IBM StoredIQ Administrator Version 7.6.0.7

Administration Guide



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Administration Guide



Note

Before using this information and the product it supports, read the information in Notices.

This edition applies to Version 7.6.0.6 of product number 5724M86 and to all subsequent releases and modifications until otherwise indicated in new editions.

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Table of contents

Tables		• •	•	• •	. v
About this publication	ı				vii
IBM StoredIQ Platform prod					
Contacting IBM StoredIQ cu	stomer s	suppo	ort .		. vii
Contacting IBM					. vii
Contacting IBM How to send your comment	s				viii
Chapter 1. Overview c Administrator					. 1
Chapter 2. Data Serve	rs and		ume)e	3
Searching for a specific data					
Adding a primary volume	Server .	•	• •	• •	. 5
Adding a primary volume. Box volumes: configuration	n note	•	• •	• •	15
IBM Content Manager at	rihutes	• •	•		. 18
Adding a retention volume	induces	• •		· ·	
Adding a discovery export v	olume	• •			
Viewing details of a data ser	ver	• •		· ·	
Viewing details of multiple	volumes	· ·			
Reporting a data server	vorunics	,	•		
Rebooting a data server . Restarting services		• •	•	•••	. 22
Removing a volume					
Removing a volume		• •	•	•••	. 20
Chapter 3. Harvests .					25
Harvesting a volume					. 25
Searching for a specific harv	est				. 25
Stopping a harvest					. 26
Editing a harvest					. 26
Editing a harvest Deleting a harvest			•		. 26
Chanter 1 System inf	oooto				07
Chapter 4. System info					
Searching for a specific syste	em infos	et.	•	• •	. 27
Creating a system infoset.	• • •	• •	·	• •	. 28
Editing a system infoset .	· · ·	•••	•	• •	. 28
Viewing infosets that use a s	system i	ntose	t .	• •	. 29
Viewing access members .		• •	•	• •	. 29
Viewing access members . Deleting a system infoset .			•		. 29
Chapter 5. User mana	aemer	nt.			31
Viewing your user profile					. 31
Viewing your user profile Searching for a specific user			•		31
Creating a user					
Connecting to the LDAP ser					
Synchronizing the LDAP					. 02
stack database					33
Importing a user		· · · ·	:	•••	. 34
Editing an imported user		• •	•		. 34
Editing a user		• •	•		. 34
Viewing details of a user .			•		. 35
Deleting a user					. 35
Changing user passwords		• •	•		. 36
Changing user passwords Resetting the user password		• •	•		. 36
Resetting the user password Obtaining a new password		• •	•	 	. 36
Obtaining a new password		• •	•	•••	. 37

Chapter 6. Action management	39
Searching for a specific action	. 40
Creating an action	. 40
Deleting an action	
Cloning an action	
Editing an action	. 45
Chapter 7. Target sets	47
Searching for a specific target set	. 47
Creating a target set	. 48
Creating a target set	. 48
Cloning a target set.	. 48
Deleting a target set	
Chapter 8. Reports	51
Searching for a specific report	51
Creating a report	52
Customizable reports	52 52
Customizable reports	53
Uploading the report design.	. 56
Deploying fonts	. 57
Changing the reportuser password	. 57
Chapter 9. Auto-classification models	50
	. 60 . 61
	. 61
	. 61
Preparing an IBM Content Classification model for	. 01
	. 62
Importing an auto-classification model	. 62
	. 63
Searching for a specific classification model.	. 64
Editing a model	. 64
0	. 65
Retraining a classification model	
Chapter 10. Concept management	67
Adding a member to a concept	
	. 68
	. 68
Deleting a member of a concept	. 68
Chapter 11. Mule scripts	69
	. 69
0 1	. 69
	. 70
	. 70
	. 70
Importing the IBM StoredIQ application stack SSL	
	. 71
	-

