Quest® On Demand Migration

Active Directory Users, Groups and Contact Sync Set Up Quick Start Guide

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Legend

CAUTION: A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.

IMPORTANT, **NOTE**, **TIP**, **MOBILE**, or **VIDEO**: An information icon indicates supporting information.

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1

Introduction

Directory Sync supports users, groups and contact synchronization between environments. The following describes the supported environments and deployment models.

- Local to Local – Covered in this guide. Support synchronization between two local Active Directory environments.
- Cloud to Cloud – Support synchronization between two Microsoft 365 tenant environments.
- Local to Cloud – Support synchronization between an Active Directory and a Microsoft 365 tenant environment when source is Active Directory and target is Microsoft 365 tenant.
- Cloud to Local – Support synchronization between a Microsoft 365 tenant and an Active Directory environment when source is Microsoft 365 tenant and target is Active Directory.

This guide describes how-to setup Users, Groups and Contacts Synchronization for between your On-Premises Active Directory environments.

To set up Directory Sync for Users, Groups and Contacts Synchronization, source objects must be either matched to existing objects or created as new objects in the target environment. To accomplish this, four configurations must be completed prior to the first synchronization.

1. Set up Environments
2. Set up Local Agents
3. Set up Templates
4. Set up Workflows

The next section will provide the list of requirements needed to successfully Synchronization Users, Groups and Contacts between two Active Directory environments.

Requirements

In order to facilitate synchronization of Users, Groups and Contacts, the following is a list of minimum requirements to get set up using Directory Sync with your On-Premises Active Directory.

- One Local Administrator Account for each Microsoft Forest and/or Domain that has permissions to create, update or delete depending on the scope of your Directory Sync workflows.

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Setup

This section provides a step-by-step guide on how to set up Users, Groups and Contacts Synchronization for Microsoft Active Directory Environments.

Setup Environments

To begin at least two Active Directory environments must be configured in Directory Sync. At the end of this section there will be two Active Directory environments fully configured.

An environment is an end-point connection that can control the scope of objects read. This guide will walk through how to create the source and target active directory environments.

To create a local AD environment, the following are required

- One Local Administrator Account for each Microsoft Forest and/or Domain that has permissions to create, update or delete depending on the scope of your Directory Sync workflows.
- One Windows Server to install and host the Directory Sync Agent.

Follow these steps to setup the cloud environment endpoints.

1. Navigate to **Environments**.
2. Click **New**.
3. Click **Local** as the environment type. Click **Next**.
4. Name the environment. Click **Next**.
5. Name the local agent. Click **Next**.
6. Note the agent registration URL and registration Key for later use. Click **Finish**.
7. Install the agent in the Windows Server that is joined to the local AD domain.
    a. Launch the Directory Sync Agent installation in the target workstation or server.
    b. Accept the license agreement and click **Next**.
    c. Enter the target active directory environment information by providing the following and click next.
        - Domain Name
        - Global Catalog Server
        - Username
        - Password
    d. Enter the **Directory Sync Registration URL** and **Agent Registration Key** information and click **Next**.

e. In the sIDHistory Migration section, you may skip this step if sIDHistory Migration is not part of your project scope.

NOTE: See the On Demand Migration Active Directory User Guide for detailed information about agent installation and set-up requirements.

8. Once the agent is installed and the environment is discovered. Click **Settings** to access the local AD environment setting page.
9. Click the **Organization Unit** tab and define the OU filter based on your project scope.
10. Click the **Filters** tab and define any LDAP filter based on your project scope.
11. Click **Save**.
12. Repeat steps 2 – 11 for the next local environment

Setup Templates

Before we can build our workflows, it is best to set up your template(s). Templates contain common mappings and settings used to sync Users, Contacts, Devices, Groups, Office 365 Groups and Microsoft Teams. A template can then be applied to any workflow with a Stage Data step.

