

Directory Synchronization Evaluation Guide

Getting started with synchronizing directories using Sodium Sync.

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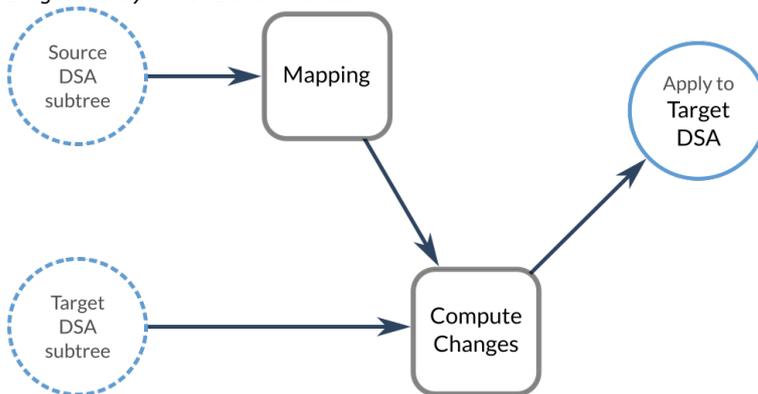
Objectives

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.).

Diagram 1 shows the synchronization process.

Diagram 1: Synchronization Process



Using Isode Support

You will be given access to Isode support resources when carrying out your evaluation. Any queries you have during your evaluation should be sent to support@isode.com. Please note that web-based ticket submission and tracking is not available to evaluators.

Preparation

You should visit www.isode.com/products/supported-platforms.html to discover which operating systems are supported for Isode evaluations. Please note that in addition to the server platforms listed, we support the use of Isode servers on Windows 7, Windows 8, Windows 8.1 and Windows 10 for simple evaluations and demonstrations.

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 [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.

Isode Products

Product downloads are held in a password-protected section of the Isode website. If you have not already done so you should apply for a username/password by filling in the form located at www.isode.com/evaluate/evalrequest.html.

Isode binaries can be obtained by clicking on the links in the Program Files section of the Directory Synchronization evaluation page (www.isode.com/evaluate/sodium-sync.html).

Evaluation License File

Isode server products require a valid license from Isode before they will run correctly. Licenses are issued by Isode Customer Services. 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 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 placed 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.

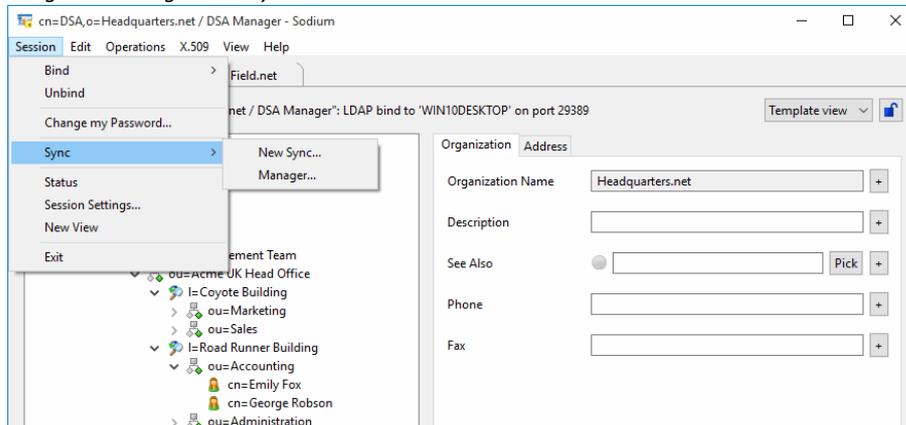
Running a Simple Sync (M-Vault to M-Vault)

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

You can also configure a synchronization between M-Vault and Active Directory by following these steps and selecting the “Sync Active Directory to M-Vault” option.

