

Password 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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Introduction

The goal of this guide is to provide a step-by-step walk through of how-to setup Real Time Password Synchronization for user objects between your On-Premises Active Directory environments. Power365 Directory Sync will monitor source Active Directory password changes in real time and synchronize the changes to matched or newly created user objects in the target Active Directory.

To set up Power365 Directory Sync for Real Time Password Synchronization, source user objects must be matched to existing or newly created user objects in the target environment. To accomplish this, four (4) 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 Password between two Active Directory environments.

Requirements

In order to facilitate the Real Time Password Synchronization, the following is a list of minimum requirements to get set up using Power365 Directory Sync with your On-Premises Active Directory.

Preparing the Source and Target Domains

- ADMIN\$ must be accessible on the domain controller from the Directory Sync agent server.
- Any third-party anti-virus program that prevents access the LSASS process may need to be updated with a whitelist entry for the Password Sync executable.

Account Permissions

- One (1) 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.
- The Password Sync functionality requires that either a domain admin role or built-in admin role be granted to the service account.

The next section will provide a step-by-step guide on how to set up Password Synchronization for Active Directory environments.

Setup

This section provides a step-by-step guide on how to set up Password Synchronization for Microsoft Active Directory Environments.

Setup Environments

To begin at least two (2) Active Directory environments must be configured in Power365 Directory Sync. At the end of this section there will be two (2) 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 (1) 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. This Administrator Account should also meet the Password Synchronization requirement as stated in Account Permissions section above.
- One (1) Windows Server to install and host the Power365 Directory Sync Agent.

Follow these steps to setup the cloud environment endpoints.

1. Login to [Power365](#)
2. Navigate to [Environments](#)
3. Click the [New](#) button
4. Click *Local* as the environment type, Click *Next*
5. *Name* the environment, Click *Next*
6. *Name the* local agent, Click *Next*
7. Note the agent registration URL and registration Key for later use, click *Finish*.
8. Install the agent in the Windows Server that is joined to the local AD domain.
 - a. Launch the Power365 Directory Sync Agent installation in the target workstation or server
 - b. Accept the license agreement and click on next.
 - c. Enter the target active directory environment information by providing the following and click next.
 - i. Domain Name
 - ii. Global Catalog Server
 - iii. Username
 - iv. Password
 - d. Enter the Power365 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, Refer to [Power365 Online Help Center](#) for [detailed information about agent installation and set-up requirements](#).

9. Once the agent is installed and the environment is discovered, click on the *Setting* button to access the local AD environment setting page.
10. Click on the Organization Unit tab and define the OU filter based on your project scope.
11. Click on the Filters tab and define any LDAP filter based on your project scope.

12. Click Save.
13. Repeat steps 3 – 12 for the next local environment

Prepare source environment for Password Monitoring

Once both local environments are configured, the next step will be to prepare the environment for Real Time Password Synchronization. Password Monitoring must be configured in your source environment.

1. Login to [Power365](#)
2. Navigate to [Environments](#)
3. Select the source environment where you like Power365 DirSync to monitor password changes and click on *SETTINGS*
4. Click on the **PASSWORDS** tab
5. Select an agent to use for monitoring password changes from the Agent Drop down list.
6. Click *Save*, then Click *Back*.

Enable target environment for Password Changes

Allow Password Changes must be enabled in your target environment for Power365 to synchronize Passwords when they are changed in the source environment.

1. Login to [Power365](#)
2. Navigate to [Environments](#)
3. Select the source environment where you like Power365 DirSync to monitor password changes and click on *SETTINGS*
4. Click on the **PASSWORDS** tab
5. Check the checkbox for *Allow Password Changes from Other Environments*.
6. Click *Save*, then Click *Back*.