Appendix A. IBM StoredIQ Mule script Setting up Mule Anypoint Studio with IBM	73
StoredIQ	. 73
Importing the IBM StoredIQ application stack	
SSL certificate	. 74
Mule script management	
IBM StoredIQ Connector operations	. 75
Creating the IBM StoredIQ Mule script	. 85
Deploying the Mule script	. 87
Configuring Mule script timeout lengths	. 88
Mule domain project	. 88
Importing a domain project in Anypoint Studio	89

Associating a Mule project with a domain project 89

Appendix B. IBM StoredIQ Connector operations	91
Notices	105
Privacy policy considerations	107
Terms and conditions for product documentation	108
Trademarks	108
Index	111

Tables

1.	Data Dashboard fields and descriptions 3
2.	All Data Servers tab column names and
	descriptions
3.	System Status and System Activity panes field
	names and descriptions
4.	All Volumes tab column names and
	descriptions
5.	Box volumes: Add Volume dialog box options
	for primary volumes
6.	CIFS volumes: Add Volume dialog box options
	for primary volumes 6
7.	CMIS volumes: Add Volume dialog box options
	for primary volumes
8.	Documentum volumes: Add Volume dialog box
	options for primary volumes 7
9.	Exchange volumes: Add Volume dialog box
	options for primary volumes
10.	FileNet volumes: Add Volume dialog box
	options for primary volumes
11.	HDFS volumes: Add Volume dialog box
	options for primary volumes
12.	IBM Content Manager volumes: Add Volume
	dialog box options for primary volumes 11
13.	Livelink volumes: Add Volume dialog box
	options for primary volumes
14.	NewsGator volumes: Add Volume dialog box
	options for primary volumes

15.	NFS volumes: Add Volume dialog box options		
	for primary volumes		
16.	SharePoint volumes: Add Volume dialog box		
	options for primary volumes		
17.	Retained Box metadata attributes to copy to		
	Box volumes		
18.	Retention volume options		
19.	Discovery export volume options		
20.	List of Harvests fields and descriptions 25		
21.	Infoset management column names and		
	descriptions		
22.	List of Users column names and descriptions 31		
23.	Actions column names and descriptions 39		
24.	Target set management columns and		
	descriptions		
25.	List of Reports options and descriptions 51		
26.	Classification model column names and		
	descriptions		
27.	Row names and descriptions of the <model< td=""></model<>		
	name> Details panel		
28.	Concept columns and descriptions		
29.	Mule script columns and descriptions 69		
30.	IBM StoredIQ Connector operations		
31.	IBM StoredIQ Connector operations 91		

About this publication

IBM[®] *StoredIQ Administrator Administration Guide* describes how to manage the IBM StoredIQ Administrator application to configure shares, create system infosets, manage users, target sets, and actions, and create reports.

IBM StoredIQ Platform product library

The following documents are available in the IBM StoredIQ Platform product library.

- IBM StoredIQ Platform Deployment and Configuration Guide, SC27-6386
- IBM StoredIQ Platform Overview Guide, GC27-6398
- IBM StoredIQ Platform Data Server Administration Guide, SC27-5692
- IBM StoredIQ Administrator Administration Guide, SC27-5688
- IBM StoredIQ Data Workbench User Guide, SC27-5691
- IBM StoredIQ eDiscovery User Guide, SC27-5693
- IBM StoredIQ Policy Manager User Guide, SC27-5694

Contacting IBM StoredIQ customer support

For IBM StoredIQ technical support or to learn about available service options, contact IBM StoredIQ customer support at this phone number:

Support and assistance

• 1-866-227-2068

To e-mail IBM StoredIQ customer support, use this email address:

storediqsupport@us.ibm.com

For information about how to contact IBM, see the Contact IBM web site at http://www.ibm.com/contact/us/

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The IBM StoredIQ publications can be found from IBM Knowledge Center.

PDF publications

The IBM Publication Center site offers customized search functions to help you find all the IBM publications you need.

Contacting IBM

For general inquiries, call 800-IBM-4YOU (800-426-4968). To contact IBM customer service in the United States or Canada, call 1-800-IBM-SERV (1-800-426-7378).

For more information about how to contact IBM, including TTY service, see the Contact IBM website at http://www.ibm.com/contact/us/.

