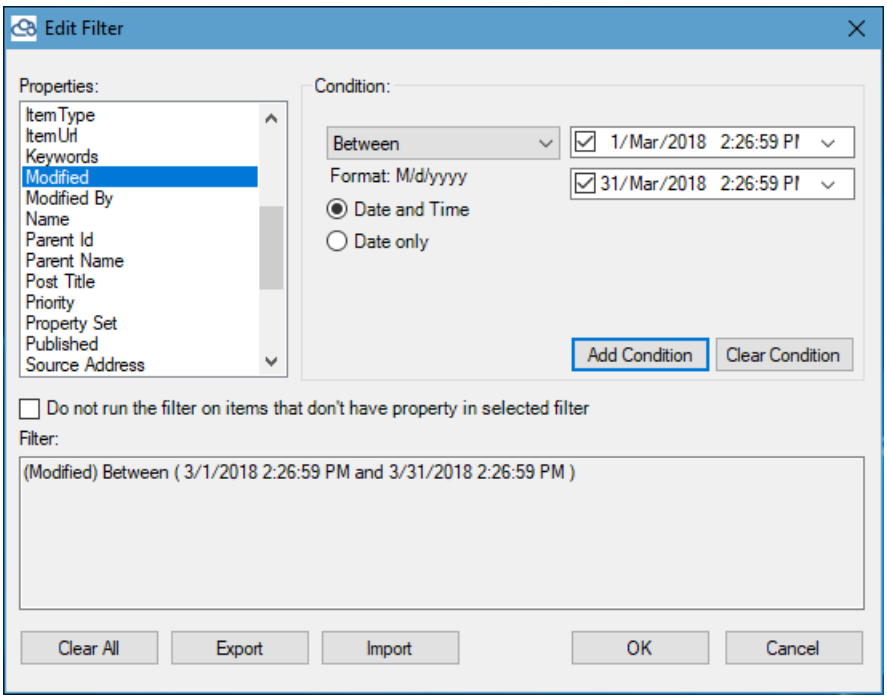


Figure 6-23: Edit Filter Window

2. Select a property from the list of Properties.
3. In the Condition area, select one of the following conditions from the drop-down list and enter a value in the corresponding field(s):
   - Equals to
   - Different than
   - Greater than
   - Smaller than
   - Between
   - Matches
   - Doesn't match
   - Empty Value
   - Non Empty Value

Some conditions have single value and others have multiple values, for example the Equals to condition can contain up to five values.

4. Click **Add Condition**. The condition is added to the Filter area, displaying the full filter expression.

You can only add one condition per property.

You can edit a condition for a property by selecting the property and modifying the condition type or it's currently assigned values and clicking **Add Condition**.

Also, date-time type property has **Date and Time** and **Date Only** filter options under **Condition** to include time or not along with date.

You can remove a condition from a property or all the conditions from all the properties by clicking **Clear Condition** or **Clear All**, respectively.

5. Click **Import/Export Button**. Export button can be pressed to dump added filter condition as an XML file. Likewise, Import button can be pressed to import the saved filter conditions accordingly.
6. Click **OK**.

   The **filter** is applied to the source hierarchy and the icon at the filtered location, including all its sub-folders, includes a filter overlay (), as well as an additional counter specifying the number of files and items that passed the filtering.

6.1.4 Best Practice for deploying source

- **Drag and drop:** Deploy selected items from the source to a pre-determined location in the target. At this stage of the Deployment, you should already be aware of what you're dragging (site, list, etc.) and which properties you want to add accordingly.

- **Mass Deploy:** Repeat the "Drag and Drop" phase for as many projects as you like. Keep in mind that using more than one person to conduct the migration can help you move through the different phases simultaneously and thereby at a quicker pace.

  Make sure not to deploy the same site collection using two different projects that are destined to run simultaneously, as this could cause inconsistency issues.

- **Review the Deploy Reports for any warnings**

- **Check for problems before Commit:** Before migrating your project to SharePoint, use the "find problems" option from the Deployer menu (Ctrl +P) in order to identify any issues that may occur as a result of SharePoint limitations, such as long URLs, or blocked extensions.

- **SharePoint Limitations:** Keep in mind SharePoint column limitations while adding missing properties.

- **Multiple Deployment:** Simulate multiple deployments for a source type till you find the one that suits your needs best. Use the same deployment pattern for that item type in future.

6.2 AUTO DEPLOYMENT AND MIGRATION

Tzunami Deployer provides a single click auto deployment and migration solution. Auto Deploy and migration is an approach of migration where user just needs to click on a button and the Deployer itself identifies, plans, analyzes and performs all the necessary steps needed to make items migrate to target.

During the deployment process, Deployer maps the User and Groups, Properties and Values based on the best matching condition for SharePoint. If there are no possible matches it will add the source properties to target as far possible.

This feature is included in the product so that novice user can perform the deployment and migration process without knowing the tool's available features in detail. User, then, can perform the analysis of the migrated content and plan for the comprehensive deployment process for the actual migration process.

To execute the auto deployment and migration process, perform the following steps:

1. Deploy the content from Source to Target panel

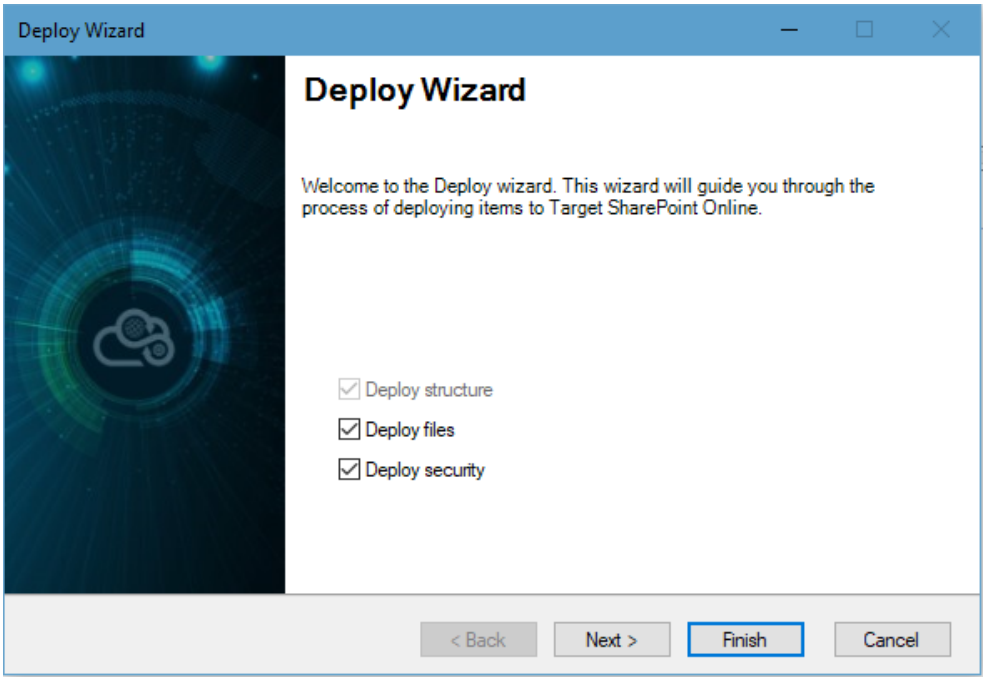
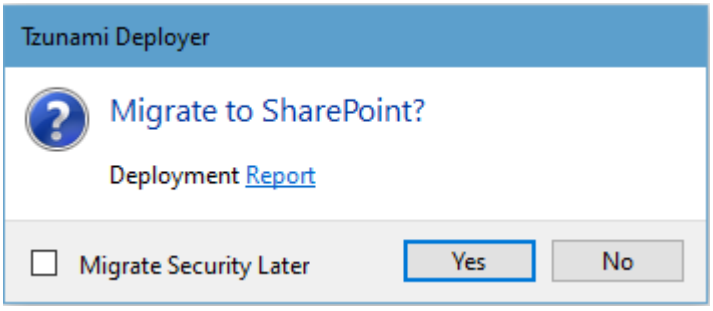


Figure 6-24 Deploy wizard screen

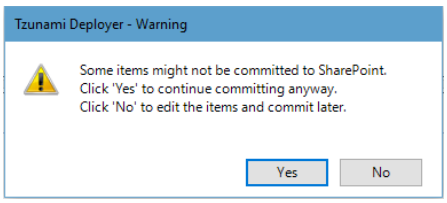
Before proceeding auto deployment and migration, it is recommended to check the problematic items by pressing CTRL or navigating to View>Find>Find Problems and resolve the problematic items.

2. Click on **Finish** button
   An auto deployment process starts. After completing the auto deployment process, a formation message to start migration appears.



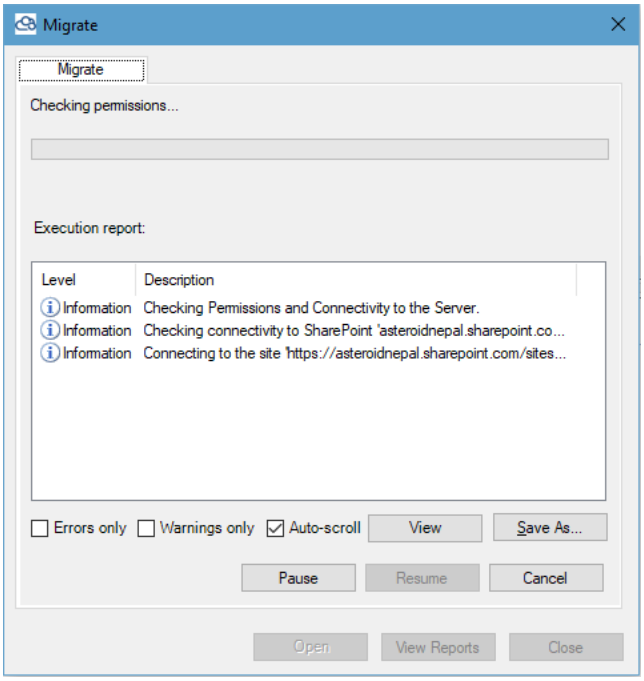
Click on **Yes**.

If there are problematic items, then you will see the warning message to view. Click on **Yes** to continue without resolving problematic items.



Click on **No** to view the problematic items. You need to resolve the problematic items navigating to View>Find>Find Problems or pressing CTRL.

3. Then, the auto migration process starts.



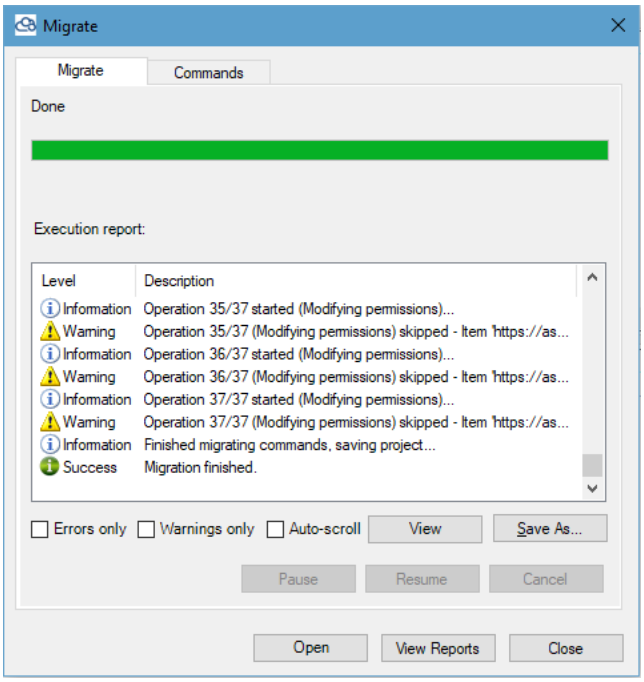


Figure 6-25 Auto migration process

6.3 DELTA DEPLOYMENT

Tzunami Deployer provides a single click delta deployment solution. Delta deployment is a new approach of migration where user just needs to initiate the delta deployment command with a single click after which Deployer itself identifies, plans, analyzes and performs all the necessary steps needed to make items ready for Migrate.

Delta deployment completely depends on previously migrated project. So, user need to make sure that every project created for migration should be unique and they are safely placed until the delta deployment is carried out.

The Link Resolver Service must have been used in previously migrated project.

Tzunami Inc. does not recommend to use **Save As** option or remove/reload operations in the regular migration project. If such operations have been performed, Delta deployment may not work as expected.

6.3.1 Configure Global Settings for Delta Deployment

Tzunami Deployer uses Security, Property and Value mappings from the previous migration by default. It identifies the required mappings to perform delta deployment based on the mapping files available in the migration project.

However, Tzunami Deployer provides a facility to use a global (custom) mapping across all delta deployment, too. To achieve this, user need to provide the path for mapping files and check the option **Use Global Mapping**.

6.3.2 Edit Mapping files

Tzunami Deployer saves all the mapping files (Property, Value, Roles, Groups and Entities) when migrating the content from source system to target system. Those mapping files are re-used, by default, when performing delta deployment.

Even though Tzunami Deployer uses the previous migration project's mappings by default, user can edit the mapping files to change the mappings as desired. Then, Tzunami Deployer performs the Delta deployment based on the edited mapping files.

If you want to reflect changes made in entity mapping (user or group mapping) during delta deployment, confirm that following options are checked.

- Always option for Show Value Mapping Dialogs under Options>Mappings menu.
- Always option for Show Security Mapping Dialogs under Options>Security menu.

To edit the mapping files for Delta deployment:

1. Open existing project, it will load all source and target information that were migrated previously.
2. Click on **Mapping Editor** from the tool bar.

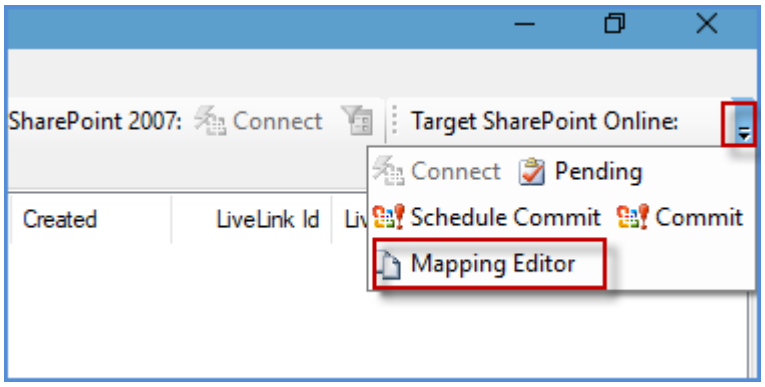


Figure 6-26 Mapping Editor Option

3. Mapping Editor opens.

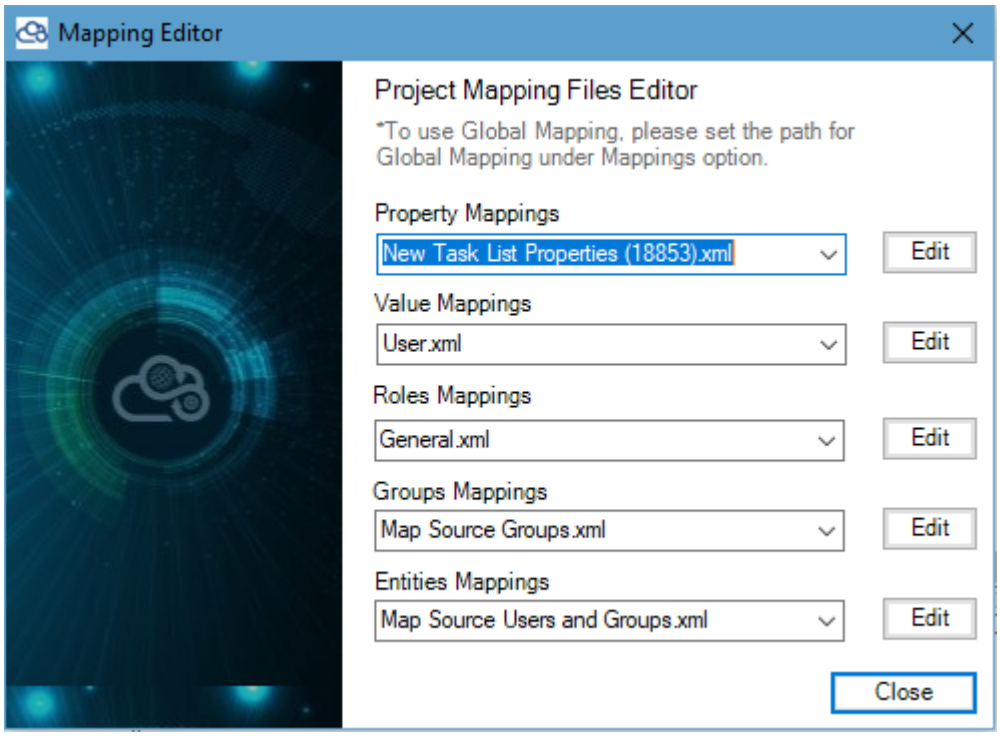


Figure 6-27 Mapping Editor Screen

4. Click **Edit** for the desired mapping file to update. The files open in an editor. Make necessary changes in the file in the existing format.
5. Then Click **Close**.

6.3.3 Perform Delta Deployment

To perform delta Deployment:

1. Open existing project, it will load all source and target information that were migrated previously.

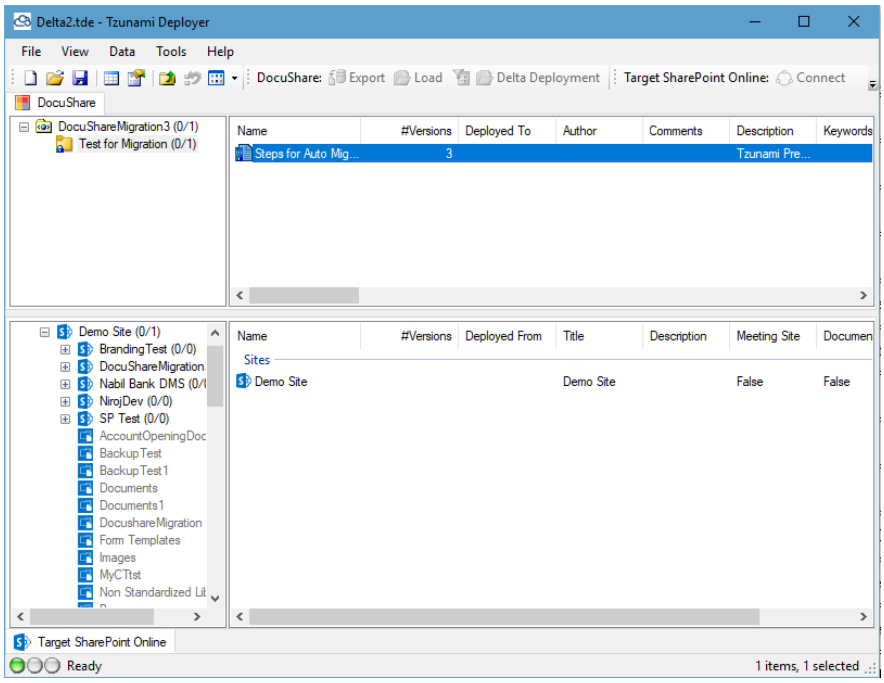


Figure 6-28 Loading Deployment Project Screen

Before performing Delta deployment, confirm that the option **Use Link Resolver Service** is checked under menu, **Tools>Options>Others>Link Registration**.

And, **Tzunami Deployer 4.0 Migration Service** is in running state in windows service.

Also, Tzunami Inc. does not recommend to run regular migration project while performing delta in same machine with multiple instances of Tzunami Deployer at the same.

2. Select root folder in Source Tab. Then click **Delta Deployment**

   Or

   Right click on root folder in Source Tab, then click **Delta Deployment**.

   A dialog to browse the specification file is displayed. Browse the specification file which is located previous migration project location.

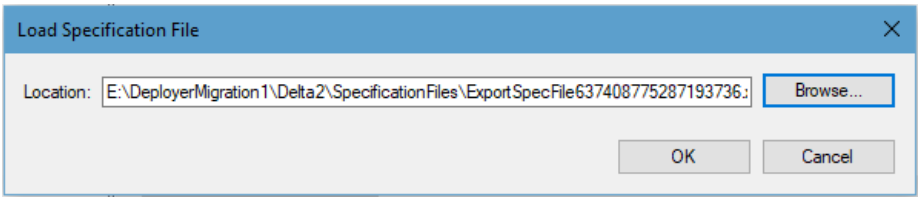


Figure 6-29 Loading Specification File for Delta Deployment

   Then click on **OK**.

3. The Delta Deployment executes. Tzunami Deployer connects to source, exports and loads the data for delta deployment, then deploys to target automatically.

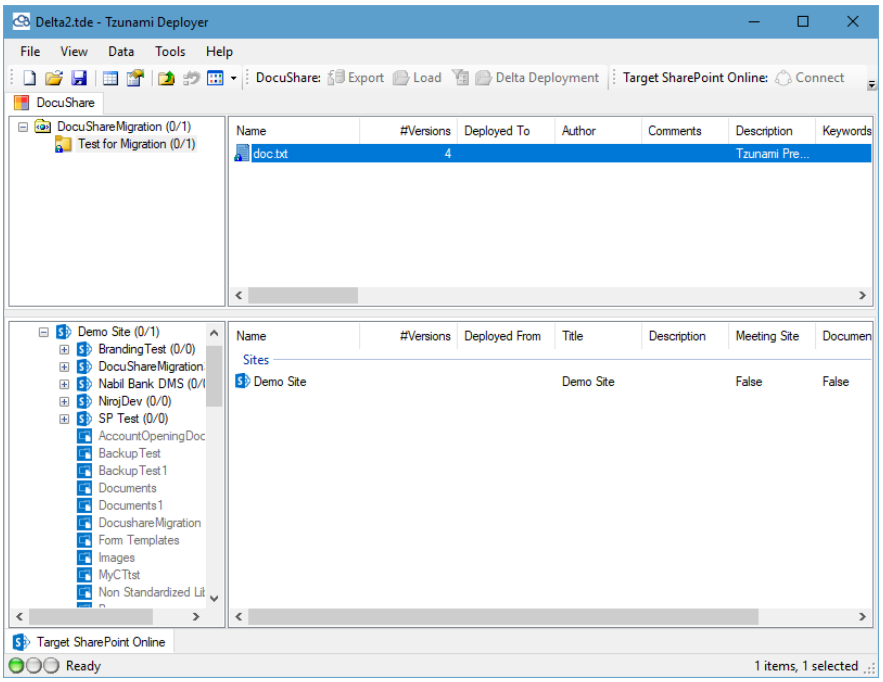


Figure 6-30 Delta Deployment Screen

   Based on existing project file, Deployer identifies and plans the structure of source items that need to be exported and exports the delta contents (contents that were modified after last export). The exported contents will be automatically loaded in Deployer.

   After loading the exported contents, Deployer analyzes the existing migration reports to figure out which items were deployed to which location, and based on that, it deploys the contents to target as incremental migration. By default, a

new version will be added to the existing items, and new items will be created for non-existing items.

During deployment, user do not need to take any action except few confirmation pop ups which may appear depending on condition to make sure user is aware of those actions. Deployer will use all the security mapping, property mapping and value mapping files based on the option selected by user on whether to use global mappings or mappings saved in the project location from previous migration.

Once deployment completes, user can verify the newly deployed item in target panel. If user need to perform any post deployment action, they can perform it. Otherwise delta contents are ready for migration.

4. Click **Migrate,** then click on **Yes**.

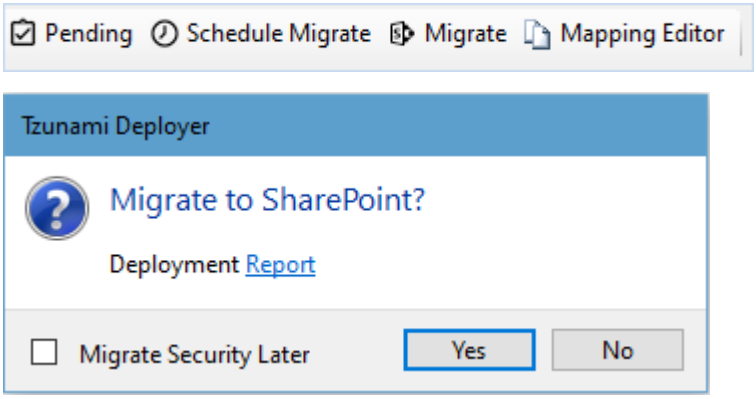


Figure 6-31 Migration Screen

6.4 Security Only Migration for Already Migrated Content

Tzunami Deployer provides a feature to migrate the ACL of the previously migrated content. This is useful if there are anomalies in security for the migrated content. The new deployment does not deploy the new items (if any) and perform the security related changes and hence updates the security information in previously migrated content.

Security only migration can be performed using Security only Migration option in icon bar or from the incremental migration option as well. Either way of deployment uses the same option and produce the same result.

Steps to perform security only migration

1. Open the Deployer Migration project, and reload the items in source and target panels. And select items to deploy in source panel.

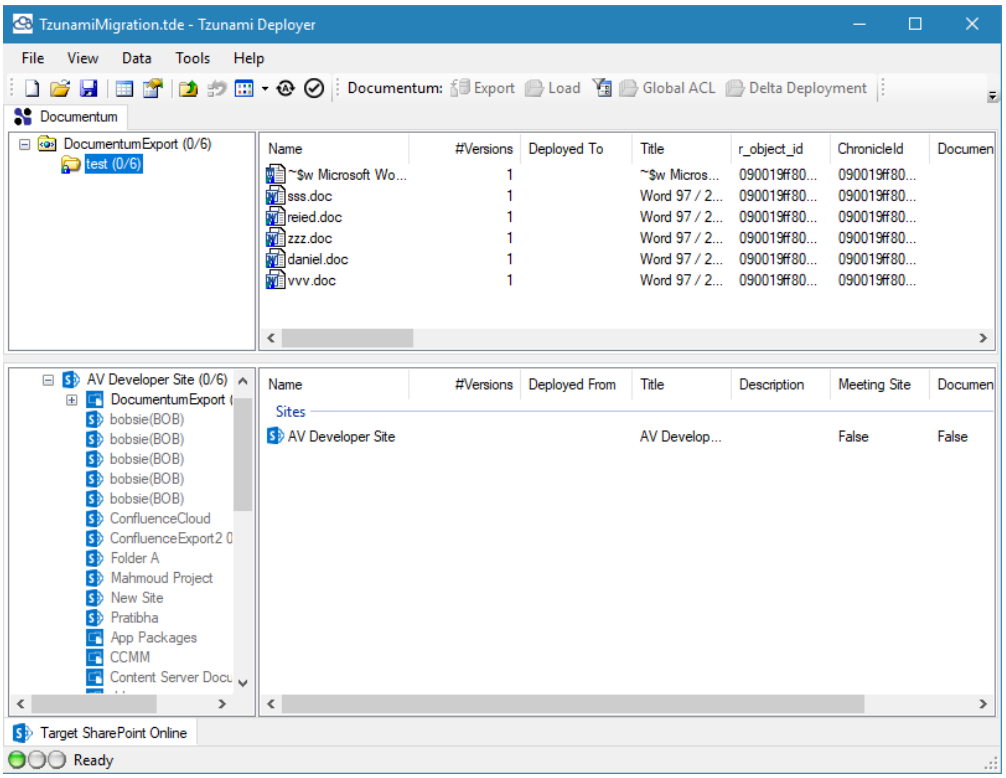


Figure 6-32 Migration Project window

2. From the top icon bar, click on **Security Only Migration** option.

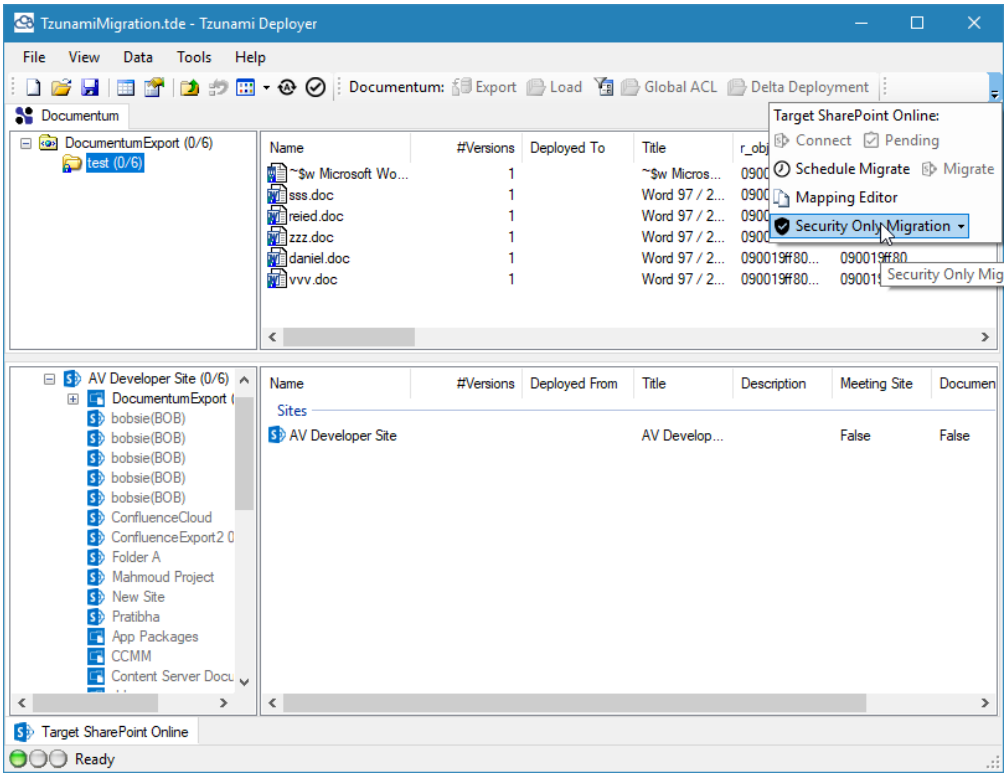


Figure 6-33 Security Only Migration option in icon bar

3. Select option **Overwrite All** or **Overwrite Mapped** as required.
   Overwrite All: Overwrites all the target ACL with new ACL.
   Overwrite Mapped: Only mapped ACL from current migration will be overwrite in target, leaving unmapped ACL as it is in target.