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 Password Synchronization for User Objects. This guide also assume users 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

How to create a Local to Local template

1. Login to [Power365](#)
2. Navigate to [Templates](#)
3. Click the [New](#) button

4. *Name and Describe* the template
5. In our example, we will name our template “*Local to Local Password Sync*”, Click *Next*
6. Click *Local* as the source environment type, Click *Next*
7. Click *Local* as the target environment type, Click *Next*
8. Set *CREATE NEW USERS AS = AS-IS*
9. Set *UPDATE CREATED USERS= ENABLE*
10. Set *UPDATE MATCHED USERS= ENABLE*
11. Set *IF TARGET ADDRESS EXISTS* setting as *OVERWRITE ONCE*.
12. Click *Next*
13. Set *CREATE GROUPS AS = SKIP*
14. Set *UPDATE CREATED GROUPS = DISABLE*
15. Set *UPDATE MATCHED GROUPS = DISABLE*
16. Click *Next*
17. Set *CREATE NEW CONTACTS AS = DO NOT CREATE*
18. Set *UPDATE CREATED CONTACTS = DISABLE*
19. Set *UPDATE MATCHED CONTACTS = DISABLE*
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 (2) new workflows for reading, matching, staging and writing data.

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

1. Login to [Power365](#)

2. Navigate to [Workflows](#)
3. Click the [New](#) button
4. *Name* and *Describe* the template, Click *Next*
5. Select the all two (2) local Active Directory environments created previously, Click *Next*
6. Select *ONE-WAY SYNC*, Click *Next*
7. The screen presented next will be a pre-configured set of workflow steps to facilitate the flow of object and attributes between your directories.
8. Start at the top of the steps, *1. Read From*. Click the *Select* button
9. Select all two (2) environments created previously the click *OK*
10. Move to *Match Objects*
 - a. This is the step where you will decide on how to match existing objects across your local Active Directories
 - b. Matching is conducted by pairing sets of attributes to find corresponding objects
 - c. Your two (2) 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
 - d. For the purpose of Password Synchronization, it is most important that existing objects are correctly matched to perform Password Synchronization.
11. Click the *Select* button to configure the *Match Objects* criteria for your source Local environment and target Local environment