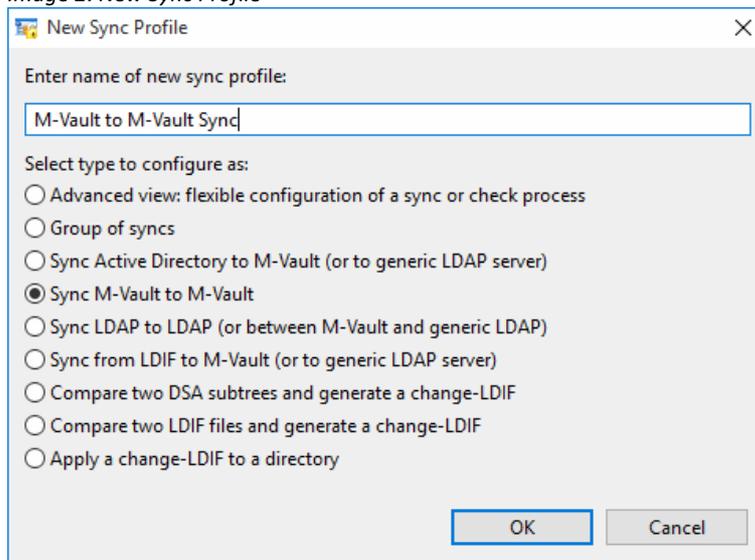
Sodium Sync is an option within the main Sodium management GUI (which you will have used previously with M-Vault). Synchronizations are configured and controlled from within the Sync Profile Manager, accessed by selecting “Session > Sync > New Sync” from within Sodium (Image 1).

Image 1: Starting a New Sync



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 (Image 2). Then click [OK] to proceed.

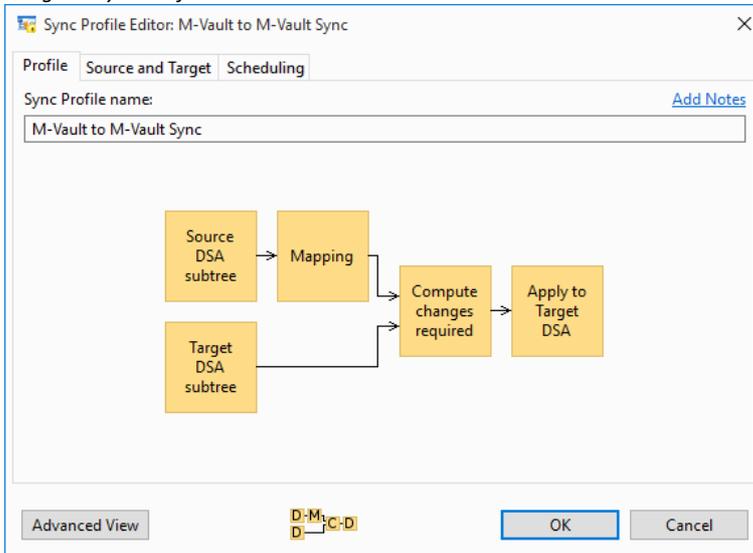
Image 2: New Sync Profile



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.

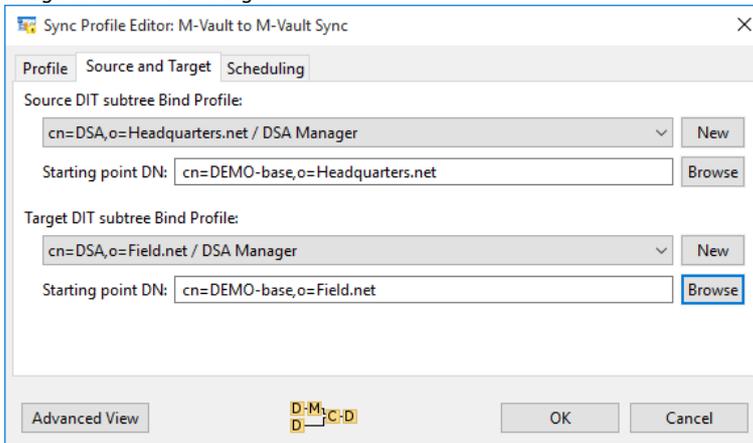
Image 3: Sync Profile Editor



Setting Source and Target

Click on the “Source and Target” tab (Image 4). 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).

Image 4: Source and 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 (Image 5), then select “Change” next to

“Match on any objectclass” (Image 6).

