R19.0 M-Vault Directory Server Evaluation Guide

Getting started with M-Vault, Isode's X.500/LDAP Directory Server.

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Introduction

The purpose of this guide is to introduce M-Vault to readers new to Isode's servers and management tools. The guide will introduce some basic directory concepts in the context of the Isode product set. M-Vault Directory Server is one of a family of Directory and messaging products which comprises:

M-Switch SMTP (SMTP Message Transfer Agent)

M-Box (POP/IMAP Message Store)

M-Switch X.400 (X.400 Message Transfer Agent)

M-Store (X.400 Message Store)

M-Switch MIXER (message gateway providing conversion between X.400 and Internet email according to the MIXER specifications)

M-Switch Gateway (Email Messaging for low-bandwidth and/or high-latency networks)

Harrier (web based email client)

M-Switch products are widely deployed in the Government, Military, Intelligence, Civil Aviation and EDI markets.

Use of TLS: Due to UK Export Controls we are unable to provide Evaluation Activations that support TLS to certain geographic regions. This guide is written with the assumption that the reader is not a member of those regions and by default, we will provide a product activation that supports TLS. For customers whose region we have no current export control arrangement, further configuration information may be required and provided separately.

Objectives

By the end of this guide you will have:

- 1. Become familiar with some directory terminology and concepts
- 2. Created a Directory Server using M-Vault Console.
- 3. Configured a Sodium CA
- 4. Configured M-Vault to support TLS with Certificates generated with Sodium CA
- 5. Added, modified and deleted directory entries using Sodium (Secure Open Data, Identity and User Manager)
- 6. Bulk loaded data into the Directory from a sample LDIF file
- 7. Created a Directory Server using Cobalt.
- 8. Added, modified and deleted entries in the directory using Cobalt
- 9. Synchronized directory data using Sodium Sync

Environment Overview

The following diagram shows the high-level overview of what you will be building.

High Level Overview



Where passwords are required, the guide will assume "Secret1+"

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 isode.support@isode.com. Please note that access to the Self-Service Portal for web-based ticket submission and tracking is not available to evaluators.

Terminology

Organizational Chart

This section describes some of the major Directory concepts that you will encounter in this evaluation. Feel free to skip this section if you are already familiar with Directories.

Prior to creating a new Directory Server, you need to decide what schema (data dictionary) you want to use and the structure of the Directory. One good way to plan this is to draw a chart of your company's structure, as this will be very similar to the structure of the Directory that you create. Shown below is part of such a chart for a fictional company, Headquarters.net. An LDIF file containing this 'Headquarters.net' dataset is one of the sample files shipped with M-Vault and later in this guide you'll load and work with this data.

Headquarters. net Head Office Labs Coyote Building Sales Marketing Joseph Miller Erik Perez Head of Accounting Head

In this organizational chart we can see entries for an organization (Headquarters.net), organizational units (Head Office, Labs, Sales, Marketing, etc.), locations (the two buildings), people, an organizational role (Managing Director) and a Group of Names (the Management Team).

The hierarchical structure of the information held in the Directory is called the Directory Information Tree (DIT). Most of the useful information, from the perspective of a user, is found at the lower levels of the DIT, while the top levels hold information that facilitates identification and navigation of entries across the hierarchy.

Each entry in the Directory (such as a person, organizational unit or organization) has attributes which contain information about it. An attribute consists of an attribute type and one or more values. An entry for Eric Perez contains attributes like:

```
telephoneNumber: 070 4166 2970
mail: eric.perez@acmelabsldifdemo.com
```

In this example, "telephoneNumber" and "mail" are attribute types, while "070 4166 2970" and "eric.perez@acmelabsldifdemo.com" are values for these attribute types.

Each entry must also have at least one attribute which is used to name the entry (naming attribute). This attribute forms the Relative Distinguished Name (RDN) for this entry. The examples below are all valid RDNs, where cn stands for the attribute type "commonName", ou for "organizationalUnitName", and o for "organizationName":

cn=Eric Perez ou=Marketing o=Acme

An entry can have more than one naming attribute, although usually only one is used. You may adopt a more complicated naming system, involving multiple naming attributes, to distinguish between large numbers of entries located at a single level of the DIT. For example, if there are two employees in the Marketing department called John Smith, you could use the userId (uid) attribute type to distinguish between them:

```
cn=John Smith+uid=jrs
cn=John Smith+uid=cbs
```

Each Directory entry also has a Distinguished Name (DN), which uniquely identifies the entry in the DIT. The DN is constructed by joining the RDNs of all the entries in the DIT at and above this entry, up to the root. For example, consider the image below which shows the Directory Information Tree for the Sales department (an organizational unit) of Headquarters.net.

Sales Department DIT



This chart shows the RDN of each level of the hierarchy. To construct the DN for the entry for Joseph Miller, join the RDNs of all entries at and above this entry up to the root. The chart above shows the required information. Therefore, the DN for the entry for Joseph Miller is:

```
cn=Joseph Miller, ou=Sales, l=Coyote Building, ou=Head Office,
o=Acme
```

The DN of an entry thus shows its position in the DIT as well as identifying it.

Note that the RDN of an entry must distinguish it from all other entries with the same parent, where a parent is the next level up in the DIT. This means that you cannot have two entries with the same RDN (e.g. cn=Joseph Miller) underneath the same parent (e.g. ou=Sales).

Preparing the Server Environment

These steps should be followed on two servers.

Naming the Servers

Make the first machine name : HQDSASERVER Make the primary dns suffix for this server HEADQUARTERS.NET Make the second machine name : FIELDDSASERVER Make the primary dns suffix for this server FIELD.NET

Alternatively, you may use your own names or add dns entries in a dns server or hosts file.

Install the Isode Software

Follow the instructions in the release notes for the appropriate platform for the products.

Remember to install an appropriate java runtime engine first (refer to product release notes) and in a Windows environment the visual c++ redistributable package. For this guide, the following products were used:

Messaging Activation Server 1.1v1 M-Vault 19.0v21 Cobalt-1.5v3

Please use a supported web browser as documented in the product release notes.

Activating the Isode Products

Ensure the MAS server has started by using the Isode Service configuration tool.

Isode Service Configuration - N	MAS				
4 Service Configuration			-		\times
Service Configuration Operations View Help					
Isode Services					
Add Refresh All Refresh MAS Start S	Start Tree 😵 S General Recc Service Name Service Status Start Type Product Acti	top X Remove very Advanced lsode MAS Running Automatic vation Status < Activation file (C:\lsode\etc\activate.dat) not found >			~
			Apply	Can	cel
Abort					

Browse to "https://localhost:9000"

The browser will provide a security warning. Choose an option to override the warning

MAS First Time Log in

Messaging Activation Server				
First time Login Please enter credentials he user	re to register a new			
Username:	Required			
masadmin				
masadmin Password:	Required			
masadmin Password:	Required			
masadmin Password: Confirm Password:	Required			

In "Username" type "masadmin"

In "Password" type "Secreti+"

In "Confirm Password" type "Secret1+"

Press "Register"

You will be presented with a list of installed products.