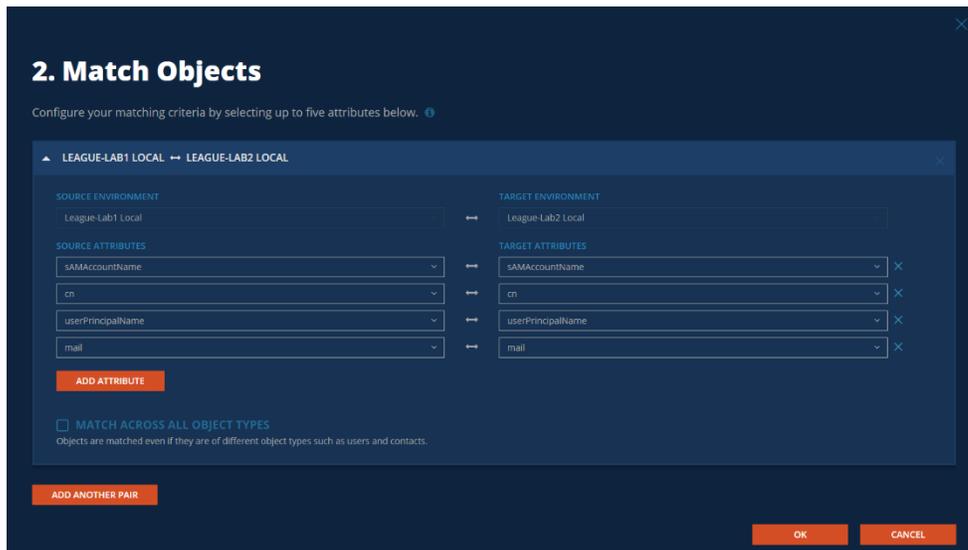


Figure 1: Example Match Objects Criteria

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

- c. Choose your first attribute pairings, we will use *WindowsEmailAddress* for our first match criteria
 - d. Choose the *sAMAccountName* attribute for the source and target fields
 - e. To add more attribute pairs, click the *Add Attribute* button
 - f. Additional pairings are evaluated as “OR” conditions. After the first match is found, the additional pairings are not assessed.
 - g. In our case we are adding three (3) additional attribute pairings to our criteria
 - i. *cn* – This attribute was added to ensure we can match existing objects based on CN.
 - ii. *UserPrincipalName* – UPN was added to ensure uniqueness of the local part of the address string.
 - iii. *Mail* – This attribute was added to ensure we can match existing objects based on Mail.

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.
 - h. Ensure *Match Across all object types* is not checked in this case.
 - i. There is no need in this guide to *Add Another Pair*, click *OK* to close this configuration
12. Drag a *Stage Data* workflow task from the left panel to the right under the *Stage Data* task mentioned above. Click the *Select* button to configure the fourth *STAGE DATA workflow task for your target local to source local synchronization rule*.
- a. Select the “*Local to Local Password Sync*” template, Click *Next*
 - b. Select the source local environment as your source, Click *Next*
 - c. Select the target local environment as your target, Click *Next*
 - d. Select the default target domain name, Click *Next*
 - e. Select the source Organizational Units that will be in scope of the project by click on the *ADD OUS* button.
 - f. In the new OU pop-up window, select the OU that will be in-scope, check 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*

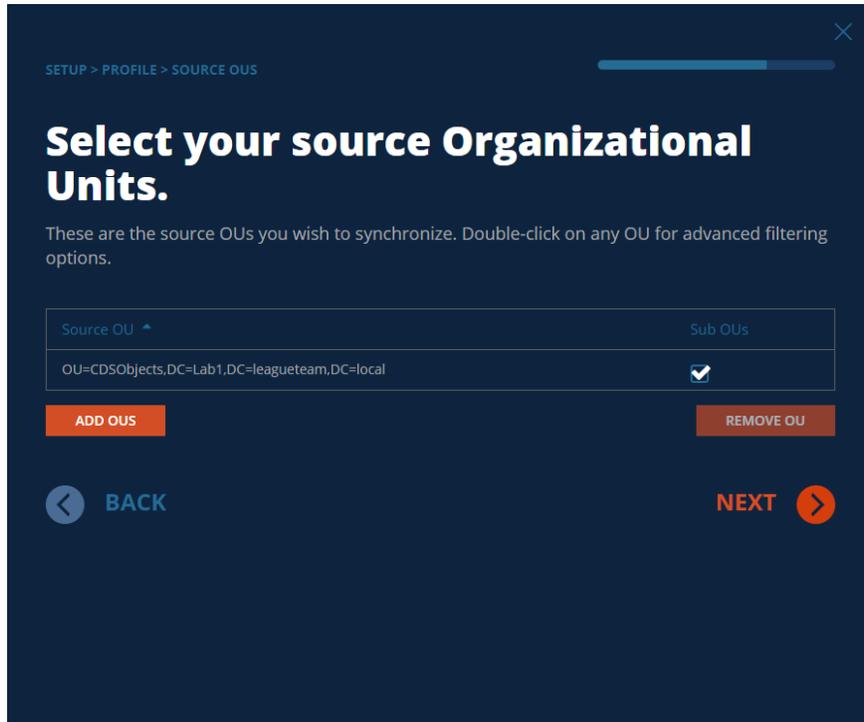


Figure 2: Example Source OU setup.

- h. Select the default OU for newly created objects for Users, Groups, Contacts, and Devices.