How to send your comments

Your feedback is important in helping to provide the most accurate and highest quality information.

Send your comments by using the online reader comment form at https://www14.software.ibm.com/webapp/iwm/web/signup.do?lang=en_US &source=swg-rcf.

Chapter 1. Overview of IBM StoredIQ Administrator

IBM StoredIQ Administrator provides at-a-glance understanding of the different issues that can crop up in the IBM StoredIQ Platform environment. These views are unique to the IBM StoredIQ Administrator application, providing an overview of how the system is running. These views also allow access to various pieces of information that are shared across applications or allow for the management of resources in a centralized manner.

The administrator is the person responsible for managing the IBM StoredIQ Platform installation at a customer site. This individual has strong understanding of data sources, harvests, indexes, data servers, jobs, infosets, reports, concepts, actions, and Mule scripts. This list provides an overview as to how IBM StoredIQ Administrator works.

Managing Data Servers

Using IBM StoredIQ Administrator, the administrator can identify what data servers are deployed, their location, what data is being managed, and the status of each data server in the system. Volume management is a central component of IBM StoredIQ Platform. With IBM StoredIQ Administrator, the administrator can see:

- What volumes are currently under management
- Which data server is responsible for that volume
- The state of the volume after indexing
- The amount and size of information that is contained by each volume.

Administrators can also add volumes to data servers through this interface.

Administering Harvests

Administrators can initiate the incremental or full harvest of a single volume through the IBM StoredIQ Administrator user interface without having to log into IBM StoredIQ Platform Data Server.

Creating System Infosets

System infosets that use only specific indexed volumes can be created and managed within IBM StoredIQ Administrator. Although infosets are a core component of IBM StoredIQ Data Workbench, system infosets are created as a shortcut for users in IBM StoredIQ Administrator.

Managing Users

The user management area allows administrators to create users and manage users' access to the various IBM StoredIQ Platform applications.

Configuring and Managing Actions

An action is any process upon the data that is represented by the indexes. Actions are run by data servers on indexed data objects. Any errors or warnings that are generated as a result of an action are recorded as exceptions in IBM StoredIQ Data Workbench.

Note: Actions can be created within IBM StoredIQ Administrator and then made available to other IBM StoredIQ Platform applications such as IBM StoredIQ Data Workbench.

Managing Target Sets

Provides an interface that allows the user to set the wanted targets for specific actions that require a destination volume for their actions.

Creating Reports

Helps you create reports and upload report packages, helping you produce reports about your environment.

Using Auto-classification Models

Deploys natural language processing-based document classification to help you identify relevant documents in cases when relevance is difficult to characterize with traditional methods, such as queries and set operations.

Managing Concepts

Helps you relate business concepts to indexed data.

Managing Mule Scripts

Helps you to create Mule scripts and upload script packages. These Mule scripts are used by IBM StoredIQ Policy Manager to create policies using the Automation Workflow.

Chapter 2. Data Servers and Volumes

The Data Servers and Volumes page of IBM StoredIQ Administrator contains the Data Dashboard, where you see all data currently under management, **All Data Servers** tab and the **All Volumes** tab. When a data server is selected, the System Status and System Activity panes provide detailed information about the selected data server.

Data Dashboard

The description of the Data Dashboard fields is listed in the following table.

Data Dashboard	Description	
Total DataThis field lists the total number of data objects under managemObjects		
Total Data Size	This field lists the total size of data objects under management.	
Number of Data ServersThis field lists the total number of data servers under manager		
Number of Volumes	This field lists the total number of volumes under management.	

Table 1. Data Dashboard fields and descriptions

All Data Servers

All Data Servers tab lists detailed information about a data server.

Table 2. All Data Servers tab column names and descriptions

All Data Servers Column Name	Description	
Data server name	Lists the name of the data server.	
Status	Lists the data server's status, namely Healthy , Vulnerable , Critical , Unavailable , Under maintenance , Rebooting , or Restarting .	
IP address	Lists the IP address of the data server.	
Data objects	Lists the number of data objects that are found on the data server.	
Total data object zize	Lists the size of the data objects that are found on the data server.	