View installed Product List

ng Activation Server (HQDSASERVER)	Logged in
Products		
Refresh		
Cobalt 1.5v3-0 Not activ	ated M-Vault 19.0v21- Not activa	ted Sodium Sync Not activated
Description: Cobalt User and Role Provisioning	1 Description: LDAP/X.500 server	19.0v21-1 Description: Sodium Sync for synchronizing data in LDAP directories
Log Files View Details View	Log Files View Details View	Log Files View Details View
	Refresh Cobalt 1.5v3-0 Refresh Description: cobalt User and Role Provisioning Log Files View Details View	Refreats Cobalt 1.5v3-0 Net activation Description: Cobalt User and Role Provisioning Log Files View Details View Details View Details View

Select "Activate Products"

In "Reference" type "M-Vault Evaluation HQDSASERVER" (or FIELDDSASERVER)

Populate Activation	n Request	
္က ^{ြာ} Isode Messagir	ng Activation Server (HQDSASERVER)	
# Products	Activate Products	
E Activations	Commente Antionation Permanet	
Activate Products	Generate Activation Request	
## Activation Server	Reference Enter the text in the box below which will be returned as p More M-Vault Evaluation HQDSASERVER	Required
	Generate	Cancel

Press "Generate"

Copy the activation request code to your clipboard.



Send an email to Isode support asking for a Product Activation for M-Vault, Sodium Sync and Cobalt for a "R19.0 M-Vault Evaluation". Include the activation request code.

Isode support will supply a set of Product Activation keys.

It is likely that the session between the browser and MAS will have timed out between requesting the product activation and receiving the keys. It is therefore sensible, once the keys have been received, to close the browser window and log back into MAS again.

Select "Activate Products"

Paste the keys into the "Reference" field.

Activation Key		Required
Please input the Activation Key provided by the Isode Pro	More	
hyaXMgTWFyC2hnbGwiCnNpZ249lk1FVUNJQWZ SZUcrRDdUaUt3RJU1RUdpRXF1UGxleW1hVEtVa m1JMTZKeUNYej2707pRVFSWIKU3BncjhUb01 DeDI2T2dVZy8rT0FDWHY2TEw1RjdTdjlkYll2YnFR PSIK	~	

Press "Submit".

You will be presented with an "Activation Result"

Activation result

Activa Activa This sho keys.	vate Key tion Result	Activation Keys submitte	ed. Click Cancel / Clear to submit new
No.	Processing Status	Product	Activation and Installed Status
1	Added	M-Vault 19.0	ОК
2	Added	SodiumSync 19.0	ОК
3	Added	Cobalt 1.5	ОК
Subi	mit		Clear

Select "Products"

The products that have been activated should appear in green.

Activated Product List

مر Isode Messagir	ng Activation S	erver (HQD	SASERVER)			B masadmin Logged in	
Products	Products						
Activations	Refresh						
Activate Products	Cobalt 1.5v3-0	activated	M-Vault 19.0v	21-1 activated	Sodium Sync 19.0v21-1	activated	
Activation Server	ActivationName: Cobalt - Base		ActivationName: M-Vault - Server		ActivationName: SodiumSync - Base		
	Log Files	View	Log Files	View	Log Files	View	
	Details	View	Details	View	Details	View	

Creating a Directory Server Using M-Vault Console

This part of the guide is written to be carried out on HQDSASERVER.

Create the DSA

Open the "M-Vault Console" from the Windows Start menu. On Linux execute the following command:

% /opt/isode/bin/mvc



Click "Yes".

Enter a Passph	rase for the Bind Profile	
調 Enter Profile pa	ssphrase 2	×
Please enter a Prot and means that yo run Sodium, M-Va	file passphrase. This will be used to encrypt all of the passwords, bu will be prompted for this passphrase from now on whenever you ult Console, MConsole or M-Link Console.	
Passphrase:	•••••	
Verify Passphrase:	••••••	٦
	OK Cancel	

Enter and verify the password "Secret1+"

Click "OK".

Bind Profile encryption confirmation



Click "OK".

No managed DSAs configured No Managed DSAs Configured You currently do not have any managed DSAs configured. You can use the "Create" option to create a new DSA, or to create a bind profile for an existing DSA. OK

Click "OK".



Select "Create" and then from the menu presented "Directory Server"

Click "OK".



Ensure "Default DSA Configuration" is selected.

Click "Next >".



In the "Base DN" field type "o=Headquarters"

In "Initial Directory User" type " cn=DSA Manager,cn=Users,o=Headquarters"

Click "Next >".



Leave the Defaults

Click "Next >"

Access control group configuration

Create Directory Server					×
Access Control group configuration					
Mandatory groups are displayed here and optional grou	ps may be select	ed/deselected			
Mandatory groups:					
ACI Managers Group					
DSA Managers Group					
DSA Operators Group					
Password Managers Group					
User Managers Group					
Optional groups:					
🗹 Data Managers Group					
CRL Writers Group					
Certificate Writers Group					
CA Managers Group					
	< Back	Next >	Finish	Cance	el

On "Access Control group configuration" ensure all optional groups are selected.

Click "Next >"



Provide a memorable password

Click "Next >"

Bind Profile Names						
Create Directory Server						×
Bind Profile Names and Filesystem Locatio	n					
Use the suggested values, or enter your own						
Management bind profile name: Used to manage the DS	5A in M-Vault Con	sole				
cn=DSA,o=Headquarters / DSA Manager						
The folder which will contain the directory server's datab DSA):	base and configura	ation (this folder v	vill be created in	n order	to initia	lize the
C:\lsode\d3-db					В	rowse
	< Back	Next >	Finish		Canc	el

Leave as default

Click "Next >".

Address configuration							×
Address Configuration							
Enter the server hostname / IP address and ports to lister	n on						
Hostname: HQDSASERVER.HEADQUARTERS.NET							
Enable:							
Port numbers: O Standards, no messaging: 389 / 102							
O Standards with messaging: 389 / 19999							
Isode default: 19389 / 19999							
O Alternate 2: 29389 / 29999							
O Alternate 3: 39389 / 39999							
O Alternate 4: 49389 / 49999							
O Alternate 5: 593897 59999							
Advanced Editor					Re	echeck	Ports
	< Back	Next >	F	inish		Cance	4

In "Hostname:" type "HQDSASERVER.HEADQUARTERS.NET"

Click "Next >".



Click "Finish".

The DSA will be created and started.



Press "Yes"

DSA configuration



It is sensible at this point to configure the dsa to start automatically with Windows. Start the "Isode Service Configuration" tool from the Windows Start menu.

Service Configuration tool

Service Configuration Operations View Help Isode Services	Service Configuration				-		\times
Isode Services	Service Configuration Operations View Help						
Image: Add Refresh All Refresh Image: Refresh Image: Refresh Image: Refresh All Refresh Image:	Isode Services						
Isode Cobalt server Isode MAS Service MAS Isode DSA cn=DSA,o=Headquarters / DSA Manager Service Name Isode DSA cn=DSA,o=Headquarters / DSA Manager Service Status Running Stat Type Automatic Product Activ Manual	🕂 Add 📓 Refresh All 📓 Refresh 🕨 Start 🕨 Start T	Tree 🔞 Stop 🗙 Remove					
Automatic Product Disabled Latest Version Expiration Valid M-Vault 19.1 31-Dec-2026 YES Apply Cancel	 Isode Cobalt server Isode M-Yault DSA Creation Service Isode MAS Isode DSA cn=DSA,o=Headquarters / DSA Manager 	General Recovery Advanced Service Name Isode DSA cn=DSA, c Service Status Running Start Type Automatic ~ Product Acti Manual Product Disabled M-Vault c	s=Headquarters / DSA Man.	Expiration 31-Dec-2026	Valid VES Apphy	/ Car	▲ ►

Select the newly created DSA service in the left hand pane.

In the right-hand pane, select "Automatic" from "Start Type" Press "Apply"

(Linux : systemctl enable isode-dsa@d3-db)

Create an Isode PKI

These steps explain how to create an Isode PKI to generate certificates. You may skip this step if you already possess a PKI infrastructure.