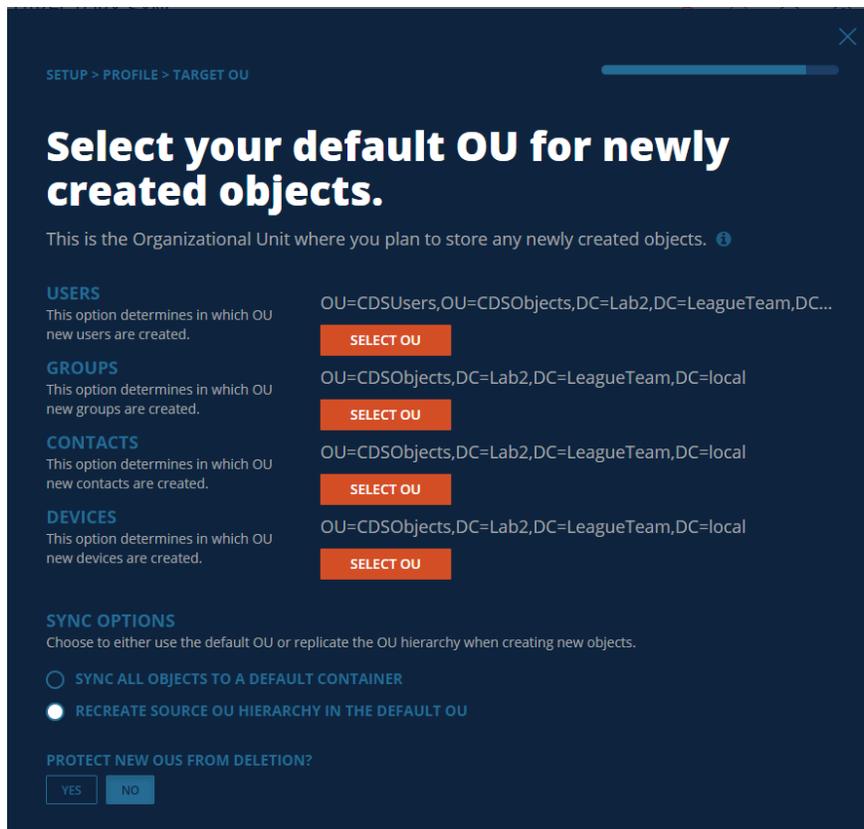


Figure 3: Example Target OU setup.

- i. Click *Finish*
13. Click the *Select* button to configure the *WRITE TO workflow task*. Ensure the target environment is selected, Click *OK*
14. Click *Next*
15. Configure the workflow sync interval, select *Manual* for now and we can setup a sync schedule once the test sync has completed. Click *Next*
16. Setup any workflow alert you may wish to configure, for now, Click *SKIP*
17. Click *Finish*

Set up Test Objects

Follow these steps to create test objects in the source environment to validate the Password Sync workflow.

1. Setup 2 Users in the source local environment and ensure it is part of the OU filter setup for the Local Environment.
 - a. DisplayName: Lab1PWD1
 - b. DisplayName: Lab1PWD2Description: Matched User
2. Setup a User in the target local environment it is part of the OU filter setup for the Local Environment.
 - a. DisplayName: Lab1PWD2
3. Setup a workstation in the target Active Directory environment for Password validation test.

Validating the Workflow

Follow the below steps to perform Real Time Password Sync workflow and validation.

1. Select the workflow configured and click on *RUN*.
2. Allow the workflow execution to complete.
3. Validate Lab1PWD1 from source local Active Directory will be created in target.
4. Validate Lab1PWD2 from source local Active Directory will match to the existing Lab1PWD2 user in target. Source user's description value will be added to the target user.
5. Select the workflow configured and click on *Run* again. This is needed to read the newly created object into system, this will allow Power365 DirSync can update Password for the user object.
6. Make Password changes to both Lab1PWD1 and Lab1PWD2 users.
7. Wait for about 1-2 minutes, navigate to the Environment page and select the source environment. Click on *PASSWORD LOGS* button and export the logs with default setting.

