



Directory Synchronisation Evaluation Guide

Getting started with synchronising directories using Sodium Sync

Objectives

The purpose of this guide is to introduce Isode's directory synchronization product, Sodium Sync, to users who are unfamiliar with that product but who have some familiarity with directory concepts and with Isode's M-Vault directory product. During this evaluation you will:

- Run a simple manual sync, that changes one attribute in a single record, between two M-Vault DSAs, both of which Sodium Sync is able to bind to.
- Briefly explore Advanced Synchronization options.
- Learn how to configure syncs so that they generate warnings should defined conditions be met (in this case where more than 10% of the target data would be changed by application of the sync).
- Learn how to run a Cached Scan sync for situations where access to the target directory is not available and an LDIF file of changes is to be generated for indirect transfer (file transfer by email (FTBE), air-gap sync etc.).

Note for Windows Users

If you're running Windows 7/8 or 10 you will need to run Isode Management tools (like Sodium) as an Administrator. You can do this by right-clicking on the program icons and choosing 'Run as administrator' from the pop-up.

Prerequisites

This guide does not cover initial M-Vault setup activities. Before running this guide you should have gained experience with M-Vault and the Sodium management GUI either by following the main M-Vault Evaluation Guide [<http://www.isode.com/evaluate/m-vault.html>] or as a result of your own operational experience with M-Vault.

To follow this guide you will need access to two DSAs. The screenshots and examples within the guide have been generated from two DSAs running on a single machine. The Source DSA is the 'Headquarters.net' directory created during the M-Vault Evaluation Guide. The Target DSA is a modified repeat of that guide, creating a target directory, 'Field.net', which is populated with the same data.

Installation Requirements

You should visit [www.isode.com/evaluate/supported-platforms.html] to discover which operating systems are supported for Isode evaluations. Evaluation downloads (excluding documentation) are held in a password-protected section of the Isode website. You will need to fill in the form located at [www.isode.com/evaluate/evalrequest.php] to apply for password access.

Installing Isode Applications

Many Isode management tools are written in Java. You should install Java before installing the Isode packages. You can obtain the required packages (Java SE 7 – JRE) from [www.oracle.com/technetwork/java/javase/downloads/index.html].

Obtain a License File

Isode products require a valid license from Isode before they will run correctly. Licenses are issued by Isode Customer Service. If you haven't already been sent a license when requesting access to the evaluation files, please send a message to request a license to [pre-sales@isode.com] remembering to specify which Isode

server products you need a license file for.

By default the license file you receive needs to be installed in "\Isode\etc\" (Windows) or "/etc/isode/" (Linux) as license.dat. You may have chosen an alternative installation directory when installing the software, in which case you will have to place the license file there.

Server Products

All of the server and client programs required for this guide will have been downloaded and installed when following the initial M-Vault Evaluation.

If you wish to setup your Source and Target DSAs on separate machines, please note that the evaluation license file you obtained for your initial evaluation can be installed on up to three separate Isode server installations. If you require an extension to the license to cover more server installations or an extended evaluation period, please send a message to request a license extension to [sales@isode.com].

Sodium Sync Overview

Sodium Sync provides a mechanism to copy a set of data from a source Directory Server to a target Directory Server, and to ensure that the target remains up to date by performing regular updates to take account of any subsequent changes in the source Directory Server.

Synchronization occurs in one direction only: whilst changes, additions and deletions made to data held on the source Directory Server will be copied to the target, any local changes made to data in the target Directory Server will not be copied back to the source, and will normally be lost when the next synchronization operation takes place.

In particular Sodium Sync is designed to be able to handle synchronization from non-Isode DSAs (for example Active Directory) to Isode's M-Vault. Sodium Sync has a number of features to make it easier to deal with translation between directories which are not completely compatible with one another.

When configuring the synchronization operation, Sodium requires that you specify:

- the base of a subtree in the source Directory from which entries will be copied.
- the location of the entry in the target Directory that will form the base of the copied subtree; any existing entries under this base entry on the target will be deleted.

Sodium Sync will automatically rename entries if the source and target base DNs are different, and it is possible to synchronize between two separate subtrees on the same Directory.

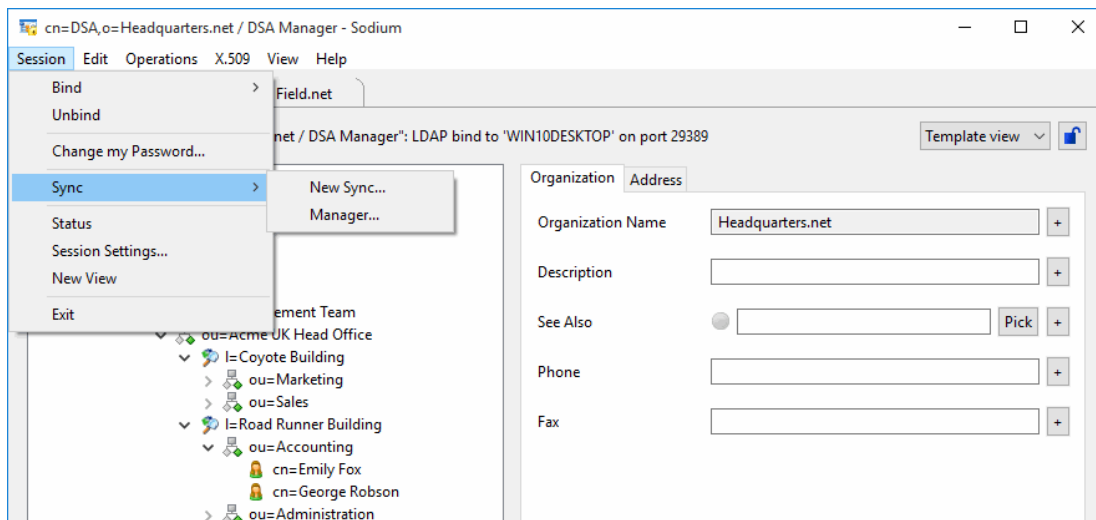
Running a Simple Sync (M-Vault to M-Vault)

In this example we will configure a simple synchronization between two M-Vault directories (**Headquarters.net** and **Field.net**) using Sodium Sync.

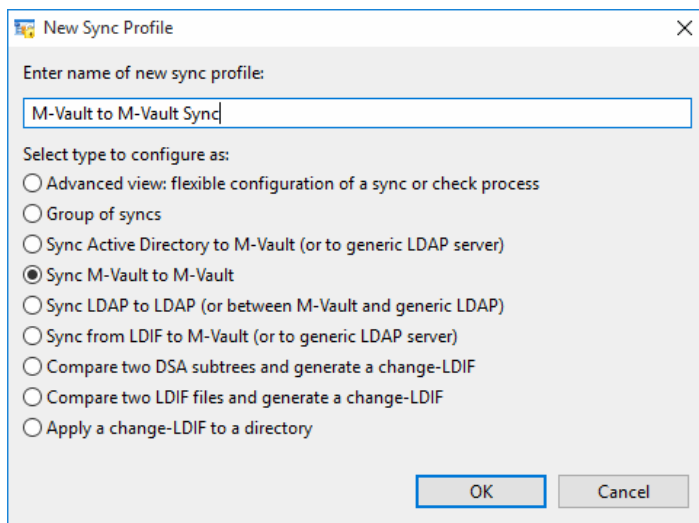
Note

You can also configure a synchronization between M-Vault and Active Directory following the steps below, but selecting the Sync Active Directory to M-Vault option instead.