Create the directory "c:\IsodeCerts"

(Linux:/var/isode/certs)

Open "Sodium CA" from the Windows start menu

```
(Linux: %/opt/isode/sbin/sodiumca)
```

Click "New"

On "Set Properties of the Certificate Authority" leave Defaults

Click "Create"

	Sodium CA Profile Manager	×	🧔 New CA	- 0	×
	Configured CAs	New Modfy Delete Encrypt	Set Properties of the Certificate Authority Use this page to set the display name, key passphrase and CADB directory for the CA Sodium CA Profile Name CADB Directory CADB Directory CADB Directory CADB Directory Passphrase (Optional) : Set the CA to work with the Directory	Change Crea	ate
Abort		Open Close			

Click "Next >"

In "Hostname" type the fully qualified host name ("HQDSASERVER.HEADQUARTERS.NET")

Click "Pick"

Browse to "cn=DSA Manager,cn=Users,o=Headquarters"

Pick CA Bind DN

🧔 Pick an entry to use for the bind DN	×
	_
 ✓ <world></world> 	_
✓ o=Headquarters	
> cn=Groups	
✓ cn=Users	
cn=DSA Manager	
	_
	-
	_
Selection cn=DSA Manager, cn=Users, o=Headquarters	
OK Cance	1

Click "OK"

Define bind password The real Control of the real of the real

In "Bind Password" type "Secret1+"

Click "Next >"



On "Select an Entry for the CA" browse to and select "o=Headquarters"

Click "Add"

On "Enter RDN for the new CA entry" type "HQDSASERVER CA"

Click "OK"

elect an Entry for the CA	
Jse this page to select an Entry for the Certificate Autho	rity
Choose a suitable location for the CA. Use "Add" to cr entry. or "Promote" to add the "pkiCA" objectClass to t	eate a new entry below the selected the selected entry.
Existing "pkiCA" objects are shown with the icon: 🤌	,-
🗙 🧰 «World»	
> _ cn=config	Promote
✓	Lindo Add
> cn=Groups	- Chao Ada
🔑 cn=HQDSASERVER CA	
> cn=Users	
Added entry "cn= HODSASERVER CA on Headquarters"	-
PROPERTY FILLS AND A DATE OF A DATE	
Added entry en-ingosaserver ea,o-meadquarters	enverent the CA's entry
Select cn=HQDSASERVER CA,o=Headquarters to re	epresent the CA's entry
Select cn=HQDSASERVER CA,o=Headquarters to re	epresent the CA's entry

Click "Next >"

On "Set Key Type, Subject and Subject Alternative Names" leave default options

Click "Next >"

On "Certificate Status Sharing" leave Defaults

Click "Next >"

On "Set the CRL Distribution Point for the CA" leave defaults

Click "Next >"

On "Set the Access Description List for the CA" leave defaults

Click "Next >"

On "Set Basic Constraints and KeyUsage Extension" leave defaults

Click "Next >"

On "Generate Self Signed Certificate or CSR" select "Generate a Self Signed Root Certificate

generate self signed ca certificate

🧊 New CA		\times
Generate Self Signed Certificate or CSR		
Use this page to either generate a Self Signed Root Certificate or CSR to be signed by another CA		
Generate a Self Signed Root Certificate Generate a CSR to be signed by another CA		
Signature Algorithm SHA256WITHRSA ~		
Valid From 12 July 2023, 13:09	Edit	
Valid To 12 July 2033, 13:09	Edit	
Lifetime		
Years: 10 3 Months: 0 3 Days: 0 3 Hours: 0	Reset	
Include a CRL Distribution Point extension in the CA certificate		
< Back Next > Finish	Cancel	

Leave the defaults.

Click "Next >"

On "Root CA Certificate" leave Defaults

Click "Next >"

On "Finish CA Configuration" press "Finish"

open configured ca

🔀 Sodium CA Profile Manager		>
Configured CAs		
SodiumCA		New Modify Delete Encrypt
	Open	Close

On "Sodium CA Profile Manager" select "SodiumCA"

Click "Open"

In "Password" type "Secreti+"

Click "OK"



Select "Certificate for cn=HQDSASERVER, o=Headquarters"

Press "Export PEM .."

On "Export Certificate for "cn=HQDSASERVER CA, o=Headquarters", browse to "c:\IsodeCerts" Change Filename to "HQDSASERVER-CA-CERT.pem"

export root ce	ertificate						
🗔 Export Certificate fo	or "cn=HQDSASERVE	R CA, o=Headquarte	rs"				×
← → • ↑ 📙	≪ Local Disk (C:) →	IsodeCerts	~	ō	Search IsodeCert	s	P
Organize 🔻 Nev	v folder						?
This PC	^ Name	^		D	ate modified	Туре	
3D Objects		N	lo items ma	tch you	r search.		
E Desktop							
Documents							
👆 Downloads							
Music							
Pictures							
🔛 Videos							
🏪 Local Disk (C:)							
🛫 cmsw (\\cmiso	od 🗸 <						>
File name:	HQDSASERVER-CA-0	CERT					~
Save as type:	*.pem						~
The or the							
 Hide Folders 					<u>S</u> ave	Cance	

Press "Save"

On "Certificate for cn=HQDSASERVER CA,o=Messaging System" exported Click "OK"

Change to "Certificate Requests" tab

CSR directory	changed
---------------	---------

Sodium CA - SodiumCA (cn=HQDSASERVER CA,o=Headquarters)	-		×
SodiumCa Operations Session View Help			
Sodium CA X Sodium CA Logs			
Browse Connected to "Idap://HQDSASERVER.HEADQUARTERS.NET:19389" as "cn=DSA Manager, cn=Users, o=Headquarters" CA Components Certificates Certificate Requests			
Directory to search for CSR			
C:\lsodeCerts	Change	Refresh	
Subject Name Created File 1	Name		
<			>
View Export PEM Export DER Issue Certificate Delete			
Abort			

Change "Directory to Search for CSR" to "C:\IsodeCerts"

Configure M-Vault to Support TLS

From the Windows Start menu, open "M-Vault console" and provide the password "Secret1+"



Double Click on the "Managed Directory server"

Directory configuration



Select "TLS" on the left-hand side of the "Configuration" tab.

On the "Identities" tab Press "Create"

Create TLS identity X Create TLS identity for the Set the Key parameters and edit Subject DN Set the parameters for generating the key and edit subject DN if required nate v r Remove C Refrest Address Operation Coperation Coperation Superior Ko SASL 7 TLS X X S09 Personed P-🖀 Databases 📮 Peer DSAs 🔲 Log Streams 📑 OCSP Servi tion 📑 Shad Subject DN kn+DSA.o+He
 LS (Transport Layer Security)

 Management of identities and other configuration related to TLS.

 Identities
 A SA, Minibutes

 Tout Anchors
 Other CA Cetti

 No identities have been configuration (TLS) constrained by connections then an anonymous cyben will be registed
 Key Size Key Size 3072 V Pick_ Apply Cancel < Back Next > Finish Cancel

On "Set the Key parameters and edit Subject DN" leave defaults

Click "Next >"

On "Select and add Subject Alternative names and Clearance" leave defaults

Click "Next >"

On "Select X.509 Extensions", leave defaults

Press "Next >"

On "Certificate Request Contents" leave defaults

Press "Next >"

On "Send Request to a CA" press "Save PEM ..."

On "Choose a Directory" browse to "C:\IsodeCerts"

Click "Select Folder"

Back on "Send Request to CA" leave defaults



Click "Next >"

In Sodium CA:

Change to "Certificate Requests" Tab

Press "Refresh"

Ensure that the Certificate request is selected

Click "Issue Certificate..."