For the purpose of this guide, the following template will need to be configured to perform Synchronization for User, Group and Contact Objects. This guide also assume objects will be created in the target Active Directory if there is no match found. Additional templates may be created based on your project requirements. Local to Local Password Sync

- Local to Local Sync

How to create a Local to Local template

1. Navigate to **Templates**.
2. Click **New**.
3. Enter the **Name** and **Description** of the template.
4. In our example, we will name our template "Local to Local Sync". Click **Next**.
5. Click Local as the source environment type. Click **Next**.
6. Click Local as the target environment type. Click **Next**.
7. Set CREATE NEW USERS AS = AS-IS
8. Set UPDATE CREATED USERS= ENABLE
9. Set UPDATE MATCHED USERS= ENABLE
10. Set IF TARGET ADDRESS EXISTS setting as OVERWRITE ONCE.
11. Click **Next**.
12. Set CREATE GROUPS AS = SKIP
13. Set UPDATE CREATED GROUPS = ENABLE
14. Set UPDATE MATCHED GROUPS = ENABLE

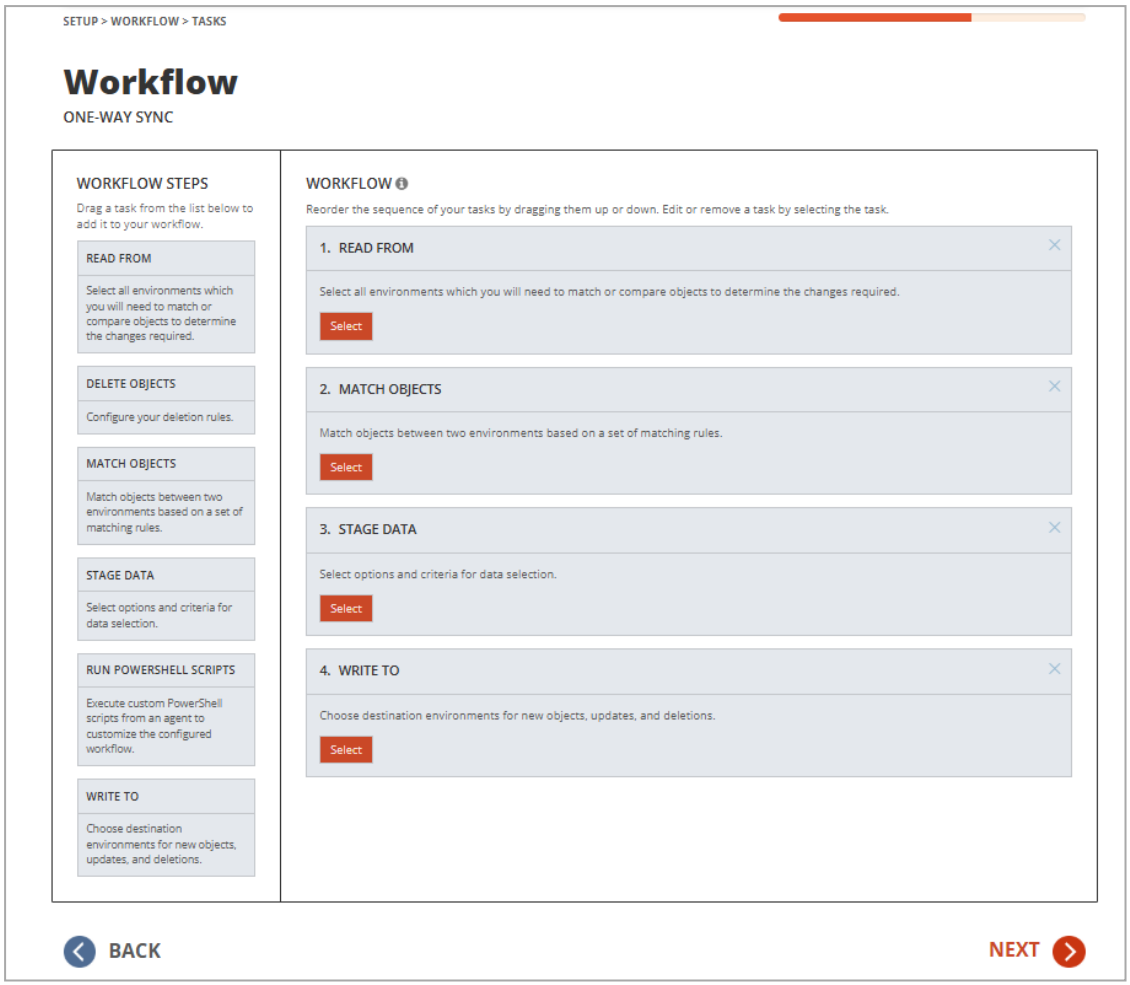
15. Set Convert Group Options with default settings:
    a. DOMAIN LOCAL GROUPS = DOMAIN LOCAL
    b. GLOBAL GROUPS = GLOBAL
    c. UNIVERSAL GROUPS = UNIVERSAL
16. Click **Next**.
17. Set CREATE NEW CONTACTS AS = AS-IS
18. Set UPDATE CREATED CONTACTS = ENABLE
19. Set UPDATE MATCHED CONTACTS = ENABLE
20. Click **Next**.
21. Set CREATE NEW DEVICES AS = SKIP
22. Set UPDATE CREATED CONTACTS = DISABLE
23. Set UPDATE MATCHED CONTACTS = DISABLE
24. Click **Next**.
25. Enter a default password. Click **Next**.
26. Leave the SYNCHRONIZE SID HISTORY checkbox unchecked. Click Next.
27. Under mappings, we can leave the settings as default or update them based on your project requirements.
28. Click **Next**.
29. Click **Finish**.