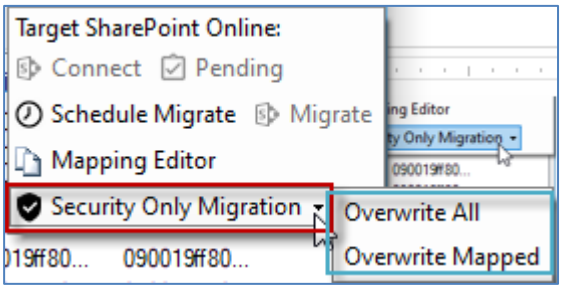


Figure 6-34 Options in Security Only Migration

4. Expand the tree view

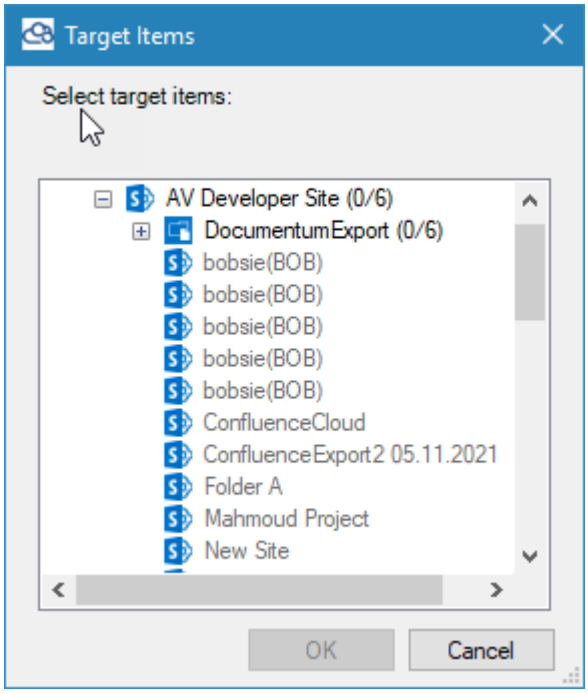


Figure 6-35 Taget Tree view for Security Only Migration

5. Select the previously migration item in target tree view.

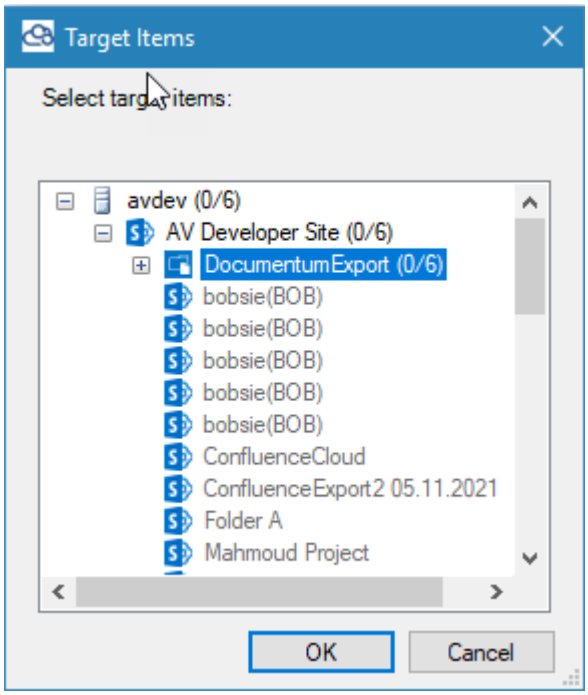


Figure 6-36 Security Only Migration with Previos Item

6. Click on **OK** button. Deploy wizard starts.

7. In **Define Deployment Structure** wizard, select the appropriate structure for deployment.

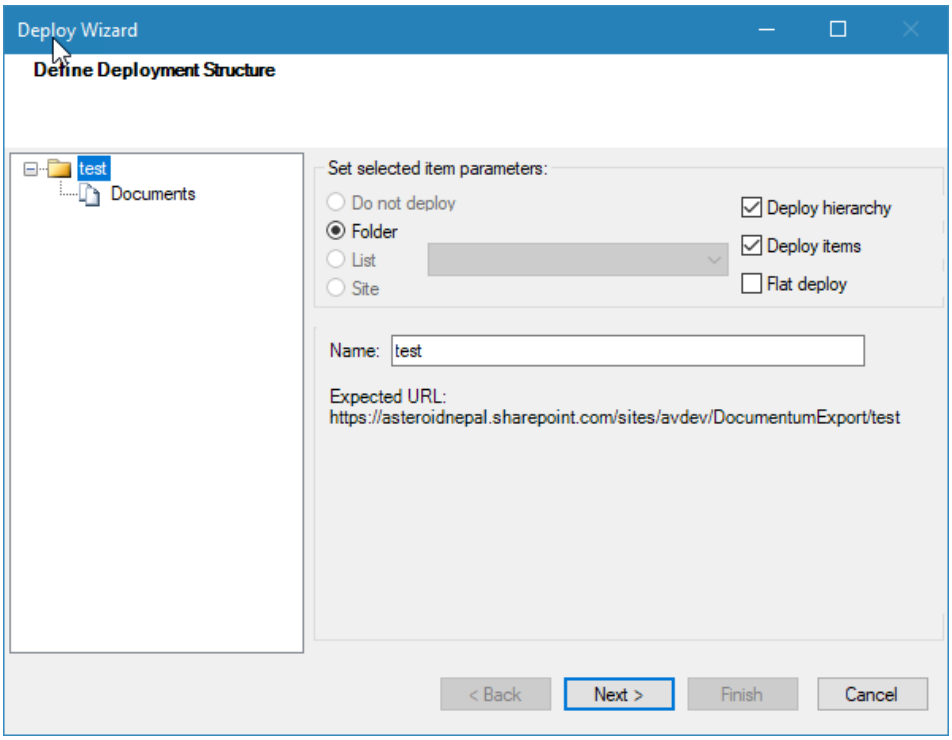


Figure 6-37 Deployment Structure window

Click on **Next** button. If confirmation for overwriting existing Role mappings is asked, you can click on **Yes** or **No** as you wish, and proceed ahead.

8. In **Map Source Users and Groups** wizard, perform mapping as required.

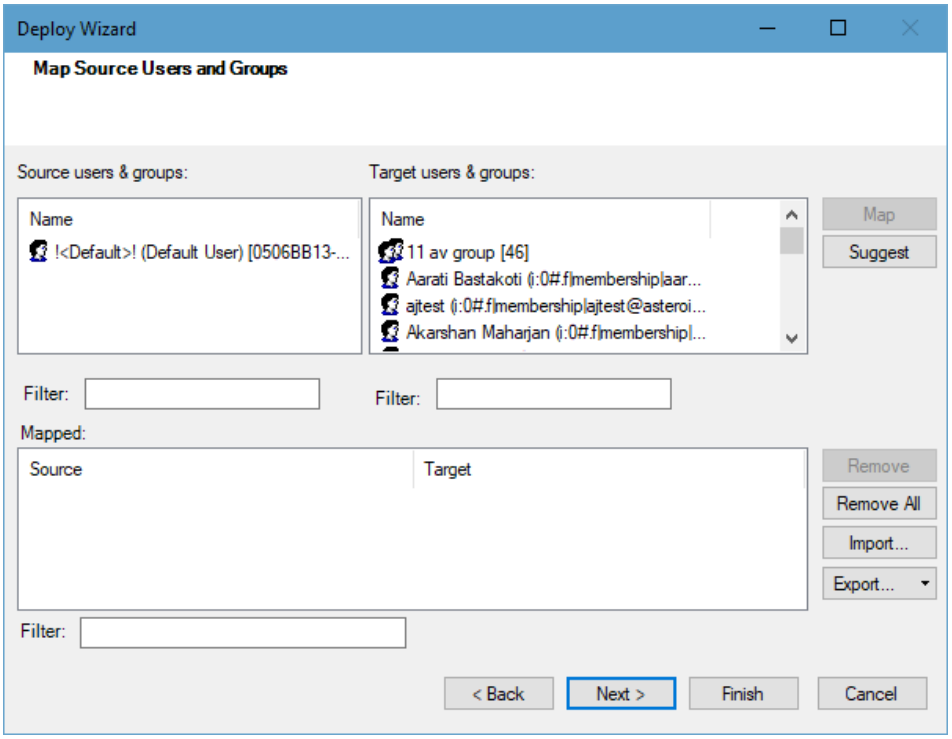


Figure 6-38 Users and Groups Mapping window

Click on **Next** button.

9. In **Map Source Roles To Target Roles** wizard, perform mapping as required.

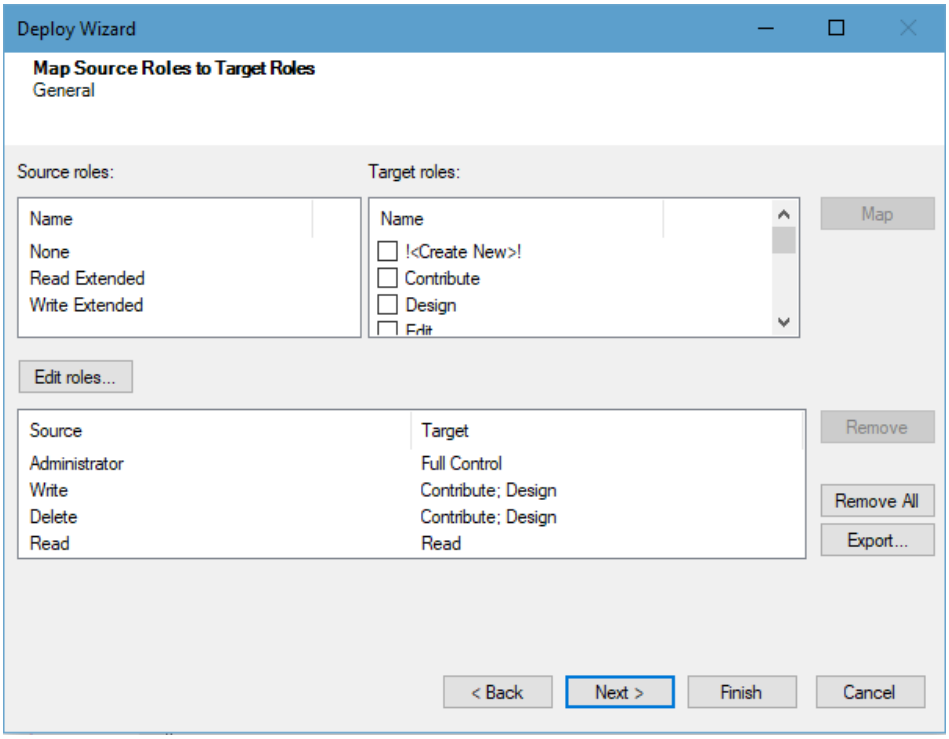


Figure 6-39 Roles mapping window

Click on **Next** button.

10. In **Ready to Deploy** wizard, click on **Next** button.

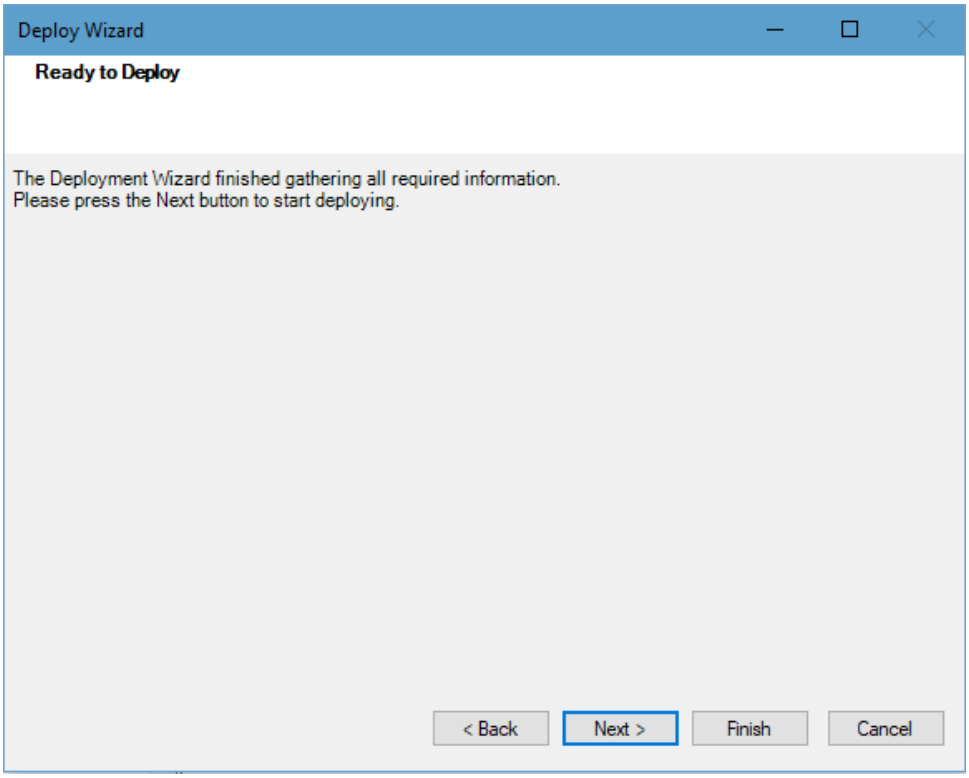


Figure 6-40 Deploy Ready Window

11. You can view the Deployment report following the link.

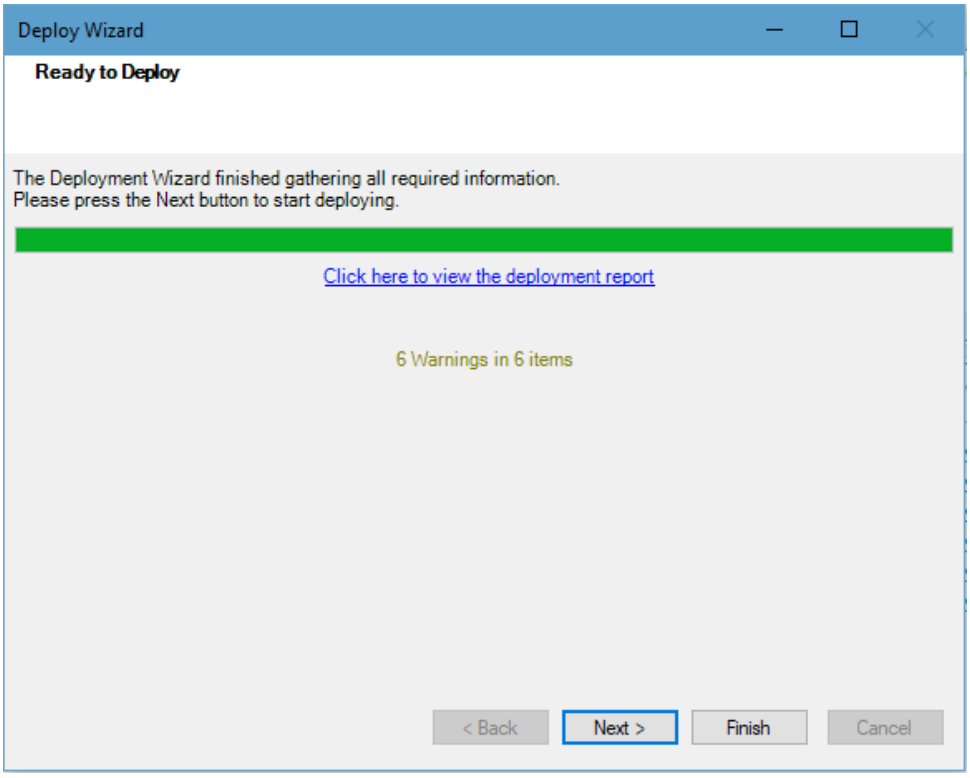


Figure 6-41 Deployment report window

Click on **Next** button

12. In Deploy Security wizard, click on **Next** button

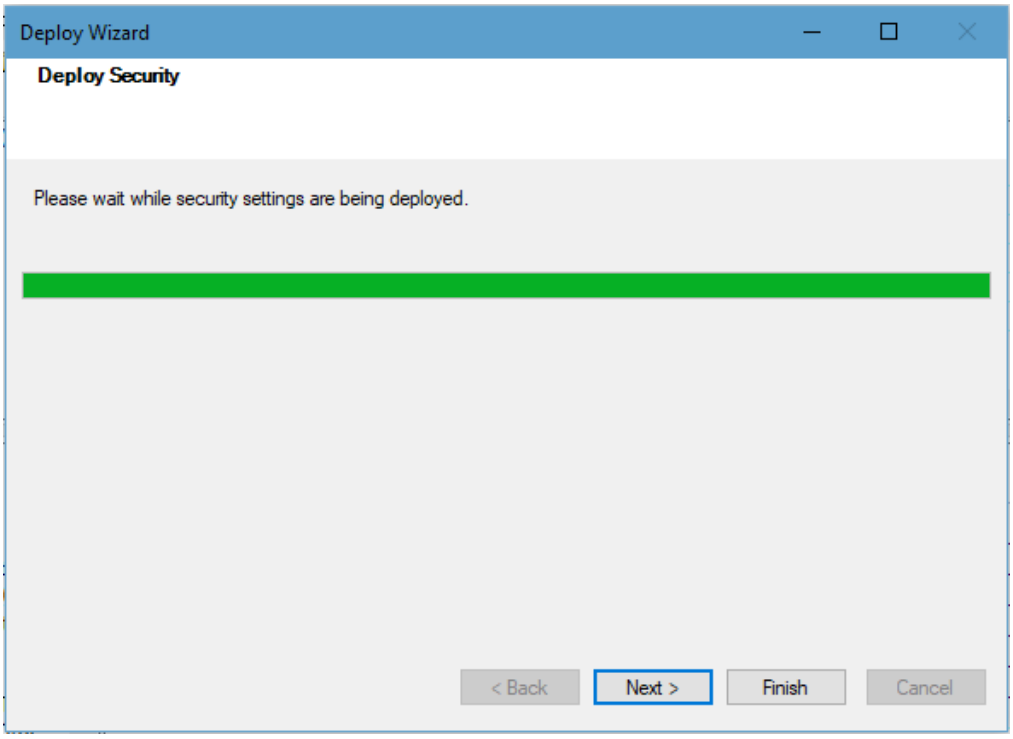


Figure 6-42 Deployer Security window

13. In final wizard, click on **Done** button.

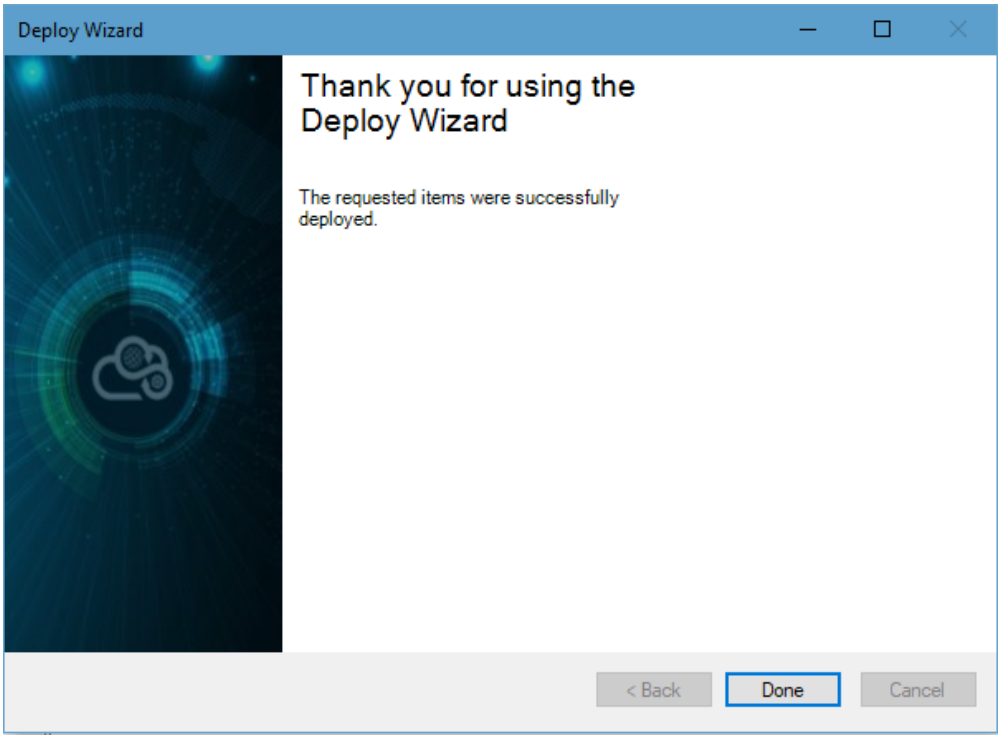


Figure 6-43 Thankyou wizard

14. In project window, click on **Migrate** button.

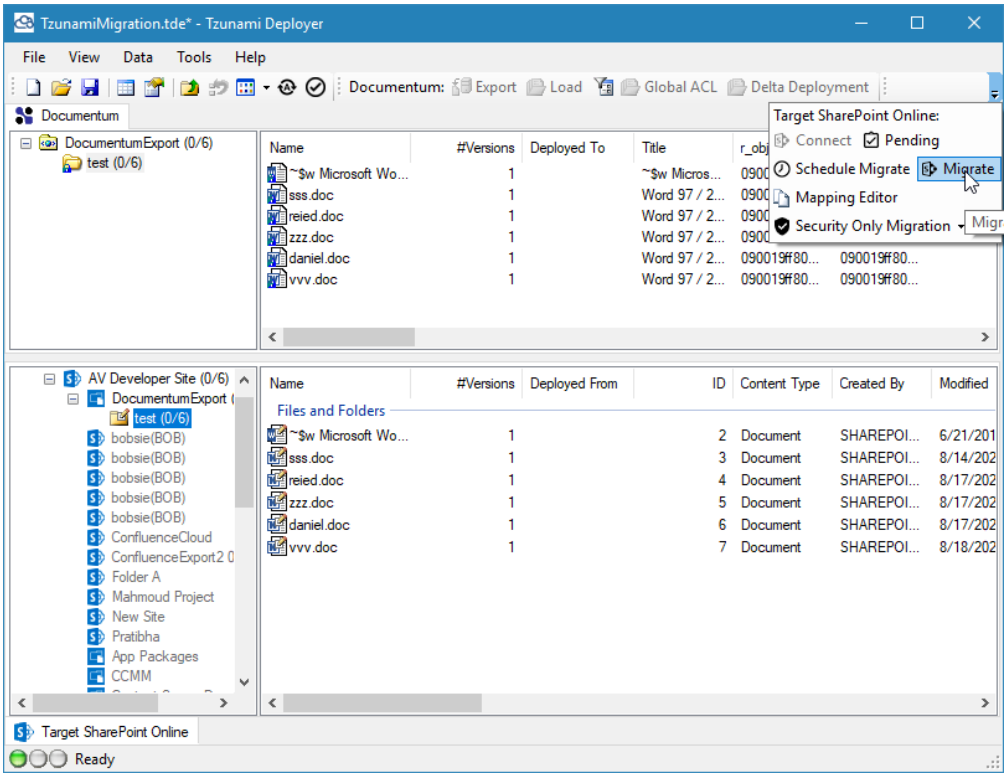


Figure 6-44 Starting migration for Security Only Migration

15. Confirm the migration by clicking on **Yes** button.

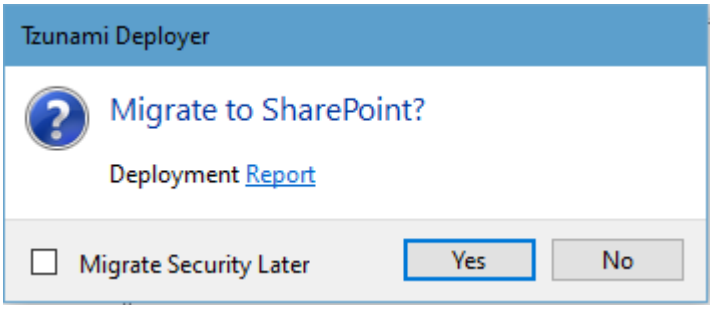


Figure 6-45 Confirmation for Migration

16. Security only migration starts. Successful security only migration screen looks like

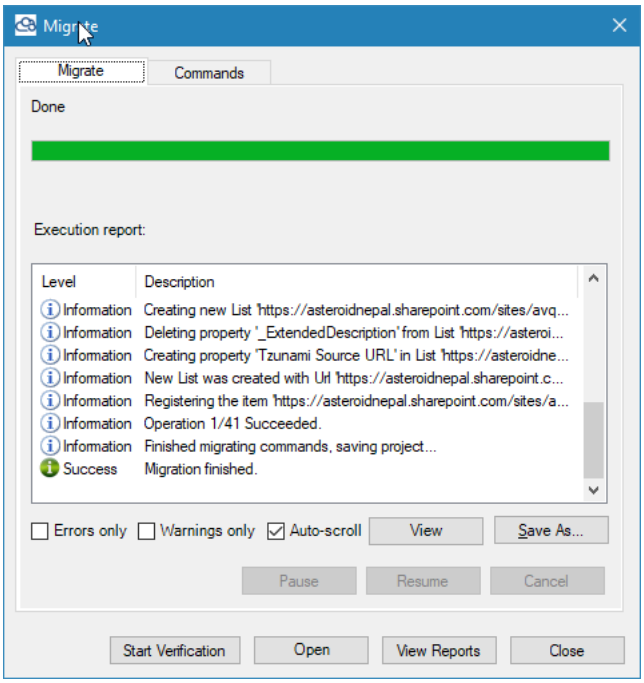


Figure 6-46 Migration completion window

User can perform following actions using available buttons.

- User can close the window by clicking on **Close** button.
- User can open a window containing migration reports list by clicking on **View Reports** button. Individual reports can be opened from the list.
- User can open the target site (root of deployment) by clicking on **Open** button.
- User can start migration verification by clicking on **Start Verification** button. This feature requires additional license, please contact Tzunami Support at ***support@tzunami.com***.