Image 5: Add a Rule

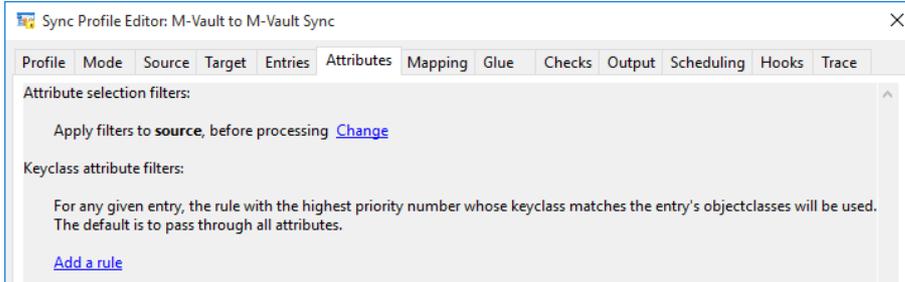
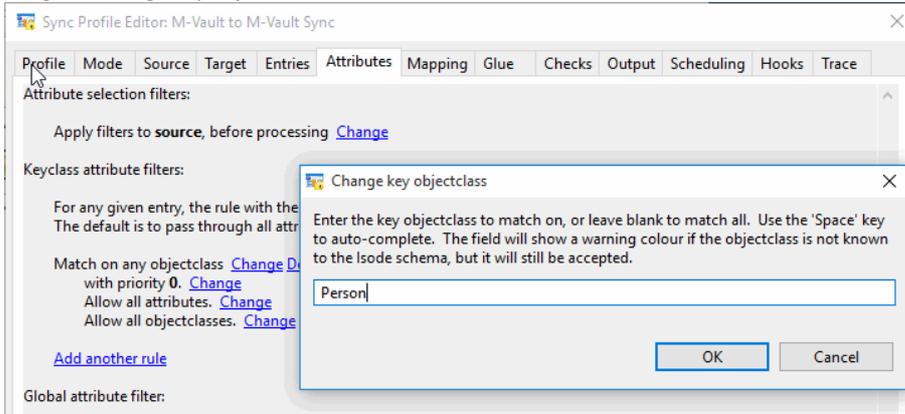
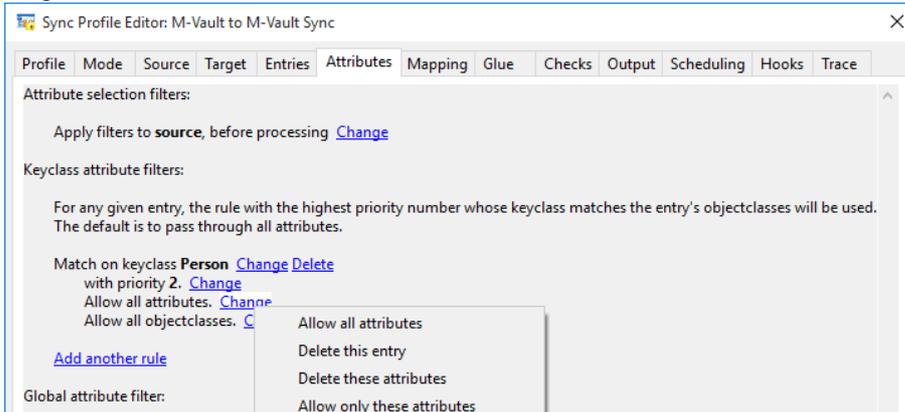


Image 6: Change key objectclass



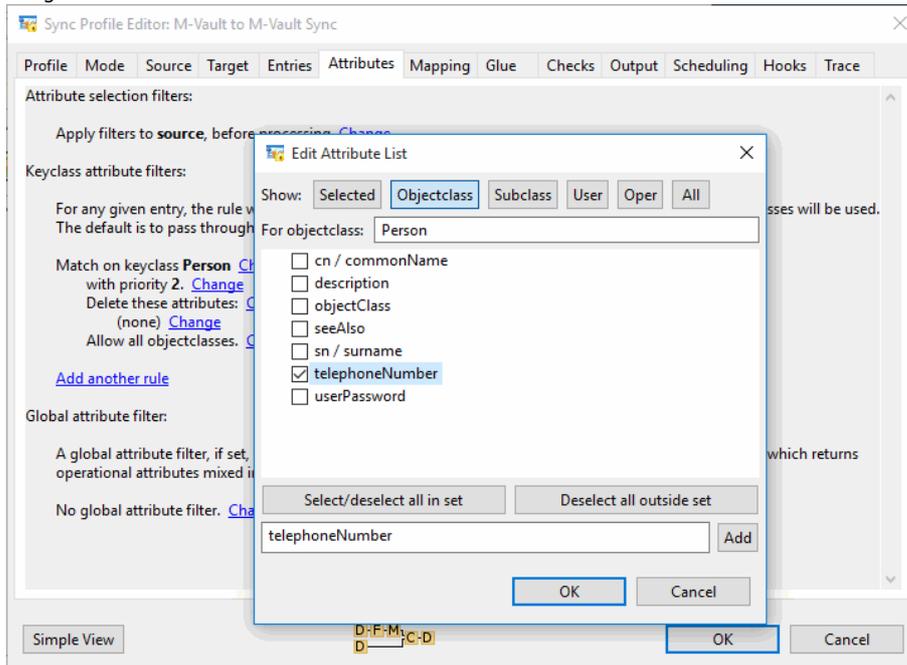
In the 'Change key objectclass' pop-up, type in "Person" and then click on [OK] to commit this change. Next to 'Allow all attributes', click on Change and select Delete these attributes from the pop-up menu (Image 7).