Setup Workflows

Follow these steps to create two new workflows for reading, matching, staging and writing data.

How to create a one-way sync workflow for Local to Local

1. Navigate to **Workflows**.
2. Click **New**.
3. Enter the Name and Description for the template. Click **Next**.
4. Select both the local Active Directory environments created previously. Click **Next**.
5. Select ONE-WAY SYNC. Click **Next**.
6. The workflow task wizard opens. It is a pre-configured set of workflow steps to facilitate the flow of objects and attributes between your directories.



Step 1: READ FROM

a. Click **Select**.

b. Select both environments created previously.

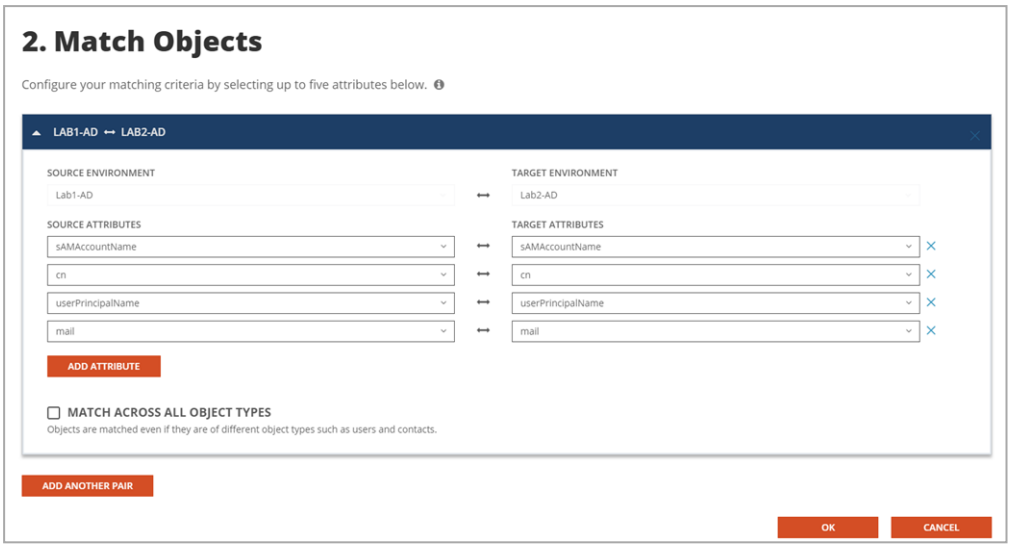
c. Click **OK**.