Steps to perform security only migration form normal Deployment process

1. Open the Deployer Migration project, and reload the items in target panel.

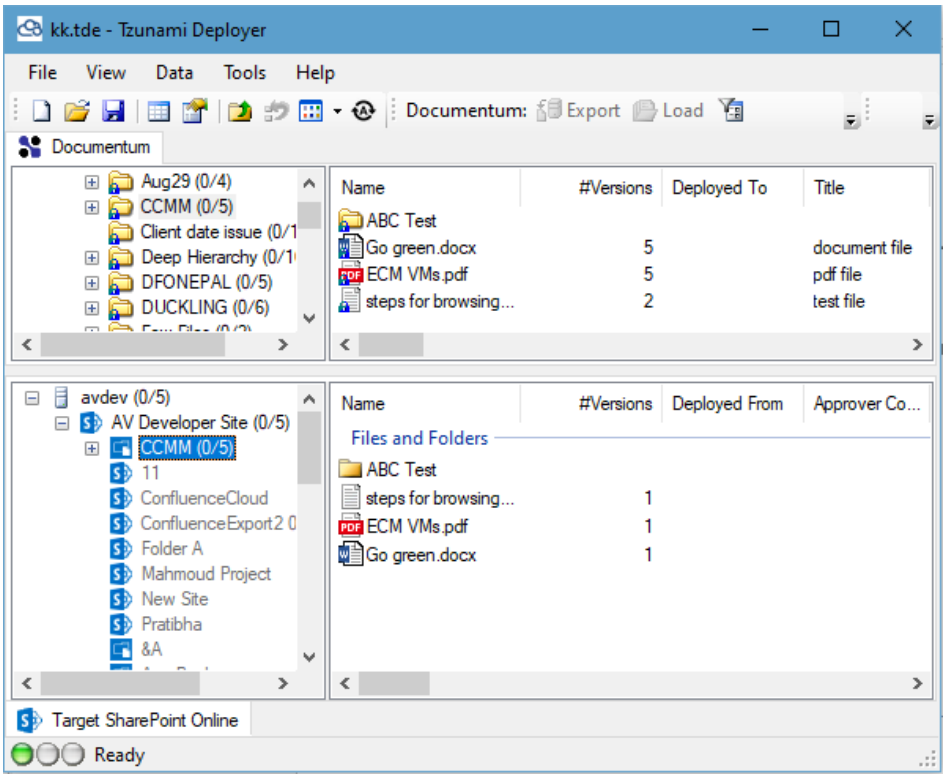


Figure 6-47 Security Only: Reload target

2. Deploy the source data to target as deployed in previous migration project and make sure **Deploy Security** option is checked. Then click on **Next.**

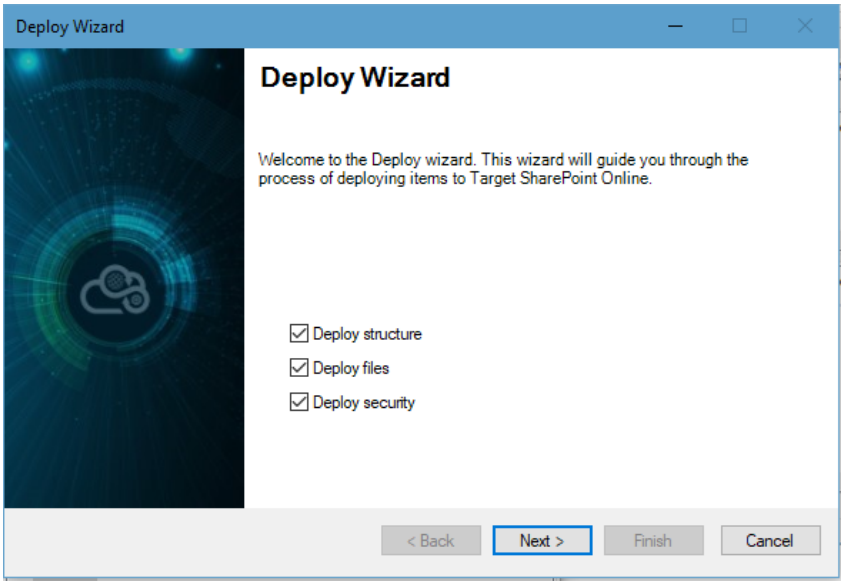


Figure 6-48 Security Only: Deploy with security

3. In Global Settings screen, check **Incremental Migration** radio button. Then click on **Update security only** radio button. The **Skip new items** check is disabled now to skip any new items deployed (if any).

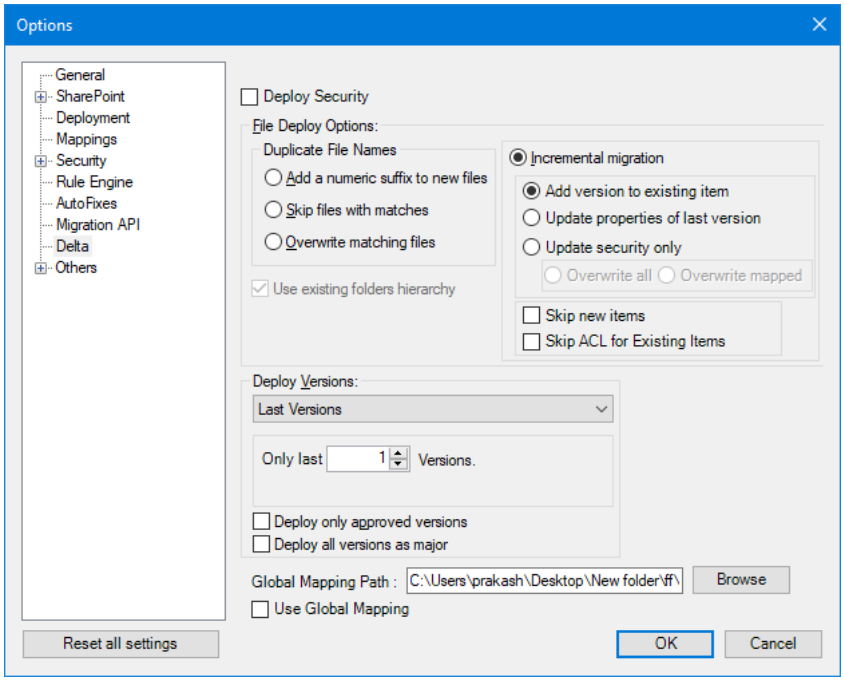


Figure 6-49 Security Only: Update security only option

In ACL Options, check **Overwrite all** or **Overwrite mapped** radio button. The **Overwrite all** option will remove the existing security of the items in target and create new security and assign. The **Overwrite mapped** option will update the mapped securities only in the target. The **Use existing folders hierarchy** should be check in this screen. Then, click on **Next**.

4. In Define Deployment Structure screen, continue with the displayed structure deployment. Then, click on **Next**.
5. In Map Source Groups screen, map the source groups to target groups as required. Then, Click on **Next.**

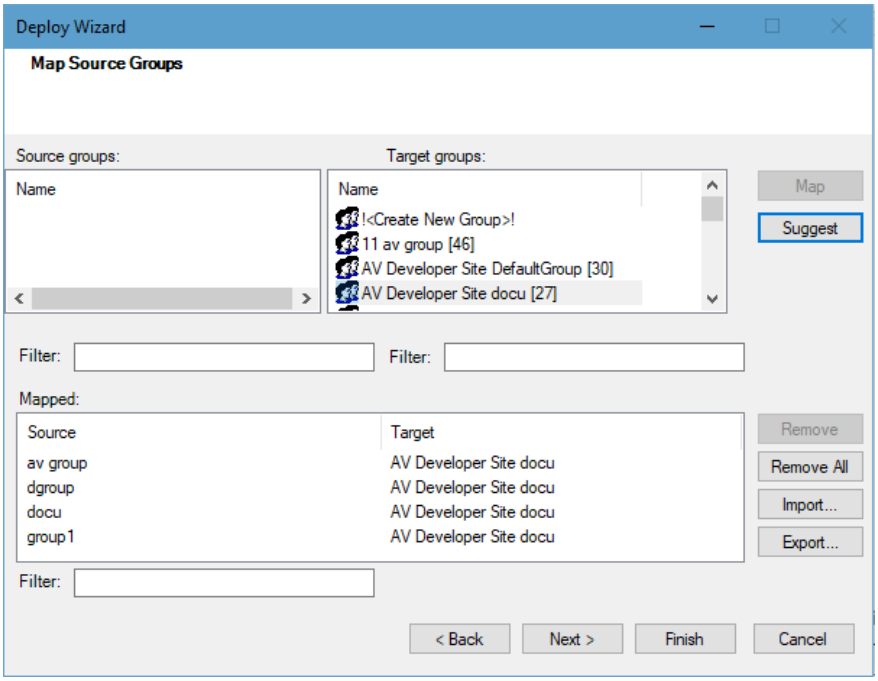


Figure 6-50 Security Only: Groups mapping

6. In Map Source Users and Groups screen, map the source users and groups as required. Then, click on **Next.**

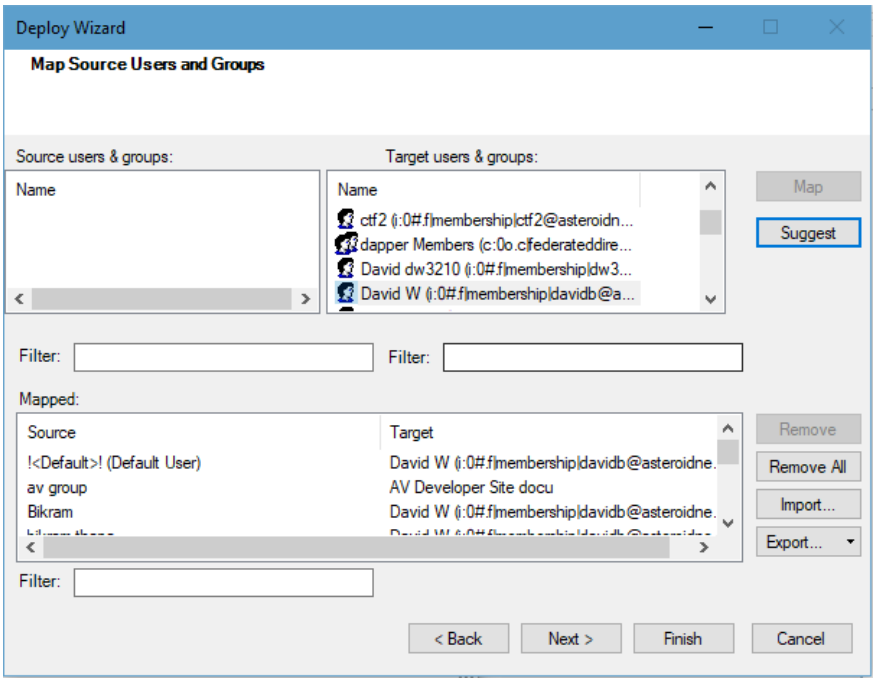


Figure 6-51 Security Only: map users and groups

7. In Map Source Roles to Target Roles screen, map the roles. Then click on **Next** until deployment process is finished.

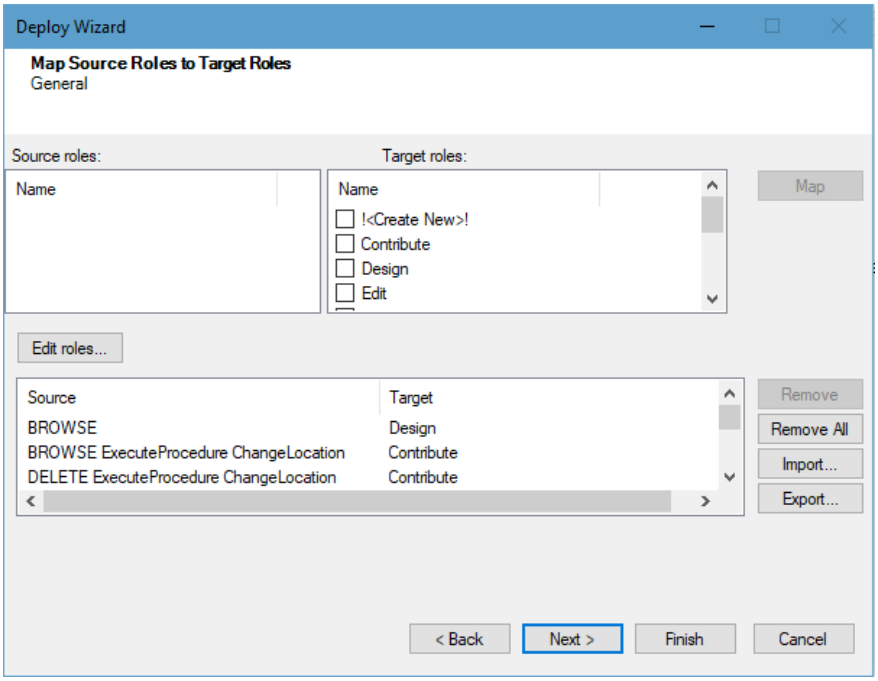


Figure 6-52 Security Only: Map roles

8. Click on **Done** button. The security only migration is ready to migrate the security changes in target. Proceed for migrating the data to target.

7 MIGRATING USING DEPLOYER PROJECT

This chapter explains how to migrate the deployed content to target SharePoint. This chapter contains the following topics:

- ***Executing the Migration***
- ***Migrating Now***
- ***Schedule Migrate***
- ***Batch Mode Migrate***
- ***Migrate Process Using Migration API***
- ***Best Practice for migrating a Deployer Project***

7.1 EXECUTING THE MIGRATION

The migrating stage executes your target SharePoint customizations and migrates your source items to your target SharePoint. You can perform the migrating stage immediately after deployment or you can schedule it for a later date.

The migrating process first applies the model that was designed in Modeling Target SharePoint. This ensures that the sites, libraries, lists, and folders are created in the target SharePoint and that their metadata is set, so that they are ready for the migration of items into them, according to the deployment scheme you built in Deploying Source Data for Migration.

The actual content migration physically copies the source items (**For e.g.** Microsoft Office documents) to the target library, list, or folder on the SharePoint site, while updating their metadata properties according to the Tzunami Deployer project definitions.

You can estimate how much time the migrating stage requires with the following calculation:

$$\frac{(X \times Y)}{(N \times Z)} = \text{anticipated migrating time.}$$

Where:

X – The total number of documents to Migrate.

Y – The average migrating rate for one Tzunami Deployer instance. This rate can be determined by migrating a project and dividing the number of documents by the amount of hours taken to complete migrating.

Z – The number of servers (that meet the required specifications) available on which to run Tzunami Deployer.

N – The number of Tzunami Deployer instances planned to run on each server.

While your projects are in the Migrating stage, create and work on additional projects to save time. When one project finishes the Migrating stage, you can immediately begin Migrating another.

You can run multiple Tzunami Deployer projects on a single server. Keep in mind that the number of Tzunami Deployer projects running simultaneously on one machine and the total number of running projects depends on your hardware, network connections, and the SharePoint environment maintenance and response time. This maintenance and response time depends on the amount of free memory on the machines running Tzunami Deployer, hardware, available CPU, network connectivity to SharePoint, DB indices on the SharePoint SQL server, and so on.

Avoid making additional changes directly to your target SharePoint during the Migrating stage.

After the Migrating stage is complete, the numbers on the left of the item counters in both the source and target trees are set to zero and the New, Modified, and Deployed overlays are removed from all icons.

7.1.1 Migrating Now

To migrate the changes to the SharePoint server:

1. Select **Data > Target SharePoint 2003/2007/2010/2013/2016/2019/SPOnline> Migrate to SharePoint**.

   Or

   Right-click in the target SharePoint store area and select **Migrate to SharePoint**.

   If the Tzunami Deployer project was modified since it was last saved, Tzunami Deployer informs you that the current project data will be saved.

   Tzunami Deployer prompts you to verify that you wish to migrate your changes to SharePoint.

2. Click **Yes**. Tzunami Deployer begins migrating your changes and displays a progress window indicating the number of modifications being made to the SharePoint server, as well as the progress and time estimation.

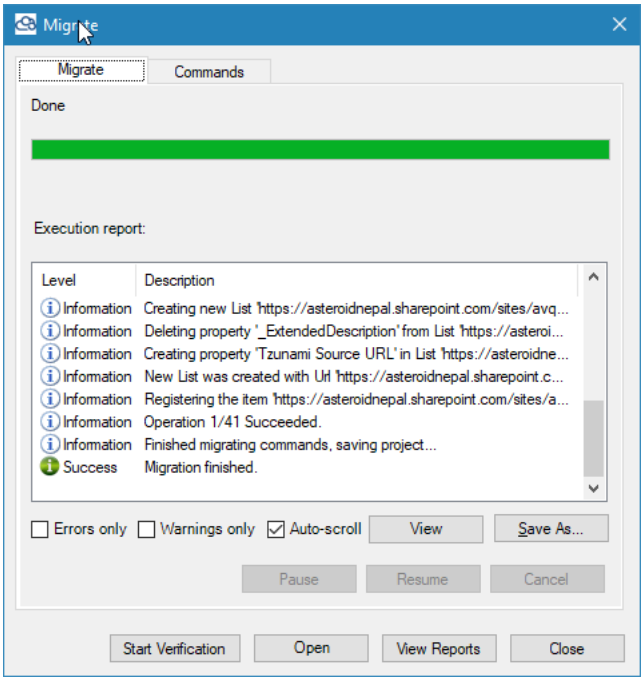


Figure 7-1: Migrate Progress Window

User can perform following actions using available buttons.

- User can close the window by clicking on **Close** button.
- User can open a window containing migration reports list by clicking on **View Reports** button. Individual reports can be opened from the list.
- User can open the target site (root of deployment) by clicking on **Open** button.

- User can start migration verification by clicking on **Start Verification** button. This feature requires additional license, please contact Tzunami Support at ***support@tzunami.com***.

Clicking **Errors only** filters the displayed progress messages to show error messages only.

After Tzunami Deployer finishes migrating your changes, you can right-click the new SharePoint site or document library and select **Open** to view the site or document library using your Internet browser.

If the migrating process completes successfully without errors, you have finished migrating your content.

If errors or failures are displayed in the Migrate Progress window (**Figure 7-1**), a new tab is added to the window, indicating which items were not migrated and what problems caused the failure.

3. Click the **Commands** tab. The Commands tab appears listing the actions that failed to be migrated to SharePoint and the reason for the failure. All actions are selected by default.

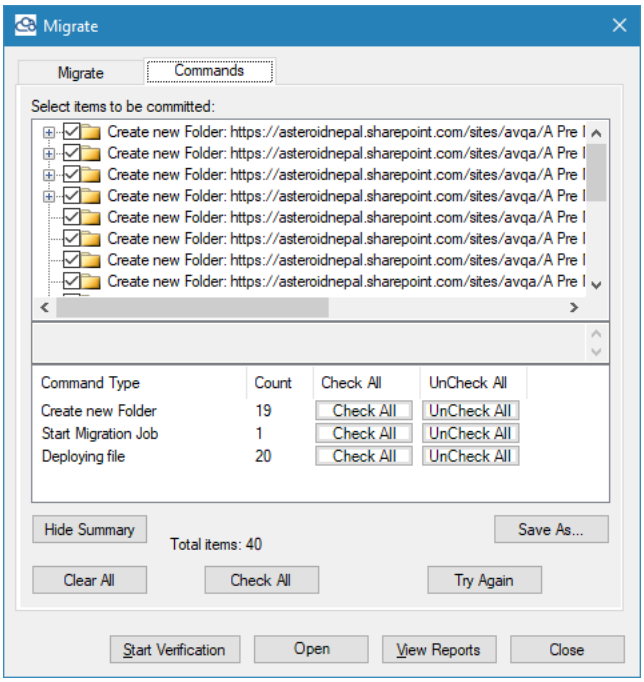


Figure 7-2: Migrate Window – Commands Tab

User can perform following actions using available buttons.

- User can close the window by clicking on **Close** button.

- User can open a window containing migration reports list by clicking on **View Reports** button. Individual reports can be opened from the list.
- User can open the target site (root of deployment) by clicking on **Open** button.
- User can start migration verification by clicking on **Start Verification** button. This feature requires additional license, please contact Tzunami Support at ***support@tzunami.com***.

4. Select the actions that you want to retry migrating to SharePoint and click **Try Again**.

If you close the window without resolving the failed commands, you can resolve them later by right-clicking in the SharePoint store and selecting **View pending commands**. You can then retry migrating the items.

5. User can view the list of migration report's location by clicking on **View Reports** button.

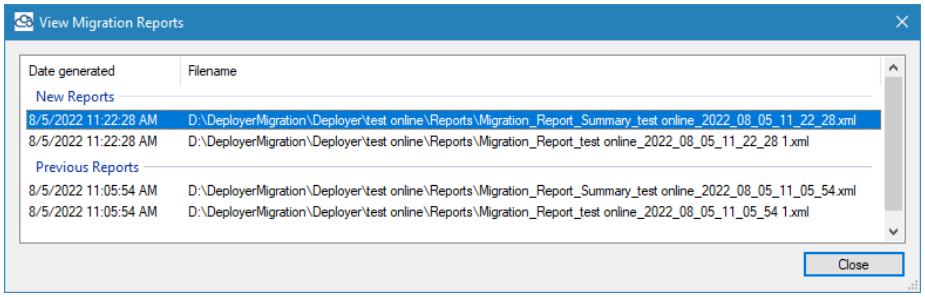


Figure 7-3 View Migration Report Location

User can double click to open the report file.

6. User can open the target site of migrated data by clicking on **Open** button.

7. User can start migration verification by clicking on **Start Verification** button. The migration verification jobs created and saved for the migrated data.

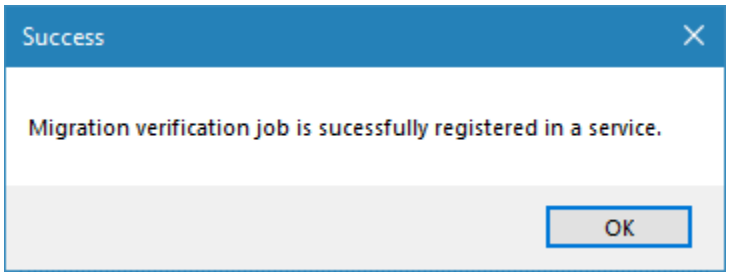


Figure 7-4 Start Verification

For more detail, refer migration verification user guides.

7.1.2 Schedule Migrate

You can schedule Tzunami Deployer to migrate a project at a time that is most convenient for you.

To schedule Deployer project:

Once you have successfully deployed contents to the target, save the Deployer project.

1. Select **Data > Target SharePoint 2013> Schedule Commit to SharePoint 2013**.

   Or

   Right-click in the target SharePoint store area and select **Schedule Migrate to SharePoint 2013/ SharePoint Online**. Check this

   The Schedule Migrate window appears.

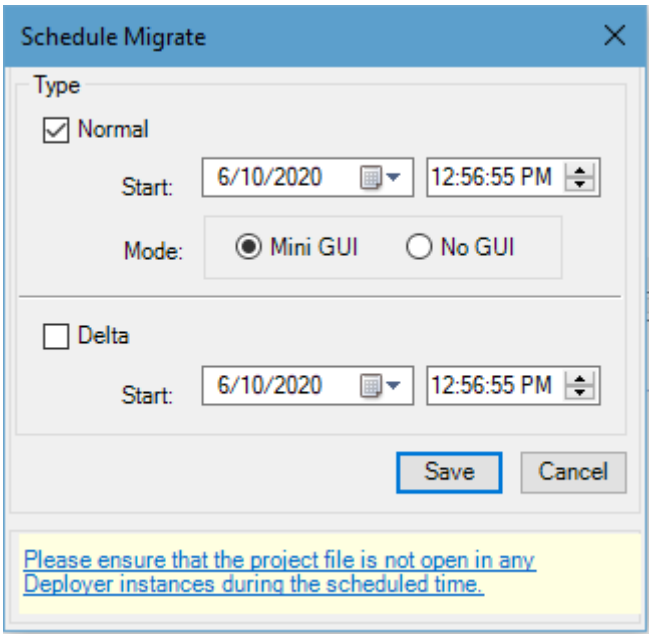
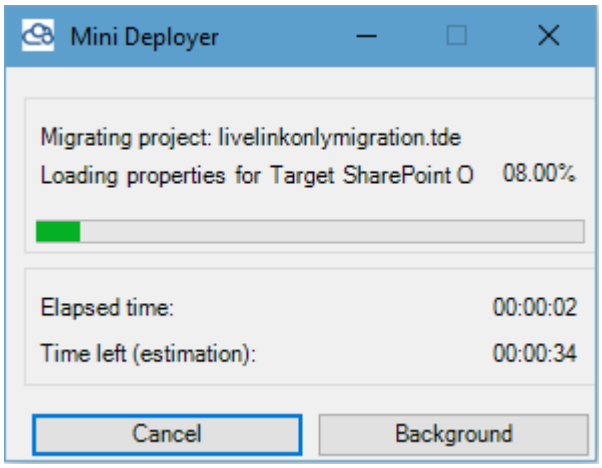


Figure 7-5: Schedule Migrate window

Table 7-1: Schedule Migrate

Parameters	Descriptions
Start	Set the start date and time for schedule Migrate. The start date and time should be greater than current date and time.
Mode	Enables you to specify how Deployer runs the schedule Migrate process. • **Mini GUI** - Runs Deployer and starts to migrate a project opening the Mini Deployer interface. It shows Migrate progress, Elapsed time and Time left (estimation) in Mini Deployer window.



- **No GUI** - Runs Deployer and starts to Migrate without opening the user interface of Deployer.

2. Click **Save**.

Please ensure that the Project File is not opened in any Deployer instances during the scheduled time.

7.1.3 Batch Mode Migrate

You can schedule Tzunami Deployer to migrate a project at a time that is most convenient for you.

To set a time for migrating a project:

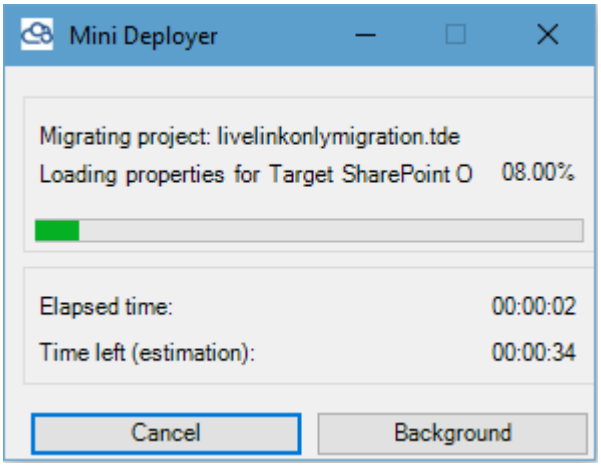
Once you have successfully deployed contents to the target, save and close the Deployer project.

1. Create a batch file with Migrate command in the following format.

   Deployer.exe <DeployerProjectFile> [/Migrate [/nogui] [/minigui]] [/SMTP <mail.domain.com>] [/From <name@domain.com>][/To <name@domain.com>] [/PORT <SMTP port>]

   Usage

Parameters	Descriptions
/Migrate	Opens the provided Deployer Project File and immediately starts to Migrate to SharePoint. If a project is not provided, or if there are no commands to Migrate, Deployer opens regularly.
[/nogui]	This flag is used with the "/Migrate" option, in order to run Deployer and start to Migrate without opening the user interface of Deployer.

[/minigui]	This flag is used with the "/Migrate" option, in order to run Deployer and start to Migrate a project opening the Mini Deployer interface. It shows Migrate progress, Elapsed time and Time left (estimation) in Mini Deployer window. 

For example:

C:\> "C:\Program Files (x86)\Tzunami\Deployer 4.0\Deployer.exe" "F:\My Project\Project1.tde" /Migrate

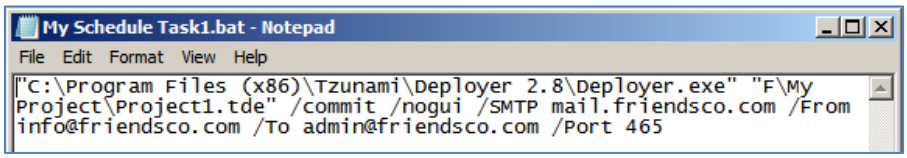
C:\Program Files (x86)\Tzunami\Deployer 4.0> Deployer.exe "F:\My Project\Project1.tde" /Migrate /nogui

C:\Program Files (x86)\Tzunami\Deployer 4.0> Deployer.exe "F:\My Project\Project1.tde" /Migrate /minigui

C:\> "C:\Program Files (x86)\Tzunami\Deployer 4.0\Deployer.exe" "F:\My Project\Project1.tde" /Migrate /nogui /SMTP mail.friendsco.com /From info@friendsco.com /To admin@friendsco.com /Port 465

For better performance and less intrusions on the machine, you can use the /nogui flag, which does not display the Tzunami Deployer user interface.

The first parameter is the path to Deployer executable file.



Save the file.