Image 7: Blah



Click on **Change** next to **none** and in the Edit Attribute List screen, select telephoneNumber and click on [OK] to complete the rule (Image 8).

Image 8: Edit Attribute List



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.

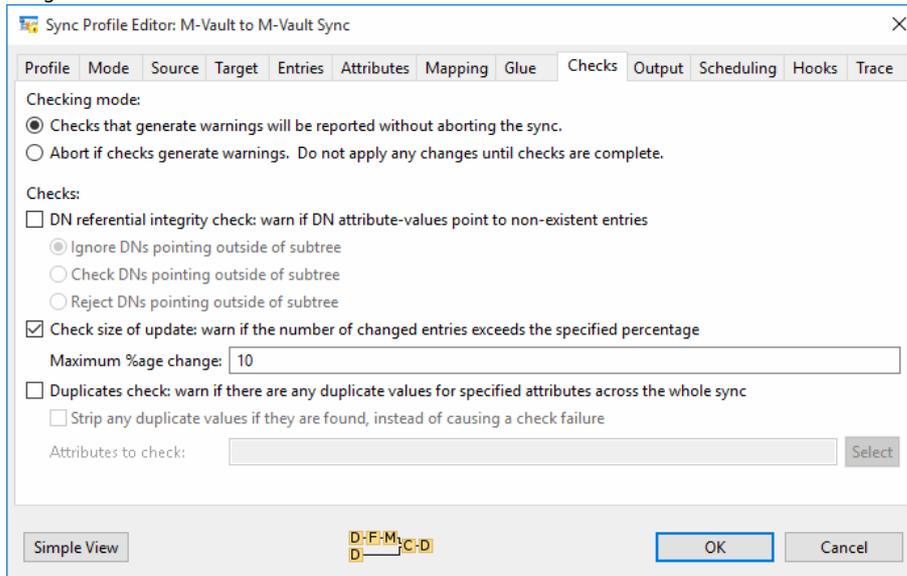
If you'd like to explore these tabs further see the M-Vault Administration Guide available from www.isode.com/support/docs.html.

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.

Image 9: Check Tab



As in Image 9, leave the Checking mode as the default value of "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.

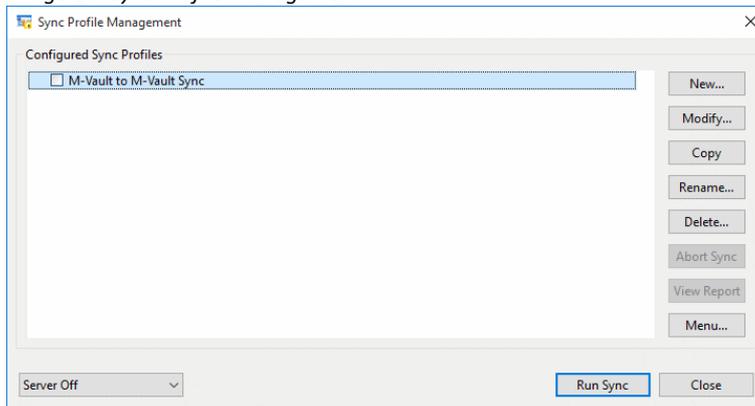
Running a Manual Sync

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 (Image 10) and click on **[Run Sync]**.

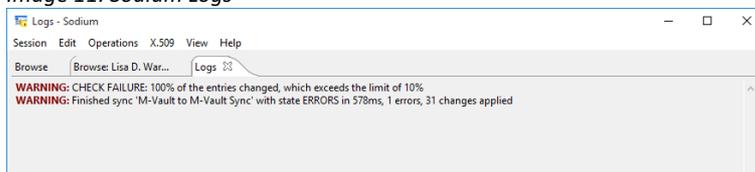
Image 10: Sync Profile Management



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 (Image 11).