On "Certificate Signing Request" leave defaults

Click "Next >"

On "Select and add Subject Alternative Names" leave defaults

Press "Next >"

On "Select and Create X.509 Extensions" leave defaults

Press "Next >"

On "Set Validity and Signature Algorithm for the Certificate" leave defaults

Click "Next >"

On "Generated Certificate" press "Finish"

On "CSR Signed" Click "OK".

Back in in M-Vault Console:

Select "The CA has provided a certificate" Click "Next >"

On "User Certificate" leave defaults Click "Next >"

Other certificates



On "Other Certificates" leave defaults

Click "Next >"

On "Finish directory servers Identity creation" leave defaults

Click "Finish"

On "Trust Root CA Certificate" dialogue click "Yes"

apply TLS identity



On "Configuration" tab press "Apply" Close "M-Vault Console"

Go to the "Isode Service Configuration" tool.

Select "Operations/Stop all"

Wait for the services to stop

Select "Operations/Start all"

Populating and Browsing a Directory using Sodium

Isode provides a Directory User Agent (DUA) called Sodium as part of the M-Vault installation. Sodium can be used to manage user information in a directory. In this section we're going to use Sodium to add some entries to the directory in pursuit of the DIT described in the section of this guide on Terminology.

Sodium can be launched from the windows start menu.

```
(Linux: %/opt/isode/bin/sodium)
```

Binding to a Directory Server

On startup, Sodium will ask you for the Bind Profile passphrase you set earlier and will then list your configured binds. In our case, we have only one.

Configured Binds			
😽 Bind Profile Management			×
Configured Binds (encrypted)			
cn=DSA,o=Headquarters / DSA Manager		New	
		Modify	
		Сору	
		Rename	
		Delete	
		Passphrase	
Certificates			
Conne	ect	Close	

You can use the Bind Profile Management screen to modify a profile or copy it as a template for other connection configurations but we're simply going to connect to the directory. Ensure the bind profile is selected and press "Connect".

Initial world view	_		×
			~
Session Edit Operations X.309 View Help			
Browse X			
"cn=DSA,o=Headquarters / DSA Manager": LDAP bind to 'HQDSASERVER.HEADQUARTERS.NE	T (No	view 🖂	m î
> World Add another Clone Object classes	Арр	ly Ca	ancel
Abort			

You are now connected to the Directory Server and the initial World view is displayed.

Bulk-loading entries from a sample LDIF file

M-Vault ships with a number of sample LDIF (LDAP Data Interchange Format) files. We're going to load the default Headquarters.net data. Normally when bulk-loading data you would use the "Bulk Tools" option in the Operations menu. The sample data sets are loaded from the Help menu.

Data cannot be loaded directly under 'World' so firstly expand the tree to reveal the current entries in the DIT. Clicking on any entry in the DIT will cause Sodium to read the entry in the Directory Server and display the results in the right-hand pane.

🏹 cn=DSA,o=Headquarters / DSA Manager - So	dium		- 🗆 ×
Session Edit Operations X.509 View Hel	р		
Browse: Headquarters X			
🔒 🌇 "cn=DSA,o=Headquarters / DSA Mar	nager": LDAP bind to 'HQDS/	ASERVER.HEADQUARTERS.NET' on port 19389	Template view 🗸 💕
V 🌍 World	Organization Addre	255	
> cn=config			
V 💑 o=Headquarters	Organization Name	Headquarters	+
cn=Groups	D 11		
cn=CA Managers	Description		±
🔤 cn=Certificate Writers	See Also		Pick +
en=CRL Writers	0001100		
cn=Data Managers	Phone		+
cn=DSA Operators			
Cn=Password Managers	Fax		+
Cn=User Managers			
Cn=Users			
the DSA Manager	Addressites		An other contracts
	Add another Clo	Object classes	Appiy Cancel

Make sure that you have the 'Headquarters" entry selected and then select "Help > Load Demo Data" from the menu. Click "OK" after reading the information popup and you'll be presented with the LDIF Bulk Load Settings screen.

Bulk Load Settings
The set of
LDIF file: Trogram Files\lsode\share\examples\demo-Idif\DEMO-base.Idif Browse
119236 bytes, starting: cn=DEMO-base,cn=SAMPLES,c=US c=GB,cn=DEMO-base,cn=SAMPLES,c=US o=Acme,c=GB,cn=DEMO-base,cn=SAMPLES,c=US
└ Load to alternative location in tree
Substitute 2 A RDNs: (cn=SAMPLES,c=US)
with DN o=Headquarters
Correct loaded DN attribute-values
After substitution: cn=DEMO-base,o=Headquarters c=GB,cn=DEMO-base,o=Headquarters o=Acme,c=GB,cn=DEMO-base,o=Headquarters
On error: 🔿 Abort 🔿 Prompt 💿 Continue
Strip operational and collective attributes
OK Cancel

Accept these default settings by pressing "OK".

LDIF Load Completed	
🙀 LDIF Load Completed	×
LDIF load completed successfully. 31 entries were written	ОК

Clicking on "OK" will return you to the main Sodium screen and if you now expand the entries under "Headquarters" you'll see that the sample data set has been loaded and now reflects the organizational diagram which we part examined in an earlier section. Clicking on any of the entries will reveal the detail of that entry in the right-hand pane (grouped into tabbed views).

Browsing the DIT (post bulk load)

🕎 cn=DSA,o=Headquarters / DSA Manager - Sodium					-		×
Session Edit Operations X.509 View Help							
Browse: Eric Perez, ×							
🔒 🌇 "cn=DSA,o=Headquarters / DSA Manager": LDA	P bind to 'HQDSAS	ERVER.HEADQUARTE	RS.NET' on port 19	389	Template view	w v	e
✓	Personal Group	Contact Other	Address Photo	Employee			
V 🗸 o=Headquarters	Full Name	Eric Perez				+	
✓ ✓ cn=DEMO-base ✓ GB ✓ A o=Acme	Surname	Perez					
😜 cn=Management Team	User Password						
✓ ζ₀ ou=Acme UK Head Office ✓ 𝔅 I=Coyote Building ✓ 𝔅 ou=Marketing	Password	< No value availab	le >		Set +		
B cn=Lisa D. Warner > ♣ ou=Sales > ୭ I=Road Runner Building	E-mail User Certificate	eric.perez@acmelab	osldifdemo.com			•	•
>	Save Save	e as PEM Remove	Load Requ	est Import Verify			
	User S/MIME Ce	ertificate					
	Save Save	e as PEM Remove	Load Verify	l			
	Add another	Clone Object clas	ses		Apply	Can	cel
			CD				

Adding an Entry/Entries using Sodium

As we have seen, the left-hand pane of the Sodium interface shows a hierarchical tree view of the directory. Right-clicking on an entry in the DIT allows you, amongst other things, to add entries below the one you have selected.

In this section we're going to add another staff member to the Marketing department.

Object context menu

🌄 cn=DSA,o=Headquarters / DSA Man	ager - Sodium			
Session Edit Operations X.509 Vie	w Help			
Browse: Marketing, ×				
🔒 🌇 "cn=DSA,o=Headquarters /	DSA Manager'': LD	AP bind to 'HQDSASE	RVER.HEADQUARTERS.NET' on port 19389	Template view 🗸 🥤
V 🔍 World		Organizational Unit	Address	
cn=config Lago = Headquarters Lago = DEMO-base		Name	Marketing	•
✓ Starter Carlos Carlo		Description		+
Cn=Managemer → 🖧 ou=Acme UK Hi	t Team ad Office	See Also	9	Pick +
✓ SP I=Coyote Builder Second Second Sec	Browse Search Compare Copy DN	n' ie		•
> 🐥 ou=Acme UK >) cn=Groups // cn=HQDSASERVER CA >) cn=Users	Rename Add below Delete			
	Refresh	nother Cle	one Object classes	Apply Cancel
Abort Viewing: ou=Marketing.I=C	Bulk tools	> Head Office.o	=Acme.c=GB.cn=DEMO-base.o=Headquarters	

Right click on the "ou=Marketing" entry and select "Add Below"



Select 'Person' from the Template list.