The **System Status** and **System Activity** panes provide performance information on a selected data server. These panels appear only once a data server is selected and **View Details** is clicked. The ability to check the status of all deployed data servers is critical to understanding the system's performance metrics.

Table 3. System Status and System Activity panes field names and descriptions

System Status Field Name	Description
Status	Lists the data server's status, namely Healthy , Vulnerable , Critical , Unavailable , Under maintenance , Rebooting , or Restarting .

Table 3. **System Status** *and* **System Activity** *panes field names and descriptions* (*continued*)

System Status Field Name	Description	
Status message	Describes the data server's status. Status messages include these	
	messages:	
	• System and services running.	
	• System is running but some services are still coming up.	
	 Some query processes are not running. 	
	• There was a problem with the RAID controller.	
	Some services are in error.	
	Cannot connect to system and error.	
IP address	Lists the IP address of the data server.	
Software version	Lists the installed software version.	
DB version	Lists the installed database version.	
System time	Lists the system's time, date, and utilized time zone.	
System Activity Field Name	Description	
Free RAM memory	Denotes the amount of available memory (RAM) for the selected data server.	
Free swap memory	Denotes the amount of available swap memory for the selected data server.	
Load average	Lists the average process load for the selected data server.	
Available space	Lists the available space on the selected data server.	
Active DB connections	Lists the number of database connections currently open for the selected data server.	
System uptime	Lists the total duration of time for which the data server ran.	

All Volumes

The tab provides the detailed information about the volumes.

Table 4. All Volumes tab column names and descriptions

Volumes Column Name	Description	
Volume name	Lists the name of the volume.	
Data server	Lists the name of the parent data server.	
Туре	Lists the volume's type, namely Primary , Retention , or Discovery Export . Primary indicates a primary volume. Retention indicates a retention volume. Discovery Export indicates a discovery export volume.	
Source type	Lists the source or connection type for the volume.	
Server name	hame Lists the name of the server where the volume is found.	
Data objects	ta objects Lists the number of data objects that are found on the volume.	
Total data object size	data object size Lists the size of the data objects in the volume.	
Last harvested	Denotes the last time that the volume was harvested.	

Select the volume and click **View Details**, a bottom window opens with the number of data objects, total data object size, harvest status, last harvest date and time, and the harvest type.

Searching for a specific data server

When you have multiple data servers available from which to choose, you can search for a specific data server instead of using the slider to move through available options.

Procedure

- In the Enter key term(s)... text box, enter the name of the data server for which you want to search, and then click Search. You can enter either the full data server name or a portion of it. To remove the search term, click the X to the left of the Enter key terms.... text box. Actions that match the entered search term are returned.
- 2. Select a data server from the returned list of servers.
- 3. View the data server's details by clicking View Details.

Adding a primary volume

A primary volume serves as a primary data source in IBM StoredIQ Platform. You must have at least one primary volume within your configuration.

Procedure

- 1. Select **Data Servers & Volumes > All Data Servers**, select a data server, and then click **Add Volume**. The Add Volume dialog box appears.
- 2. In the Add Volume dialog box, complete these fields in the following tables. For Box volume prerequisites and configuration information, see "Box volumes: configuration note" on page 15.

Box: Add Volume dialog box options	Action	Notes
Volume Type	In the Volume type list, select Primary .	
Source Type	Select Box.	
Server	Enter the fully qualified domain name of the server from which the volume is available for mounting. For Box volumes, the server name api.box.com is automatically entered.	
Authenticate with Box	Before a Box volume can be added, the user must be authenticated. Click the Authenticate with Box link, sign into the Box account, and select Grant access .	
Assign to Data Server	Select the data server.	