Image 11: Sodium Logs



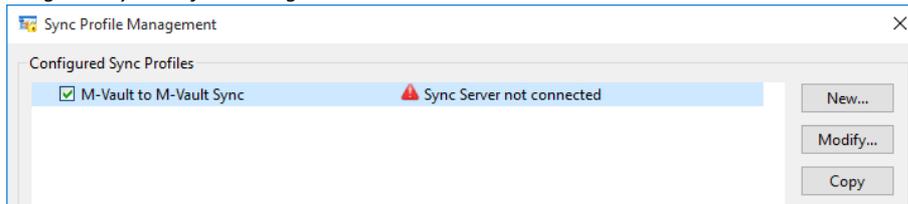
By browsing the Field.net Directory in Sodium, you can see (Image 12) that there are now no telephone numbers associated with Person entries below `cn=Demo-base`.

Running an Automatic Sync

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.

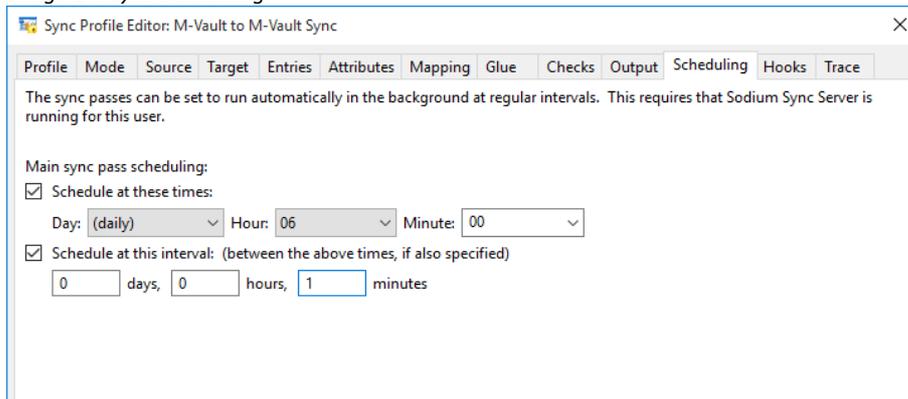
When the Sync Server is not running, scheduled syncs are displayed in the Sync Profile Management window with an error triangle to warn that the server is not running (Image 13).

Image 13: Sync Profile Management



Sync schedules can be set up using the "Scheduling" tab in "Advanced" view (Image 14)

Image 14: Sync Scheduling



For information on setting up the Sync Server, see the Chapter on "Configuring the Sodium Sync Server", of the M-Vault Administration Guide.

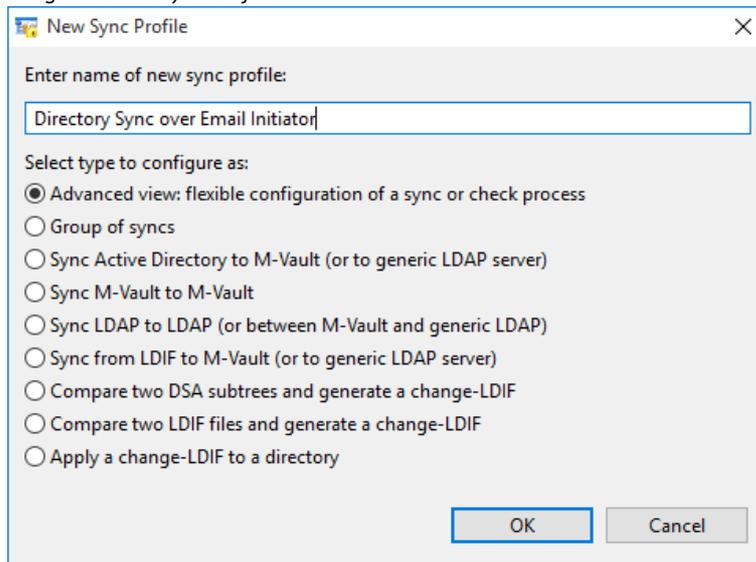
Cached Scan Synchronization

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)