Step 2: MATCH OBJECTS

- In this step you decide how to match existing objects across your local Active Directories.
- Matching is conducted by pairing sets of attributes to find corresponding objects
- The two environments may already have some attributes that can be used to find similar objects between the different directories, or you may need to set some to ensure accurate matching.
- It is important that existing objects are correctly matched to perform password synchronization.

NOTE: Matching attributes should be reviewed and adjusted based on actual project scope; there isn't a set matching rule that will fit all scenarios.

a. Click the **Select**.



b. Select your source local environment from the drop-down menu.

c. Select your target local environment from the drop-down menu.

d. Choose your first attribute pairings, we will use WindowsEmailAddress for our first match criteria .

e. Choose the sAMAccountName attribute for the source and target fields.

f. To add more attribute pairs, click **Add Attribute**.

g. Additional pairings are evaluated as “OR” conditions. After the first match is found, the additional pairings are not assessed.

h. In our case we are adding three additional attribute pairings to our criteria

- cn – This attribute was added to ensure we can match existing objects based on CN.
- UserPrincipalName – UPN was added to ensure uniqueness of the local part of the address string.
- Mail – This attribute was added to ensure we can match existing objects based on Mail.

i. Ensure Match Across all object types is not checked in this case.

j. There is no need in this guide to Add Another Pair. Click **OK** to close this configuration

Step 3: STAGE DATA

a. Click **Select**.

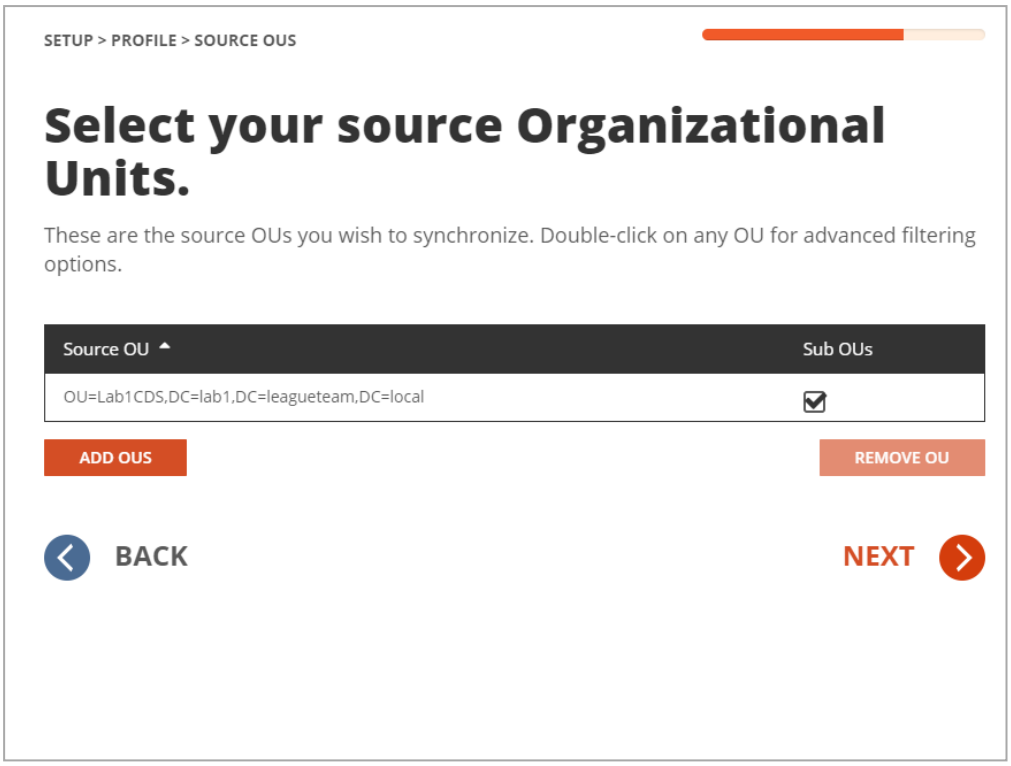
b. Select the “Local to Local Sync” template. Click **Next**.

c. Select the source local environment as your source. Click **Next**.

d. Select the target local environment as your target. Click **Next**.