Press "Next >"

Optional Template parts Select optional parts Select which optional parts of the template apply [^] Person* template options: [^] Organizational Person [^] Internet Organizational Person [^] Isode M-Box User [^] Isode M-Box Gateway User [^] Skode M-Box Gateway User [^] XA10 MHS User [^] PKI User [^] PKI User [^] PKI User [^] PKI User [^] Certification Authority [^] Certification Authority [^] Cancel

Select optional template parts: 'Organizational Person' and 'Internet Organizational Person'. Note that some of these templates have linked dependencies, so when clicking on 'Internet Organizational Person', Sodium will automatically include the required Organizational Person template

Press "Next >"

🚾 Add entry un	ider: ou=Marketing,I=Coyote Buil — 🛛 🛛 🗙
Enter RDN Enter the RDN v	alue for the new entry
	Marth Desum
Full Name	Mark brown

Add the full name of the person being added to the directory.

Click "Finish"

In most cases there will additional mandatory attributes needed before the record can be committed (in this case it's Surname) and these will be highlighted.

Add mandatory attribute

Browse: Marketing, ×	LDAP bind to 'HQDSASERVER.HEADQUARTERS.NET on port 19389 Template view
 World Cn=config 	Personal Group Contact Other Address Photo Employee
✓ ♣ o=Headquarters ✓ ◎ cn=DEMO-base	Full Name Mark Brown +
✓ dia c=08 ✓ dia c=08 ✓ dia c=08 ✓ dia c=08	Surname Brown
 Classifier (classifier) Cuarting Cuarting Cuarting Cuarting 	Password <no available="" value=""> Set +</no>
Cin=Lise D. Warner > ↓ ou=Sales > ▷ l=Road Runner Building > ↓ ou=Acme UK Labs	E-mail + User Certificate
 Cn=Groups cn=HQDSASERVER CA Cn=Users 	Save Save as PEM Remove Load Request Import Verify
	User S/MIME Certificate
	Save Save as PEM Remove Load Verify
	Add another Clone Object clarger

Type the required attribute of "Brown".

Press "Add"

It is possible to quickly add another entry of the same type by clicking "Add Another"

For later use, add an additional object "Cobalt Data" of type "Container below "o=Headquarters"

Modifying and Deleting an Entry

You can modify any entry in the tree by clicking on it and using the entry detail tabs displayed to the right. If you change any of the values for the entry, Sodium will enable an Apply button which, when clicked, will cause Sodium to attempt to modify the directory entry with the changes.

You can delete an entry from the DIT by right-clicking on it and pressing "Delete" Please note that you cannot remove an entry with subordinate entries. In order to remove an entry and its subordinate entries you can use the menu item 'Bulk Tools / Delete Subtree 'when right-clicking on an entry.

Searching

You can search the DIT by right-clicking on an entry and selecting 'Search' from the pop-up menu or by clicking on an entry and selecting 'Operations / Search' from the main toolbar. In both cases a search will be performed on all entries below the currently selected one.

Try this operation with the o=Acme entry. Select 'o=Acme' and bring up the search box.

In this example we're going to search for entries containing 'Miller'



Click "OK" and Sodium will return the results in a separate Tab, showing the entries that match the search request and their position in the DIT. Up to this point we've been viewing entries in Template mode.

Search results		
n=DSA,o=Headquarters / DSA Manager - Sodium		– 🗆 ×
Session Edit Operations X.509 View Help		
Browse: Acme, GB, D Search: Miller: Jos X		
Browse Arms, GR, D. Search Miller Jou. X Browse Arms, GR, D. Search Manager': LDAP bin Comparison of the search	to HQGSASKVELHEADQUARTERSNET on por 19389 Personal Group Center Other Address Photo Employee Full Name Jeseph Miller User Source Personal Center Cent	Terreplate view (in) Terreplate view (in) Childree (in) Childree (in) Childree (in) Setting (in)
	Add another Clone Object classes	Apply Cancel

For a fuller view of the data you can switch to Raw view using the drop-down menu in the top right-hand corner:



Creating a Directory Server Using Cobalt

This part of the guide is written to be carried out on FIELDDSASERVER.

It is possible to create a directory using the Cobalt web application. Cobalt can then be used to manage certain aspects of the DIT.

Start the "Isode M-Vault DSA Creation Service"

Initial Cobalt Configuration.

Browse to "https://localhost:8001"

The browser will provide a security warning. Choose an option to override the warning





On "Initial Server Configuration" select "Create a new directory server"

Press "Next"

Define Cobalt directory server

nitial Cobalt Configuration	
Initial Server Configuration (2/3) New directory server address and bind credentials	
Service Name this storing will be used to name the folder on the file system that holds data for the dire More	I line default
cobait-disa	Ose denaure
Master Directory Server Hostname the hostname where the directory server creation service is running to create a new dire More	Required
FIELDDSASERVER.FIELD.NET	
Master Directory Server Port the LDAP port number the directory server will listen on	
19389	Use default
Master Directory Server Port the X300 port number the directory server will inter or 19999	Use default
Cobalt server user's bind DN This entry will be created and used by the Cobalt to connect to the master directory server	
cn=Cobalt Server User,cn=Users,cn=Cobalt Data,o=Isode Applications	
Cobalt server user's bind password The paravord associated with the above user, used by Cobalt to correct to this directory server	Required
Secret1+ Hide Generate	
TLS Identity Check Perform hostname chack. More	
False True	Use default
Next	Back Cancel

Ensure the "Master Directory Server Hostname" correctly references your server Set "TLS Identity Check" to "False"

Type the "Cobalt server user's bind password"

Press "Next"

nitial Server Configuration (3/3	3)				
Details about location of users and configuration	on				
Domain					
Domain he domain to use for the initial Cobalt Administrator					Require
field.net					
Admin's Full Name lame of the initial Cobalt Administrator					Require
Cobalt Admin					
Admin's mail ID D of the initial Cobalt Administrator to be used for logg	ging into Cobalt				Require
cobalt.admin			@field.net		
Admin's password					Require
Secret1+	Ŕ	Show	Generate	•	

Set the "Domain" to be "field.net"

Enter a Name of your choice for the "Admin's Full Name".

We will use "Cobalt Admin"

Enter a Password of your Choice for the "Admin's Password".

Click "Finish".

You will be presented with the Cobalt login screen.

Cobalt Login Screen

Cobal	t
Username:	Required
user@example.com	
Password:	Required

Enter the Cobalt Admin Email address and password

Cobalt login credentials

Col	balt
sername:	Required
cobalt.admin@field.ne	et
assword:	Required
Secret1+	Ŕ
Lo	gin
Lo	gin

Click "Login".

Cobalt Role Selection

2 Cobalt
"cobalt.admin@field.net" has multiple authorizations. Select which one to use Cobalt Administrator
field.net: Manage Everything
field.net: Myself
Continue
Cancel

Select "Cobalt Administrator" role.

Click "Continue".