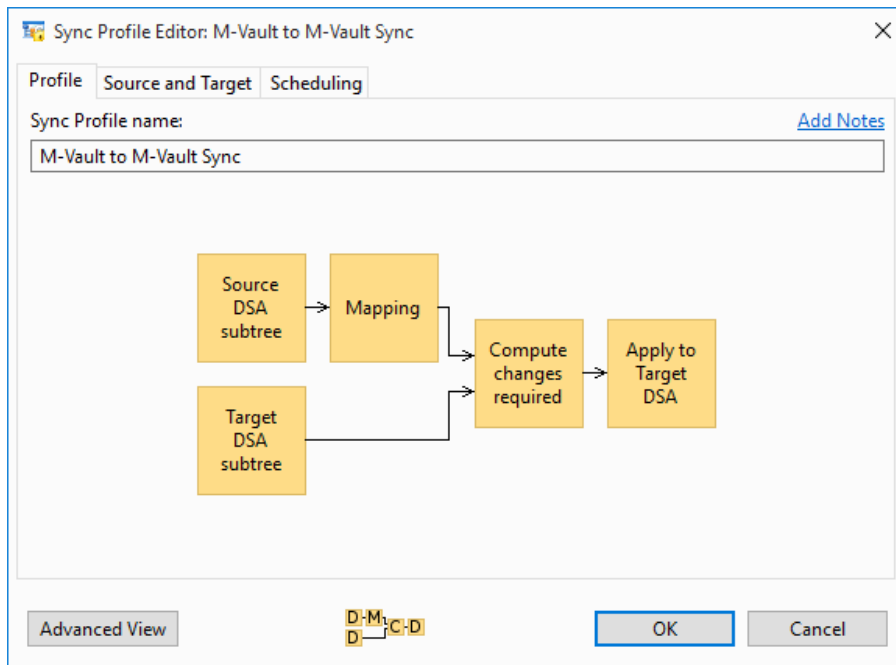
Sodium Sync is an option within the main Sodium management GUI (which you will have used previously with M-Vault). Synchronizations are configured and controlled from within the Sync Profile Manager, accessed by selecting **Session > Sync > New Sync** from within Sodium.



A **New Sync Profile** screen will pop up to prompt you to create a new Sync, select the **Sync M-Vault to M-Vault** radio button and give your profile a name. The click **[OK>]** to proceed:

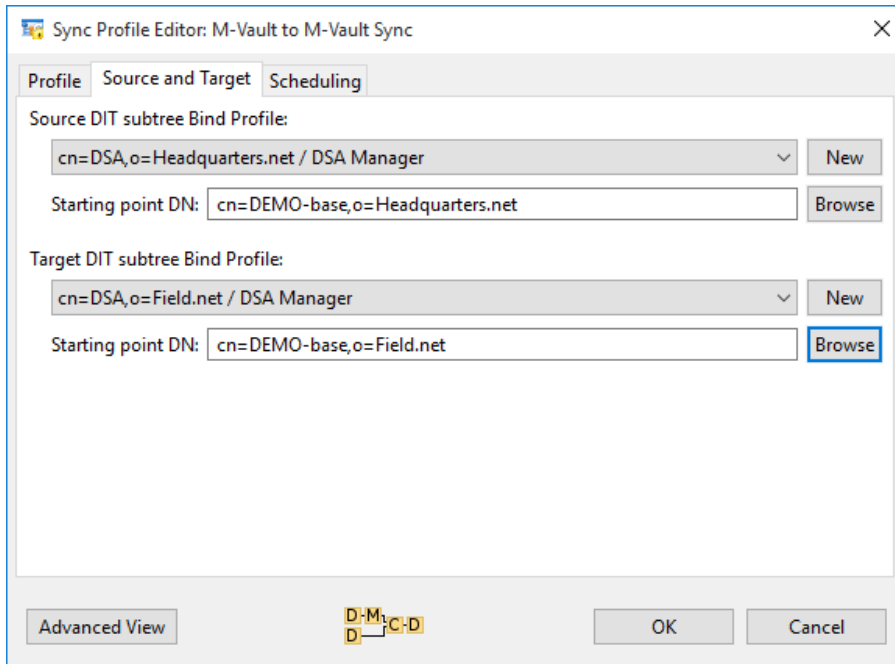


The **Sync Profile Editor** is displayed, the flow diagram shown in the editor illustrates the flow of data during the synchronization process: in this case, source DSA subtree entries are read, then mapped, and glue entries added if required. This is then compared to the target DSA subtree to find what changes need to be made, which are finally applied to the target DSA.



Setting Source and Target

Click on the **Source and Target** tab. If Sodium is already bound to both directories, simply select Source and Target using the drop-downs. If not you can Bind to the relevant directories by clicking the [**New**] button next to each drop-down. Then select a starting point below which entries will be read (source) and applied (target).

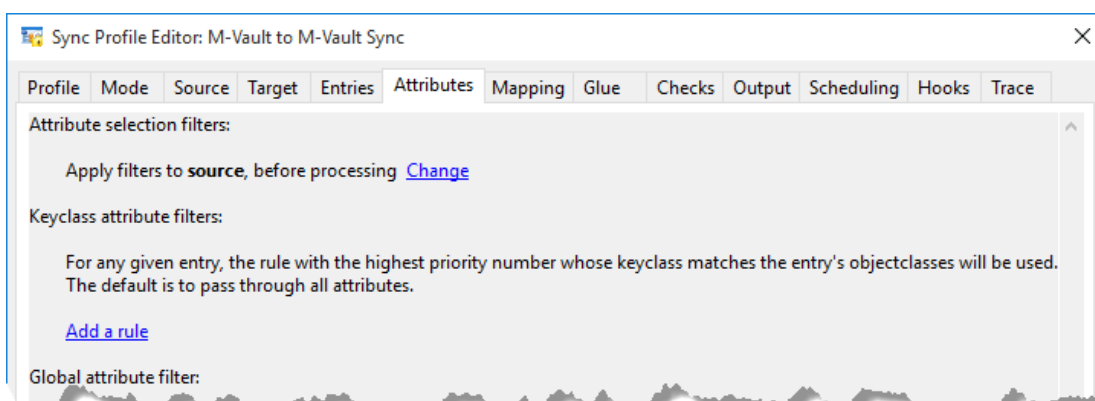


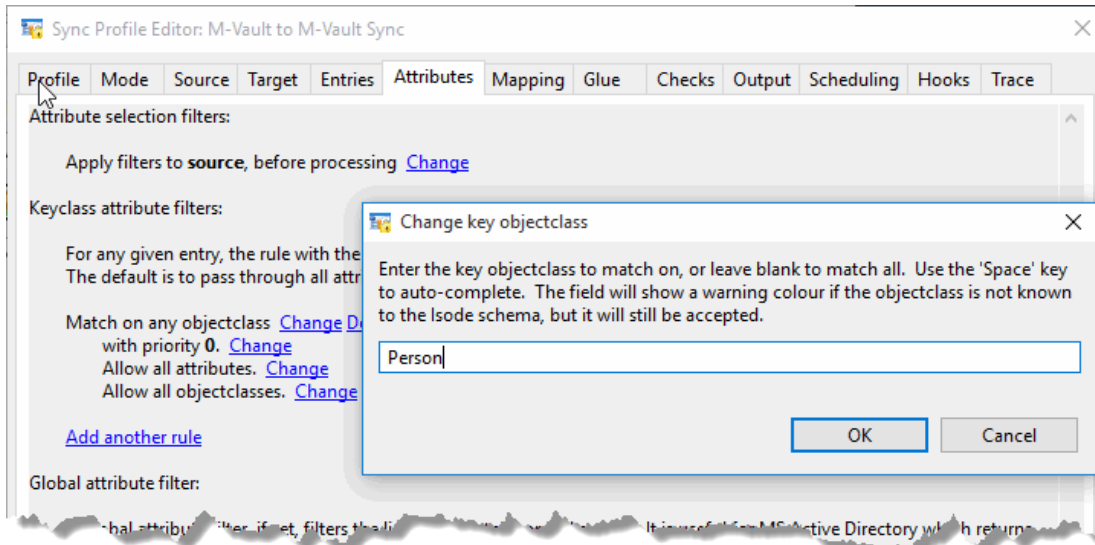
Filtering using Attributes

The advanced view in the Sync Profile Editor exposes the full functionality of Sodium Sync. We're going to make a number of changes using capabilities exposed by this view so, click on the **[Advanced View]** button to switch.