Table 5. Box volumes: Add Volume dialog box options for primary volumes

Box: Add Volume dialog box options	Action	Notes
Volume Name	Enter the common, user-defined name of this volume.	
Include Users	Select this option to scope the volume. Regular expressions are supported.	
Indexing Options	Select the check box for the indexing options that you want to include:	These options are not selected by default.
	 Include metadata for contained objects 	
	 Include content tagging and full-text index 	

Table 5. Box volumes: Add Volume dialog box options for primary volumes (continued)

Table 6. Cl	FS volumes: Add	l Volume d	dialog box	options for	primary volumes

CIFS: Add Volume dialog box options	Action	Notes
Volume Type	In the Volume type list, select Primary .	
Source Type	Select CIFS.	
Server	Enter the fully qualified domain name of the server from which the volume is available for mounting.	
Username	Enter the user name that is used to connect to and mount the volume.	
Password	Enter the password that is used to connect to and mount the volume.	
Assign to Data Server	Select the data server.	
Volume Name	Enter the common name of this volume.	
Share	Enter the share name or this volume.	
Initial Directory	Enter the name of the initial directory from which the harvest must begin.	
Indexing Options	Select the check box for the indexing options that you want to include:	These options are not selected by default.
	 Include metadata for contained objects 	
	• Include content tagging and full-text index	

CMIS: Add Volume dialog box options	Action	Notes
Volume Type	In the Volume type list, select Primary .	
Source Type	Select CMIS.	
Server	Enter the fully qualified domain name of the server from which the volume is available for mounting.	
Port	Enter the port number.	
Username	Enter the user name that is used to connect to and mount the volume.	
Password	Enter the password that is used to connect to and mount the volume.	
Assign to Data Server	Select the data server.	
Volume Name	Enter the common name of this volume.	
Use SSL	Select the Use SSL check box.	
Service	Enter the service name.	
Repository	Enter the name of the repository.	
Indexing Options	Select the check box for the indexing options that you want to include:	These options are not selected by default.
	 Include metadata for contained objects 	
	• Include content tagging and full-text index	

Table 7. CMIS volumes: Add Volume dialog box options for primary volumes

To add Documentum volumes, you must add the Documentum server first. For instructions about adding a Documentum server, see Adding a Documentum server as a data source.

Documentum: Add Volume dialog box options	Action	Notes
Volume Type	In the Volume Type list, select Primary .	
Source Type	Select Documentum.	
Doc base	Enter the name that was entered on the data server from the doc broker settings.	
Username	Enter the user name that is used to connect to and mount the volume.	

Table 8. Documentum volumes: Add	Volume dialog box	options for primary volumes
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Documentum: Add Volume dialog box options	Action	Notes
Password	Enter the password that is used to connect to and mount the volume.	
Assign To Data Server	Select the data server from the list.	
Volume Name	Enter the common name of this volume.	
Harvest all document versions	If you need to harvest all document versions, select the check box .	
Initial Directory	Enter the name of the initial directory from which the harvest must begin.	
Indexing Options	Select the check box for the indexing options that you want to include:	These options are not selected by default.
	 Include metadata for contained objects 	
	• Include content tagging and full-text index.	

Table 8. Documentum volumes: Add Volume dialog box options for primary volumes (continued)

Exchange: Add Volume dialog box options	Action	Notes
Volume Type	In the Volume type list, select Primary .	
Source Type	Select Exchange.	
Server	Enter the fully qualified domain name of the server from which the volume is available for mounting.	If Exchange Online is selected as the Source Type , the server name is automatically entered.
Username	Enter the user name that is used to connect to and mount the volume.	
Password	Enter the password that is used to connect to and mount the volume.	
Assign to Data Server	Select the data server.	
Volume Name	Enter the common name of this volume.	
Server Version	Select the version of Microsoft Exchange, choosing from 2000/2003, 2007, 2010/2013/2016, and Online.	