2. Run the batch file in the task scheduler. For more information about task scheduler, refer to:

   http://technet.microsoft.com/en-us/library/cc748993.aspx.

7.1.4 Migrate process using Migration API

When migrating content (files and folders) to SharePoint Online using Migration API, Tzunami Deployer migrate the contents to Azure Storage. Depending on Azure's own import schedule, the uploaded contents are migrated from Azure to SharePoint Online.

To Migrate content to SharePoint Online using migration API:

1. Click .

   If the Tzunami Deployer project was modified since it was last saved, Tzunami Deployer informs you that the current project data will be saved.

   Tzunami Deployer prompts you to verify that you wish to migrate your changes to SharePoint.

2. Click **Yes**. Tzunami Deployer begins migrating contents to Microsoft Azure Storage.

   Once the migration is completed in target SharePoint, the logs are downloaded from Microsoft Azure Storage in the project location. Tzunami strongly recommends to run the pilot migration and verify the logs before starting the migrations projects.

7.1.5 Schedule Security Migration

Tzunami Deployer provides the feature to migrate the permission related changes in later data and time. If the migration project has pending commands for permissions, then during migration those security related changes can be scheduled for later time. The scheduled migration will be stored in migration database and migrated in specified data and time.

Steps to schedule security migration

After completing the deployment, the migration can be started during which perform following steps:

1. Click on **Migrate.**

2. If there are pending commands for permissions, **Migrate Security Later** option is displayed. Check this option. Then, click on **Yes** button.

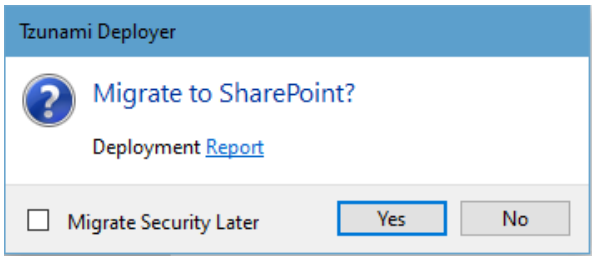


Figure 7-6 Migration confirmation screen

3. In Schedule Migrate screen, check **Normal** check box in **Type** group. Then, specify the date and time. After that, select the Mini GUI or No GUI mode.

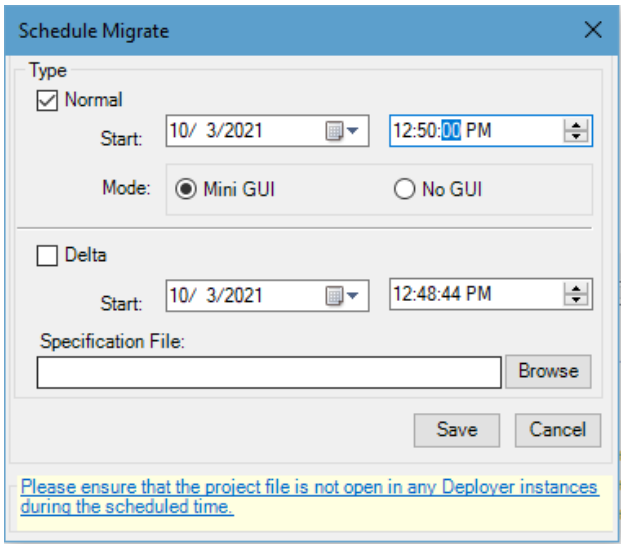


Figure 7-7 Schedule security migration in later date and time

Then, click on **Save** button.

4. The migration job for security is scheduled for specified date and time and is saved in migration database. The Deployer migration project will be started and run in scheduled date and time with specified MiniGUI or NoGUI mode.

7.1.6 Best Practice for migrating a Deployer Project

- **Check for problems before Migrate**
- **Start migrating the projects:** While these projects are migrating, begin creating as many new Deployer projects as you can.
- **Run several Deployer instances on one server:** The number of Deployer projects running simultaneously on one machine and the total number of projects which can run simultaneously depend on your hardware, network connection and SharePoint environment maintenance and response time (free memory on the machines running Deployer, HD availability, CPU, network connectivity to the SharePoint farm, DB indices on the SharePoint SQL server, etc.).
- **Don't waste time:** You can immediately migrate another project as soon as the previous project finishes migrating. You also have the option to schedule

a Migrate in the future with Deployer's command line capabilities. Keep in mind SharePoint column limitations while adding missing properties.

- **Avoid performing changes to the SharePoint outside of Deployer during the Migrate phase.**
- **In order to produce a rough estimation on the duration of the Migrate Phase, verify the following environment-dependent variables:**
    - X: Total number of documents to Migrate
    - Y: Average Migrate rate for one Deployer instance. Test this once with one project migrating M documents for H hours and just do a simple calculation of M/H.
    - Z: Number of servers available to run Deployer
    - N: Number of Deployer instances designated to run on each server.

It is not recommended to run more than 3 Deployer instances on a single server.

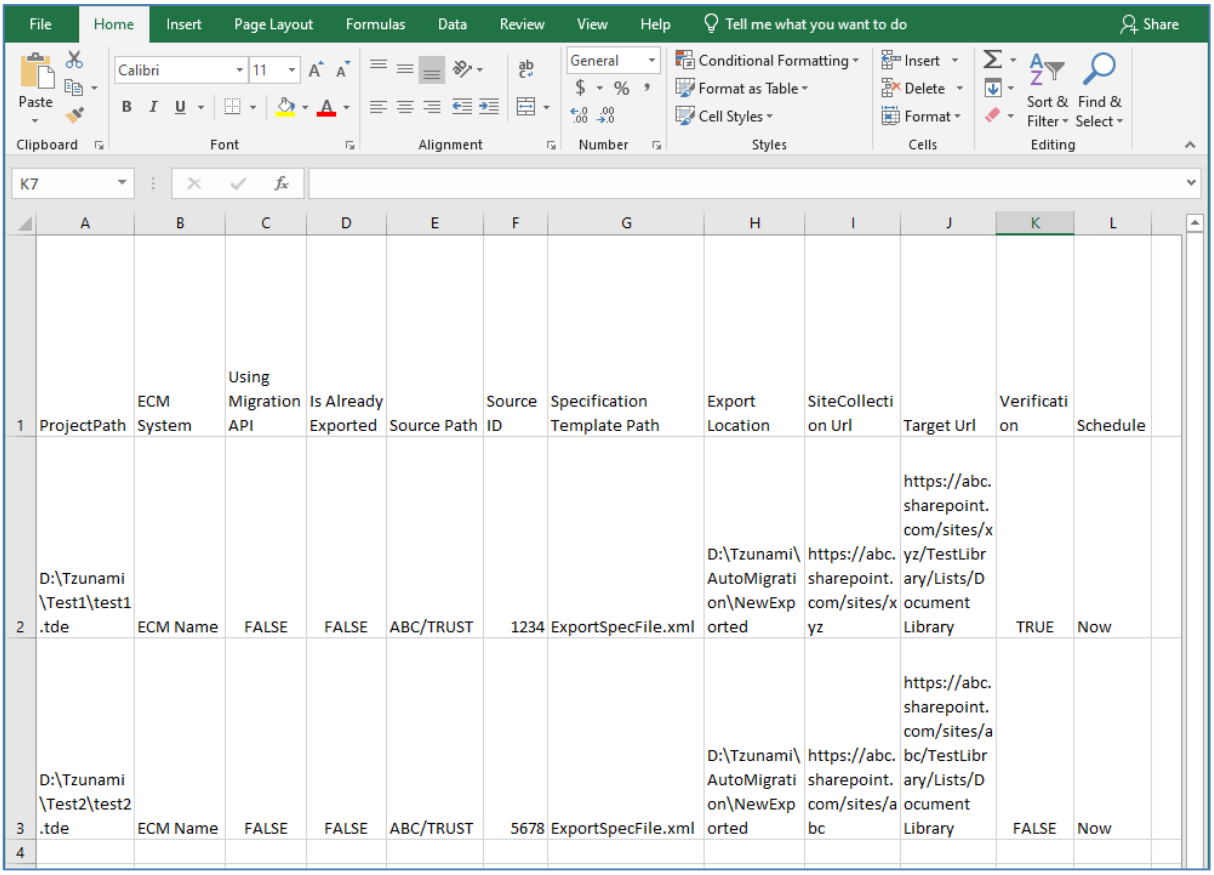
Rough time estimation for the duration of the Migrate process can be calculating using these parameters: $\frac{(X \times Y)}{(N \times Z)}$

- **Schedule Migrate:** With Scheduled Migrate, you can schedule Tzunami Deployer to migrate a project at a time that is most convenient for you.

- **Identify Issues:** During Migrate, or any other phase of the migration project, identify any problems that may arise. Save the export/deploy/Migrate reports and logs which contain any warnings or errors. Notify the Tzunami Support Team about these issues.

8 AUTO MIGRATION

Tzunami Deployer provides the feature to automatic scheduled migration from supported ECM system to SharePoint. The schedules jobs in windows for automatic migration works based on the parameters specified in migration plan file. The template for migration plan is available in Deployer installation directory (MigrationPlan.csv).



	A	B	C	D	E	F	G	H	I	J	K	L
1	ProjectPath	ECM System	Using Migration API	Is Already Exported	Source Path	Source ID	Specification Template Path	Export Location	SiteCollection Url	Target Url	Verification	Schedule
2	D:\Tzunami\Test1\test1.tde	ECM Name	FALSE	FALSE	ABC/TRUST	1234	ExportSpecFile.xml	D:\Tzunami\AutoMigration\NewExported	https://abc.sharepoint.com/sites/xyz	https://abc.sharepoint.com/sites/xyz/TestLibrary/Lists/Document Library	TRUE	Now
3	D:\Tzunami\Test2\test2.tde	ECM Name	FALSE	FALSE	ABC/TRUST	5678	ExportSpecFile.xml	D:\Tzunami\AutoMigration\NewExported	https://abc.sharepoint.com/sites/abc	https://abc.sharepoint.com/sites/abc/TestLibrary/Lists/Document Library	FALSE	Now
4												

Figure 8-1 Migration Plan Template

This migration plan (which is an input for migration jobs) should be created and is one time configuration task, beforehand scheduling the migration jobs. The fields in migration plan file are **ProjectPath, ECM System**, **Using Migration API, Is Already Exported, Source Path**, **Source ID**, **Specification Template Path**, **Export Location, SiteCollection Url, Target Url, Verification** and **Schedule**.

Based on this template file, a migration plan file is created and the fields are configured by using **Tzunami <ECM> Migration Planner** tool which is guided through exporter wizard. Based on the selected folders, a number of migration plans are created in the migration plan file.

The field in migration plan **Is Already Exported** will have default value **FALSE**. However, you have to set its value to **TRUE** when you want to process from existing (already exported content from .tdx file) to migrate the source content.

The field in migration plan **Using Migration API** will have default value **FALSE**. However, you have to set its value to **TRUE** when you want to Migration API while migrating to SharePoint target.

This template file is not required to process manually. You need to run the **Tzunami Exporter** tool to create migration file and need that created migration file manually. The following section guides you in details.

The following subsections will guide you through the steps involved to configure the automation process sequentially.

- Create Exporter Specification file and Migration Plan through **Tzunami <ECM> Migration Planner** tool in Migration Project
- Update Migration Plan file
- Import the migration file in **Tzunami Auto Migration Manager** (In Windows System Tray)

8.1 Create Migration Plan File

Tzunami Deployer uses the Migration Plan file and Specification file to schedule auto migration Deployer projects. These files are created by **Tzunami <ECM> Migration Planner** tool. This tool opens the respective ECM exporter. To create Migration Plan and Specification files, perform the following steps:

1. Run the **Tzunami <ECM> Migration Planner** from start menu, for example, here, Livelink exporter is started.

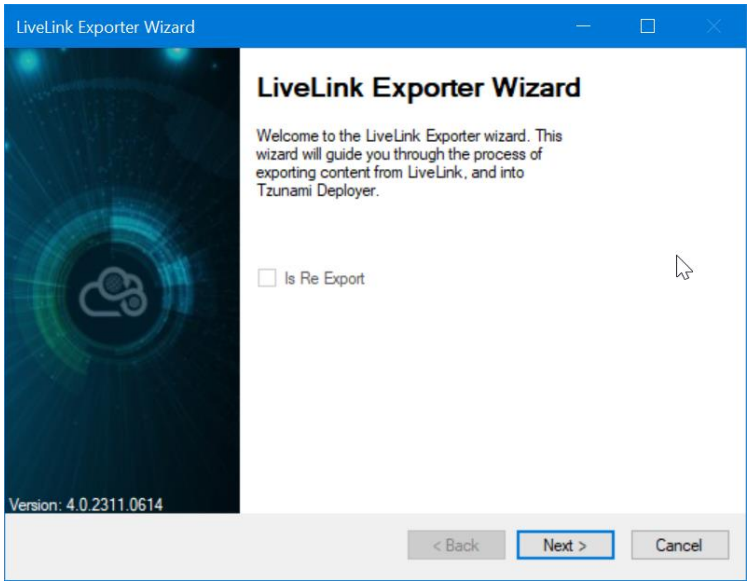
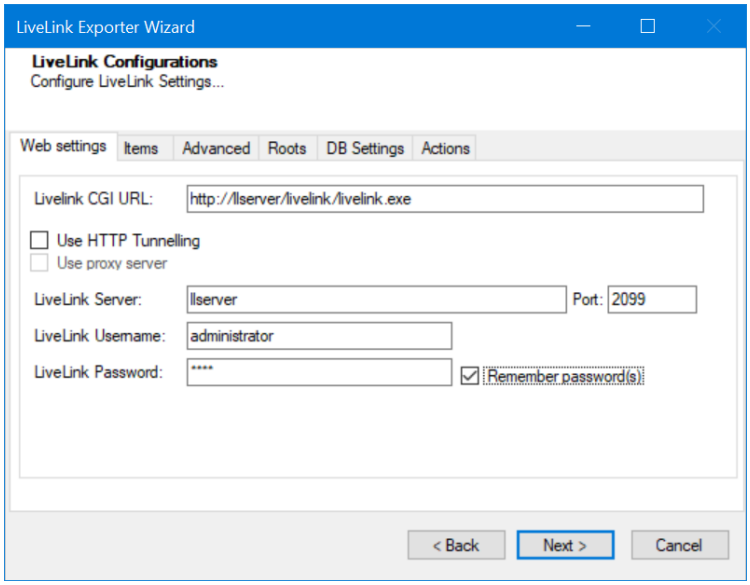
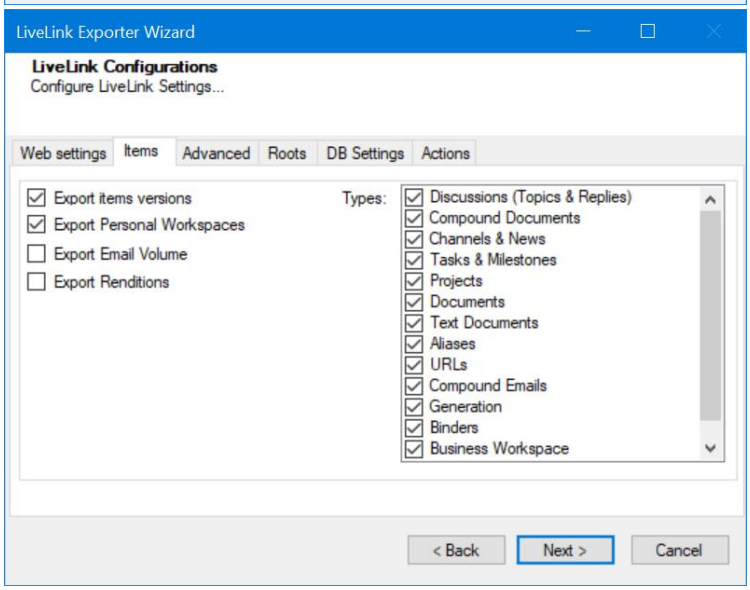
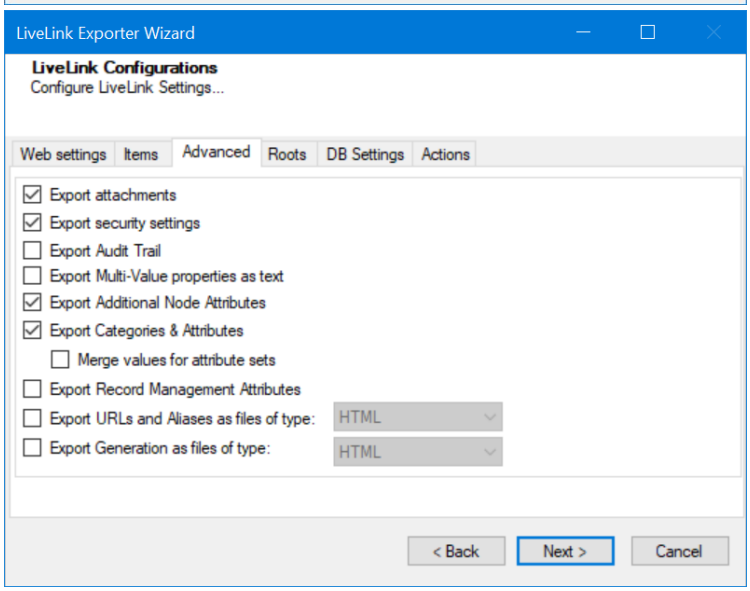


Figure 8-2 ECM Source Connection Screens

2. Select the required options


LiveLink Exporter Wizard
LiveLink Configurations
Configure LiveLink Settings...
Web settings
Items
Advanced
Roots
DB Settings
Actions
Livelink CGI URL:
http://llserver/livelink/livelink.exe
Use HTTP Tunnelling
Use proxy server
LiveLink Server:
llserver
Port:
2099
LiveLink Username:
administrator
LiveLink Password:
****
Remember password(s)
< Back
Next >
Cancel


LiveLink Exporter Wizard
LiveLink Configurations
Configure LiveLink Settings...
Web settings
Items
Advanced
Roots
DB Settings
Actions
Export items versions
Export Personal Workspaces
Export Email Volume
Export Renditions
Types:
Discussions (Topics & Replies)
Compound Documents
Channels & News
Tasks & Milestones
Projects
Documents
Text Documents
Aliases
URLs
Compound Emails
Generation
Binders
Business Workspace
< Back
Next >
Cancel


LiveLink Exporter Wizard
LiveLink Configurations
Configure LiveLink Settings...
Web settings
Items
Advanced
Roots
DB Settings
Actions
Export attachments
Export security settings
Export Audit Trail
Export Multi-Value properties as text
Export Additional Node Attributes
Export Categories & Attributes
Merge values for attribute sets
Export Record Management Attributes
Export URLs and Aliases as files of type:
HTML
Export Generation as files of type:
HTML
< Back
Next >
Cancel

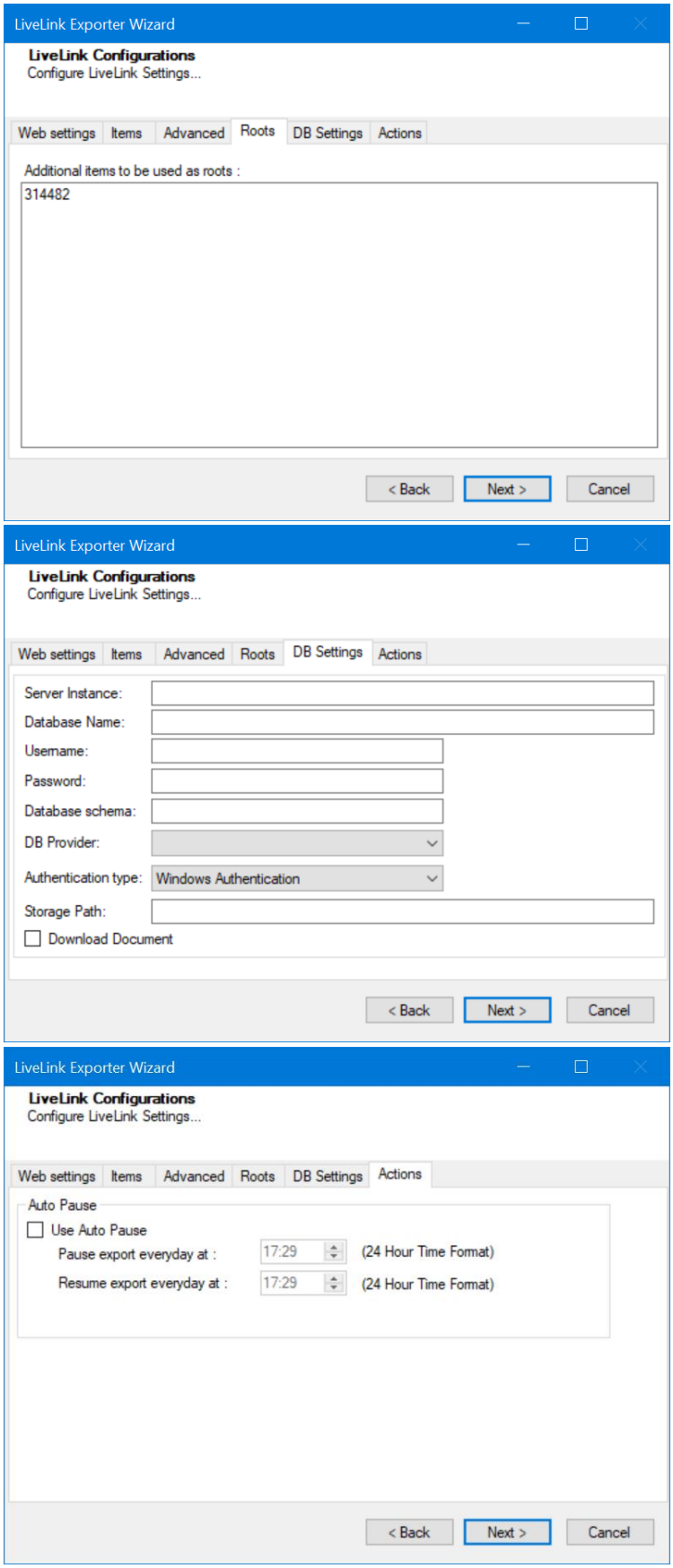


Figure 8-3 ECM Source Export Options Screens

Click on **Next** button.

3. Source and Target Mapping wizard opens. In the left side, source folders/subfolders are displayed in tree structure. Select the folders/subfolders for migration in a chunk.
   In the right side, enter the Target SharePoint URL and connect. The Target SharePoint is loaded in the tree view. Select site or subsite or Library or List as root of deployment.

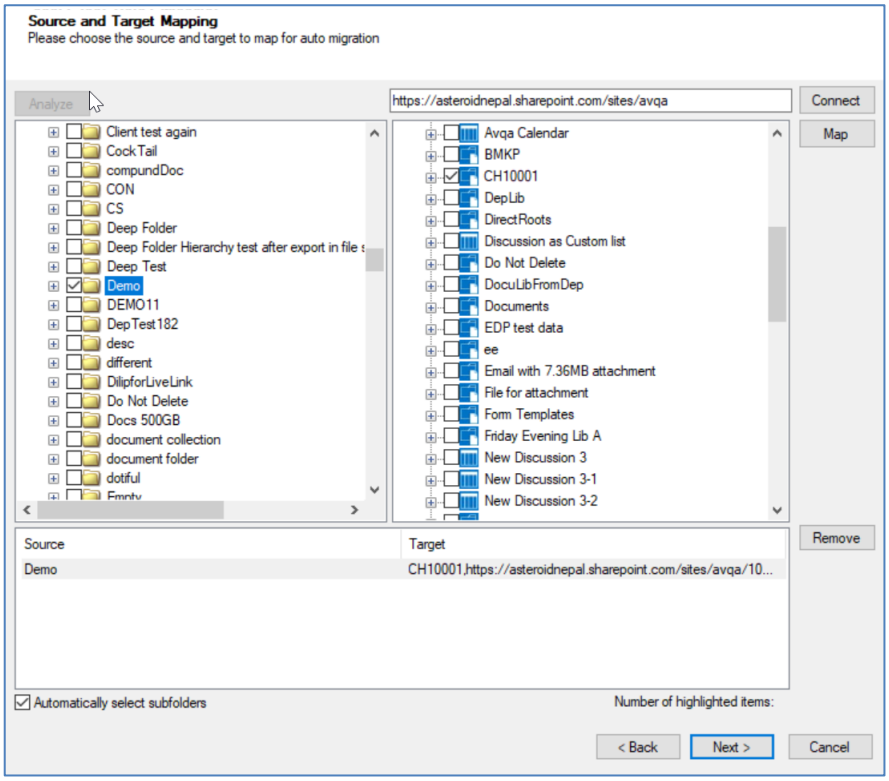


Figure 8-4 Mapped Source and Target screen

Click on Map button. You will see the mapped source and target root for migration. You can remove the mapped source and target. you can check/uncheck the check box to select or not for subfolders in source automatically.

After mapping, click on **Next** button.

The migration plan file will create number of rows based on the folders selected in this tree view. You should expand the root folder and select the subfolders wisely so that migration plan file will have manageable number of jobs created.

4. In the Property Mapping screen, select the source and target property and click on **Map** button to map properties. If you want to create source property in target, the select the source property and click on **Add** button.

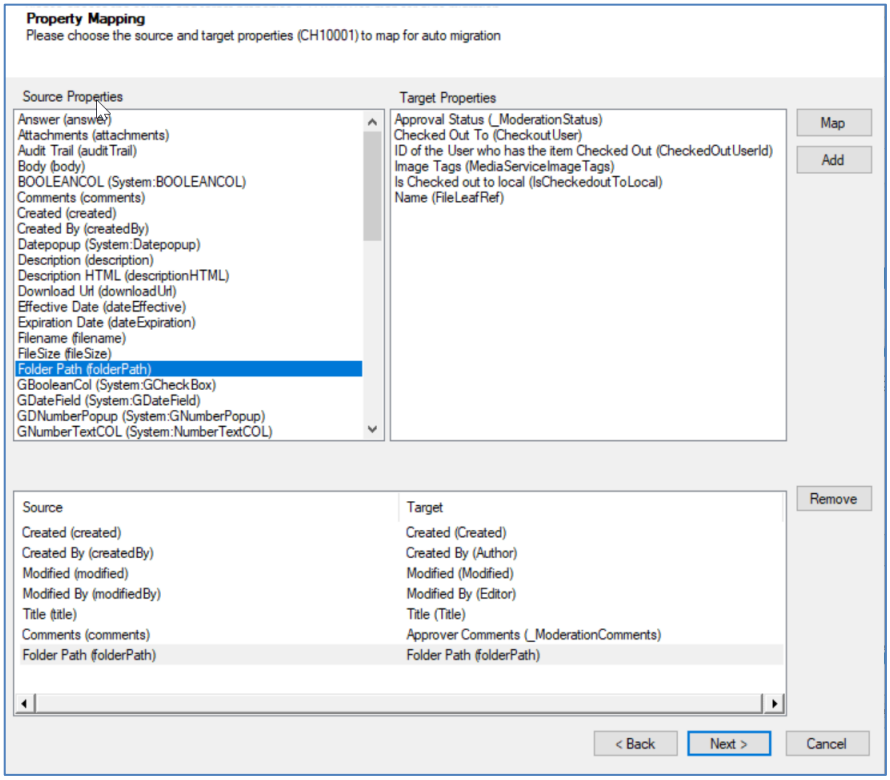


Figure 8-5 Property Mapping Screen

After completing property mapping, click on **Next** button. Multiple property mapping screens may appear, complete mapping as required.

5. In the Security Mapping screen, enter the site collection URL and click on **Load[Service]** button.
    a. Entities Tab: Select the user and group from source and target, then click on **Map** button. The mapped users and groups are displayed the bottom panel. The Users and Groups check boxes help to filter users and groups quickly. The filter text helps to find the relevant items quickly in source, target and mapped panels. Mapping source group to !<Create New Group>!, creates new group in target having group name as in source. You can remove the mapped group using **Remove** button. The **Suggest** button provides the best matching suggestion for mappings.