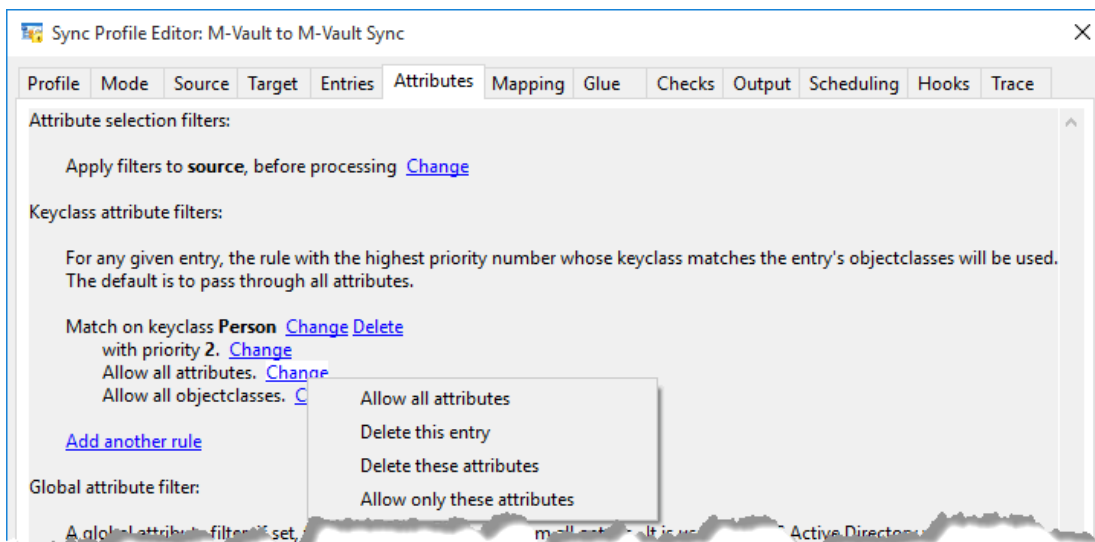
We're going to exclude from our sync all telephone numbers associated with people in the ACME directory (in other words, set up a rule that excludes the telephoneNumber attribute from the Person objectclass). We can do this by using the Attributes tab to filter the source data before processing.

Click on **Add a rule** under Keyclass attribute filters, then select **Change** next to 'Match on any objectclass'.

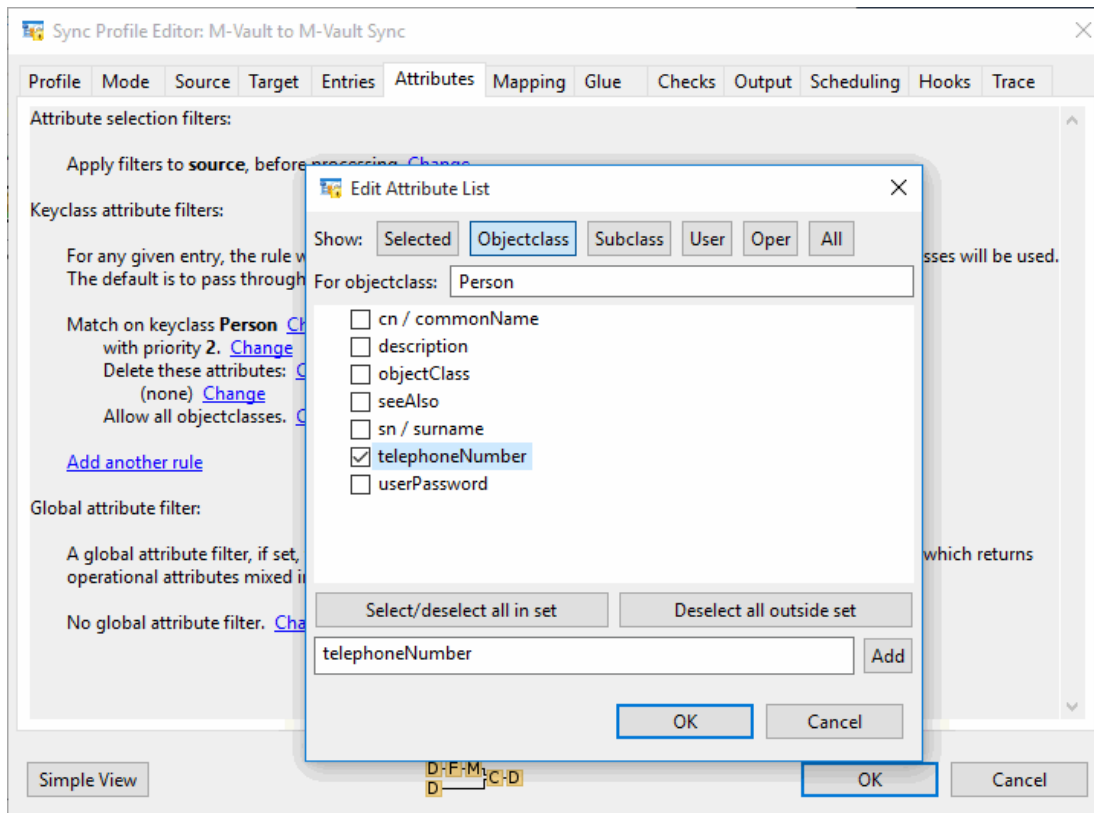




In the 'Change key objectclass' pop-up, type in "Person" and then click on [OK] to commit this change. Next to 'Allow all attributes', click on **Change** and select **Delete these attributes** from the pop-up menu.



Click on **Change** next to **none** and in the Edit Attribute List screen, select **telephoneNumber** and click on [OK] to complete the rule.



Dropping back into the main Sodium Sync screen you can see that a new filter rule has been set up telling Sodium Sync that, when running this Sync it should delete the 'telephoneNumber' attributes of the 'Person' objectclass.