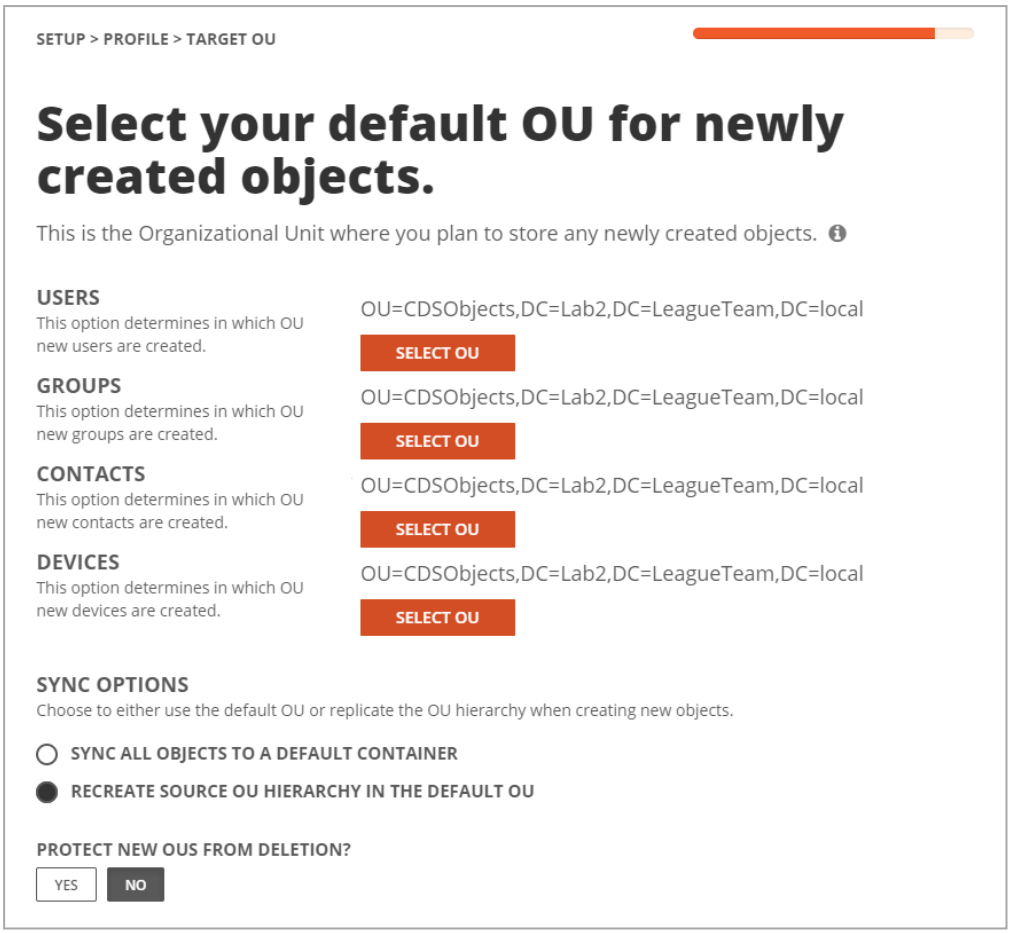
e. Select the default target domain name. Click **Next**.

f. Click **ADD OUS**. In the new OU pop-up window, select the OU that will be in-scope, select the **INCLUDE ALL SUB OUS** checkbox. Click **OK** to close the pop-up.



g. Configure any Stage Data filter you like by double click on the OU in the OUs list, it is highly recommended to setup filter to limit the scope to perform a test on the first sync as part of the validation. Click **Next**.

h. Select the default OU for newly created objects for Users, Groups, Contacts, and Devices. In our case, we can select the same OU for all object types as we are only syncing user as contact.



i. Click **Finish**.

Step 4: WRITE TO

a. Click **Select**.

b. Ensure the target environment is selected. Click **OK**.