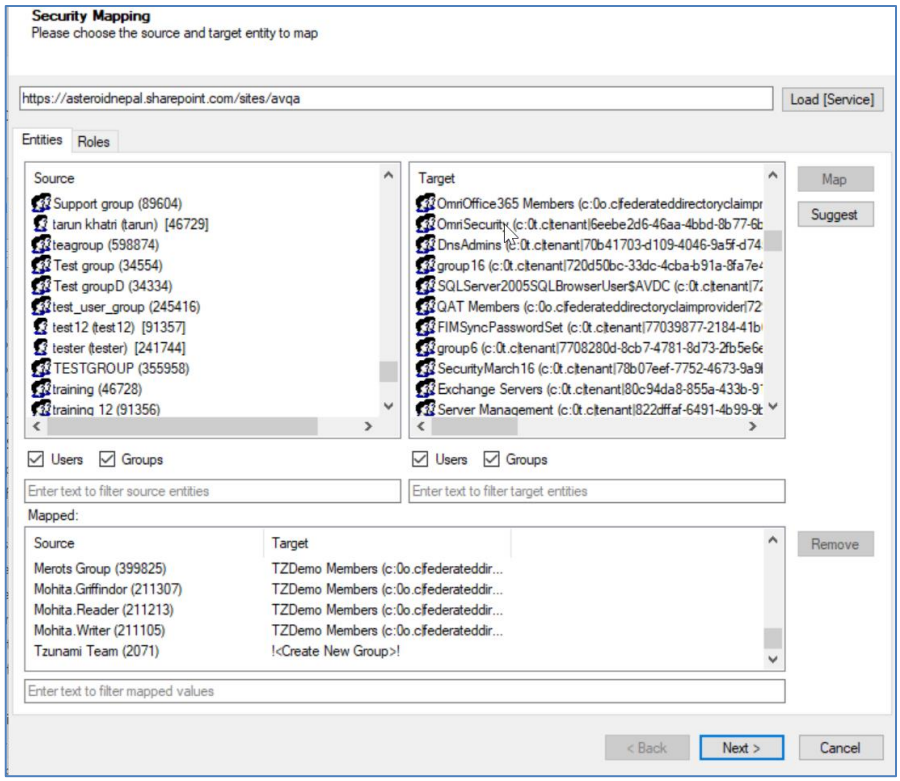


Figure 8-6 Users and Groups Mapping

b. Roles Tab: Select roles from source and target, then click on **Map** button. The mapped roles are displayed the bottom panel. You can remove the mapped group using **Remove** button. The **Suggest** button provides the best matching suggestion for mappings. The filter text helps to find the relevant items quickly in source, target and mapped panels.

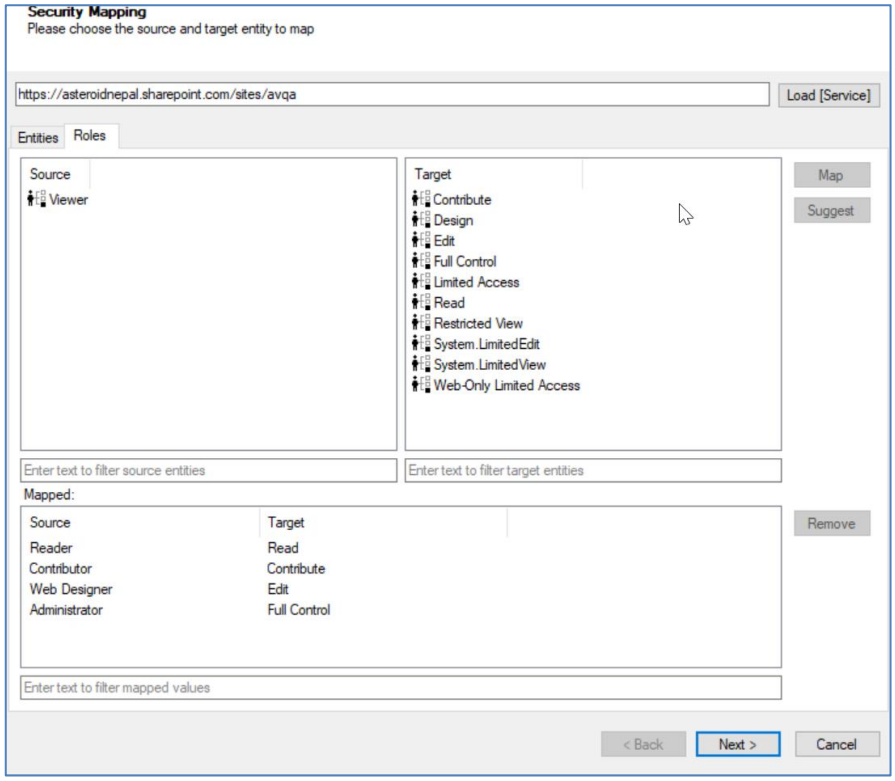


Figure 8-7 Roles Mappings

After mapping users, groups and roles, click on **Next** button.

6. In Project Options screen, provide the location to create auto migration plan files.
   The Project folder holds Auto Migration csv, Auto Migration created Deployer Project and Exported TDX information and extracted files. Deployer project name and exported folder name will be auto created. Please use a folder close to the drive root to allow deep hierarchies and long file names.

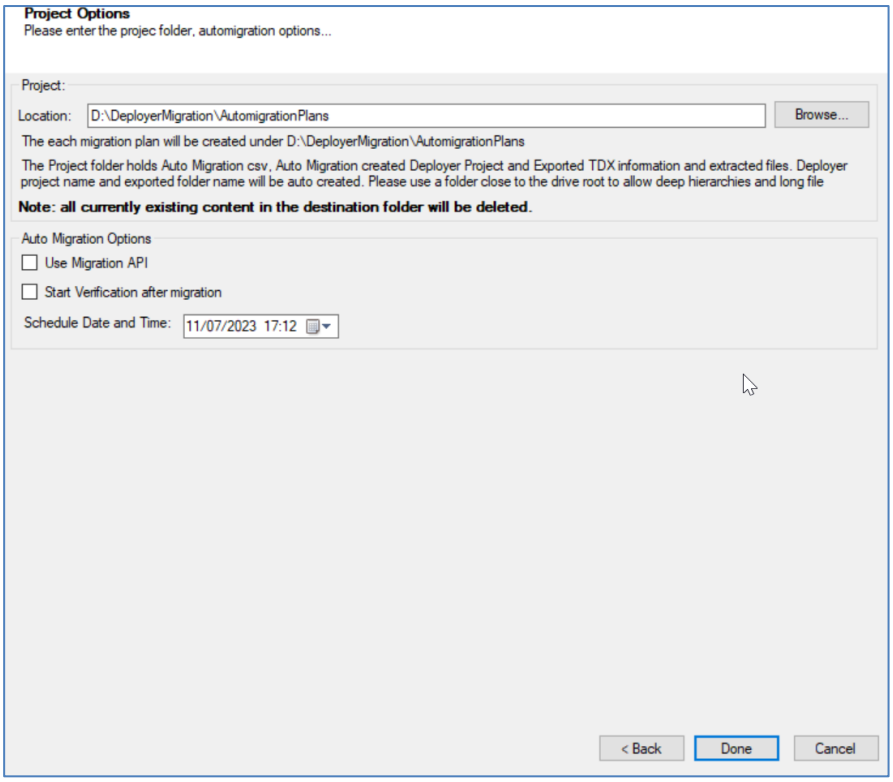


Figure 8-8 Creating Migration Plan Screen

Check the following check boxes and set date time for:

- Use Migration API: check this option to use the migration api in auto migration project.
- Start Verification after migration: check this option to use the migration verification feature right after completing the migration.
- Schedule Date and Time: set the date and time for auto migration project to start.

After completing, click on **Done** button. If confirmation for location to create is displayed, click on **Yes** button.

The required files are created in the provided location under **Plan** folder. The folder contains following file formats:

- .csv : This is the Auto Migration Plan file. It stores all the information required to create the auto migration project in Tzunami Deployer later on along with all other information about source, target and schedule time. This file needs to imported in Tzunami Auto Migration Manager to schedule and execute the migration.
- .xml : This is the specification file. This file includes all the information required to extract the data from source server during auto migration. It stores the hierarchy selected for migration along with connection parameters, credentials (in encrypted form), Tzunami Exporter options and other filter parameters as specified during creation of migration plan file.

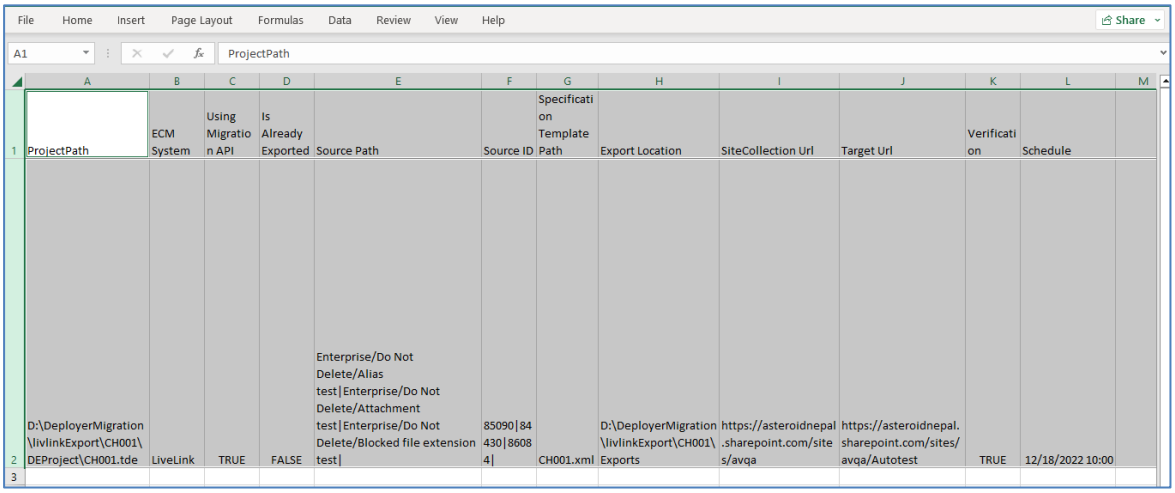
8.2 About Migration Plan

Migration Plan file (MigrationPlan.csv) includes following information in which some **ProjectPath, ECM System, Using Migration API, Is Already Exported, Export Location Site collection URL, Target URL, Verification** and **Schedule** fields should be updated.

Description of fields:

- **Project Path:** Location and name of Deployer Migration project to be created for auto migration**.** Location and project name should be unique if there are multiple rows in migration plan file.
  In Project path, the full name of the migration project should have been defined. Note that .tde extension has been provided. So, the Project path for project can be
  "**D:\DeployerMigration\livlinkExport\CH001\DEProject\CH001.tde**"
  referencing to export location. We can clearly see that the auto migration project will be created in **DEProject** directory.
- **ECM System:** Name of the source ECM.
- **Using Migration API:** Based on the option selected, the migration API is set to "FALSE" or "TRUE".
- **Is Already Exported**: By default it is set to "FALSE".
  Set to "TRUE" if you want to use automation migration from already exported content. The already migrate data should be available in specified **Source Path** location.
- **Source Path:** source container path which is willing to migrate. No need to set if "Is Already Exported" is true.
- **Source ID:** Unique of that container which is willing to migrate. For Documentum ECM 'Object Id' of the container. No need to set if "Is Already Exported" is true.
- **Specification Template Path:** File path of the specification file which is save during plan file creation. No need to set if "Is Already Exported" is true.

- **Export Location:** Export location also set during plan file creation. Export location for each migration job (each row in migration plan) should be different. Otherwise, duplicate export location error occurs.
  if "Is Already Exported" is true then provide already exported folder locations for each migration jobs.
- **Site Collection URL:** Target SharePoint site collection URL where exported content is to be migrated. Migration project
- **Target URL:** Target SharePoint URL where exported content is to be migrated. Provide full URL for sites/subsites for Lists where you want to migrate data.
- **Verification:** Based on the option selected, the verification is set to "FALSE" or "TRUE". Setting true will start the verification jobs after migration automatically. Note that, you should already have the license for migration verification to use this feature. Please, refer **Migration Verification User Guide** for more details about migration verification feature.
- **Schedule:** Either 'Now' or Date Time to schedule the migration jobs. 'Now' will immediately start the migration. If Date Time is provided, then migration process will be start on that date and time. The scheduled job will create a new Deployer Migration Project in the same location as specified in **Project Path** field.



ProjectPath	ECM System	Using Migration API	Is Already Exported	Source Path	Source ID	Specification Template Path	Export Location	SiteCollection Url	Target Url	Verification	Schedule
D:\DeployerMigration\livlinkExport\CH001\DEProject\CH001.tde	LiveLink	TRUE	FALSE	Enterprise/Do Not Delete/Alias test|Enterprise/Do Not Delete/Attachment test|Enterprise/Do Not Delete/Blocked file extension test|	85090|84430|86084|	CH001.xml	D:\DeployerMigration\livlinkExport\CH001\Exports	https://asteroidnepal.sharepoint.com/sites/avqa	https://asteroidnepal.sharepoint.com/sites/avqa/Autotest	TRUE	12/18/2022 10:00

Figure 8-9 Example of Updated Migration Plan File

8.3 AUTO MIGRATION MANAGER

Once Deployer has been installed, a **Tzunami Migration** application will run in windows system tray. This application helps to manage the migration projects in the machine. The updated migration plan should be imported in this application. On successful import, the migration projects are updated in migration database and Deployer Migration projects will run on scheduled date and time.

For the first time, user needs to provide the credential for target SharePoint. The credentials and cookies for each site collections are saved in **C:\ProgramData\Tzunami\UsersCache** location. Different site collections can use different users as well, however using same migration user for all site collection is recommended. As usual, migration user must be the member of site collection administrator group of each site collections. It is recommended that, create a pilot project and connect the target site collection in the machine where auto migration will run, so that the required cookie for auto will be available during auto running the migration projects.

To import the migration plan file in Tzunami Migration application, perform following steps:

1. Go to System Tray.
2. Right click on **Tzunami Migration** application.
3. Click on **Open Tzunami Auto Migration Manager**, an application opens.

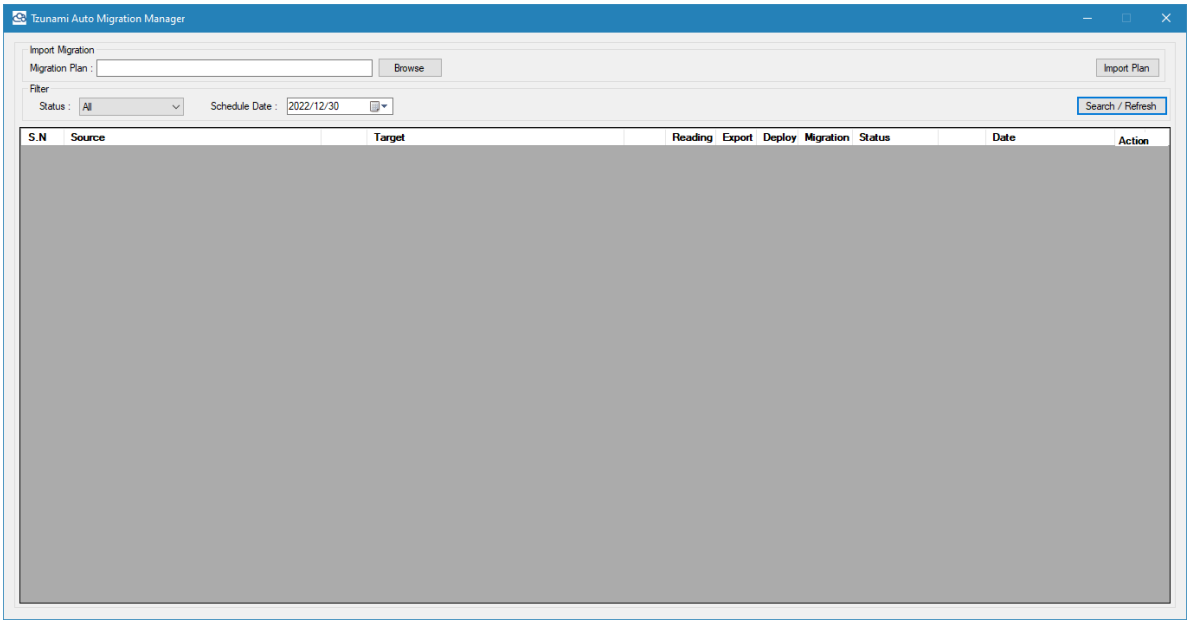


Figure 8-10 Auto Migration Manager Screen

4. Click on **Browse**, select the migration plan file. Then, click on **Import Plan** button. On successful import, tasks will be scheduled and displayed in the list.

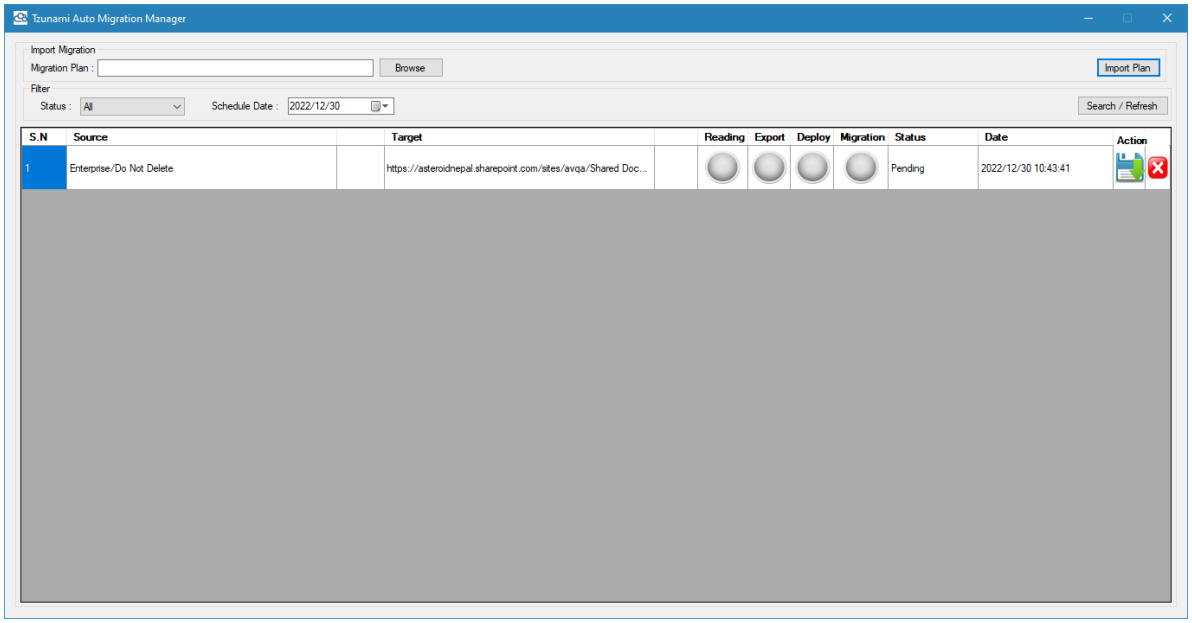


Figure 8-11 Auto Migration Manager scheduled jobs

If any error occurs during import of migration plan, errors are logged in auto migration log file. The log file is maintained date wise and located in the Deployer install directory. e.g.: C:\Program Files (x86)\Tzunami\Deployer 4.0\Log\AutoMigration_2022_06_08.xml

5. The **Tzunami Auto Migration Manager** manages scheduling migration jobs.
6. The migration projects can be searched based on status and scheduled date.
7. The status dropdown includes following status:
    - All: available all jobs.
    - Pending: jobs in queue to run in scheduled date time.
    - Running: jobs in running state now.
    - Completed: already completed jobs.
    - Paused: jobs in suspension state (until it is changed to pending state back).

The Scheduled Date field provide date picker to select a date.

The **Search/Refresh** button searches and updates the list of scheduled jobs based on selected status. The **Export, Reading, Deploy and Migrate** status fields shows the status of migration process. The color index is as follows:

Grey: Pending.

Blue: Running.

Green: succussed without error.

Red: Error occurred.

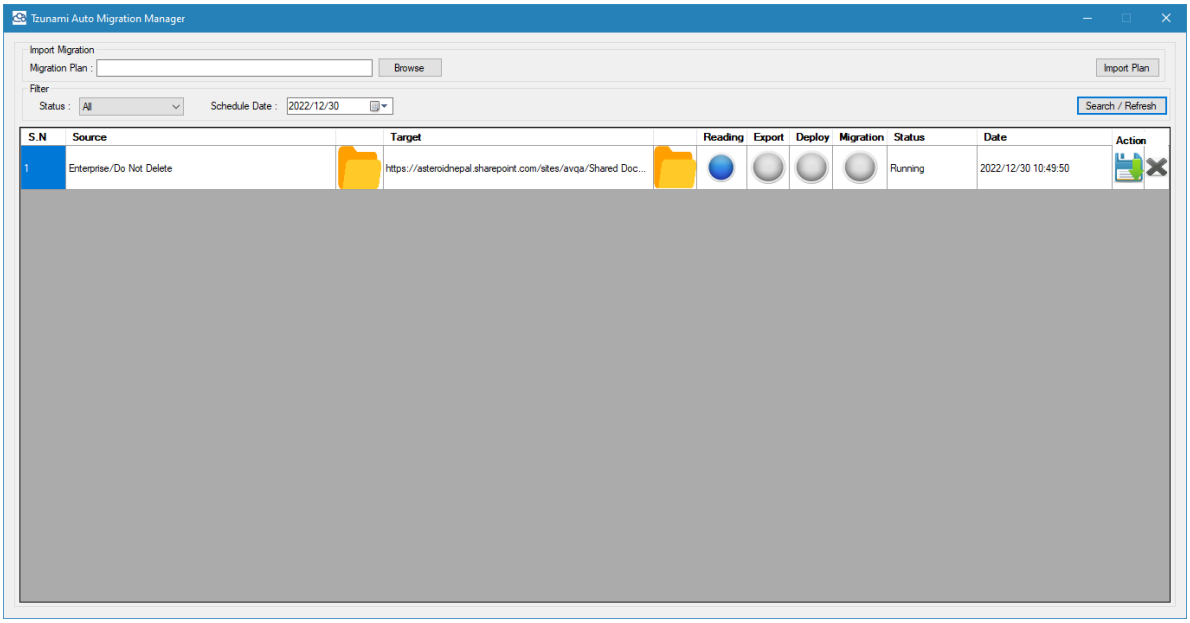


Figure 8-12 Tzunami Auto Migration Manager Screen

Once the migration is completed, the manager looks like as below:

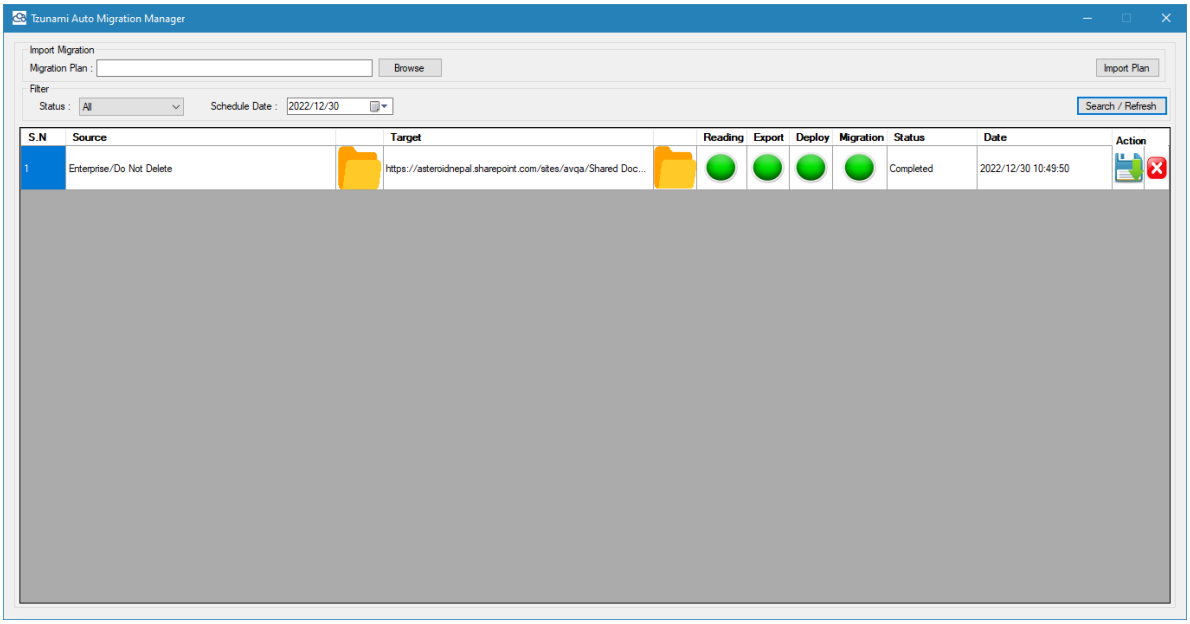


Figure 8-13 Tzunami Auto Migration Manager Screen after completion

Where, the green button indicates that the migration job status is completed without error. The status column with "Completed" indicates the migration project is completed. However, there may be errors while migrating data to target source.

8. You can perform the following actions for each job.
   - Change status: You can change the **status** of a job from 'Pending' to 'Paused' and vice-versa.
     - If a job is in pending state, it can be changed to paused state to pull out the job from queue.

    - If a job is in paused state, it can be changed to pending state to push the job in queue.
- Reschedule Date: you can change the **Date** of a job to reschedule in different date time.
- Save: When you change the **Status** and/or **Date** of a job, you need to save it by pressing **'Save**' button for that job under **Action** column.
- View the reports of exported data: Click on folder icon after **Source** column for completed jobs.
- View the reports of migrated data: Click on folder icon after **Target** column for completed jobs.

9 AUTO DELTA MIGRATION

Tzunami Deployer provides the feature to automatic scheduled delta migration from supported ECM system to SharePoint. The scheduled jobs in windows for automatic migration works based on the parameters specified in delta migration plan file. The template for migration plan is available in Deployer installation directory (DeltaMigrationPlan.csv).

Auto delta migration works under following conditions:

- Previous Deployer Migration project (tde) should not be modified, deleted and renamed.
- Source and Target of the Deployer Migration project should not be removed.
- ExportSpecFile.xml file which is located on **SpecificationFiles** folder on Deployer Migration project folder should not be modified, renamed or deleted.
- Delta migration setting should be set before delta migration under Deployer Option.

Furthermore, auto delta migration auto detects the changes in source data based on following behavior.

- Delta migration supports all filter applied in the first export except modified filter as delta export is based on modified date.
- Delta migration will export and migrate all the file which are modified after the first export.

The current implementation does not support the auto delta migration of auto migrated Deployer projects.

If same container is exported and migrated with multiple chunks with filter condition then, delta of each project will export same content which might cause duplication.

Automatic delta migration can be carried out in Tzunami Deployment with following approach.

1. Creating auto delta migration plan file manually.

The Tzunami Delta Migration Manager will be running in the system tray where Tzunami Deployer is installed.

To open the Tzunami Delta Migration Manager, perform the following steps:

- Go to System Tray, and locate **Tzunami Migration** application.
- Right click on **Tzunami Migration** application, then click on **Open Tzunami Delta Migration Manager** option.
- The Tzunami Delta Migration Manager window opens.

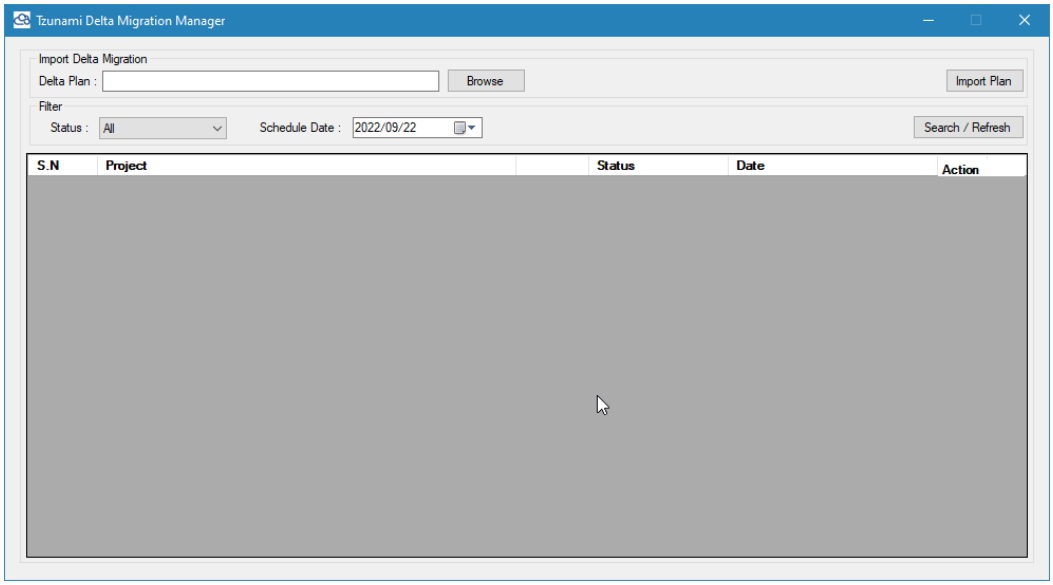


Figure 9-1 Tzunami Delta Migration Manager Window

In this window user can perform following actions:

- User can browse the auto delta migration plan file using **Browse** button
- User can import the browsed auto delta migration plan file using **Import Plan** button
- User can view the auto delta migration jobs and status in the list.
- The job list can be filter with **Status** and **Scheduled Date** using **Search/Refresh** button.