In this short introduction to Sodium Sync we won't be making any changes to either the Mapping or Glue tabs:

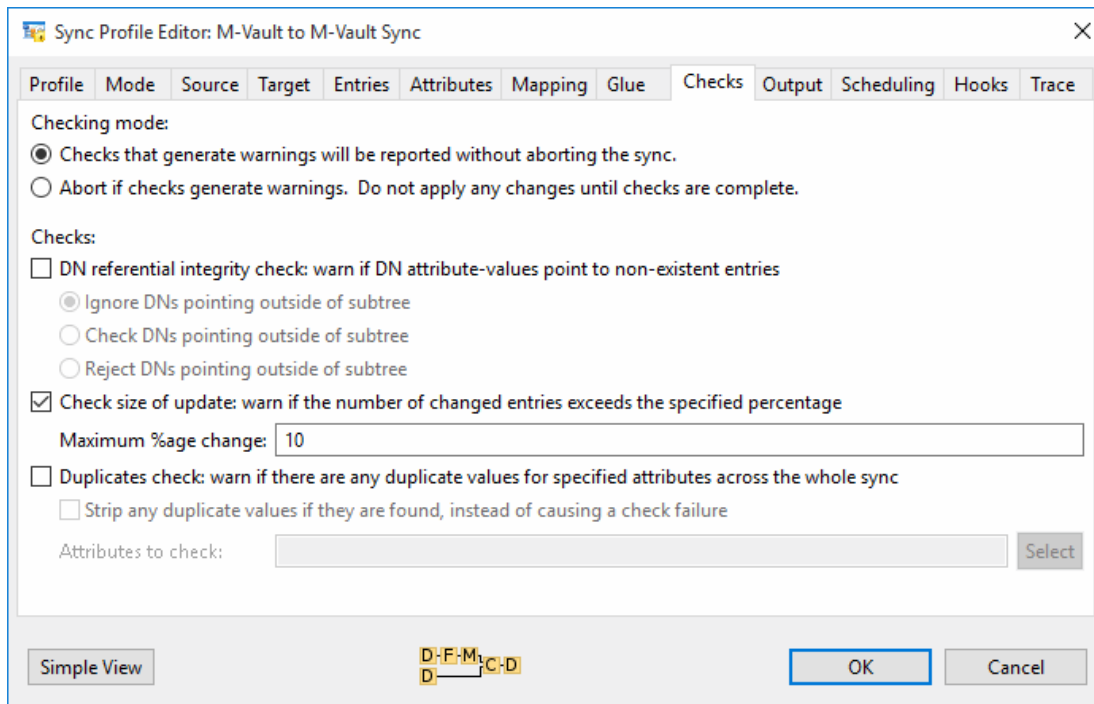
- The **Mapping tab** allows selection of various preset mapping rule-sets. These are defined in the *mapping-rulesets.xml* file shipped with Sodium, and may be reconfigured if necessary.
- The **Glue tab** can be used to handle the situation where the mapping or filtering has left a child without parents. This may happen especially as a result of the force-conformity options on the **Mapping** page (which may be implied by other rule-sets as well) when the source DSA contains parent entries with completely unknown schema.

If you'd like to explore these tabs further see Section 11.3 of the M-Vault Administration Guide available from [www.isode.com/support/docs.html].

Setting Checks

Sodium Sync allows for checks to be configured as part of a sync. The checks may be used simply to give warnings, or may be used to stop the sync from applying changes until all the checks have passed. It is possible to run a sync simply for the checks and make it throw away its results, either by running a **Source Only** sync (set on the **Mode** page), or by selecting **Discard changes** on the **Output** page.

We're going to set a check on our Sync so that it will generate a warning (but not stop the Sync) if applying our Sync will result in more than 10% changed entries in our Target directory. Start by clicking on the **Checks** tab.



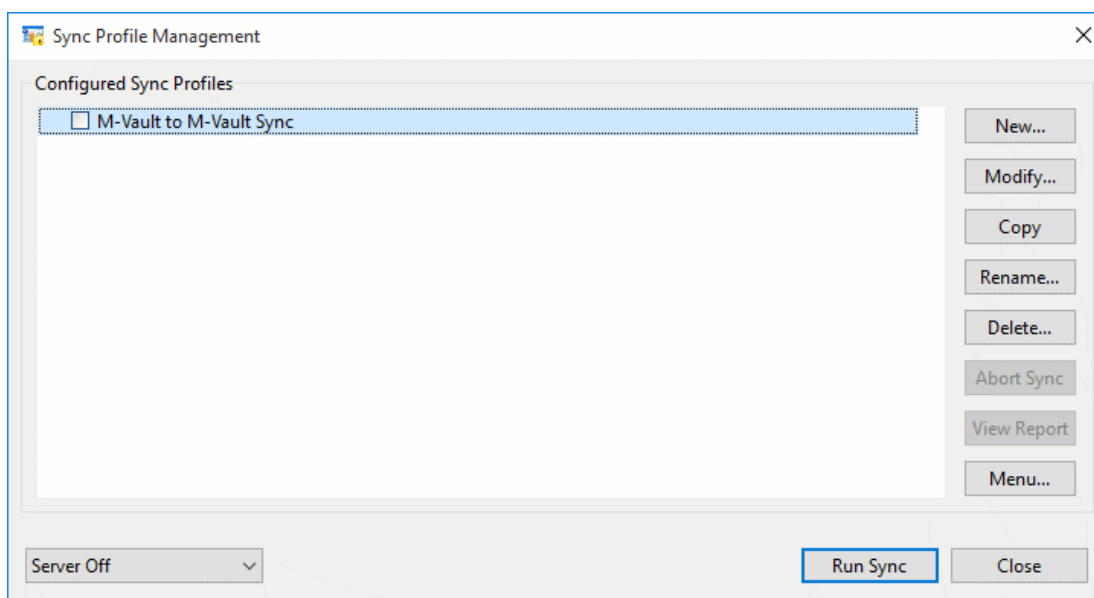
As above, leave the **Checking mode** as the default "Checks that generate warnings will be reported without aborting the sync". Tick the **Check size of update** box and enter the percentage as "10" and click on [OK] to commit this rule.

Running the Sync (Manual)

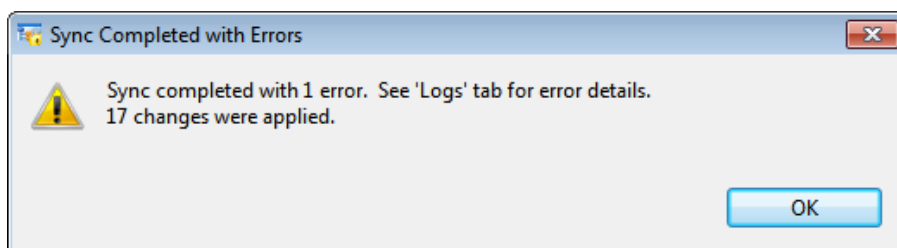
You've now set up a Sync Profile that will:

1. Scan all entries below **cn=Demo-base, o=Headquarters.net** in the **Headquarters.net** source directory.
2. Filter our source directory to exclude the telephoneNumber attribute from the Peron objectclass.
3. Copy the resulting data into the **Field.net** target directory starting at **cn=Demo-base, o=Field.net**.
4. Generate a warning (but not halt the sync) if more than 10% of the target directory is changed.

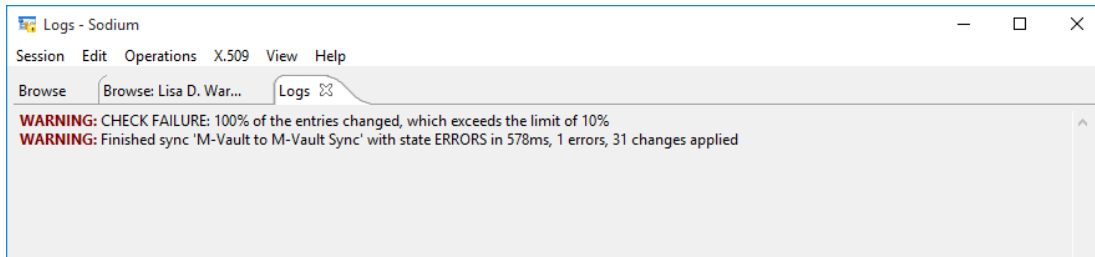
Now you need to run the Sync, which we'll do manually. Switch to the **Sync Profile Management** screen, highlight the M-Vault to M-Vault Sync that you've just created and click on [**Run Sync**].