7. When you are done with the workflow wizard, you are ready to schedule this workflow.
   a. Click **Next**.
   b. Select **Manual** for now and we can setup a sync schedule once the test sync has completed.
   c. Click **Next**.
8. You can set up workflow alerts if needed. For now, click **SKIP**.
   a. Click **Finish**.

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Set up Test Objects

Follow these steps to create test objects in the source environment to validate the Users, Groups, Contacts Sync workflow.

1. Setup the user object in the source local environment and ensure it is part of the OU filter setup for the Local Environment.
    a. User Object - DisplayName: Lab1User1
2. Setup the group object in the source local environment and ensure it is part of the OU filter setup for the Local Environment.
    a. Global Group Object - DisplayName: Lab1Grp1
    b. Universal Group Object – DisplayName: Lab1Grp2
    c. Domain Local Group Object - DisplayName: Lab1Grp3
3. Setup the contact object in the source local environment and ensure it is part of the OU filter setup for the Local Environment.
    a. Contact Object - DisplayName: Lab1Contact1

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Validating the Workflow

Follow the below steps to perform Real Time Users, Groups, Contacts Sync workflow and validation.

1. Select the workflow configured and click **RUN**.
2. Allow the workflow execution to complete.
3. Validate Lab1User1 from source local Active Directory will be created in the correct target OU defined in the workflow.
4. Validate Lab1Grp1 from source local Active Directory will be created as Global Group in the correct target OU defined in the workflow.
5. Validate Lab1Grp2 from source local Active Directory will be created as Universal Group in the correct target OU defined in the workflow.
6. Validate Lab1Grp3 from source local Active Directory will be created as Domain Local Group in the correct target OU defined in the workflow.
7. Validate Lab1Contact1 from source local Active Directory will be created in the correct target OU defined in the workflow.

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Best Practices & Tips

This list of best practices and tips has been assembled to further the understanding and assist with implementation questions that may arise during setup and testing.

1. Mappings have no impact on the matching attributes.
2. Mappings do not modify the Read Step; all object metadata is read.
3. If creating an object, such as Unified Groups in the destination the default mappings such as “GroupType” or “ObjectType” are not required because they will be auto generated by Exchange Online during creation.
4. If only synchronizing Group Membership, then all User attributes can be removed from the default mappings related to your group workflow and template.
5. Matching by “UserPrincipalName” will only match on the local part value, not the domain part.
6. Matching by “WindowsEmailAddress” will match on the entire string, not just the local part.
7. For membership/ownership to sync, within the template option, "If Users are matched" must be set to “Update”, not Skip. Skip will prevent membership from synchronizing.
8. During testing/piloting you may create a filter under Stage Data step to isolate a subset of test Groups to create and sync membership. This will provide a method to validate a few examples before proceeding onto creating all groups.
9. The Test Mode option in the workflow prevents the write data step from occurring in a workflow.
10. If the RecipientTypeDetails attribute mapping is missing, you will receive this error during the Stage Step. “No mapping found for RecipientTypeDetails.”
11. If the Name attribute mapping is missing, you will receive this error during the Write Step. “Missing required attribute: Name”.
12. The default mappings for Proxy Addresses (i.e. EmailAddresses) may prevent the creation of Unified Groups. The following error is received during the Write Step, “There should be at least one MOERA in Email Addresses.”.
13. When we create a group in the cloud environment, we grant our account Owner access. This can be removed once Sync services are no longer required.
14. The “ONLY EVALUATE OBJECTS WHICH HAVE CHANGED SINCE THE LAST READ” option only affects the Stage Step. Enable this option after the initial data has been read. Do not set that setting on read and write only workflows.
15. By default, the “ReplaceDomain” function is used by the “WindowEmailAddress” attribute to set your default email address to the Target Domain selected within the Stage Data step. This can be changed if required.
16. The default template contains the most commonly used mapping configuration between two environments, depends on the project requirements and scopes, mapping template can be modified to suite your project specific requirements.

17. Target Group Scope can be configured using these settings if you wish to convert the group scope as new groups created in target Active Directory.

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