9.1 CREATING AUTO DELTA MIGRATION PLAN FILE MANUALLY

Auto delta migration schedule (.csv) can be created manually for existing projects with csv column “Project path” and “schedule date” and that csv can be imported from auto migration tray.

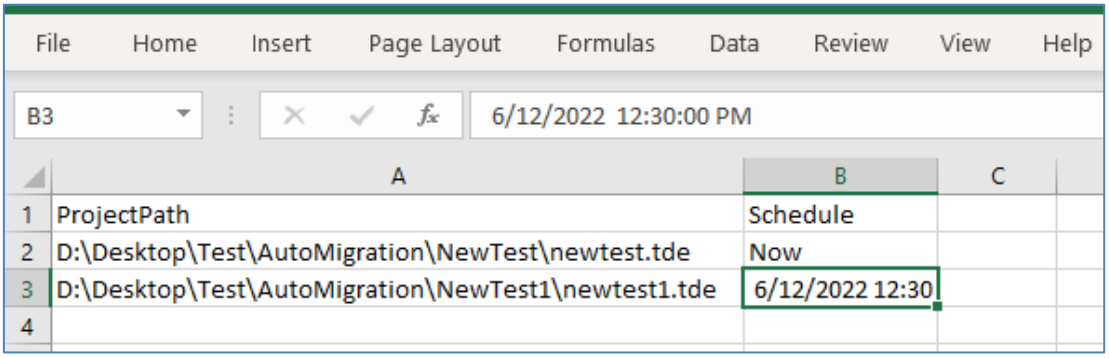


Figure 9-2 Sample Auto Delta Migration Plan File

10 CONFIGURING TZUNAMI DEPLOYER ADVANCE FEATURES

This chapter describes how to configure Tzunami Deployer settings and covers about rule engine.

10.1 RULE ENGINE

Deployer Rule Engine is a powerful Deployer component that enables you to automate large parts of the deployment process by creating flowcharts of If-Then statements in a rule editor.

A Rule consists of a set of conditions (logical IFs) and Actions (logical THENs). If all conditions are fully met, then the Actions are executed. A Rule Set is a set of rules that define deployment options for a specific Enterprise Content Management (ECM) system.

The Deployer Rule Engine is intended for power users, System Integrators, and Tzunami Deployer specialists. It provides you with a high degree of freedom in regard to the business logic you can create.

The order of the Rules in a Rule Set is important. The Rule Engine processes each container item in the deployed item, evaluating the Rules one after the other against each item. If even one Condition is not met, the Rule is ignored, and the Rule Engine proceeds to the next Rule. If all Conditions are met, the Actions are performed, and the Rule Engine continues handling the next item. No other rule is evaluated for that item. As a result, even if two Rules are valid for a certain item, only the first Rule is evaluated and performed.

The Rule Sets Editor contains several built-in default Rule Sets that define some common deployment logic schemas. You can customize these default Rule Sets to suit your specific deployment needs.

10.1.1 Opening the Rule Sets

To open the Rule Sets Editor:

- Select **Tools > Deployment Rules**.

  Or

  Press **F8**.

  The Rule Sets Editor appears.

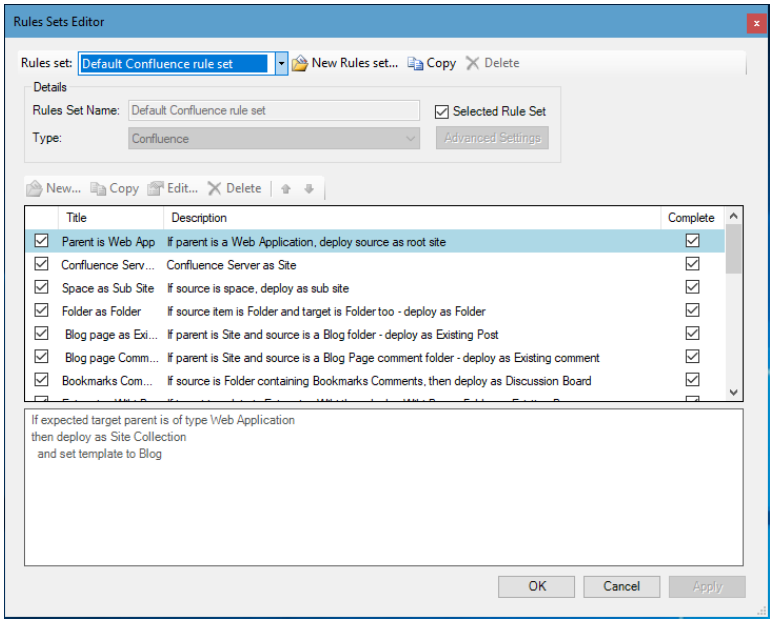


Figure 10-1: Rule Sets Editor

10.1.2Specifying Rule Set Location

Rule Sets are saved on the file system. The location of each Rule Set must be specified in the Rule Engine.

To specify the locations of Rule Sets:

Select **Tools > Options**. The Options window appears.

1. Click **Rule Engine**.

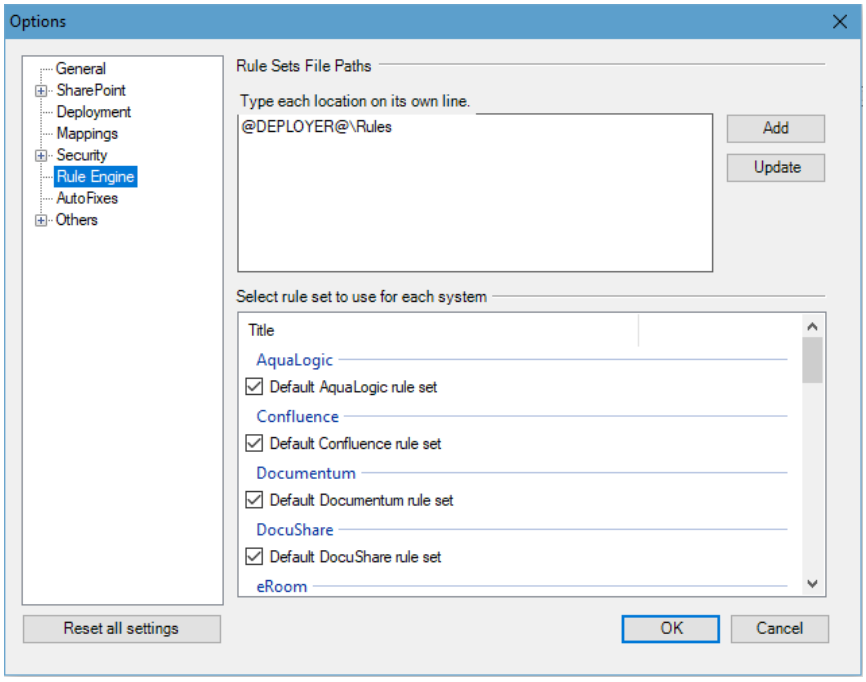


Figure 10-2: Options Window

2. Click **Add** and browse to the location of the Rule Set.

   Or

Enter the location in a new line in the Locations area.

3. Select Rule Set and click **OK**.

You can use two special variables in the definition of the location:

@DEPLOYER@ – denotes the Tzunami Deployer installation folder.

@PROJECT@ – denotes the currently open Tzunami Deployer project.

You can delete a location by highlighting the relevant text in the Location area, and deleting it.

You can specify that the location of a new Rule Set be automatically added to the list of locations, by clicking **Add location to list of rules set locations** when you define a new Rule Set (**Figure 10-3**).

10.1.3 Rule Sets Editor

You can create multiple Rule Sets for each ECM system. However, at any given time, only one Rule Set can be used during the deployment process.

To set which Rule Set to use during the deployment process:

1. Select **Tools > Options** in the menu. The Options window appears, displaying the existing Rule Sets in the bottom half of the screen (**Figure 10-3**).
2. Select the Rule Set for the ECM to use during the deployment.

10.1.4 Creating a New Rule Set

To create a Rule Set:

- In the Rule Sets Editor (**Figure 10-1**), click **New Rules set**. The New Deployment Rules Set Form appears.

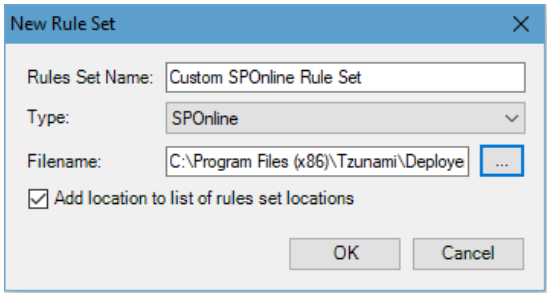


Figure 10-3: New Deployment Rules Set Form

- Enter the following information for the new Rule Set and click **OK**.

Table 10-1: New Deployment Rule Set Form Fields

Field	Description
Rules Set Name	Specify a name for the Rule Set.
Type	Select the type of source ECM the Rule Set applies to from the drop-down list.
Filename	Specify where to save the Rule set file.

Field	Description
Add location to list of rules set locations	Select this option if you wish to display the file location in the Locations pane in the Options window (**Figure 10-2**).

If the Rule Set you are creating is very similar to an existing Rule Set, you can duplicate the existing Rule Set and edit its rules.

10.1.5 Copying a Rule Set

To copy a Rule Set:

When you duplicate a Rule Set, it appears with the same name as the original Rule Set, followed by - Copy.

1. Select **Tools > Deployment Rules**. The Rule Sets Editor appears.
2. In the Rule Set Editor toolbar, click **Copy**.

10.1.6 Creating a Rule in a Rule Set

To create a rule in a Rule Set:

1. Click **New** in the Rules toolbar. The Rule Editor window appears.

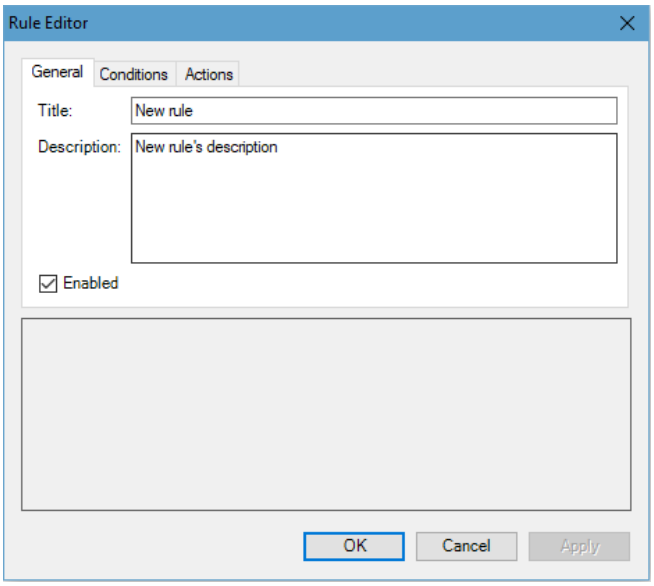


Figure 10-4: Rule Editor Window – General Tab

2. In the General tab enter the following information:

Table 10-2: Rule Editor, General tab – Description of Fields

Field	Description
Title	Enter a name for the rule.

Field	Description
Description	Enter a description for the rule.
Enabled	Select if you want this rule to be processed as part of the Rule Set.

3. Click the **Conditions** tab and define the condition(s):

   a. Click **New**. The Conditions Selector window appears, listing all available conditions.

These conditions may differ depending on the type of ECM system you specified in the Type field of the Rule Set.

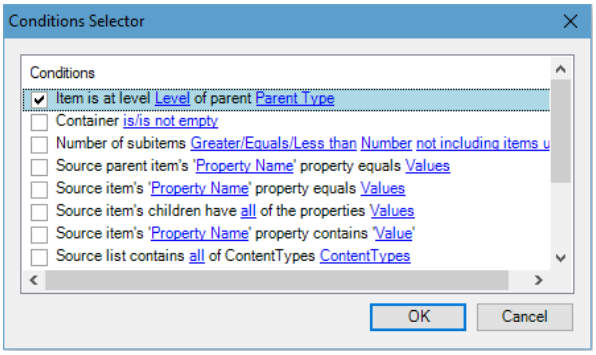


Figure 10-5: Conditions Selector Window

   b. Select the Condition(s) you wish to add and click **OK**. Each Condition is displayed both in the top pane and the bottom pane. The Condition's variables are marked in blue and underlined.

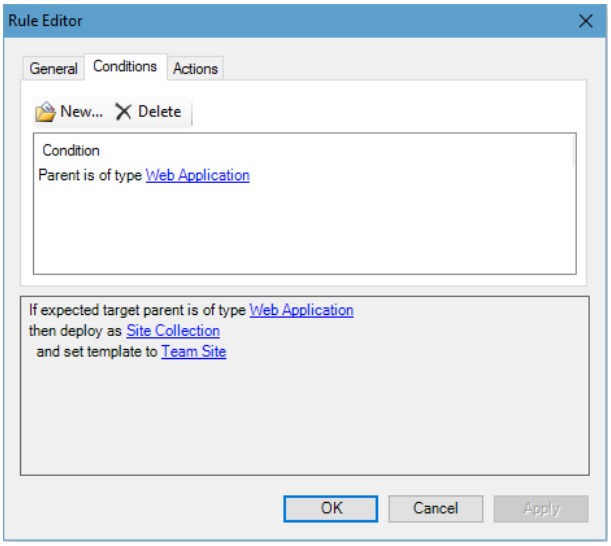


Figure 10-6: Rule Editor Window – Conditions Tab

   c. In the bottom pane, select a value for each variable by clicking the variable, and entering or selecting a value.

If you do not select a value, the rule is considered incomplete, and will not be processed.

4. Click the **Actions** tab and define the action(s):

   a. Click **New**. The Actions Selector window appears, listing all available actions. Note that these conditions may differ depending on the type of ECM system you specified in the Type field of the Rule Set.

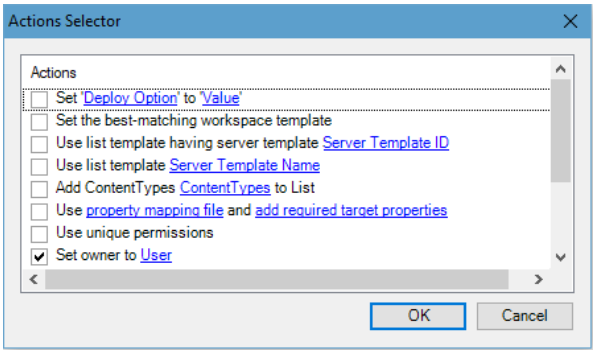


Figure 10-7: Actions Selector Window

   b. Select the Actions you wish to add and click **OK**. Each Action is displayed both in the top pane and the bottom pane. The Action's variables are marked in blue and underlined.

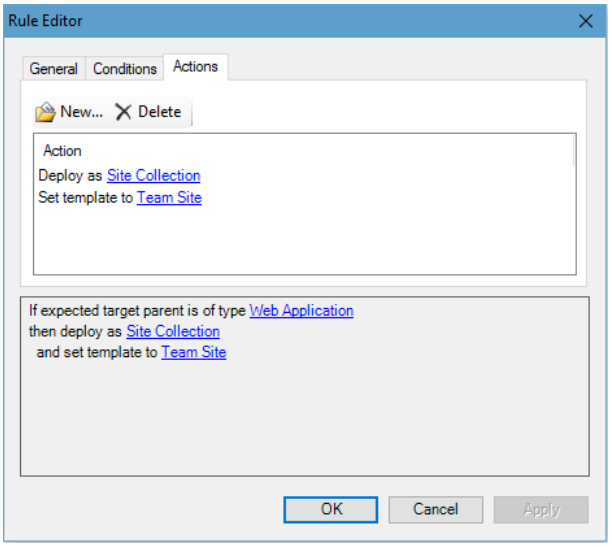


Figure 10-8: Rule Editor Window – Actions Tab

   c. In the bottom pane, select a value for each variable by clicking the variable, and entering or selecting a value.

If you do not select a value, the rule is considered incomplete, and will not be processed.

10.1.7 Copying and modifying a Rule in a Rule Set

This option is useful if you wish to create a rule that is similar to an existing one. Instead of creating a new rule from scratch, you can first copy the existing rule, and then edit it.

To copy a rule in a Rule Set:

1. Select the rule you wish to duplicate.
2. Click **Copy** in the Rule toolbar. The Rule Editor window appears, displaying the new rule.

   You can now edit the information in the General, Conditions, and Actions tabs of the rule.

To edit a rule in a Rule Set:

1. Select the rule you wish to edit.
2. Click **Edit** in the Rule toolbar.

   Or

   Double-click the rule.

   The Rule Editor window appears, displaying the selected rule.

   You can now edit the information in the General, Conditions, and Actions tabs of the rule.

10.1.8 Defining Conditions

This section provides descriptions of the various Conditions you can define. Each description includes the relevant variables, as well as general remarks, if applicable.

If you specify multiple Conditions in a rule, Tzunami Deployer arranges them in the order in which they will be evaluated. You cannot change this order.

If you define contradicting Conditions in a Rule, the Rule will never be executed, because there will never be a case when all Conditions are met.

You can define a Rule with no conditions. This rule will apply to all items. However, note that only this rule will be executed.

10.1.8.1 Parent is of type <Parent Type>

Check if the designated (new) parent of the item is of a certain type.

Variables

Variable	Description
<Parent Type>	The type of the designated parent. The type can be one of the following values: • Web Application • Site Collection • Sub Site • Area – The Portal Area used in a SharePoint 2003 Server • Site – Automatically adjust between Root site, WSS, or Area • Document Library • Image Library • List – A list of any type, including Document Library and Image Library • Folder/List. Note that lists are also recognized as folders • Area Listing – The List used in a SharePoint 2003 Server

10.1.8.2 Items is at level <Level> of parent <Parent Type>

Check if the Items hierarchy is at same level of designated parent type items.

Variables

Variable	Description
<Level>	The value (or values) to search for in the item.
<Parent Type>	The type of the designated parent. The type can be one of the following values: • Web Application. • Site Collection. • Sub Site. • Area – The Portal Area used in a SharePoint 2003 Server. • Site – Automatically adjust between Root site, WSS, or Area. • Document Library. • Image Library. • List – A list of any type, including Document Library and Image Library • Folder/List. Note that lists are also recognized as folders • Area Listing – The List used in a SharePoint 2003 Server

10.1.8.3 Source Parent is of type <Source Type>

Checks the source type of the parent of current item

Variables

Variable	Description
<Source Type>	The type of the designated parent. The type can be one of the following values: • Web Application • Site Collection • Sub Site • Area – The Portal Area used in a SharePoint 2003 Server • Site – Automatically adjust between Root site, WSS, or Area • Document Library • Image Library • List – A list of any type, including Document Library and Image Library • Folder/List. Note that lists are also recognized as folders • Area Listing – The List used in a SharePoint 2003 Server

Remarks

This condition is only available if you specified SharePoint 2007, SharePoint 2010, SharePoint 2013, SharePoint 2016 and SharePoint 2019 in the Type field of the Rule Set.

10.1.8.4 Source is of type <Source Type>

Checks the source type of the current item

Variables

Variable	Description
<Source Type>	The type of source. The type can be one of the following values: • Web Application • Site Collection • Sub Site • Area – The Portal Area used in a SharePoint 2003 Server • Site – Automatically adjust between Root site, WSS, or Area • Document Library • Image Library • List – A list of any type, including Document Library and Image Library • Folder/List. Note that lists are also recognized as folders • Area Listing – The List used in a SharePoint 2003 Server

Remarks

This condition is only available if you specified SharePoint 2003, SharePoint 2007, SharePoint 2010, SharePoint 2013, SharePoint 2016 or SharePoint 2019 in the Type field of the Rule Set.

10.1.8.5 Source Server Template is <Server Template>

Check if the source list is based on a specific list definition type (server template).

Variables

Variable	Description
<Server Template>	Server template ID of the source list. In SharePoint 2007 it is also referred to as Base Template. This can be one or several of the values in **Table 10-3**, or any custom Server Template ID.

Table 10-3: Standard Template IDs

ID	Template Name	ID	Template Name
0	No List Template	202	Meeting Attendees List
100	Generic List	204	Decision
101	Document Library	204	Meeting Decisions List
102	Survey	207	Meeting Objective
103	Links	207	Meeting Objectives List
104	Announcements	210	Text Box
105	Contacts	210	Meeting Text Box
106	Events	211	Things To Bring
107	Tasks	211	Meeting Things To Bring List
108	Discussion Board	212	Home Page Library
109	Picture Library	212	Meeting Workspace Pages List
110	Data Sources	300	Portal Sites List
111	Web Template Catalog	301	Posts
112	User Information	302	Comments
113	Web Part Catalog	303	Categories
114	List Template Catalog	402	Facility
115	XML Form	403	Whereabouts
116	Master Page Catalog	404	Call Track
117	No Code Workflows	405	Circulation
118	Workflow Process	420	Timecard
119	Web Page Library	421	Holidays
120	Custom Grid	499	IMEDic
121	Solution Catalog	600	External List
122	No Code Public	850	Publishing Page Library
130	Data Connection Library	1100	Issue Tracking
140	Workflow History	1200	Admin Tasks
150	Gantt Tasks	1220	Health Rule
200	Meetings	1221	Health Reports
200	Meeting Series List	1301	Translation Lists
200	Area Document Library	2002	Personal Document Library
201	Agenda	2003	Private Document Library
201	Meeting Agenda List	-1	Invalid Type
202	Meeting User		

Remarks

- You can enter any custom Server Template ID in order to support customized lists.
- This condition is only available if you specified SharePoint 2010, SharePoint 2013, SharePoint 2016 or SharePoint 2019 in the Type field of the Rule Set.

10.1.8.6 Source Item is a Document Workspace

Check if the source item is a document workspace

10.1.8.7 Expected target parent is a Meeting Workspace

Check if the expected target parent is a Meeting Workspace.

10.1.8.8 Source item is a Meeting Workspace

Check if the source item is a meeting workspace

10.1.8.9 Source parent item's <'Property Name'> property equals <Values>

Checks if the value of the current item's source parent item property equal certain value.

Variables

Variable	Description
<Property Name>	The display name of the property (case sensitive).
<Value>	The value (or values) to search for in the item.

Remarks

If property name is entered in <Property Name>, then the Condition is true only if the value matches the current items source parent property name.

10.1.8.10 Number of subitems <Great/Equals/Less than> <Number> <not including items under sub-containers> and <count sub-containers as items>

Check if the number of sub items of item is greater than/equals to/ less than the total number of sub-containers as items excluding item under sub-container.

Variables

Variable	Description
<Great/Equals/Less than >	The type of the Operators. The type can be one of the following values: • Greater Than • Equal • Less Than
< Number>	The value (or values) to search for in the item.
<not including items under sub-containers>	• **Including items under sub-containers (recursively)** – Select number of sub-items under sub-containers (recursively) • **Not including items under sub-containers** – Do not select the number of sub-items under sub-containers

<count sub-containers as items>	• **Count sub-containers as items** – Count number of sub-items in sub-containers as items • **Do not count sub-containers as items**– Do not Count number of sub-items in sub-containers.

10.1.8.11 Source Item's <Property Name> property equals <Value>

Checks the value of the source item's property

Variables

Variable	Description
<Property Name>	The display name of the property (case sensitive).
<Value>	The value (or values) to search for in the item.

Remarks

If property name is entered in <Property Name>, then the Condition is true only if the value matches the current items property name.

10.1.8.12 Container <is/is not empty>

Check if the container is empty or not.

Variables

Variable	Description
is	A keyword indicating that the container does not have items
Is not empty	A keyword indicating that the container has items

10.1.8.13 Source item's <'Property Name'> property contain <'Value'>

Check if the source item's property name contains a value.

Variables

Variable	Description
<Property Name>	The display name of the property (case sensitive).
<Value>	The value (or values) to search for in the item.

10.1.8.14 Source item's children have <all> of the properties <Values>

Check if the children of the current item have certain property value.

Variables

Variable	Description
<all>	The display all or any value of the property

<Values>	The value (or values) to search for in the item.

10.1.8.15 Parent Deployment option <Property Name> equals <Value>

Check if the deployment option of the current item's parent property has a certain value.

Variables

Variable	Description
<Property Name>	The deployment option property to check. This can be one of the following values: • Invalid • Description • Language Id • Language Name • List Template Name • List Template Server template. • List Template Base type. • URL • Owner login name • Owner display name • Site Template name • Title • Deploy Files • Deploy Hierarchy • Flat Deploy
<Value>	The value to search for in the deployment options of the item.

10.1.8.16 Deployment option <Property Name> equals <Value>

Check if the deployment option of the current item property has a certain value.

Variables

Variable	Description
<Property Name>	The deployment option property to check. This can be one of the following values: • Invalid • Description • Language Id • Language Name • List Template Name • List Template Server template. • List Template Base type. • URL • Owner login name • Owner display name • Site Template name • Title • Deploy Files • Deploy Hierarchy • Flat Deploy
Value	The value to search for in the deployment options of the item.

10.1.8.17 Source Item {Does | Does not have} unique permissions

Checks if a source item has unique permissions or it inherited/has the same permissions as the parent.

Parameters

Parameter	Description
Does	A keyword indicating that the source item has unique permissions.
Does not have	A keyword indicating that the source item does not have unique permissions.

10.1.8.18 Any of the subitems' <'Property Name'> property equal <Values> (Do not look recursively in sub-containers)

Check if property of sub-item of item has certain property values but don't look recursively in sub-containers of item

Parameter

Parameter	Description
All	The display any or all properties
Value	The value to search for in the deployment options of the item.

Parameter	Description
(Do not look recursively in sub-containers)	• Look recursively in sub-containers • Do not look recursively in sub-containers

10.1.8.19 All sub-items' <Property Name> property equals <Value> (using <flags>)

Check if the property of all sub-items of item has certain value using the provided flag.

Variables

Variable	Description
<Property Name>	The display name of the property (case sensitive).
<Value>	The value (or values) to search for in the item.
<flags>	• **Consider folders –** Selecting this flag will consider subfolder of folder containing subfolders and items. • **Look recursive –** Selecting this flag will recursively look for items or folders in containers. • **Accept empty containers** – Selecting this flag will accept empty containers • **Ignore already deployed items** – Selecting this flag will help to ignore which is already deployed.

Remarks

- If a property name of each sub-items of item is entered in <Property Name>, then the Condition is true only if the values of all sub-items of item include value defined in the Condition using the flag.
- This Condition will also check the items and files of the currently checked container.

10.1.9 Defining Actions

This section provides descriptions of the various Actions you can define. Each description includes the relevant variables, as well as general remarks if applicable.

If you specify multiple Actions in a rule, Tzunami Deployer arranges them in the order in which they will be evaluated. You cannot change this order.

If you define illogical combinations of Actions; the Actions are performed in the order determined by Tzunami Deployer, and invalid Actions are ignored.

10.1.9.1 Deploy as <Type>

Sets the deployment options to deploy as a certain type

Variables

Variable	Description
<Type>	The type to deploy as. This can be one of the following values: • Web Application • Site Collection • Sub Site • Area – The Portal Area used in a SharePoint 2003 Server • Site – Automatically adjust between Root site, WSS, or Area • Document Library • Image Library • List – A list of any type, including Document Library and Image Library • Folder/List. Note that lists are also recognized as folders • Do not Deploy – Using during the deployment process • Area Listing - The List used in a SharePoint 2003 Server

10.1.9.2 Set <Deploy Option> to <Value>

Sets a deploy option to a certain value.