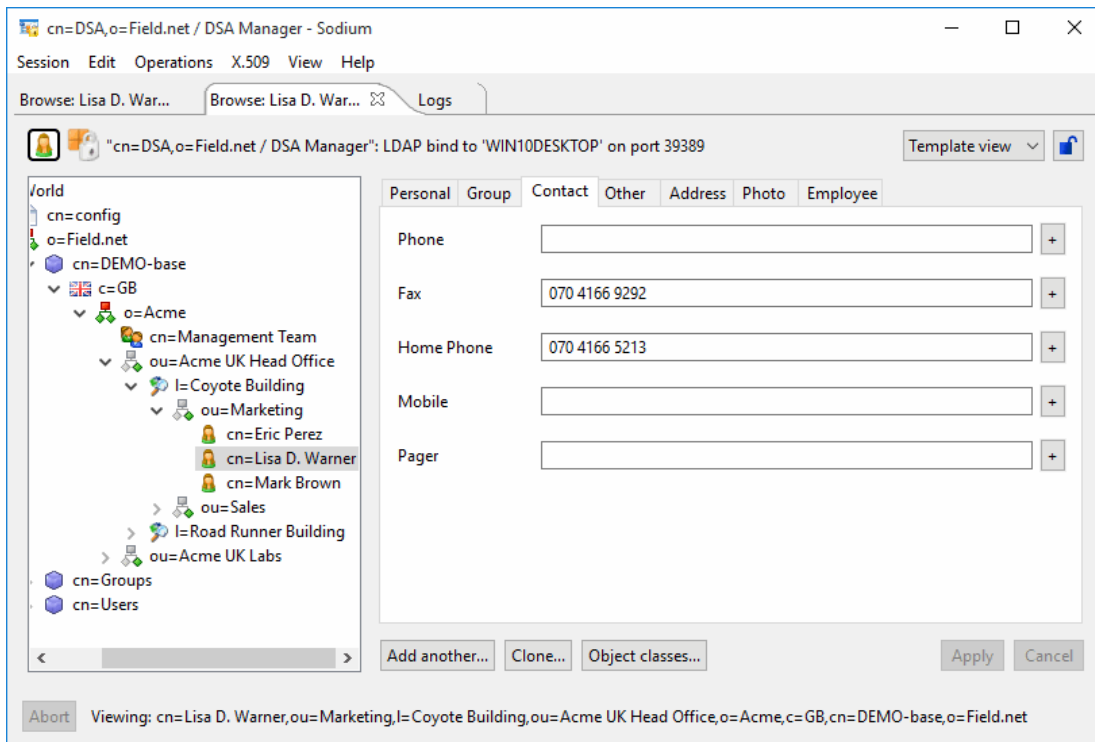
After the Sync is run, you'll see a confirmation box showing that the Sync has been completed but with 1 error.



Viewing the Logs tab, which will automatically open in Sodium when your Sync is completed, shows us that the 'Error' reported by Sodium Sync is the check you previously set up to warn if more than 10% of the target was changed by a Sync.



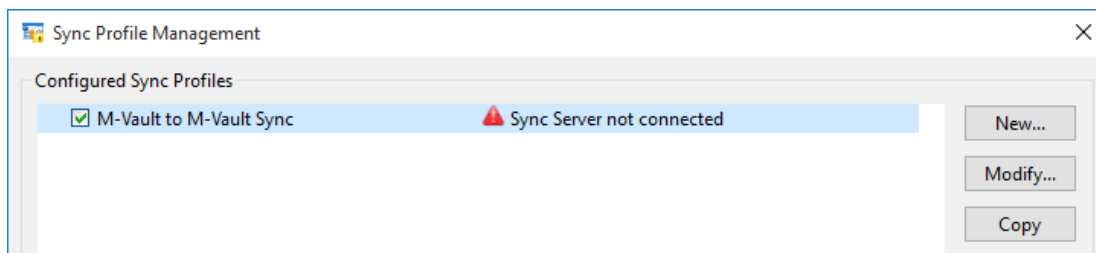
By browsing the Field.net Directory in Sodium, you can see, as below, that there are now no telephone numbers associated with Person entries below cn=Demo-base.



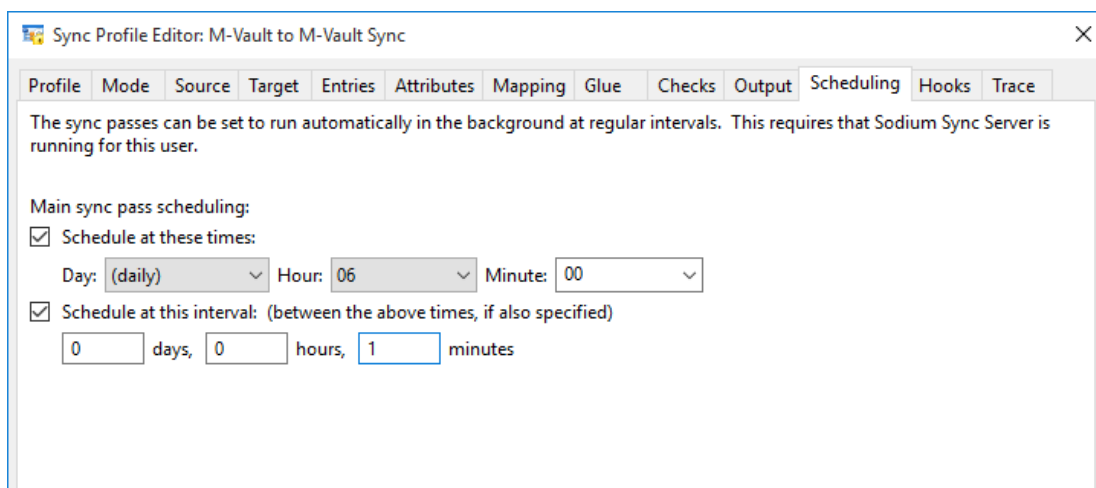
Automatic Syncs

To run syncs automatically at regular scheduled intervals, you must start the Sync Server. This is a background process that runs continuously, even over system reboots, and which runs the scheduled syncs without needing to have the Sodium GUI application running.

When the Sync Server is not running, scheduled syncs are displayed in the Sync Profile Management window with an error triangle to warn that the server is not running.



Sync schedules can be set up using the **Scheduling** tab in **Advanced** view.



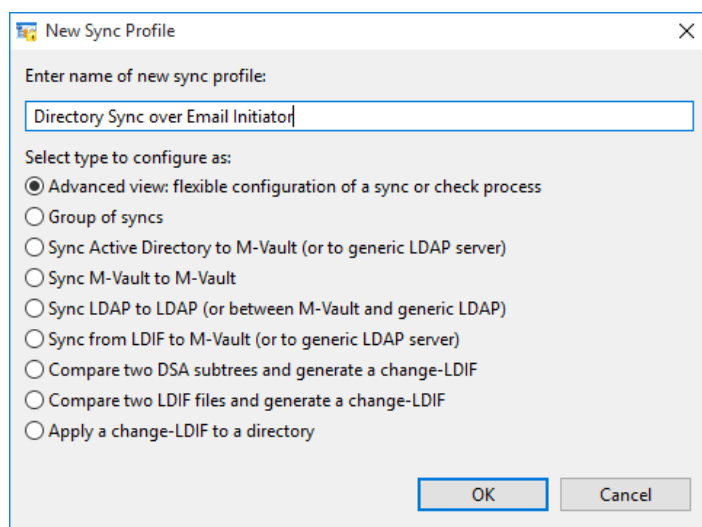
For information on setting up the Sync Server, see Chapter 11.10, "Configuring the Sodium Sync Server", of the M-Vault Administration Guide available from [www.isode.com/support/docs.html].