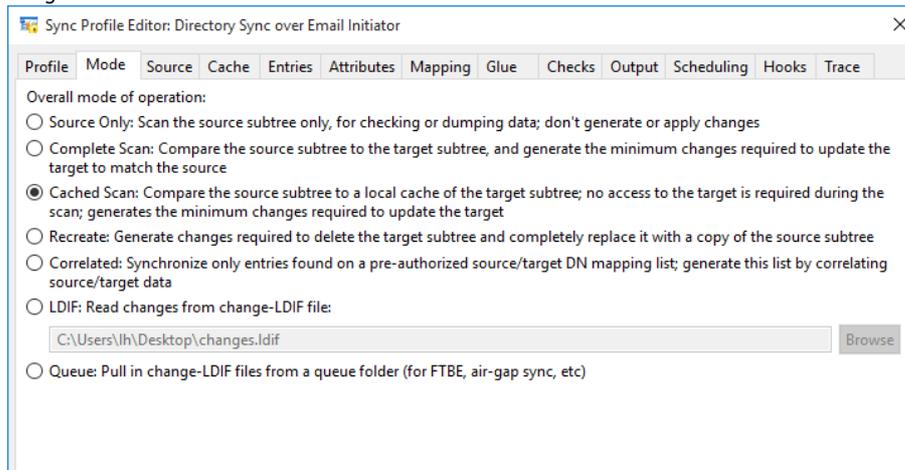
From the Sync Profile Manager click [New], type in a sync profile name, select “View” then Click [OK].

Image 15: New Sync Profile



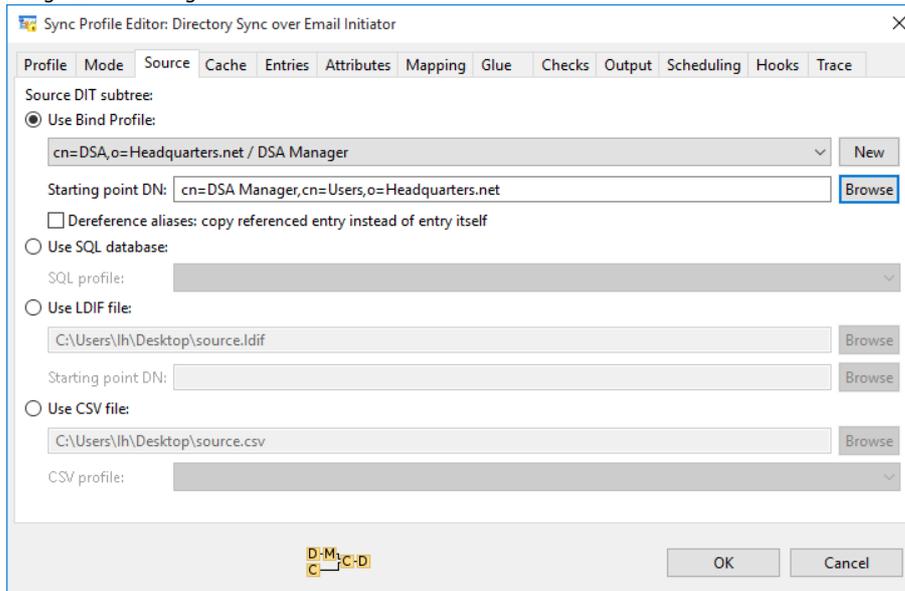
Select the Mode tab then select the “Cached Scan” radio button (Image 16),

Image 16: Cached Scan Selection



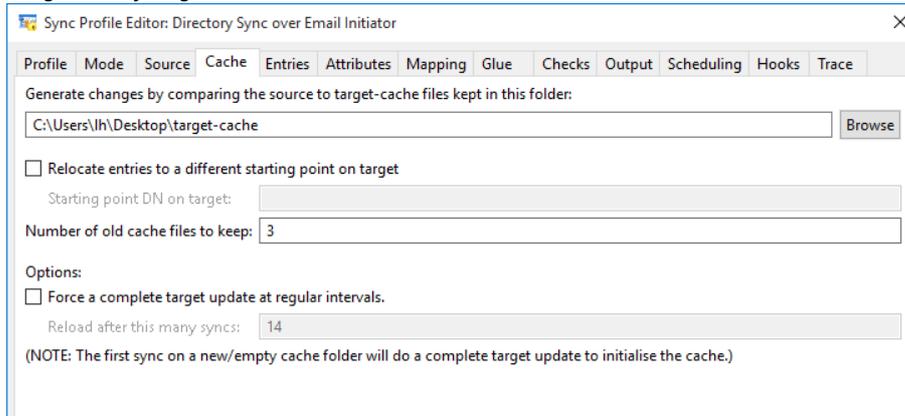
Click the “Source” tab, select the “Use Bind Profile” radio button and choose a bind profile to M-Vault, the data to be replicated is now chosen (Image 17).