Press "Features"

🔓 Cobalt	Domain Features (field.net) Domains > Features (field.net)	Cobait. View: C	It.admin@field.ne Administrator obalt Administrator
Configuration			
Domains	Domain features Configure domain features		
B Directory Servers	Supported Features		Required
D Administrators	XMPP Users	Messaging Users	
HSMs	Role Based UAs	Internet Distribution Lists	
	Military Address Lists	Redirections	
	Routed UAs	Organizations (Profiled Addresses)	
	Profiler Configuration	FTBE Users	
	Special Accounts	User Groups	
	Isode Servers	OAuth	

Note the range of features that can be provided by Cobalt.

Add Directory Objects

We will switch to the "field.net: Manage Everything" Role. Click on "cobalt.admin@field.net" in the top right corner.

Cobalt change role



Click "Switch View".

Switch view
Cobalt
"cobalt.admin@field.net" has multiple authorizations. Select which one to use
Cobalt Administrator
field.net: Manage Everything
field.net: Myself
Continue
Cancel

Select "field.net: Manage Everything" Click "Continue".

Field.net users							
🕰 Cobalt	Users	Q Sear	th :	Action	s 🔻 Add	Cobalt.admin@f Domain: field.net View: Manage Everythin	ield.net
📇 Users	Full Nan	ne \$	Mail	¢	Status 🗘	Last Authentication	¢
🛓 Domain Administrators	Cobalt A	dmin	cobalt.admin@field.net		Active	<unknown></unknown>	>

With "Users" selected on the left-hand side Click "Add".

Populate details for "Jack Sparrow", starting with his name. Give Jack a password. You may want to add a wide variety of user information via this dialogue. This information may also include picture or certificate information. Please feel free to explore the tabs available to see the information that could be stored.

Populate Jack Sparrow

🕰 Cobalt	Add User	Cobalt.admin@field.n Domain: field.net View: Manage Everything
😂 Users		
Redirections	User Entry Attributes for this user	
💂 Domain Administrators	Personal Contact Photo/Certificate Messaging Advanced	
	Full Name	Required
	Jack Sparrow	
	Given Name	
	Jack	
	Surname	Required
	Sparrow	
	User Password	
	Secret1+ Reference Show Generation	2

Change to the "Contact" tab.

Cobalt Contact tab	
🕰 Cobalt	Jack Sparrow (jack.sparrow@field.net) Users > Jack Sparrow Coptions Coption
📇 Users	Lisar Entry
Lomain Administrators	Attributes for this user
	Personal Contact Photo/Certificate Messaging Advanced
	Personal Title Examples include 'Ms', 'Dr', 'Prof' and 'Rev'
	Job Title Examples include 'Vice President', 'Software Engineer' and 'CEO'
	Swash Buckler
	Business Phone
	01234 567890 × +

In the "Job Title" field, type a job title In the "Business Phone" field, type a telephone number Scroll to the bottom of the page and press "Add" Note that "Jack Sparrow" has been added to the directory Repeat the above steps to add the additional two objects from the table below:

Display Name	Internet Address
Jack Sparrow	jack.sparrow@field.net
Elizabeth Swann	elizabeth.swann@field.net
Simon Bates	simon.bates@field.net

You should now have 4 users populated

4 Users populated								
🕰 Cobalt	User	lsers		Q Search E		▼ Add	Cobalt.admin@field. Domain: field.net View: Manage Everything	
📇 Users		Full Name	\$	Mail	\$	Status 🗘	Last Authentication	\$
Domain Administrators		Cobalt Admin		cobalt.admin@field.net		Active	<unknown></unknown>	5
		Elizabeth Swann		elizabeth.swann@field.net		Active	<unknown></unknown>	>
		Jack Sparrow		jack.sparrow@field.net		Active	<unknown></unknown>	>
		Simon Bates		simon.bates@field.net		Active	<unknown></unknown>	2

Locate Cobalt data in the Directory

Create a Bind Profile

Launch "Sodium" from the Windows Start Menu



Note that no Binds are configured and that the bind profile isn't encrypted.

Press "Encrypt ..."

Confirm Encryption X Image: Confirm Encry

Click "Yes".

Enter a Passphrase for the Bind Profile

🛐 Enter Profile pa	ssphrase	×
Please enter a Prof and means that yo run Sodium, M-Va	ile passphrase. This will be used to encrypt all of the passwords, su will be prompted for this passphrase from now on whenever yo ult Console, MConsole or M-Link Console.	DU
Passphrase:	•••••	
Verify Passphrase:	•••••	
	OK Cancel	

Enter and verify the password "Secret1+"

Click "OK".

Bind Profile encryption confirmation	
Bind profile file encrypted	×
The bind profile file has been encrypted	ОК

Click "OK"

Empty bind profile manager

		New	
		Modify	
		Сору	
		Rename	
		Delete	
		Passphrase	
ertificates			

Press "New ..."

Provide dsa server address				
🏣 Bind Profile Details			×	
Directory Server Address				
Use this page to specify the display name and address of the Directory Server				_
Address : LDAP V Hostname: FIELDDSASERVER.FIELD.NET		Port:	19389	
Display Name : FIELDDSASERVER.FIELD.NET				
A base DN may optionally be specified to limit the view of the directory to given DN.	the sul	btree be	low the	
Base DN :				
< Back Next > Finish		Ca	ncel	

Select "LDAP" from the "Address" dropdown

In "Hostname" type "FIELDDSASERVER.FIELD.NET"

Press "Next >"

Select simple	bind	
🏹 Bind Profile Deta	ils — 🗆 🗙	
Authentication T	уре	
Choose an authenti	ication type for binding to the directory server	
Type O Anonymous Simple	Description A simple bind allows authentication with the DSA using a DN and an optional password	
Strong SASL ID	The permissions granted to read or write entries depend on the directory's configuration for the bind-DN.	
Chebelos		
	< Back Next > Finish Cancel	

Select "Simple"

Press "Next >"

On "Simple Bind" press "Pick ..."

Browse to and Select "cn=Cobalt Server User,cn=Users,cn=Cobalt Data,o=Isode Applications"

🙀 Bind Profile Details — 🗆 🗙	Fig Pick an entry to use for the bind DN
Simple Bind Bind to a directory server using password based authentication Bind DN : Pick Password : Pick Verify Password : Pick Leave the password blank to be prompted for it on connection, or for a "name only" bind. Start TLS Identity (optional) Pick	
<none> View Clear Select</none>	
The identity to be used if the LDAP server requests a client certificate when performing TLS negotiation. Note that this identity will not be used for LDAP authentication: to authenticate using a certificate, you must configure a "Strong" bind. < Back Next > Finish Cancel	Selection cn=Cobalt Server User, cn=Users, cn=Cobalt Data, o=Isode Applications

Press "OK"

Provide bind pa	isword	
驞 Bind Profile De	ails — 🗆	\times
Simple Bind		
Bind to a directory	server using password based authentication	
Rind DN :	on-Cobalt Server Liser on-Lisers on-Cobalt Data o-Joode Applicatio	ick
Denna Divi		ICK
Password :	••••••	
Verify Password :	••••••	
Leave the passwo	d blank to be prompted for it on connection, or for a "name only" bind	
core ine pussito		
Start TLS		
Identity (option	I)	
<none></none>	View Clear Sele	ct
The identity to b	e used if the LDAP server requests a client certificate when performing TL	.S
negotiation.		
Note that this id certificate, you r	entity will not be used for LDAP authentication: to authenticate using a nust configure a "Strong" bind.	

In "Password" and "Verify Password" type "Secreti+"

Press "Finish"

Locate the Cobalt Data using Sodium

Open Sodium using the bind profile just created.