Cached Scan Synchronization

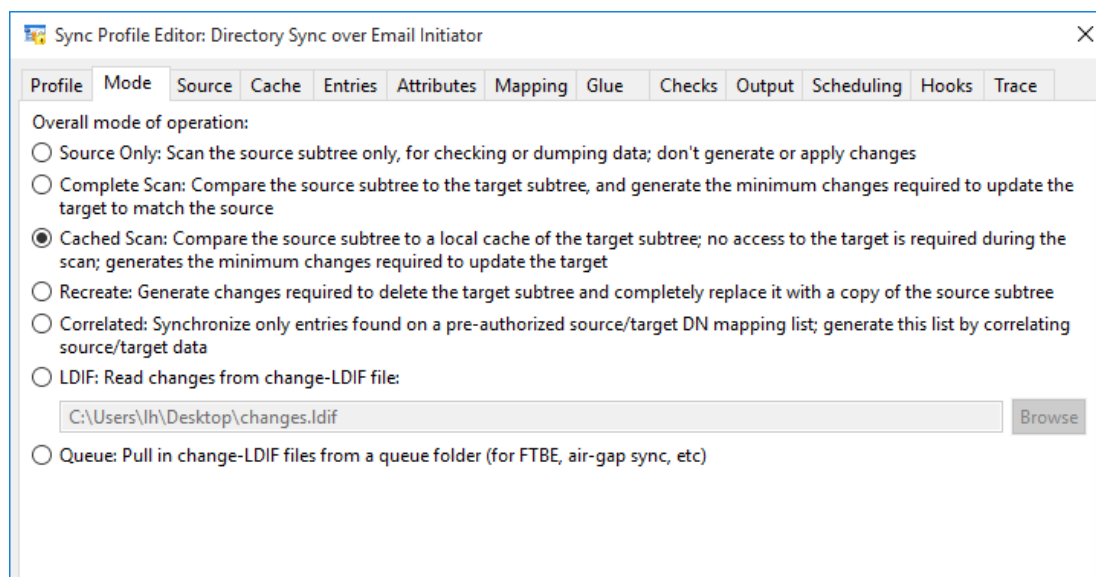
Cached Scan sync is for situations where access to the target directory is not available and an LDIF file of changes is to be generated for indirect transfer (file transfer by email (FTBE), air-gap sync etc.).

Configuring Source (Send)

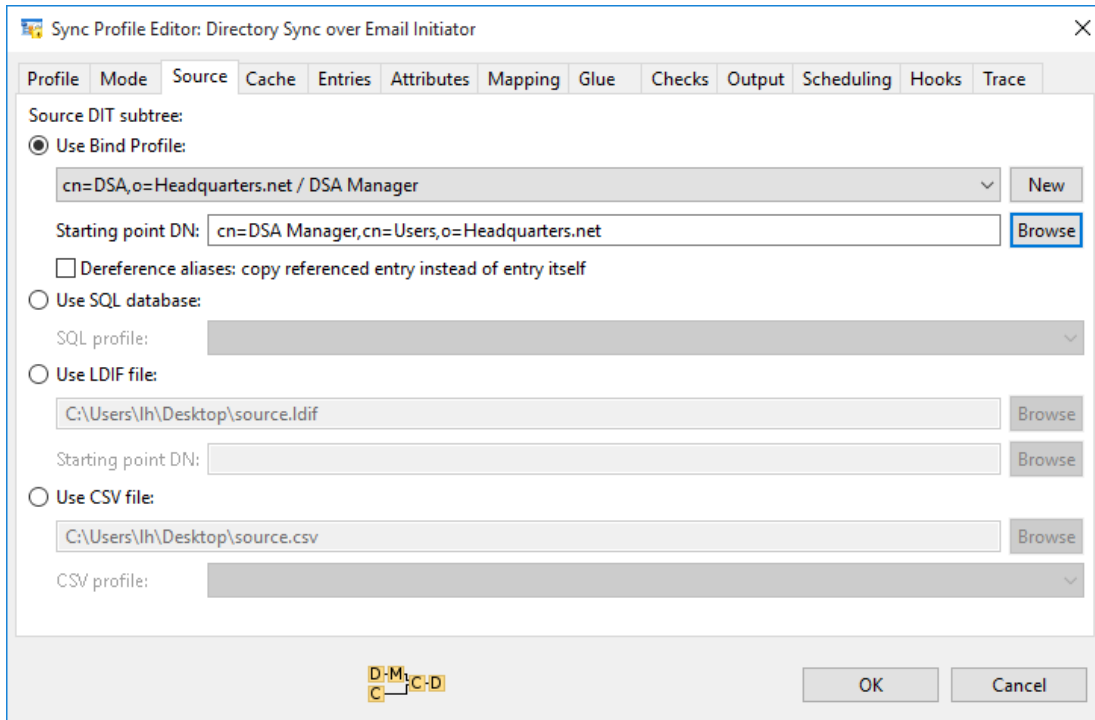
From the Sync Profile Manager click [**New**], type in a sync profile name, select View then Click [**OK**>]:



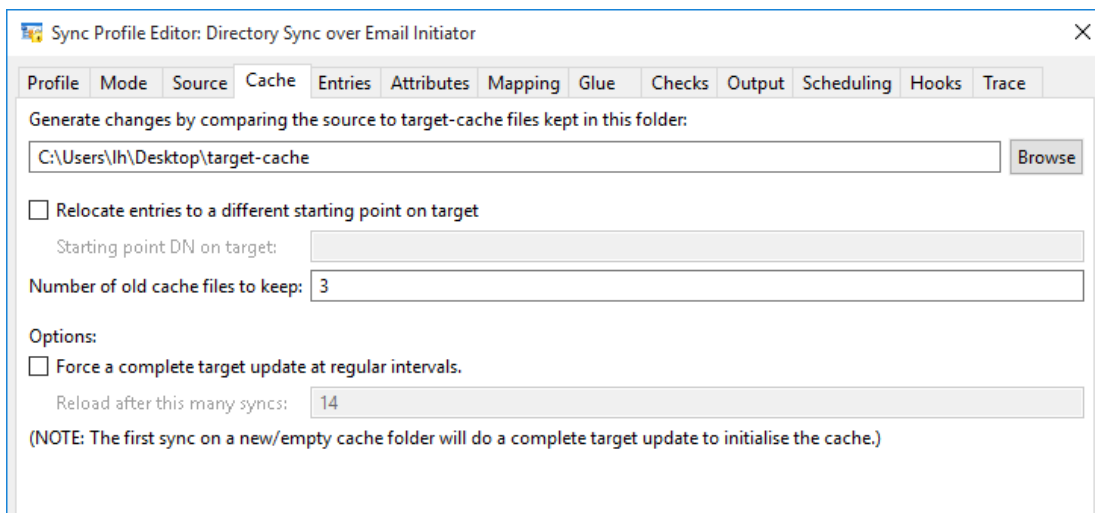
Select the Mode tab then select the **Cached Scan** radio button:



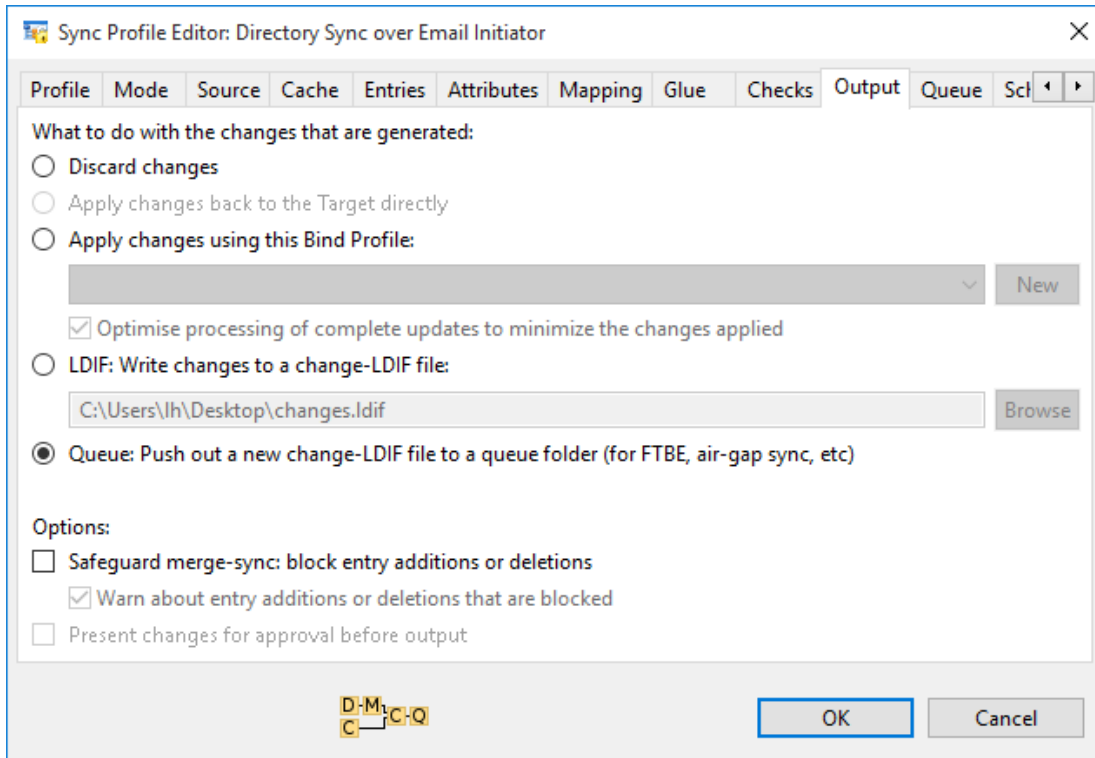
Click the **Source** tab, select the **Use Bind Profile** radio button and choose a bind profile to M-Vault, the data to be replicated is now chosen:



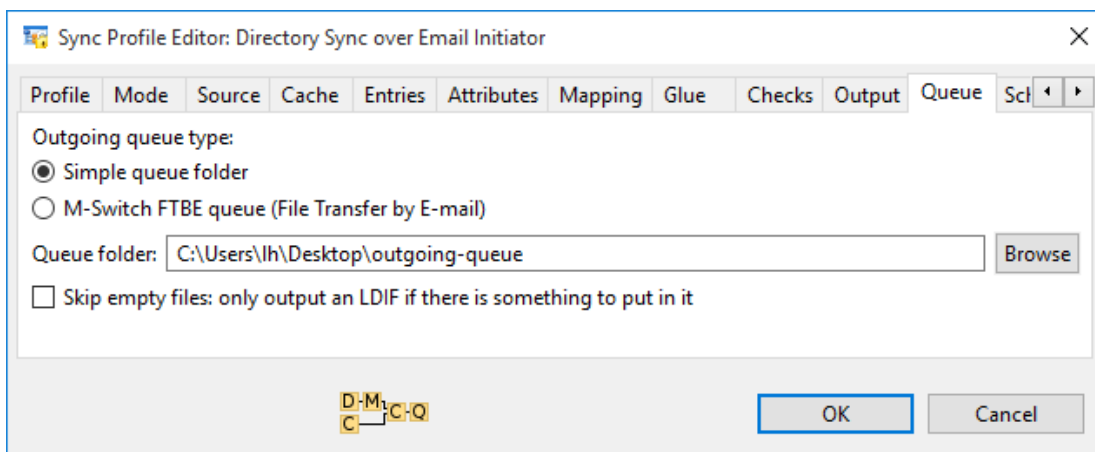
Click on the **Cache** tab, the next step is to specify the location in the file system where cached data is stored (you will need to create this location). The cache will hold a reference copy of the directory being replicated to, so that deltas can be calculated.



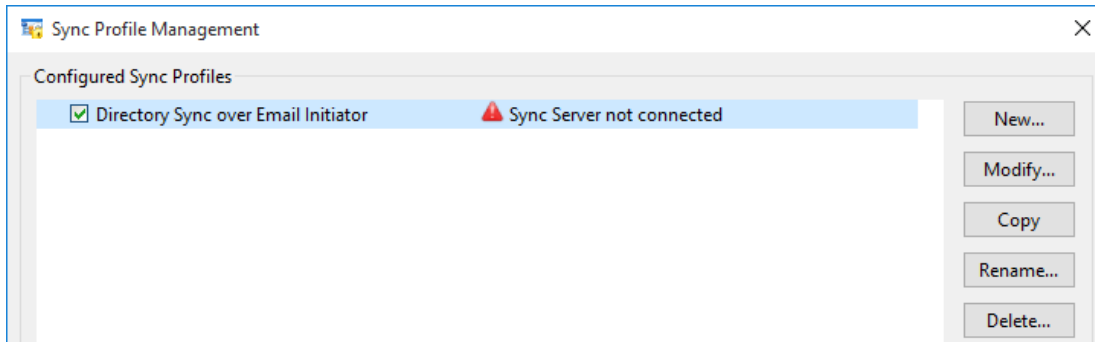
Next click on the **Output** tab and select the **Queue: Push out a new change-LDIF file to a queue folder (for FTBE, air-gap sync, etc)** Radio button:



From the **Queue** tab select the **Simple queue** folder radio button. Next you will need to select the folder, firstly you will need to create this folder, once created click the Browse button select the folder you just created. This is where the LDIF files will be written. Click [OK>]:

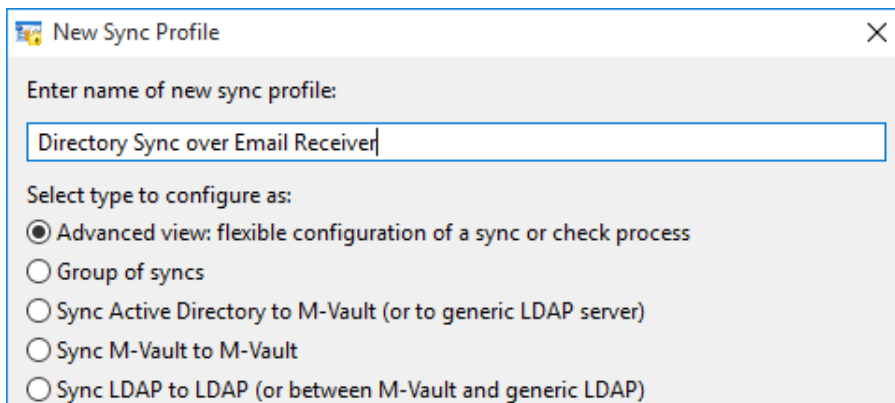


The Sync Profile for the initiator is now created, returning to the Sync Profile Management screen you can either run a manual sync or schedule an automatic sync if the Sync Server has been activated. After the sync, directory changes will be generated as LDIF and sent by email.