Exchange: Add Volume dialog box options	Action	Notes
Mailbox Server	Enter the names of the mailbox servers, which are separated by commas.	If Exchange Online is selected as the Server Version , this option is not available.
Active Directory Server	Enter the name of the Active Directory server.	If Exchange Online is selected as the Server Version , this option is not available.
Use SSL	To use secure socket layer, select the Use SSL check box.	If Exchange Online is selected as the Server Version , this option is not available.
Initial Directory	Enter the name of the initial directory from which the harvest must begin.	
Virtual Root	The name defaults to the correct endpoint for the selected Exchange version.	
Indexing Options	Select the check box for the indexing options that you want to include: • Include metadata for	These options are not selected by default.
	 Include includata for contained objects Include content tagging and full-text index 	

Table 9. Exchange volumes: Add Volume dialog box options for primary volumes (continued)

Table 10. FileNet volumes: Add Volume dialog box options for primary volumes

FileNet: Add Volume dialog box options	Action	Notes
Volume Type	In the Volume type list, select Primary .	
Source Type	Select FileNet.	
Server	Enter the fully qualified domain name of the server from which the volume is available for mounting.	
Port	Enter the port number.	
Username	Enter the user name that is used to connect to and mount the volume.	
Password	Enter the password that is used to connect to and mount the volume.	
Assign to Data Server	Select the data server.	
Volume Name	Enter the common name of this volume.	
Object Store	Enter the object store.	

FileNet: Add Volume dialog box options	Action	Notes
Connection Type	Select either HTTP or HTTPS.	
Path	Enter the appropriate directory path.	
Stanza	Enter the appropriate stanza.	
Scope	Enter the appropriate SQL where clause.	
Indexing Options	Select the check box for the indexing options that you want to include:	These options are not selected by default.
	 Include metadata for contained objects 	
	 Include content tagging and full-text index 	

Table 10. FileNet volumes: Add Volume dialog box options for primary volumes (continued)

Table 11. HDFS volumes: Add Volume dialog box options for primary volumes

HDFS: Add Volume dialog box options	Action	Notes
Volume Type	In the Volume type list, select Primary .	
Source Type	Select HDFS.	
Server	Enter the fully qualified host name of the server or the IP address from which the volume is available for mounting.	
Port	Enter the port number.	
Username	Enter the user name that is used to connect to and mount the volume.	
Password	Enter the password that is used to connect to and mount the volume.	Authentication to HDFS is not supported. If your HDFS server requires a password, StoredIQ is not able to connect to it.
Assign to Data Server	Select the data server.	
Volume Name	Enter the common name of this volume.	
Use SSL	To use SSL, select the check box.	See Option String for additional certificate options.
Initial Directory	Enter the name of the initial directory from which the harvest must begin.	
Repository	Enter the name of the repository.	

HDFS: Add Volume dialog box options	Action	Notes
Option String (optional)	This option is supported: VerifyCertificate=True.	This option is used to indicate that the validity of the HDFS server's SSL certificate is verified when SSL is used. Values are True, False, or default value. If no value is specified, value is False. To validate the certificate on the HDFS server, the user needs to specify this option and set the value to True.
Indexing Options	Select the check box for the indexing options that you want to include:	These options are not selected by default.
	 Include metadata for contained objects Include content tagging and full-text index 	

Table 11. HDFS volumes: Add Volume dialog box options for primary volumes (continued)

Table 12. IBM Content Manager volumes: Add Volume dialog box options for primary volumes

IBM Content Manager: Add Volume dialog box options	Action	Notes
Volume Type	In the Volume type list, select Primary .	
Source Type	Select IBM Content Manager.	
Server	Enter the fully qualified host name of the library server database.	
Port	Enter the port that is used to access the library server database.	
Username	Enter the user name that is used to connect to and mount the volume.	
Password	Enter the password that is used to connect to and mount the volume.	
Connection String	Optional: Enter connection-string parameters.	
Assign to Data Server	Select the data server.	
Volume Name	Enter the common name of this volume.	
Repository	Enter the name of the library server database.	