- Once the log is downloaded, open the log file and confirm Power365 DirSync has read the Password changes from source environment. Below are the sample loggings:

5109,171,League-Lab1 Local,"Read: Detected password change for object CN=Lab1PWD1,OU=CDSUsers,OU=CDSObjects,DC=Lab1,DC=leagueteam,DC=local",,5/23/2020 1:53:52 AM

CN=Lab1PWD2,OU=CDSUsers,OU=CDSObjects,DC=Lab1,DC=leagueteam,DC=local",,5/23/2020 1:53:55 AM

- Select the target environment and click on *PASSWORD LOGS* button and export the log with default setting.
- Once the log is downloaded, open the log file and confirm Power365 DirSync has written the Password changes to target environment. Below are the sample loggings:

5111,175,League-Lab2 Local,"Write: Using global catalog server from configured DCs list: Lab2-DC.Lab2.LeagueTeam.local, Domain=lab2.leagueteam.local",,5/23/2020 1:53:59 AM

5112,175,League-Lab2 Local,Write: Connecting to Domain Controller using port: 389,,5/23/2020 1:53:59 AM

5113,175,League-Lab2 Local,Write: Applying changeset e6180232-2ac7-4f7f-b7df-16217c78e3c5,,5/23/2020 1:53:59 AM

5114,175,League-Lab2 Local,Write: Finished applying changeset e6180232-2ac7-4f7f-b7df-16217c78e3c5,,5/23/2020 1:54:01 AM

5113,175,League-Lab2 Local,Write: Applying changeset f6180232-2ac7-4f7f-b7df-16217cd3421,,5/23/2020 1:53:59 AM

5114,175,League-Lab2 Local,Write: Finished applying changeset f6180232-2ac7-4f7f-b7df-16217cd3421,,5/23/2020 1:54:01 AM

- Use the target workstation and log into the machine with target Lab1PWD1 user using the most recent password from the source environment. Verify the target user can be logged in and target environment.
- Use the target workstation and log into the machine with target Lab1PWD2 user using the most recent password from the source environment. Verify the target user can be logged in and target environment.

Common Troubleshooting Guide

This list contains the common errors that may occur during Password Synchronization and troubleshooting steps we can use to address these errors.

Question: Do I need to run my workflow to have my password changes synced?

Answer: Although Password Syncs does not require user to run the workflow if the source and target users are correctly matched by Power365 Directory Sync, it is necessary to run the workflow at least once to allow existing target users to be matched with the source users based on the matching rules you have defined. For users created by Power365, running the workflow again will be required to have the new target user matched to the source user. Once users are correctly matched, Power365 Directory Sync will monitor the password changes and synced to the target without the need of running the workflow.

Question: Why does Power365 will generate password read log in the target Active Directory when I have Password Sync enabled from Source to Target?

Answer: Power365 Directory Sync needs to read the target user password hash into system so it can compare with the source user password hash to determine if it was changed and synced.

Question: I see BTPass folder being created under ADMIN\$, however I do not see BTPassSvc.exe executable in the folder, why?

Answer: The password utility executable may have been flagged as a Malware by the anti-virus software as it was trying to inject the service onto LSASS process. To remediate this behavior, BTPass utility folder and all of its content must be added to the Anti-Virus whitelist policy.

Question: I am getting 'Error connecting to remote share (WNetAddConnection2 error code: 5)' from my DirSync Agent when Password Sync is enabled, how can I resolve this error?

Answer: This error typically happens when Power365 Directory Sync agent service account do not have the proper access to ADMIN\$ share on the domain controller. As part of the Password Sync process, 'BTPass Utility' must be copied to the domain controller's ADMIN\$ share folder using the service account credential, please ensure the service account is a member of the administrator group to access the share.

Question: Can I setup a workflow that only perform password sync for existing users and not sync any other attributes?

Answer: Yes, you may setup a workflow template and only includes 'unicodePwd' attribute in the template. Alternately, you can setup a workflow that only perform Read and Match operation, once a matching record is created for the source and target user, Power365 Directory Sync will sync across passwords when changes are detected for the source users.