Image 17: Selecting the Source



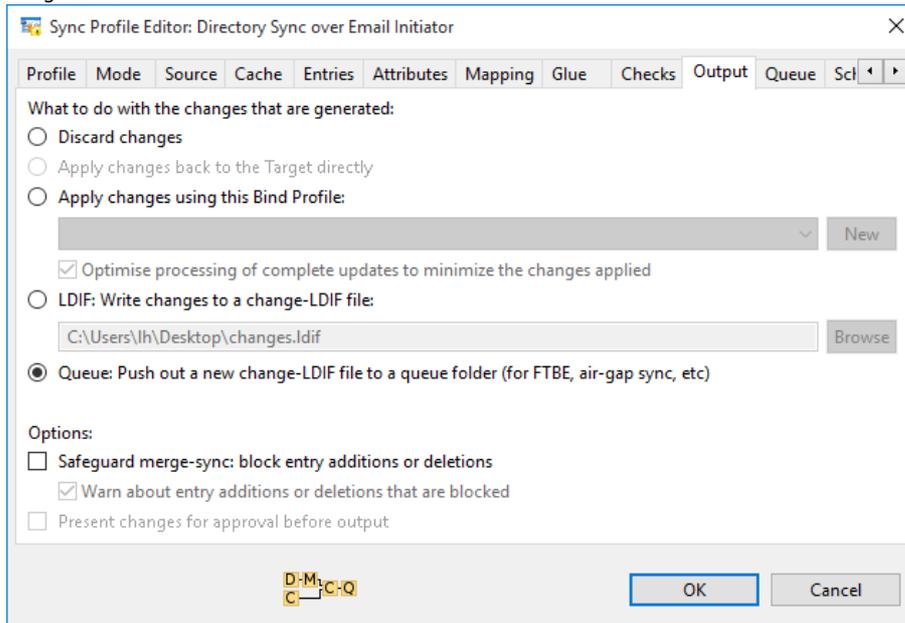
Click on the “Cache” tab, the next step is to specify the location in the file system where cached data is stored (you will need to create this location). The cache will hold a reference copy of the directory being replicated to, so that deltas can be calculated.

Image 18: Defining Cache Location



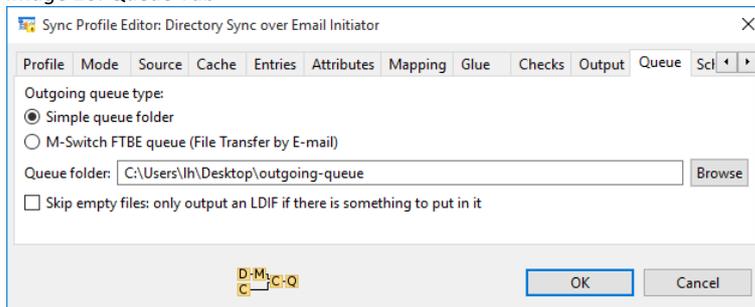
Next click on the “Output” tab and select the Queue: Push out a new change-LDIF file to a queue folder (for FTBE, air-gap sync, etc) Radio button (Image 19).

Image 19: Cache File



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 (Image 20). Click [OK].

Image 20: Queue Tab

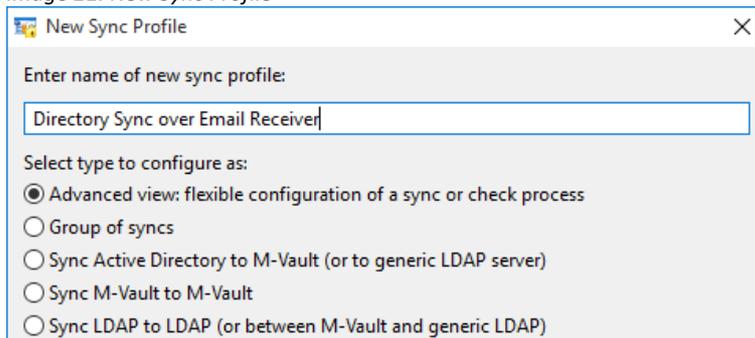


The Sync Profile for the initiator is now created, returning to the Sync Profile Management screen you can either run a manual sync or schedule an automatic sync if the Sync Server has been activated. After the sync, directory changes will be generated as LDIF and sent by email.