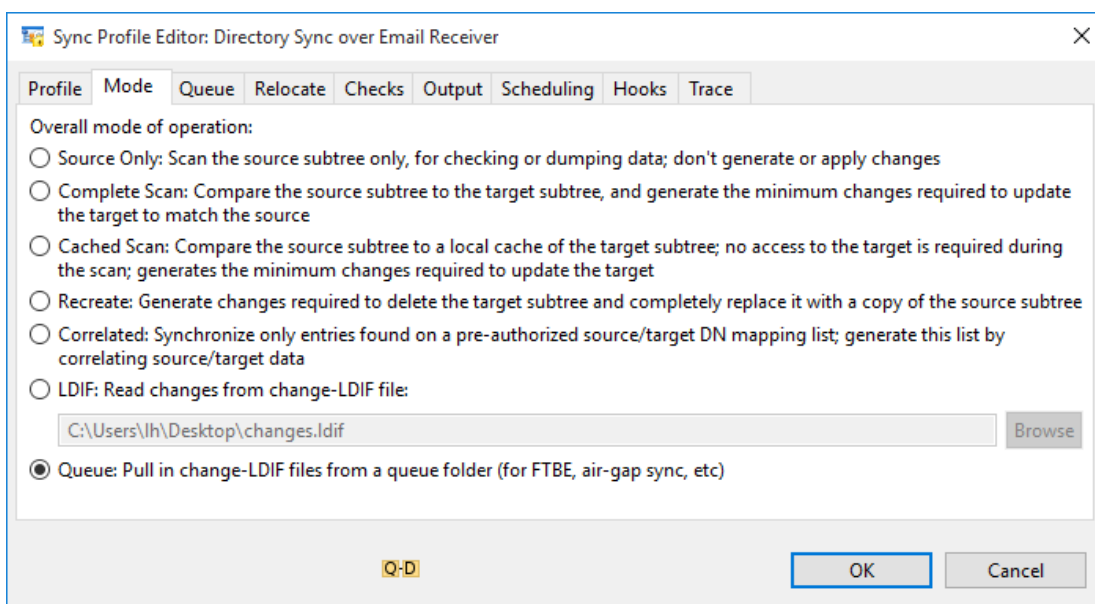


Configuring Target (Receive)

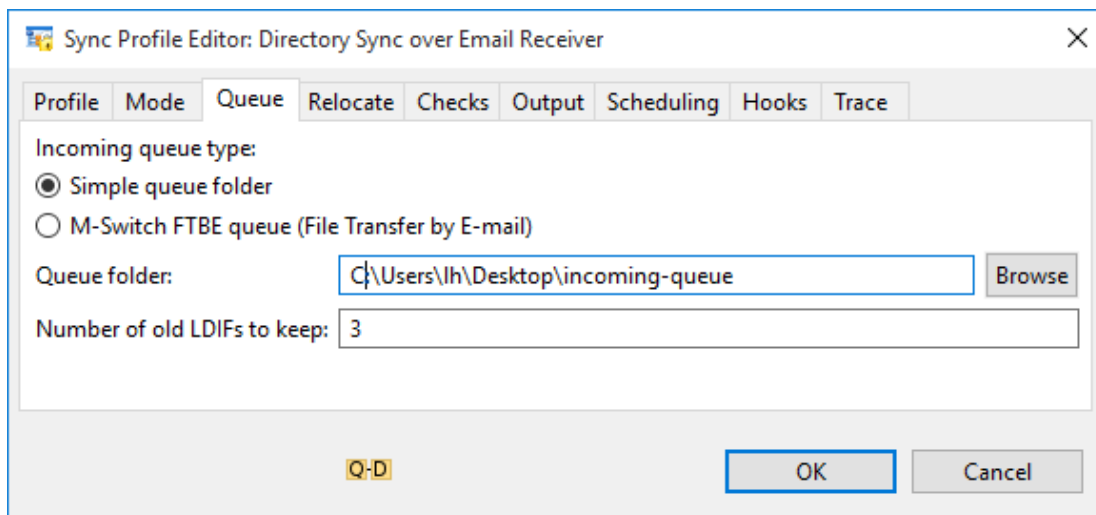
Now the receive side should be configured. Create a new Sync, give it a profile name, select **Advanced** view and Click [OK>]:



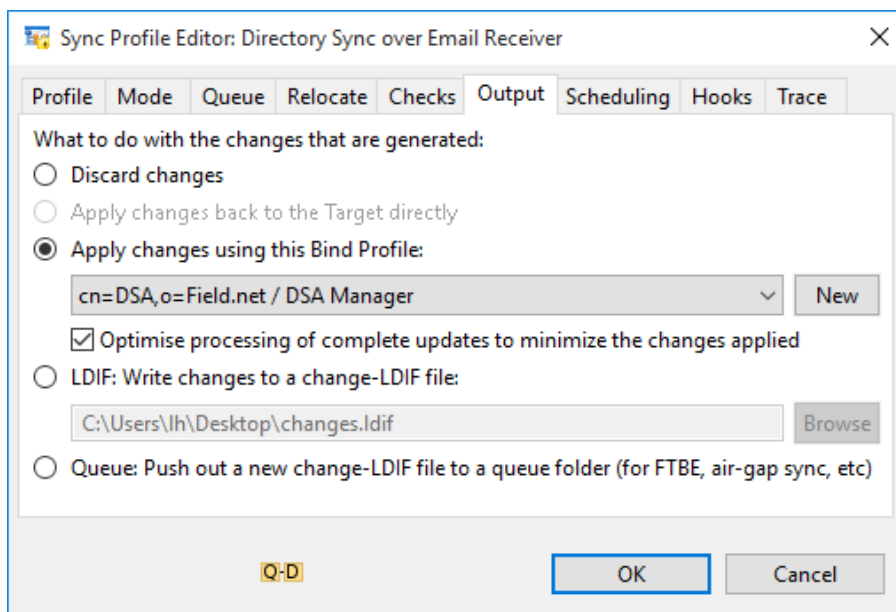
From the **Mode** tab, select the **Queue: Pull in change-LDIF files from a queue folder** radio button:



From the Queue tab select the Simple queue folder, next you will need to select the Queue folder, firstly you will need to create this folder, once created click the Browse button select the folder you just created. This is where the LDIF files will be written. Click [OK>]:



At the Output tab you should point at the M-Vault directory on the target (receiver). Scheduling and starting the sync is the same as for the initiator. The target should be scheduled to run frequently, to check for new inbound LDIF files:



Directory changes will now be replicated.

What next/other resources

Help us improve our Evaluation Guides

Producing evaluation guides that are easy to follow and that help evaluators get started with our products is important to us. Please help us improve this guide by emailing us at customer-service@isode.com.

Product Information

More information on Sodium Sync can be found in the Isode website starting from [www.isode.com/products/directory-sync.html].

Exploring Product Capabilities

This guide has covered only the basic functionality of Sodium Sync. To explore capabilities further you should read the M-Vault Administration Guide available from the Isode website in PDF format. The M-Vault Administration Guide, together with all other Isode documentation is available from [www.isode.com/support/docs.html].

Whitepapers

Isode regularly publishes whitepapers relevant to Directory technologies (as well as specialized Directory markets such Military). All whitepapers can be searched from the whitepaper index page on the Isode website at [www.isode.com/whitepapers/index.html]. You can browse whitepapers relevant to your particular area of interest by following the links on the sub-menu on the left hand side of that page.

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