Browse to the object "Jack Sparrow" which has the dn "cn=Jack Sparrow,cn=Users,cn=field.net,cn=Cobalt Data,o=Isode Applications"

FIELDDSASERVER.FIELD.NET - Sodium	-	D X
Session Edit Operations X.509 View Help		
Browse: Jack Sparro ×		
Section Cold Optication 7 Accor (New Yeap) Browse Jack Sparon. → FIEDDSASERVER.FIELD.NET': LDAP bind to 'FIELDDSASERVER.F V ● World V ● World V ● Concording V ● concording V ● concording V ● concording V ● conclusted Users V ● conclusters V ● conclusters	ELD.NET on port 19389 Templety Personal Group Contact Other Address Photo Employee Isode Har Full Name Jack Sparrow Surname Sparrow User Password Password Password Ko value available > E-mail jack.sparrow@field.net User Certificate Save as PEM Remove Save. Save as PEM Remove Load Verify	view v rew v rew view view view view view view view vi

Note the three users added via Cobalt and attributes of the Jack Sparrow User.

Synchronising the Directories Using Sodium Sync

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 (hqdsaserver and Fielddsaserver) using Sodium Sync.

Open Sodium on the fielddsaserver.



Select "Manager" from the "Session/Sync" menu.

Empty sync profile management × Configured Sync Profiles New... Modify... Copy Rename... Delete... Abort Sync View Report Menu... Server Off Close

Press "New"

Create new sync profile
Enter name of new sync profile:
Unsaved Temporary Profile
Select type to configure as:
Advanced view: flexible configuration of a sync or check process
⊖ Group of syncs
O Sync Active Directory to M-Vault (or to generic LDAP server)
O Sync M-Vault to M-Vault
O Sync LDAP to LDAP (or between M-Vault and generic LDAP)
○ Sync from LDIF to M-Vault (or to generic LDAP server)
O Compare two DSA subtrees and generate a change-LDIF
O Compare two LDIF files and generate a change-LDIF
O Apply a change-LDIF to a directory
OK Cancel

Select "Sync M-Vault to M-Vault"

Name sync profile	
New Sync Profile X	(
Enter name of new sync profile:	
Synchronise Cobalt Data from Field to Headquarters	
Select type to configure as:	
O Advanced view: flexible configuration of a sync or check process	
⊖ Group of syncs	
○ Sync Active Directory to M-Vault (or to generic LDAP server)	
Sync M-Vault to M-Vault	
○ Sync LDAP to LDAP (or between M-Vault and generic LDAP)	
○ Sync from LDIF to M-Vault (or to generic LDAP server)	
Compare two DSA subtrees and generate a change-LDIF	
Compare two LDIF files and generate a change-LDIF	
○ Apply a change-LDIF to a directory	
OK Cancel	

Give the profile a meaningful name.

Press "OK"

The "Sync Profile Editor" is displayed.

Sync profile edito	D r r: Synchronise C	obalt Data from	Field to Headqu	uarters	×
Profile Source and Sync Profile name: Synchronise Cobalt	Target Schedu Data from Field	ling I to Headquarter	5		Add Notes
	Source DSA subtree →	• Mapping	 → Compute changes required 	Apply to Target DSA	
Advanced View				ОК	Cancel

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.

Select "Source and Target" tab.

Source and target Sync Profile Editor: Synchronise Cobalt Data from Field to Headquarters	×
Profile Source and Target Scheduling	
FIELDDSASERVER.FIELD.NET ~	New
Starting point DN:	Browse
Target DIT subtree Bind Profile:	New
Starting point DN:	Browse
Advanced View D-MtC;D OK C	ancel

For "Source DIT subtree Bind Profile" select "FIELDDSASERVER.FIELD.NET

Select "Browse" for the "Starting point DN" for the Source DIT.

Browse to and select the object "cn=Cobalt Data,o=Isode Applications"

Select Cobalt data object

📲 Select a Distinguished Name

<pre>vvorid></pre>		
cn=config		
o=lsode Applications		
✓ 🥥 cn=Cobalt Data		
> 🔘 cn=config		
🥥 cn=Deleted Users		
> 🥥 cn=field.net		
> 🔘 cn=Groups		
> 🥥 cn=Users		
> 🥥 cn=Deleted Users		
> 🔘 cn=Groups		
cn=Users		
tion cn=Cobalt Data o=Isode Applicat	ions	
tion coolar bata,0=isode Applicat	10113	

 \times

Press "OK"

Press "New" for the "Target DIT subtree Bind Profile"

Provide connection details to the headquarters DSA

Define target dsa address			
🏹 Bind Profile Details			\times
Directory Server Address			
Use this page to specify the display name and address of the Directory Server			
Address : LDAP V Hostname: hqdsaserver.headquarters.net		Port: 19	389
Display Name : hqdsaserver.headquarters.net			
A base DN may optionally be specified to limit the view of the directory to t given DN.	the subt	tree belov	v the
Base DN :			
		~	
< Back Next > Finish		Cance	el

Press "Next >"

On "Authentication Type" Select "Simple"

Press "Next >"

onia to a directo	ny server using password based addrenication
Bind DN :	cn=DSA Manager, cn=Users, o=Headquarters Pick.
Password :	•••••
/erify Password	: •••••••
eave the passw Start TLS Identity (optio	ord blank to be prompted for it on connection, or for a "name only" bind.
Start TLS Identity (optio	ord blank to be prompted for it on connection, or for a "name only" bind. nal) View Clear Select
Start TLS dentity (option The identity to negotiation.	ord blank to be prompted for it on connection, or for a "name only" bind. nal) View Clear Select be used if the LDAP server requests a client certificate when performing TLS
Start TLS Identity (option <none> The identity to negotistion. Note that this cettificate, you</none>	ord blank to be prompted for it on connection, or for a "name only" bind. nal) View Clear Select be used if the LDAP server requests a client certificate when performing TLS identity will not be used for LDAP authentication: to authenticate using a round confinue a "Strong" bind.

Populate the "Bind DN" and "Password" Field.

Press "Finish"

Populate starting point dn

😽 Sync Profile Editor: Synchronise Cobalt Data from Field to Headquarters											
Profile	Source and Targe	Scheduling	I								
Source DIT subtree Bind Profile:											
FIELDDSASERVER.FIELD.NET V											
Starting point DN: cn=Cobalt Data,o=Isode Applications											
Target DIT subtree Bind Profile:											
hqdsaserver.headquarters.net 2											
Start	ing point DN: cn=	Cobalt Data, o	=Headquarters				Browse				
Advan	cod View	D	MICID		OK	0	ancol				
Advan		D			UK	C C	incer				

Populate the "Starting point DN" for the target as "cn=Cobalt Data,o=Headquarters"

Press "OK"

Populated sync profile	×
Configured Sync Profiles	
Synchronise Cobalt Data from Field to Headquarters	New
	Modify
	Сору
	Rename
	Delete
	Abort Sync
	View Report
	Menu
Server Off V	Run Sync Close

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.

With the New Sync profile selected, press "Modify"

Press "Advanced View"

We're going to exclude from our sync all business telephone numbers by creating a rule.

Select the "attributes" tab.