Variables

Variable	Description
<Deploy Option>	The name of the deployment option. This can be one of the following values. • Invalid • Description • Language Id • Language Name • Title • Deploy Files • Deploy Hierarchy • Flat Deploy • Enable Quick Launch • Inherit Navigation • On Top Navigation bar
Value	The value to set for the deployment option.

10.1.9.3 Set the best-matching workspace template

When an item is deployed as a site, this action matches the template of the deployed site to best matching available site templates.

10.1.9.4 Set Template to <Site Template>

When an item is deployed as a site, this action sets the site template to a certain template.

Variables

Variable	Description
<Site Template>	The name of the site template. For example: Team Site, Blank Site, and so on.

Remarks

This Action is valid only when an item is deployed as a site.

10.1.9.5 Set Template using the following <mapping>

When an item is deployed as a site, this action sets the site template according to the specified site mapping.

Variables

Variable	Description
<Mapping>	A mapping of source templates to target templates. See **Table 10-4** and **Table 10-5** for a list of standard source template IDs and standard target template Name#IDs.

Table 10-4: Standard source values (Template base type IDs)

ID	Template Name	Description
1	STS	Template for Team Site, Blank site and Document workspace
2	MPS	Meeting Workspaces Template
3	CENTRALADMIN	Central Admin Site
4	WIKI	Wiki Site
9	BLOG	Blog
20	SPS	SharePoint Portal Server Site (Obsolete)
21	SPSPERS	SharePoint Portal Server Personal Space
22	SPSMSITE	Personalization Site
30	SPSTOC	Contents area Template (Obsolete)
31	SPSTOPIC	Topic area template (Obsolete)
32	SPSNEWS	News Site Template (Obsolete)
33	SPSNHOME	News Site Template
34	SPSSITES	Site Directory
36	SPSCOMMU	Community area template
38	SPSREPORTCENTER	Report Center
39	CMSPUBLISHING	Publishing Site
47	SPSPORTAL	Collaboration Portal
50	SRCHCEN	Search Center with Tabs

ID	Template Name	Description
51	PROFILES	Profiles
52	BLANKINTERNETCONTAINER	Publishing Portal
53	BLANKINTERNET	Publishing site Template
54	SPSMSITEHOST	My Site Host

Table 10-5: Standard target values (Template name#Configuration ID)

Template Name#ConfigurationID	Title
STS#0	Team Site
STS#1	Blank Site
STS#2	Document Workspace
MPS#0	Basic Meeting Workspace
MPS#1	Blank Meeting Workspace
MPS#2	Decision Meeting Workspace
MPS#3	Social Meeting Workspace
MPS#4	Multipage Meeting Workspace
CENTRALADMIN#0	Central Admin Site
WIKI#0	Wiki Site
BLOG#0	Blog
SPS#0	SharePoint Portal Server Site (this template is obsolete)
SPSPERS#0	SharePoint Portal Server Personal Space
SPSMSITE#0	Personalization Site
SPSTOC#0	Contents area Template (this template is obsolete)
SPSTOPIC#0	Topic area template (this template is obsolete)
SPSNEWS#0	News Site (this template is obsolete)
SPSNHOME#0	News Site
SPSSITES#0	Site Directory
SPSCOMMU#0	Community area template (this template is obsolete)
SPSREPORTCENTER#0	Report Center
CMSPUBLISHING#0	Publishing Site
SPSPORTAL#0	Collaboration Portal
SRCHCEN#0	Search Center with Tabs
PROFILES#0	Profiles
BLANKINTERNETCONTAINER#0	Publishing Portal
BLANKINTERNET#0	Publishing Site
BLANKINTERNET#1	Press Releases Site
BLANKINTERNET#2	Publishing Site with Workflow
SPSMSITEHOST#0	My Site Host

Remarks

- This Action is valid only when an item is deployed as a site.
- This Action is available only if you specified SharePoint 2010, SharePoint 2013, SharePoint 2016 or SharePoint 2019 in the Type field of the Rule Set.

- In the Rule Sets Editor, the following window appears for defining the mapping:

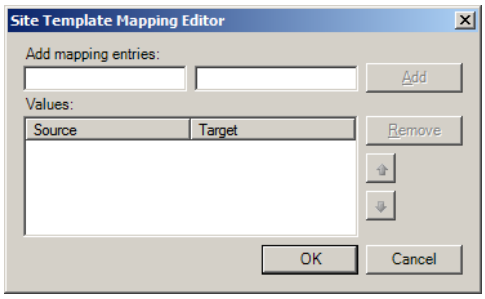


Figure 10-9: Site Template Mapping Editor Window

- Enter a source template ID in the left hand field under **Add mapping entries**, and enter a target template Name#ID in the right hand field under **Add mapping entries**. Click **Add** to add this entry to the list of source and target values.
- The source value "%OTHER%" can be used as a placeholder, signifying "any other template". This can be used as a default mapping, instead of defining mappings for all source options.

10.1.9.6 Use List Template having server template <Server Template>ID

When an item is deployed as a list, this action sets the List Template based on a Server Template ID.

Variables

Variable	Description
<Server Template>	The server template ID. You can enter a standard template ID (see **Table 10-3** for a list of standard template IDs), or any custom Server Template ID.

Remarks

- You can enter any supported Server Template ID, in order to support lists and libraries.
- This Action is valid only when item is deployed as a list.
- This Action is based on the SharePoint recommendation, in which each list template has a unique Server Template ID.

10.1.9.7 Use List Template <Server Template Name>

When an item is deployed as a list, this action sets the List Template based on the list template's Name.

Variables

Variable	Description
<Server Template Name>	The server template Name. You can enter a standard template name (such as Document Library, Contacts, and so on, see **Table 10-3** for a list of standard template IDs) or any custom Server Template name.

Remarks

You can enter any supported Server Template Name, in order to support lists or libraries.

10.1.9.8 Set List Template using the following <mapping>

While an item is deployed as a list, this action maps template ID number from source to target according to the specified list template mapping.

Variables

Variable	Description
<mapping>	A mapping of source template IDs to target template IDs. You can enter standard source and target template IDs (see **Table 10-3** for a list of standard source and target template IDs), or any custom Server Template ID.

Remarks

This Action is available only if you specified SharePoint 2007, SharePoint 2010, SharePoint 2013, SharePoint 2016 or SharePoint 2019 in the Type field of the Rule Set.

- In the Rule Sets Editor, the following window appears for defining a mapping:

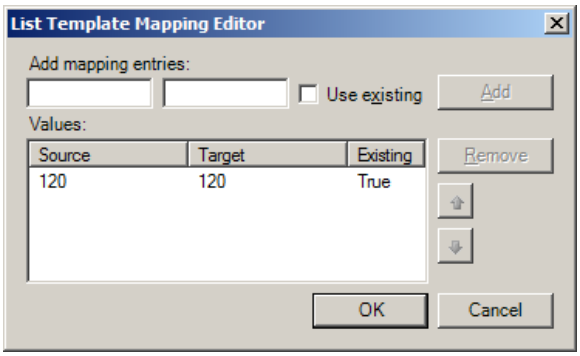


Figure 10-10: List Template Mapping Editor Window

  - Enter a source list template ID in the left hand field under Add mapping entries, and a target list template ID in the right hand field under Add mapping entries.
  - Click Use Existing to specify that if the site template includes this list type, it will be used and set true to existing column.
  - Click Add to add this entry to the list of source and target values.

10.1.9.9 Set List Template using the following <mapping> (automatic)

While an item is deployed as a list, this action automatically maps template ID number from source to target according to the specified list template mapping.

Variables

Variable	Description
<mapping>	A mapping of source template IDs to target template IDs. You can enter standard source and target template IDs (see **Table 10-3** for a list of standard source and target template IDs), or any custom Server Template ID.

Remarks

- This Action is available only if you specified SharePoint 2007, SharePoint 2010, SharePoint 2013, SharePoint 2016 or SharePoint 2019 in the Type field of the Rule Set.
- In the Rule Sets Editor, the following window appears for defining a mapping:

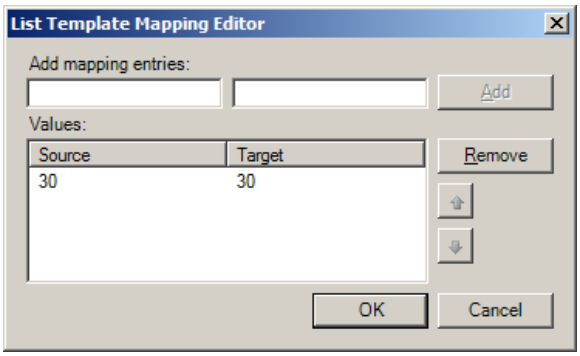


Figure 10-11: List Template Mapping Editor Window

- Enter a source list template ID in the left hand field under Add mapping entries, and a target list template ID in the right hand field under Add mapping entries.
- Click Add to add this entry to the list of source and target values.

10.1.9.10 Use <property mapping file> and <add required target properties>

Sets an XML document as the property mapping to be used for the item, and specifies whether to add required target properties.

Variables

Variable	Description
<mapping>	The path to on XML file that defines the property mapping.
Add required target properties| Don't add required target properties	Required target properties are the properties that are required in the target item but are not present in property mapping XML file. Use these keywords to specify whether to add missing properties to the target.

10.1.9.11 Sample Property Mapping XML File

```
<PropertyMapping SourceSet="Tasks Column Set" TargetSet="Tasks Column Set 2">
 <Pair>
  <Source DisplayName="Created" Name="Created"
       PropertyType="DateTime" />
  <Target DisplayName="Created" Name="Created Date"
       PropertyType="DateTime" />
 </Pair>
 <Pair>
  <Source DisplayName="Approval Status" Name="_ModerationStatus"
       PropertyType="ModStat" />
  <Target DisplayName="Approval Status" Name="_ModerationStatus"
       PropertyType="ModStat" />
```

```
 </Pair>
 <Pair>
  <Source DisplayName="Name" Name="D996E646-5C05-45b7-B24A-9AFAF5B21503"
        PropertyType="Text" />
  <Target DisplayName="Name" Name="D996E646-5C05-45b7-B24A-9AFAF5B21503"
        PropertyType="Text" />
 </Pair>
 <Pair>
  <Source DisplayName="Modified By" Name="Editor" PropertyType="User" />
  <Target DisplayName="Modified By" Name="Editor" PropertyType="User" />
 </Pair>
 <Pair>
  <Source DisplayName="Created By" Name="Author" PropertyType="User" />
  <Target DisplayName="Created By" Name="Author" PropertyType="User" />
 </Pair>
 <Pair>
  <Source DisplayName="Start Date" Name="StartDate"
        PropertyType="DateTime" />
  <Target DisplayName="Start Date" Name="StartDate"
        PropertyType="DateTime" />
 </Pair>
 <Pair>
  <Source DisplayName="Due Date" Name="DueDate" PropertyType="DateTime" />
  <Target DisplayName="Due Date" Name="DueDate" PropertyType="DateTime" />
 </Pair>
 <Pair ValueMapping="@DEPLOYER@\Rules\Mappings\Value Mapping - Tasks -
Priority.xml">
  <Source DisplayName="Priority" Name="Priority" PropertyType="Choice" />
  <Target DisplayName="Priority" Name="Priority" PropertyType="Choice" />
 </Pair>
 <Pair>
  <Source DisplayName="% Complete" Name="PercentComplete"
        PropertyType="Number" />
  <Target DisplayName="% Complete" Name="PercentComplete"
        PropertyType="Number" />
 </Pair>
 <Pair>
  <Source DisplayName="Modified" Name="Modified" PropertyType="DateTime" />
  <Target DisplayName="Modified" Name="Modified" PropertyType="DateTime" />
 </Pair>
 <Pair>
  <Source DisplayName="Created" Name="Created" PropertyType="DateTime" />
  <Target DisplayName="Created" Name="Created" PropertyType="DateTime" />
 </Pair>
 <Pair>
  <Source DisplayName="Assigned To" Name="AssignedTo" PropertyType="User" />
  <Target DisplayName="Assigned To" Name="AssignedTo" PropertyType="User" />
 </Pair>
 <Pair>
```

```
  <Source DisplayName="Description" Name="Body" PropertyType="Note" />
  <Target DisplayName="Description" Name="Body" PropertyType="Note" />
 </Pair>
 <Pair>
  <Source DisplayName="Title" Name="Title" PropertyType="Text" />
  <Target DisplayName="Title" Name="Title" PropertyType="Text" />
 </Pair>
 <Pair ValueMapping="@DEPLOYER@\Rules\Mappings\Value Mapping - Tasks -
Status.xml">
  <Source DisplayName="Status" Name="Status" PropertyType="Choice" />
  <Target DisplayName="Status" Name="Status" PropertyType="Choice" />
 </Pair>
 <Pair>
  <Source DisplayName="Modified" Name="Modified"
       PropertyType="DateTime" />
  <Target DisplayName="Modified" Name="Last Modified"
       PropertyType="DateTime" />
 </Pair>
</PropertyMapping>
```

Where;

DisplayName is the Properties Display name.

Name is the SharePoint internal name.

PropertyType can be one of the following: DateTime, ModStat, User, Choice, and Text.

10.1.9.12 Sample Value Mapping XML File

Note that the sample mapping file includes references to two external XML files that contain value mappings (highlighted in the sample): Status and Priority. The Status value mapping file for this example is:

```
<ValueMapping>
 <Pair Source="Issue" Target="Waiting on someone else" />
 <Pair Source="Completed" Target="Completed" />
 <Pair Source="{D3A98B62-323C-4130-AA18-2CA791C9E57D}" Target="Not Started" />
 <Pair Source="{D3A98B62-323C-4130-AA18-2CA791C9E57C}" Target="{D3A98B62-323C-
4130-AA18-2CA791C9E57A}" />
</ValueMapping>
```

Where value mapping provides a few "placeholder" values:

{D3A98B62-323C-4130-AA18-2CA791C9E57C} – Empty Source.

{D3A98B62-323C-4130-AA18-2CA791C9E57D} – Default Source.

{D3A98B62-323C-4130-AA18-2CA791C9E57A} – Target Map to Empty.

{D3A98B62-323C-4130-AA18-2CA791C9E57B} – Target Map to Keep Original.

These values match the values available to users in the Value Mapping step of the deployment wizard.

Remarks

You can create the mapping file manually, but it is recommended to export a property mapping during a regular deployment, and use the exported mapping. For more information.

10.1.9.13 Set Title to <Title>

Sets the title of the new item to the selected value

Variables

Variable	Description
<Title>	The title of the item.

10.1.9.14 Use unique permissions

When an item is deployed as a site, this action sets the site to use unique permissions.

Remarks

This Action is valid only when an item is deployed as a site.

10.1.9.15 Set owner to <user>

When an item is deployed as a site, this action sets the owner to a certain value.

Variables

Variable	Description
<User>	The username of the user who is being assigned as owner. The username is case sensitive. It should be the full user logon name (pre-Windows 2000: DOMAIN\user).

Remarks

This Action is valid only when an item is deployed as a root site (site collection).

10.1.9.16 Set Description to <Description>

Sets the description of the new item to the selected value

Variables

Variable	Description
<Description>	The description of the item.

10.1.9.17 Add the missing properties [except]

Adds the missing properties of the item except selected property

Variables

Variable	Description
<except>	The description of the item value.

10.1.9.18 Add the missing properties [except of type]

Adds the missing properties of the item except selected property type

Variables

Variable	Description
<Description>	The description of the item type value.

10.1.9.19 Execute the following Rules <Rules>

Executes selected rules of the current Rule Set

Variables

Variable	Description
<rules>	The rules to execute.

Remarks

- It is considered good practice to disable Rules that are meant to be executed as part of this Action.

Usually, Rules that are executed by this Action are small, zero, or one condition Rules. These are often created as Rules only to prevent duplication of their logic in multiple Rules.

11 NAMING AND URL LENGTH CONSIDERATIONS

To ensure the smooth management of a SharePoint migration project, you should ensure that Site/Sub-site, List/Library, Folder/Files, Group, Permission Name and expected URL conventions for invalid characters, length and reserved words etc. The following sections highlights the basic considerations incorporated in **Tzunami Deployer**.

11.1 SITE AND SUBSITE NAME

The naming convention, applied in **Tzunami Deployer**, is listed in the following table.

Table 11-1 Naming Considerations for Site and Sub-site.

Category	SharePoint Server 2013 and earlier	SharePoint Server 2016/2019 and Online
Title Length supported (in characters)	255	255
Reserved words (i.e. Forbidden to use)	PRN, AUX, NUL, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9, CON, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9, Wpresources	PRN, AUX, NUL, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9, CON, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9, Wpresources

Tzunami Deployer automatically replaces invalid characters with an underscore ("_").

11.2 LIST AND LIBRARY

The naming convention, applied in **Tzunami Deployer**, is listed in the following table.

Table 11-2 Naming Conventions for List and Library.

Category	SharePoint Server 2013 and earlier	SharePoint Server 2016/2019 and Online
Title Length supported (in characters)	255	255

.

11.3 FOLDER AND FILE

The naming convention, applied in **Tzunami Deployer**, is listed in the following table.

Table 11-3 Naming Convention for Folder and File.

Category	SharePoint Server 2013 and earlier	SharePoint Server 2016/2019 and Online
Invalid characters	~ " # % & * : < > ? / \ { | } or tab characters	" # % * : < > ? / \ | or tab characters
File name starts with period(.) or tidle(~)F	Forbidden	Permissible
File name contains multiple period(….)	Forbidden	Forbidden
File Name Length supported (in characters)	128	128 for SP 2016/2019. 255 for SP Online.
File URL Length supported (in characters)	260	260 for SP 2016/2019. 400 for SP Online.
Name starts with underscore(_)	Permissible	Permissible
Name starts with vti (e.g._vti_cnf, _vti_pvt, _vti_bin, _vti_txt)	Forbidden	Forbidden
Reserved words at the end of file name (i.e. Forbidden to use)	_archivos, _arquivos, _bestanden, _bylos, _Dateien, _datoteke, _dosyalar, _elemei, _failid, _fails _fajlovi, _ficheiros, _fichiers, _filer, .files, _files, _file, _fitxers, _fitxategiak, _pliki, _soubory, _tiedostot	_archivos, _arquivos, _bestanden, _bylos, _Dateien, _datoteke, _dosyalar, _elemei, _failid, _fails _fajlovi, _ficheiros, _fichiers, _filer, .files, _files, _file, _fitxers, _fitxategiak, _pliki, _soubory, _tiedostot

11.4 Group Name

The naming convention, applied in **Tzunami Deployer**, is listed in the following table.

Table 11-4 Naming Consideration for Group Names.

Category	SharePoint Server 2013 and earlier	SharePoint Server 2016/2019 and Online
Invalid characters	| \ " ' / [ ] : < > + = , ; ? * @ or tab characters	| \ " ' / [ ] : < > + = , ; ? * @ or tab characters
Title Length supported (in characters)	255	255
Name starts with underscore(_)	Permissible	Permissible

11.5 Permission Name

The naming convention, applied in **Tzunami Deployer**, is listed in the following table.

Table 11-5 Naming Conventions for Permission Name.

Category	SharePoint Server 2013 and earlier	SharePoint Server 2016/2019 and Online
Invalid characters	| \ " ' / [] : <> + = , ; ? * @ or tab characters	| \ " ' / [] : <> + = , ; ? * @ or tab characters
Title Length supported (in characters)	64	64

11.6 URL and Path Length

The SharePoint URL typically consists of following parts:
URL= **protocol + server name + folder or file path + folder or file name**
For Example:
http://www.tzunami.com/sites/ supports/documents/Shared%20Documents/issue/File%20One.xlsx
Here,
Protocol= http://
Server name = www.tzunami.com/
Folder or file path = sites/supports/documents/Shared%20Documents/issue/
File name = File%20One.xlsx
Then,
The URL length (in character) is calculated as “folder or file path + folder or file name”.
And the length is 61 characters.
Tzunami Deployer will check the URL length (expected) based on the convention listed in the following table.

Table 11-6 Naming Conventions for URL

Category	**SharePoint Server 2013 and earlier**	**SharePoint Server 2016/2019 and Online**
Invalid characters	\ / : * ? “< > | # % { } ~ & or tab characters.	\ / : * ? " < > | # % or tab characters
URL contains multiple periods (….)	Forbidden	Forbidden
URL start/end with period (.)	Forbidden	Forbidden
URL starts with underscore(_)	Forbidden Underscore(_) starts in URL for Folder and File is permissible.	Forbidden Underscore(_) starts in URL for Folder and File is permissible.
URL Length supported (in characters)	260	260 for SP2016/2019. 400 for SP Online.

12 DEPLOYER CONFIGURATION FILE

12.1 DEPLOYER OPTION SETTINGS

Tzunami Deployer has a **Deployer.exe.config** in the installation directory. This file consists of options required for Deployer during migration. When Tzunami Deployer runs, it loads the options for the running instances. The subsequent running instance of the deployer also shares the options from the initial instance of the deployer.

Some options in the configuration files are set from deployer's **option** in file menu. Some options should be manually updated to this file prior to execution of the deployer. This section lists and describes such options.

In the deployer installation directory, find the **Deployer.exe.config** file. It's an XML file. Open it in any xml file editor with elevated privilege. In the file locate the **appSettings** node. This node consists of options in key value pair. The following table lists the manually configurable options.

Table 12-1 Options in Deployer Configuration File

Key	Description
WebAuthBrowser	This option is used to connect SharePoint online. Users can set value to "Edge", "Firefox", "Chrome" or "Internet Explorer" to support the installed browser.
exportReportToCsv	Deployer produces various reports during deployment and migration in html format by default. Users can set value to "True" to create additional reports in CSV format as well.
exportReconsilationReport	Deployer provides a feature to combine multiple reports in a single file as reconciliation report. Users can set the value to "True" to create such reconciliation report in excel format.
MaxMigrationAPIThreads	This option is used to process the migration package in parallel while using migration api in Deployer. Users can set value for desired number of threads to process packages in parallel which dependent on the number of threads of the system.
ItemsPerPackageLimit	This option is used to include the number of items per package while using migration api in Deployer. User can set value to the desired number of items.
NumberofRetry	This option is used to retry when there is throttling issue during migration in SharePoint online. Users can set the value to the desired number.

Key	Description
MigrationAPISkipPageMigration	This option is used to migrate pages in Web Page/Site Pages library in SharePoint online using migration api. The value is set to “True” to skip the migration of pages. The pages remain in pending changes of the Deployer, and users can retry to migrate those pages by ensuring that associated libraries are migrated in the target source. When users set value to “False”, pages are migrated. However, it cannot be assured that associated libraries are migrated first before migrating pages. That may lead to errors in migration of pages and users see the errors as well as pending commands in Deployer. Users can retry the pending command by ensuring the associated libraries are migrated in Target SharePoint.

13 TROUBLESHOOTING

13.1.1 Execution Report

When **Tzunami Deployer** performs long operations, such as connecting to SharePoint and migrating, an execution report appears.

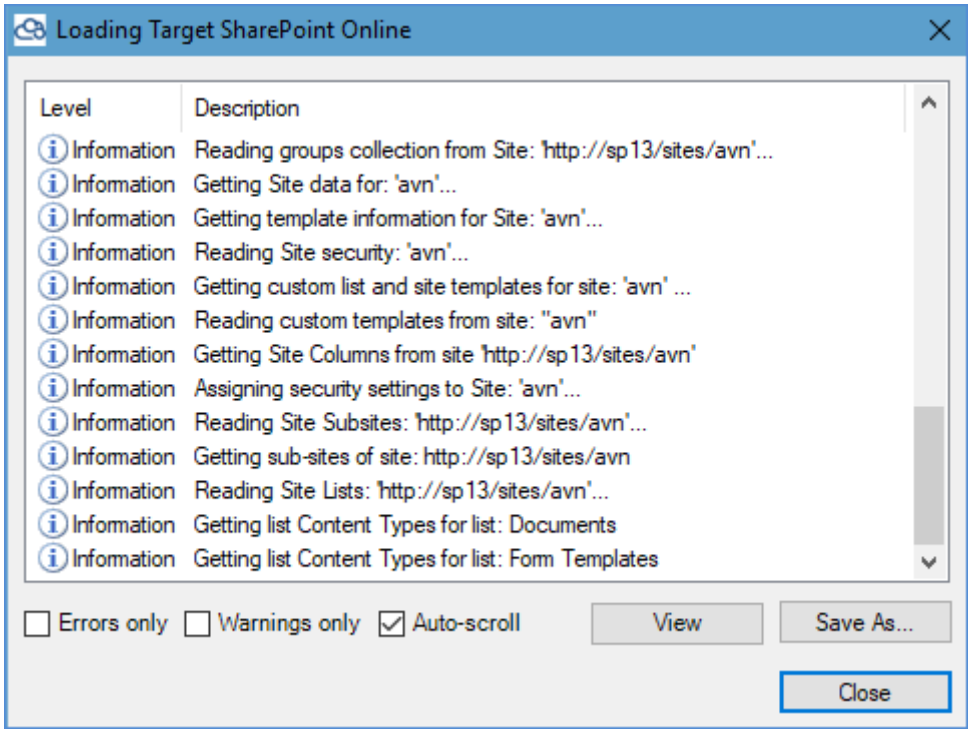


Figure 13-1: Execution Report

This report displays information concerning the progress of the running operation. The report shows Information, Warnings and Errors by default in Level and related operation in Description.

You can perform various actions using the report:

- Check box **Auto-scroll** - if checked, the report will automatically scroll down to the newest entry.
- Check box **Errors only** – if checked, filters the entries to display only errors.
- Check box **Warnings only** – if checked, filters the entries to display only warnings.
- Button **Save As…** – Saves the report as a text file.
- Button **View** - Displays an advanced view of the report, providing users with more details and possible resolutions to errors.

If there were any errors during the running process, a balloon will appear, notifying us that errors were found. Pressing the View button, will display the advanced view of the report:

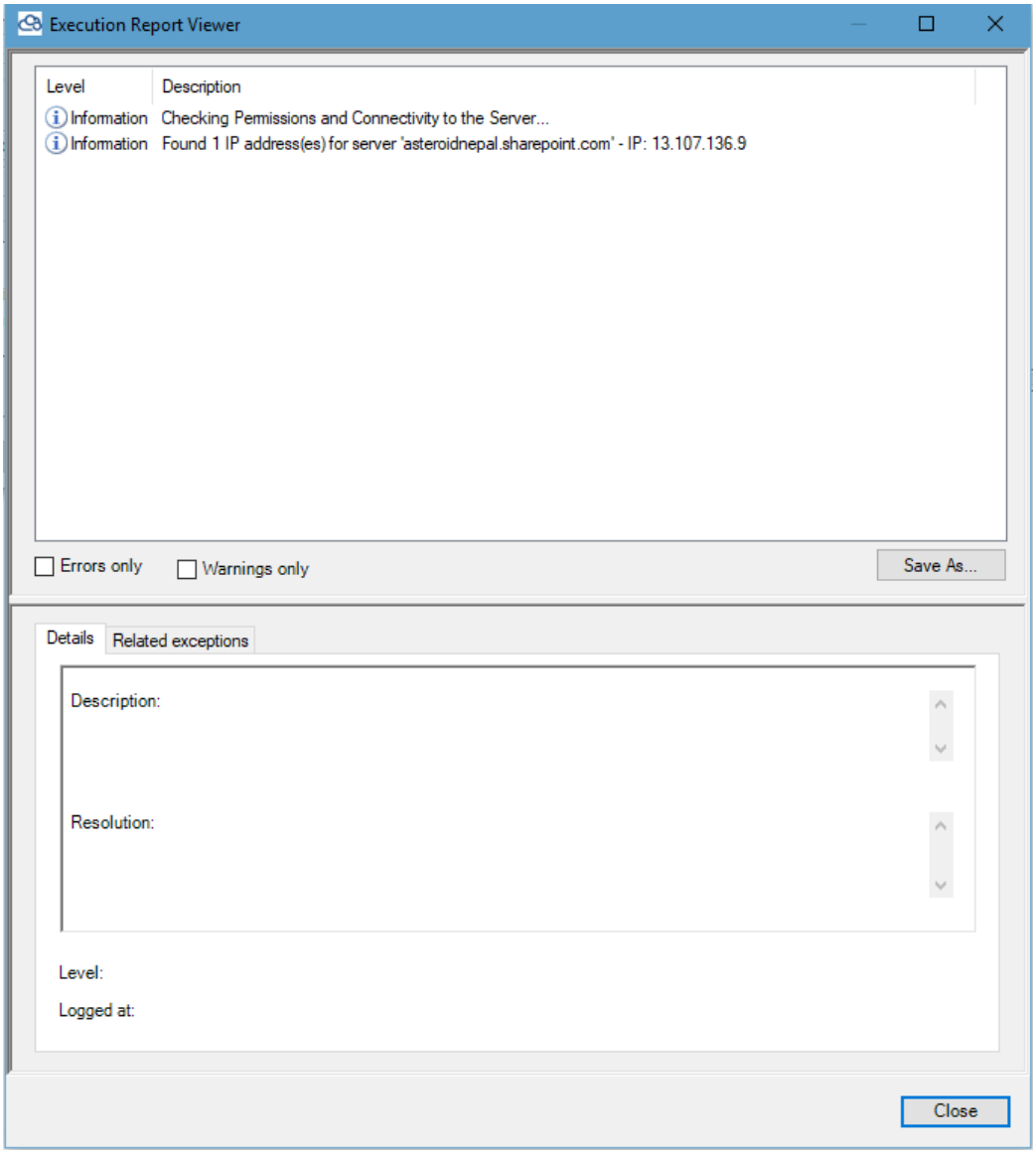


Figure 13-2: Execution Report – Advanced View

The upper panel in this window displays the same information entries as in the execution report.