Configuring Target (Receive)

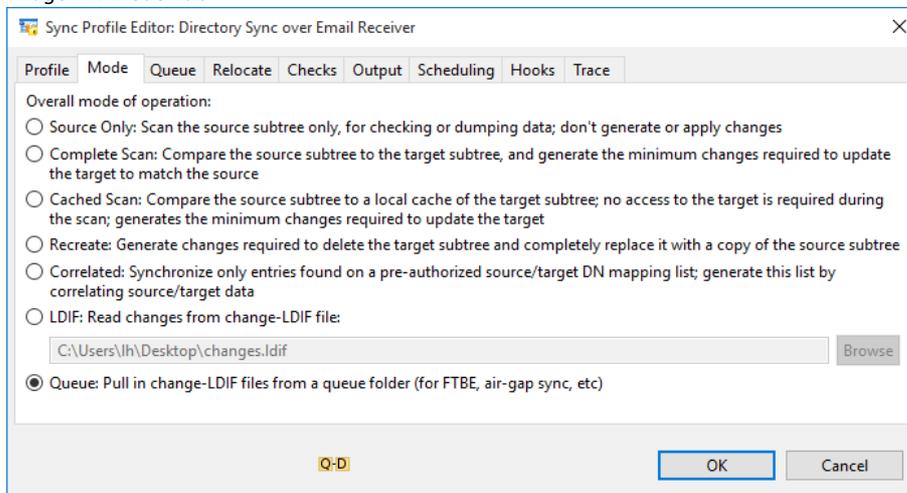
Now the receive side should be configured. Create a new Sync, give it a profile name, select Advanced view and Click [OK] as in Image 21.

Image 21: New Sync Profile



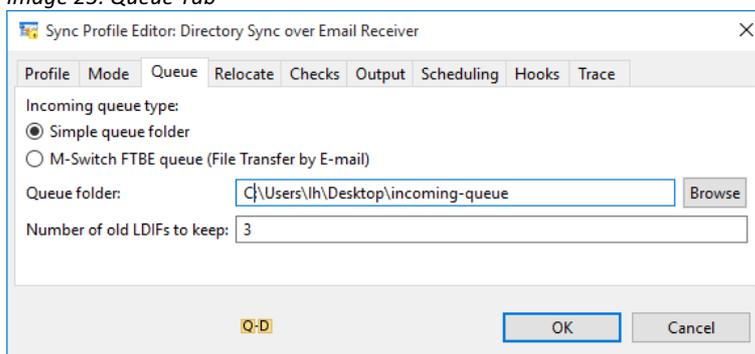
From the “Mode tab”, select the “Queue: Pull in change-LDIF files from a queue folder” radio button.

Image 22: Mode Tab



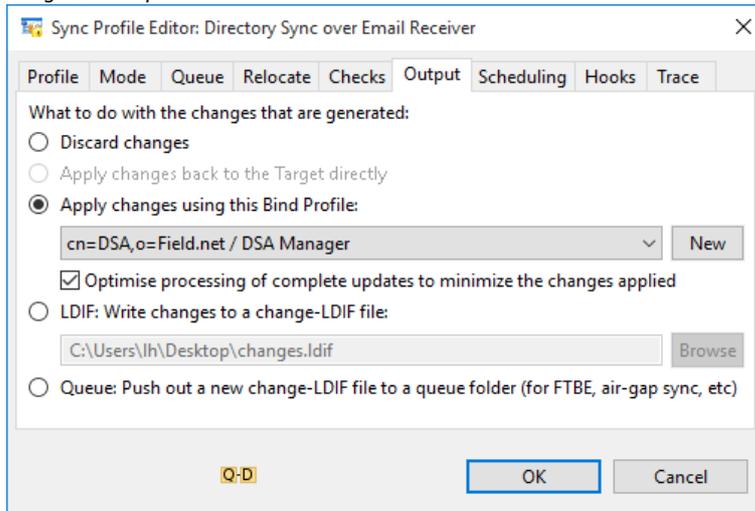
From the Queue tab select the Simple queue folder, next you will need to select the Queue folder, firstly you will need to create this folder, once created click the Browse button select the folder you just created. This is where the LDIF files will be written (Image 23). Click [OK].

Image 23: Queue Tab



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 (Image 24).

Image 24: Output Tab



Directory changes will now be replicated.

What Next?

More information on Sodium Sync's capabilities can be found from the main product page on the Isode website at www.isode.com/products/directory-sync.html.

You'll also find links from that page to other Isode XMPP directory products.

Detailed configuration and operation information on Sodium Sync can be found in the M-Vault Administration Guide which is available for download in PDF format from www.isode.com/support/docs.html.

Further Evaluations

The guide you have just completed is one of two guides which explore Isode's directory products:

- LDAP/X.500 Directory Server (www.isode.com/evaluate/m-vault.html)
- Directory Synchronization (this guide)

Other evaluations, available from www.isode.com/evaluate/, cover Isode's email and instant messaging products.

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