Empty attributes tab Tog Sync Profile Editor: Synchronise Cobalt Data from Field to Headquarters X													
Profile	Mode	Source	Target	Entries	Attributes	Mapping	Glue	Checks	Output	Scheduling	Hooks	Trace	
Attribute selection filters: Apply filters to source, before processing Change													
Keyclass attribute filters: For any given entry, the rule with the highest priority number whose keyclass matches the entry's objectclasses will be used. The default is to pass through all attributes.													
Add a rule Global attribute filter:													
A global attribute filter, if set, filters the listed attributes from all entries. It is useful for MS Active Directory which returns operational attributes mixed in with the user attributes.													
Simple	View				D-M _C	D				ОК	С	ancel	

Click on "Add Rule"

Empty attribute rule



Select "Change" next to "Match on any objectclass"

Define objectclass	×
Enter the key objectclass to match on, or lea to auto-complete. The field will show a wan to the Isode schema, but it will still be accep	ve blank to match all. Use the 'Space' key ning colour if the objectclass is not known ted.
person	
	OK Cancel

In the "Change key objectclass" pop-up, type "person"

Press "OK"

Next to "Allow all attributes", click on "Change"

	wode	Source	Target	Entries	Attributes	Mapping	Glue	Checks	Output	Scheduling	Hooks	Trace
tribut	e selectio	n filters:										
Ani	nlv filters	to source	e before	nrocessir	ng Change							
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	to source	2, 521012		.g <u>change</u>							
eyclass	s attribut	e filters:										
For	any give	n entry, tl	he rule w	ith the hi	ghest priorit	y number w	hose key	class mate	ches the e	entry's objecto	lasses wi	ll be
use	d. The d	efault is t	o pass th	rough all	attributes.							
M-	tch on ke	welass pe		ange Del	ata							
IVId	with pri	ority 2. C	Change	ange Dei	ele							
	Allow a	ll attribut	es. <u>Chan</u>	ge								
	Allow a	ll objectcl	lasses.	Allo	w all attribut	tes						
Add	d anothe	rule		Dele	ete this entry							
				Dele	ete these attr	ibutes						
	attribute f	ilter:		Allo	w only these	attributes						
obal a		ibute filte	er, if set, t	ilters the	listed attribu	ites from al	entries.	It is usefu	l for MS A	Active Director	ry which i	returns
obala Aq	iobal attr		mixed in	with the	user attribu	tes.					-	
obala Ag ope	rational	attributes	mixeu ii									
obala Ag ope	rational attr	attributes tribute fil	tor Cha	ana Ural	hase AD list							

Click on "Delete these attributes"

Click on "Change" next to "(none)"

Select attributes								
🐺 Sync Profile Editor: Synchronise Cobalt Data from Field 🐺	Edit Attribute List X							
Profile Mode Source Target Entries Attributes Show	R Selected Objectclass Subclass User Oper All							
Autobule selection milers:	bjectclass: person							
Apply filters to source , before processing <u>Change</u>	cn / commonName							
Keyclass attribute filters:	description objectClass							
For any given entry, the rule with the highest priority used. The default is to pass through all attributes.	seeAlso							
Match on keyclass person <u>Change Delete</u> with priority 2 . <u>Change</u>	✓ telephoneNumber □ userPassword							
Delete these attributes: <u>Change</u> (none) <u>Change</u> Allow all objectclasses. <u>Change</u>								
Add another rule								
Global attribute filter:								
A global attribute filter, if set, filters the listed attribut operational attributes mixed in with the user attribute								
No elekel ettelikte filter. Charges Has here AD list	Select/deselect all in set Deselect all outside set							
tele	phoneNumber Add							
Simple View	OK Cancel							

In the Edit Attribute List screen, select "telephoneNumber"

Press "OK"

Completed attribute rule

	Mode	Source	Target	Entries	Attributes	Mapping	Glue	Checks	Output	Scheduling	Hooks	Trace
Ap (eyclas Fo usi Ma	e selection opply filters is attribut r any give ed. The d atch on ko with pr Delete t tel	e filters: e filters: en entry, ti lefault is tr eyclass pe iority 2 . <u>C</u> these attri ephoneN	e, before he rule w o pass th crson <u>Ch</u> <u>change</u> butes: <u>C</u>	processir ith the hi rough all <u>ange Dele</u> <u>hange</u> Change	ng <u>Change</u> ghest priorit <u>,</u> attributes. <u>ete</u>	y number w	hose key	/class mate	ches the e	ntry's objecto	lasses wi	ll be
<u>Ad</u> ilobal	Allow a Id anothe attribute	ill objectcl <u>r rule</u> filter: ribute filte	asses. <u>C</u>	hange	listed attribu	iter from all	entrier	It is usefu	I for MS A	uctive Director	which	atura
op	erational	attributes	mixed in	n with the	user attribu	tes.	entries.	it is useru		Clive Director	y which	ecum

Press "OK"

Running a Manual Sync

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

- Scan all entries below cn=Cobalt Data,o=Isode Applications in the "Field" source directory.
- Filter our source directory to exclude the telephoneNumber attribute from the Person objectclass
- Copy the resulting data into the "Headquarters" target directory starting at cn=Cobalt Data,o=Headquarters.

Now you need to run the Sync, which we'll do manually.

Switch to the Sync Profile Management screen

Completed sync rule Sync Profile Management	×
Configured Sync Profiles	
Synchronise Cobalt Data from Field to Headquarters	New
	Modify
	Сору
	Rename
	Delete
	Abort Sync
	View Report
	Menu
Server Off V	Run Sync Close

Select the Sync "Synchronise Cobalt Data from Field to Headquarters"

Press "Run Sync"

Sync completed Sync Profile Management × Configured Sync Profiles Synchronise Cobalt Data from Field to Headquarters Success (24/0:01) New... Modify... 🏹 Sync Completed × Сору Sync completed without errors. 24 changes were applied. Rename... Delete... ОК Menu... Server Off \sim Run Sync Close

Note that the data was successfully synchronised.

On the HQ server, use Sodium to browse to the object "cn=Jack Sparrow,cn=Users,cn=field.net,cn=Cobalt Data,o=Headquarters"

Jack Sparrow at headquarters

🎼 cn=DSA,o=Headquarters / DSA Manager - Sodium — 🗌 🗙													
Session Edit Operations X.509 View Help													
Browse: Jack Sparro ×													
🔝 🌇 "cn=DSA,o=Headquarters / DSA Manager": LDAP bind to 'H	IQDSASERVER.HEADQ	UARTERS.N	VET' on p	ort 19389					Template	riew 🗸			
V 😡 World	Personal Group	Contact	Other	Address	Photo	Employee	Isode Harrier User	Isode M-Box User	Isode M-Link Us	er LA!	4 🕨		
> Cn=config													
✓ ♣ o=Headquarters	Phone										+		
> Ch=Cobat Data													
cn=Deleted Users	Fax										+		
✓													
✓	Home Phone										+		
Cn=Cobalt Admin	Mobile												
cn=Elizabeth Swann	Woone												
cn=Simon Bates	Pager									1	+		
> in cn=Groups		L											
> in=Users													

Note that this copy of the Jack Sparrow object doesn't contain a telephone number.

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.

Sync schedules can be set up using the "Scheduling" tab in "Advanced" view:

Scheduling tab									×				
Profile	Mode	Source	Target	Entries	Attributes	Mapping	Glue	Checks	Output	Scheduling	Hooks	Trace	
The syn running Sch Jay Sch 0	c passes for this of mc pass s eedule at t c (daily) eedule at t d	can be se user. Ichedulin these tim this inter. ays, 1	g: es: V Hou ral: (betw	r: 06 reen the a ours, 0	bove times,	Minute: Minute: if also spec utes	0 (jfied)	intervals.	This requ	ires that Sodi	um Sync	Server is	
Simple	e View				D-F-M	C D				OK		Cancel	

Check "Schedule at this interval ..."

Press "OK"

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 server not connected		
🏹 Sync Profile Management		×
Configured Sync Profiles		
Synchronise Cobalt Data from Field to Headquarters	A Sync Server not connected	New
		Modify
		Сору
		Rename
		Delete
		Abort Sync
		View Report
		Menu
Server Off ~		Run Sync Close

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