The lower panel displays the details of the selected entry, and possible resolutions if exists. The Related Exceptions tab can be used to view information from the logs that is relevant to the selected error.

13.1.2 Unexpected Errors

When Tzunami Deployer encounters an unexpected error, the following window pops up:

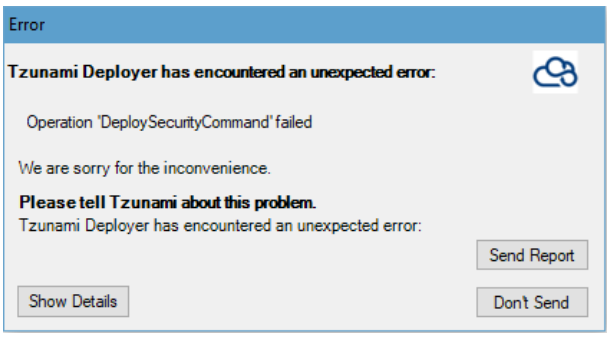


Figure 13-3: Unexpected Error window

This window provides information about the error. In order to see more details, click **Show Details**. You can also report this error to the Tzunami Support Team by clicking the **Send Report** button, or return to Tzunami Deployer by clicking **Don't Send**.

To send a report:

1. Click Send Report.

   The Report window appears.

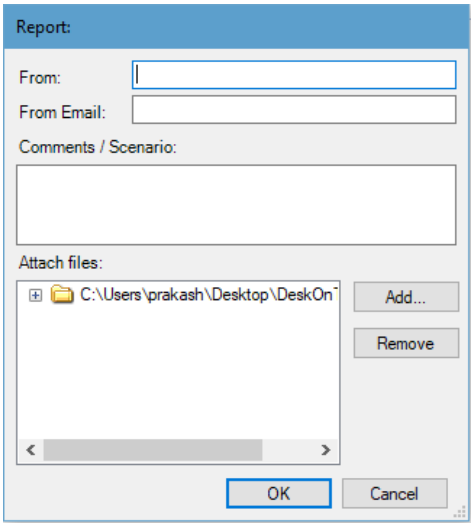


Figure 13-4: Report window

2. Fill the **From** and **From Email** fields.
3. In the **Comments/Scenario** field, describe the steps you performed that led to the unexpected error or add comments about the process.
4. In the **Attach files** section, you can add or remove files that to send with the report. By default, Tzunami Deployer adds the logs of the project as attached files.
5. Click **OK**.

   The generated report is sent to the Tzunami Support Team

14 FREQUENTLY ASKED QUESTIONS

This section includes frequently asked questions in the following areas:

- Installation.
- Support # character.
- Permission.
- Security.
- Broken Links.
- Batch and Command Line Operations.
- Remote Operation.
- Logging.
- Delta Deployment.

14.1 INSTALLATION

Where do I get the software for the Tzunami Deployer Remote Service?

Tzunami Deployer Remote Service is a component needed in order to run Tzunami Deployer on non-SharePoint machines. This component is not available during the Tzunami Deployer evaluation phase (in which the Tzunami Deployer installation must be on the SharePoint server). Upon purchasing the product, all relevant links for download are supplied. If you have any more questions about this subject, please contact the Tzunami Support Team at ***support@tzunami.com***.

Does Tzunami Deployer support running migration operations without having to install any components on the SharePoint servers?

Yes. When performing a migration to SharePoint 2003, there are no components that require installation on the SharePoint server.

When migrating to SharePoint 2013, 2016 or 2019, the current version of Tzunami Deployer provides "On-Premise" mode for connecting to premise SharePoint server without using Tzunami Remote Service.

Is Tzunami Deployer a Windows or a web based application?

Tzunami Deployer is a Windows-based application with a Windows service component running on the SharePoint server (for migration to SharePoint 2010/ SharePoint 2013/SharePoint 2016/SharePoint 2019 or SharePoint Online only).

14.2 SUPPORT # CHARACTER

How does Tzunami Deployer support "#" character in folder and file when migrating to SharePoint online?

Tzunami Deployer supports "#" character in folder and file title property when migrating to SharePoint online and SharePoint 2019. The "#" character is preserved in folder and file title property after migration to SharePoint (i.e.; original file name from source is preserved in Title property for folder).

In other target SharePoint on-premise versions, the "#" character is replaced with "_" character.

14.3 PERMISSIONS

What access rights does Tzunami Deployer require on the source environment?

This varies from system to system. Generally, a user with full read permissions is required for the source system. A user that can access the data through the regular system interface should be sufficient in most cases. For more information about the requirements of the various systems, see the relevant Tzunami Deployer Exporter's Guide. Migration

Does Tzunami Deployer migrate folder structure? Does Tzunami Deployer migrate Documents and lists metadata?

Yes. Tzunami Deployer extracts and enables the deployment and migrating of any hierarchy structure existing in the source system. Tzunami Deployer migrates metadata for sites, lists, items, and files, including the system properties (Create, Created By, Modified, and Modified By).

Does Tzunami Deployer migrate version history of documents?

Yes. Tzunami Deployer retains version history for items and documents with all relevant metadata.

Does Tzunami Deployer migrate Document Policy Management? Does Deployer migrate Alerts?

No. Tzunami Deployer is a data migrating tool and, as such, it does not support migrating document policies or alerts.

Does Tzunami Deployer migrate Documents and Lists?

Yes. Tzunami Deployer supports migration of all kinds of containers and contained items from the source system, including documents, data-items, folders, lists, libraries, and sites.

Does Tzunami Deployer support the migration of all list types?

Yes. Tzunami Deployer supports the migration of all list types, including Document Libraries, Issues, Tasks, Contacts, Announcements, Discussions, as well as custom lists.

Does Tzunami Deployer support multi-lingual migration?

Tzunami Deployer is not language-specific. Whatever the language your data is written in, Tzunami Deployer will migrate it as-is.

Does Tzunami Deployer migrate layouts, themes, and headers of sites?

No. Tzunami Deployer is a content migration tool. Layouts, themes, and templates in general are not part of the content and, therefore, are not migrated. However, you can create your own custom templates in the target SharePoint and use those templates in Tzunami Deployer.

Does Tzunami Deployer migrate Site Definitions?

The main site definitions of SharePoint reside on the SharePoint server and are not part of the SharePoint data itself. For this reason, Tzunami Deployer does not support the migration of site definitions. Custom site/list templates, on the other hand, reside in the SharePoint libraries: "site/list template gallery". These lists are read with Tzunami Deployer and the contained item can be migrated to the target SharePoint. Note that any dependency or inconsistency that might occur after migration is the responsibility of the creator of the site/list template – Tzunami Deployer is responsible only for moving the files.

Does Tzunami Deployer migrate regional settings? Does Tzunami Deployer migrate workflows?

No. Tzunami Deployer is a data migration tool and, as such, it does not support migrating non-data related definitions.

Does Tzunami Deployer migrate Personal sites?

Yes. Personal sites are treated as any site collection in Tzunami Deployer and can be migrated along with their content.

Does Tzunami Deployer support site level migration? Does Tzunami Deployer support item level migration?

Yes. Tzunami Deployer allows migration of content from any level in the source system to any level in the target system.

Does Tzunami Deployer migrate Wiki Page content for Confluence to Modern Page in SharePoint Online?

Yes. You can refer **Annex Section** for details steps required to perform during migration.

14.4 SECURITY

Does Tzunami Deployer migrate file system security?

Tzunami Deployer extracts file system security definitions and enables the mapping of these to SharePoint security definitions. Security modeling is a complex topic – if you have more questions about how exactly Tzunami Deployer supports security migration, contact the Tzunami Support Team at ***support@tzunami.com***.

Does Tzunami Deployer support migrating permissions at the list level?

Tzunami Deployer enables the management of list-level permissions at any level, as well as migration of security settings during the migration process. Security modeling is a complex operation – we recommend consulting with the Tzunami Support Team at ***support@tzunami.com*** on all aspects of your security migration needs.

Will Tzunami have any access to my data?

No. Tzunami products are installed into your environment, and all data are stored locally.

14.5 Broken Links

Does Tzunami Deployer fix broken links?

Tzunami Deployer itself does not handle the fixing of relative links that refer to the source system. Tzunami offers a redirection tool to solve such cases. For more information, contact the Tzunami Support Team at ***support@tzunami.com***.

14.6 Batch and Command Line Operations

Does Tzunami Deployer support creating a batch of migration operations that can be run a scheduled time?

Yes. Tzunami Deployer can work in non-GUI mode and performs operations in a batch style manner once batch files are created. You can schedule Tzunami Deployer as a command-line tool to run at a scheduled time using the Windows Scheduled Tasks. For more information, contact the Tzunami Support Team at ***support@tzunami.com***.

14.7 Remote Operation

Does Tzunami Deployer allow migration operations to be performed remotely?

When performing a migration to SharePoint 2003, SharePoint Online and SharePoint Server 2010 (without using remote service), all operations are done remotely.

When migrating to SharePoint 2010/ SharePoint 2013/SharePoint 2016/SharePoint 2019, Tzunami Deployer requires a Windows Service component to be installed on the SharePoint server. After installation, all Tzunami Deployer instances can communicate and function remotely.

14.8 LOGGING

Does Tzunami Deployer log migration operation results to a file?

Yes. All actions are logged for later reviewing in case of errors. Tzunami Deployer also provides several XML reports for you.

14.9 DELTA DEPLOYMENT

Does Tzunami Deployer supports Delta Deployment?

Yes. Tzunami Deployer supports the delta deployment. You have to save the previous regular migration project. Later on, you can load that project and perform delta deployment in one go (automatic). Delta deployment can be performed for modified source content only once.

Does Tzunami Deployer supports Delta Deployment for Confluence Page migrated in Modern Page of SharePoint Online?

Yes. When you have migrated the content using Tzunami Deployer, you have to update the Configuration file prior to perform Delta Deployment. Please, refer **Annex Section** for details.

15 ANNEX

15.1 How to Update Configuration File to Perform Delta Deployment of Modern Page

To perform delta in confluence as source when the confluence pages are exported and deployed as modern pages in target (SharePoint Online) at first follow the following steps:

1. Go to the project location and open the **SpecificationFiles** folder.
2. Open **RootDeploySourceTargetInfo** in editor tool.
   The xml file will be like:

```
<?xml version="1.0"?>
<ArrayOfRootDeploySourceTargetInfo xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <RootDeploySourceTargetInfo>
    <SourceUrl>https://localhost:8443/display/KAS</SourceUrl>
    <TargetUrl />
    <TargetParentUrl>https://asteroidnepal.sharepoint.com/sites/pratibha</TargetParentUrl>
  </RootDeploySourceTargetInfo>
</ArrayOfRootDeploySourceTargetInfo>
```

Figure 15-1 Configuration File

3. Now copy from **<RootDeploySourceTargetInfo>** to **</RootDeploySourceTargetInfo>** and paste it just below the end of **RootDeploySourceTargetInfo** as:

```
<?xml version="1.0"?>
<ArrayOfRootDeploySourceTargetInfo xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <RootDeploySourceTargetInfo>
    <SourceUrl>https://localhost:8443/display/KAS</SourceUrl>
    <TargetUrl />
    <TargetParentUrl>https://asteroidnepal.sharepoint.com/sites/pratibha</TargetParentUrl>
  </RootDeploySourceTargetInfo>
  <RootDeploySourceTargetInfo>
    <SourceUrl>https://localhost:8443/display/KAS</SourceUrl>
    <TargetUrl />
    <TargetParentUrl>https://asteroidnepal.sharepoint.com/sites/pratibha</TargetParentUrl>
  </RootDeploySourceTargetInfo>
</ArrayOfRootDeploySourceTargetInfo>
```

Figure 15-2 Adding Nodes for Source and Target URL

4. Edit the **SourceUrl** with the Url of wiki pages in your source as:

```
<?xml version="1.0"?>
<ArrayOfRootDeploySourceTargetInfo xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <RootDeploySourceTargetInfo>
    <SourceUrl>https://localhost:8443/display/KAS</SourceUrl>
    <TargetUrl />
    <TargetParentUrl>https://asteroidnepal.sharepoint.com/sites/pratibha</TargetParentUrl>
  </RootDeploySourceTargetInfo>
  <RootDeploySourceTargetInfo>
    <SourceUrl>https://localhost:8443/display/KAS/Wiki Pages</SourceUrl>
    <TargetUrl />
    <TargetParentUrl>https://asteroidnepal.sharepoint.com/sites/pratibha</TargetParentUrl>
  </RootDeploySourceTargetInfo>
</ArrayOfRootDeploySourceTargetInfo>
```

Figure 15-3 Mapping Source and Target URL

5. Now edit the **TargetParentUrl** with the URL of the site which was deployed as team site from source.

```
<?xml version="1.0"?>
<ArrayOfRootDeploySourceTargetInfo xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <RootDeploySourceTargetInfo>
    <SourceUrl>https://localhost:8443/display/KAS</SourceUrl>
    <TargetUrl />
    <TargetParentUrl>https://asteroidnepal.sharepoint.com/sites/pratibha</TargetParentUrl>
  </RootDeploySourceTargetInfo>
  <RootDeploySourceTargetInfo>
    <SourceUrl>https://localhost:8443/display/KAS/Wiki Pages</SourceUrl>
    <TargetUrl />
    <TargetParentUrl>https://asteroidnepal.sharepoint.com/sites/pratibha/KasturiKAS 9</TargetParentUrl>
  </RootDeploySourceTargetInfo>
</ArrayOfRootDeploySourceTargetInfo>
```

Figure 15-4 Editing Target's Parent Site URL

6. Finally edit the **TargetUrl** with the url of SitePages as:

```
<?xml version="1.0"?>
<ArrayOfRootDeploySourceTargetInfo xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <RootDeploySourceTargetInfo>
    <SourceUrl>https://localhost:8443/display/KAS</SourceUrl>
    <TargetUrl />
    <TargetParentUrl>https://asteroidnepal.sharepoint.com/sites/pratibha</TargetParentUrl>
  </RootDeploySourceTargetInfo>
  <RootDeploySourceTargetInfo>
    <SourceUrl>https://localhost:8443/display/KAS/Wiki Pages</SourceUrl>
    <TargetUrl>https://asteroidnepal.sharepoint.com/sites/pratibha/KasturiKAS 9/SitePages</TargetUrl>
    <TargetParentUrl>https://asteroidnepal.sharepoint.com/sites/pratibha/KasturiKAS 9</TargetParentUrl>
  </RootDeploySourceTargetInfo>
</ArrayOfRootDeploySourceTargetInfo>
```

Figure 15-5 Editing SitePage URL

7. Save the xml file and close it.
8. Now go to the Deployer project and perform delta deployment.

15.2 How to create Microsoft Azure Storage Account

1. Log in to **https://portal.azure.com**.
2. Go to **Storage Accounts**. Add one.
3. While adding a new storage account, a couple of things need to be considered:
   Choose an appropriate nearest Geo Location for reduced latency and optimal throughput. Or use the default one. For example, the nearest location for Nepal would be Southeast Asia.

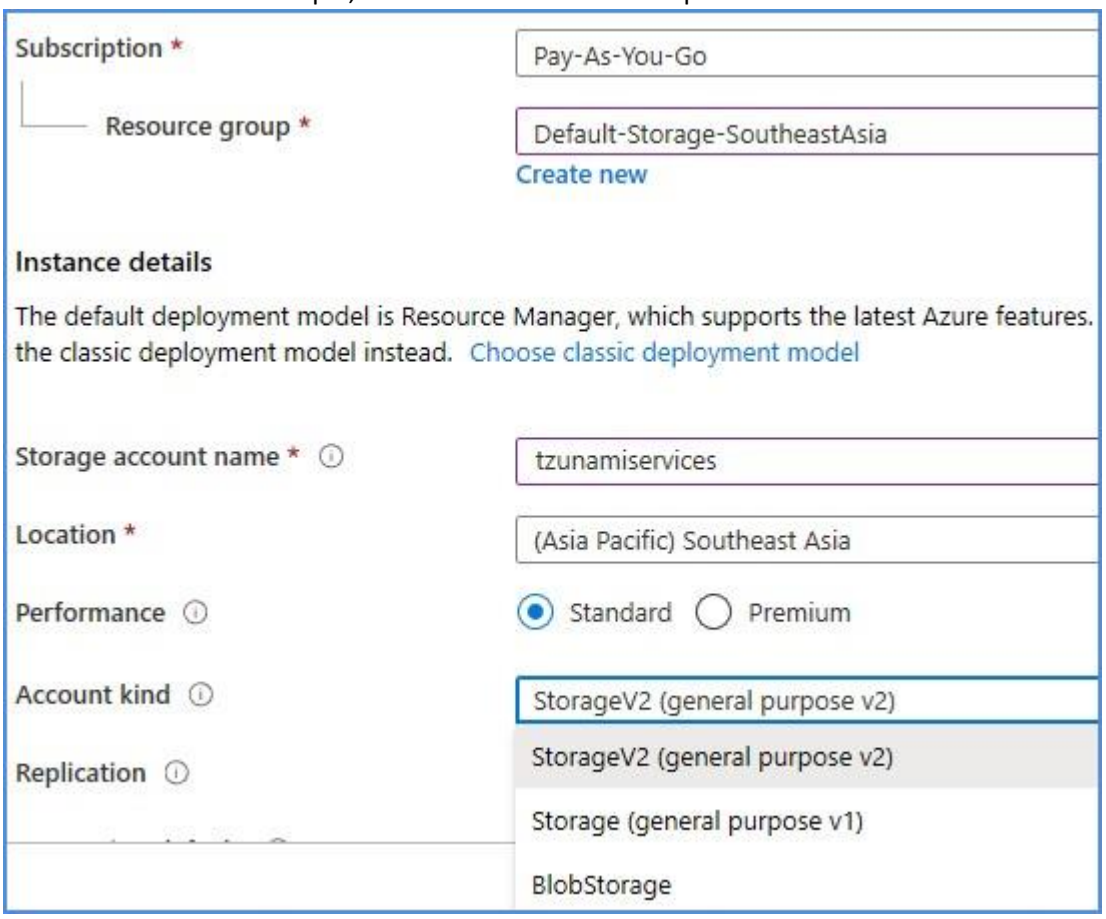


Figure 15-6 Azure Storage Account Details

4. **Account kind** should be either **StorageV2 (general purpose v2)** or **Storage (general purpose v1)**.

5. Go back to Storage Accounts list and click on the specific storage account.

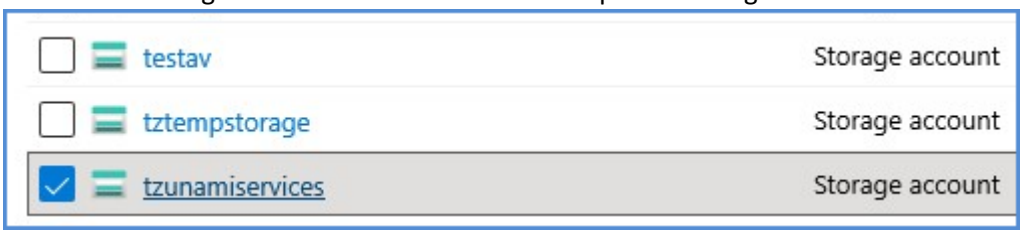


Figure 15-7 Azure Storage Account Name

6. Click on **Queues** and add a Queue.

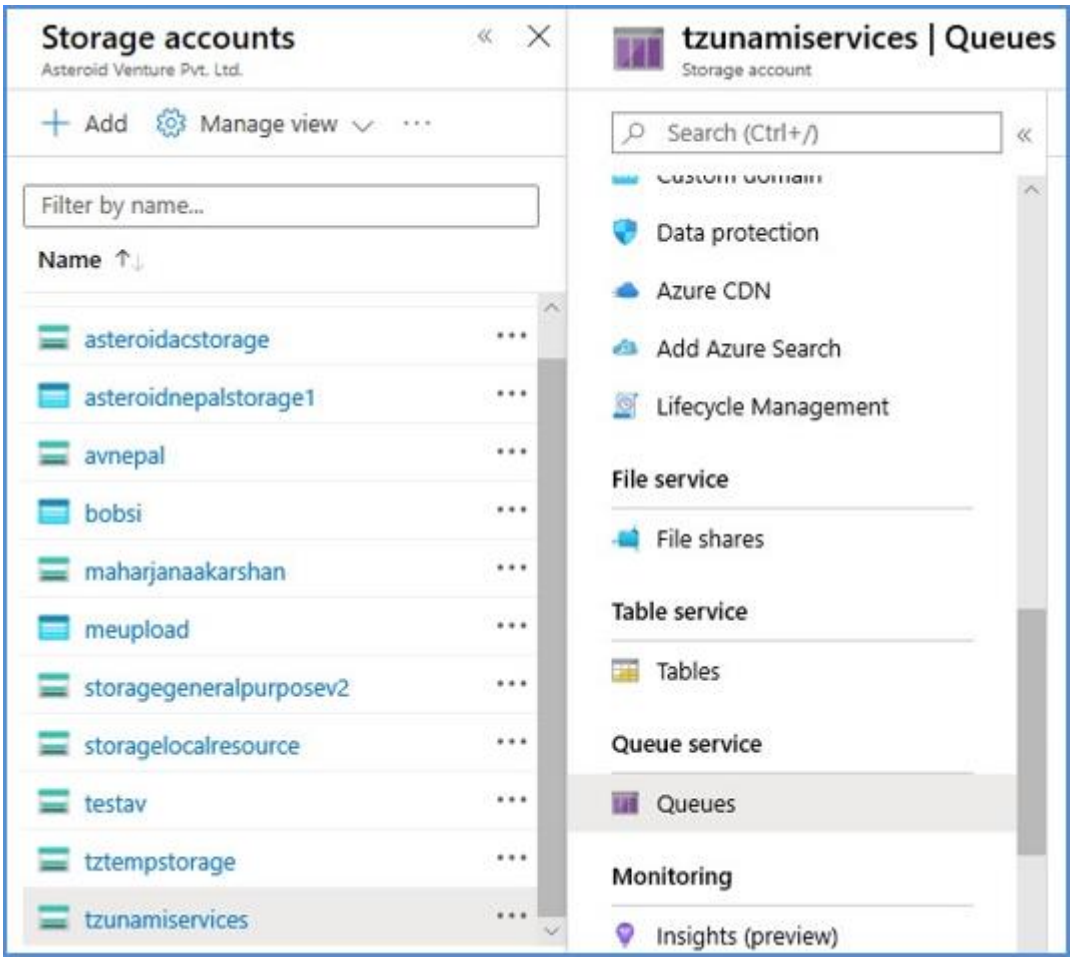


Figure 15-8 Azure Storage Account Queue

7. Go to **Access keys** and copy any one of the keys to use in Deployer.

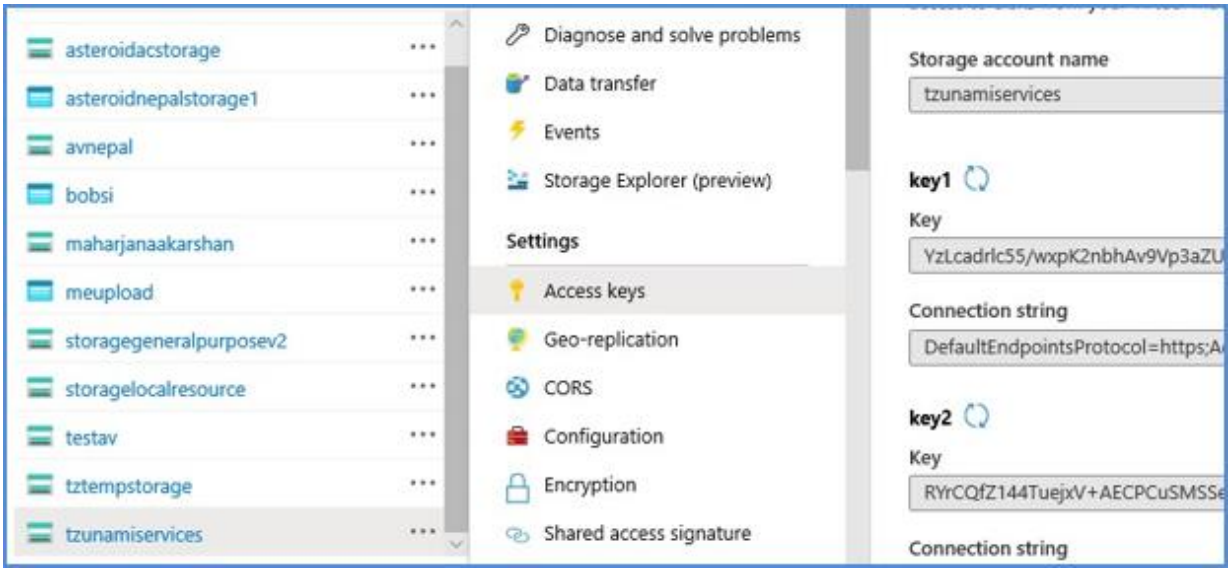


Figure 15-9 Azure Storage Account Access Key

8. Use the **Endpoints Protocol**, **Storage Account Name**, **Queue Name** and the **Access Key** to connect to SharePoint Online in Deployer.

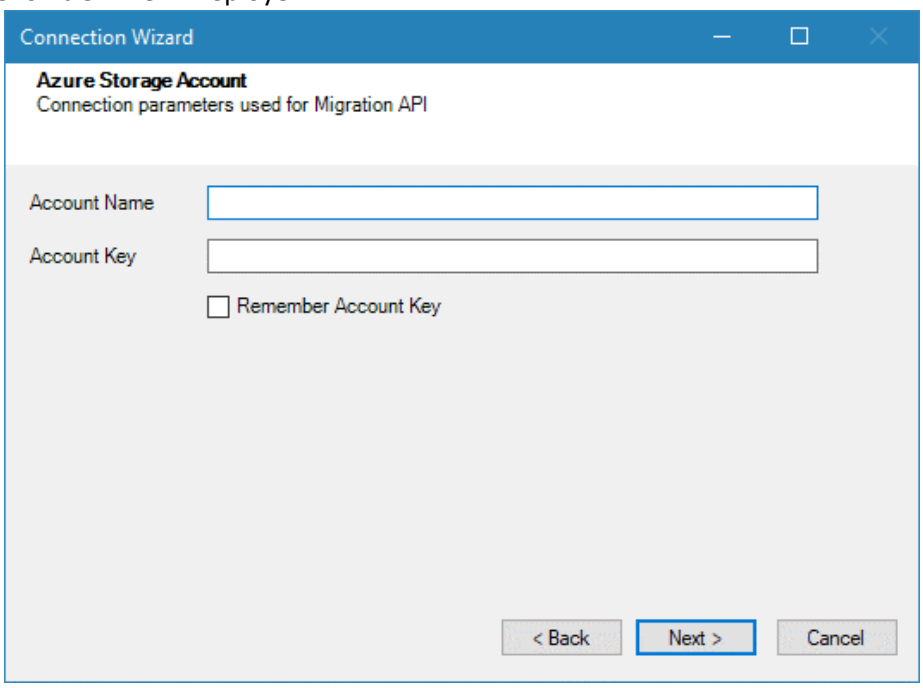


Figure 15-10 Azure Storage Account Connection Details

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