IBM Content Manager: Add Volume dialog box options	Action	Notes
Server Type	Select the type of server that is associated with the volume. Options include DB2 and Oracle . By default, DB2 is selected.	
Schema	Enter the schema for this library server database.	
Remote Database	Enter the name of the remote database.	
Harvest Item Types	Enter the name of the item types to be harvested, separated by commas.	
Copy to Itemtype	The Copy to Itemtype text box can be changed to either SiqDocument or to be an empty field. If this field is left empty, the volume cannot be used for copy-to actions.	In this release, the attribute lengths are increased for some. For more information, see "IBM Content Manager attributes" on page 18.
Indexing Options	 Select the check box for the indexing options that you want to include: Include metadata for contained objects 	These options are not selected by default.
	 Include content tagging and full-text index 	

Table 12. IBM Content Manager volumes: Add Volume dialog box options for primary volumes (continued)

Livelink: Add Volume dialog box options	Action	Notes
Volume Type	In the Volume type list, select Primary .	
Source Type	Select Livelink.	
Server	Enter the fully qualified domain name of the server from which the volume is available for mounting.	
Port	Enter the port number.	
Username	Enter the user name that is used to connect to and mount the volume.	
Password	Enter the password that is used to connect to and mount the volume.	
Assign to Data Server	Select the data server.	
Volume Name	Enter the common name of this volume.	

Livelink: Add Volume dialog box options	Action	Notes
Database	Enter the database name.	
Search Slice	Enter the search slice.	
Initial Directory	Enter the search slice and name of the initial directory from which the harvest must begin.	
Indexing Options	Select the check box for the indexing options that you want to include:	These options are not selected by default.
	 Include metadata for contained objects 	
	 Include content tagging and full-text index 	

Table 13. Livelink volumes: Add Volume dialog box options for primary volumes (continued)

Table 14. NewsGator volumes: Add	l Volume dialog box	options for primary volumes
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NewsGator: Add Volume dialog box options	Action	Notes
Volume Type	In the Volume type list, select Primary .	
Source Type	Select NewsGator.	
Server	Enter the fully qualified domain name of the server from which the volume is available for mounting.	
Username	Enter the user name that is used to connect to and mount the volume.	
Password	Enter the password that is used to connect to and mount the volume.	
Assign to Data Server	Select the data server.	
Volume Name	Enter the common name of this volume.	
Initial Directory	Enter the name of the initial directory from which the harvest must begin.	
Indexing Options	 Select the check box for the indexing options that you want to include: Include metadata for contained objects 	These options are not selected by default.
	• Include content tagging and full-text index	

NFS: Add Volume dialog		
box options	Action	Notes
Volume Type	In the Volume type list, select Primary .	
Source Type	Select NFS.	
Server	Enter the fully qualified domain name of the server from which the volume is available for mounting.	
Assign to Data Server	Select the data server.	
Volume Name	Enter the common name of this volume.	
Export	Enter the export name for this volume.	
Initial Directory	Enter the name of the initial directory from which the harvest must begin.	
Indexing Options	Select the check box for the indexing options that you want to include:	These options are not selected by default.
	 Include metadata for contained objects 	
	• Include content tagging and full-text index	

Table 15. NFS volumes: Add Volume dialog box options for primary volumes

SharePoint: Add Volume		
dialog box options	Action	Notes
Volume Type	In the Volume type list, select Primary .	
Source Type	Select SharePoint.	
Server	Enter the fully qualified domain name of the server from which the volume is available for mounting.	
Username	Enter the user name that is used to connect to and mount the volume.	
Password	Enter the password that is used to connect to and mount the volume.	
Assign to Data Server	Select the data server.	
Volume Name	Enter the common name of this volume.	
Server Version	Select one of these servers: 2003, 2007, 2010, 2013, and Online.	
Site URL	Enter the site URL of the SharePoint server.	

SharePoint: Add Volume dialog box options	Action	Notes
Recurse into subsites	Optional.	
Use SSL	Optional.	
Include all versions	Optional.	
Initial Directory	Enter the name of the initial directory from which the harvest must begin.	
Indexing Options	 Select the check box for the indexing options that you want to include: Include metadata for contained objects Include content tagging and full-text index 	These options are not selected by default. Note: For SharePoint Online, full-text indexing of OneNote notebook objects, that is, Notes, is not supported currently. FSMD-based searches for these files are supported.

Table 16. SharePoint volumes: Add Volume dialog box options for primary volumes (continued)

- 3. Click **Save** to save your configurations and add the volume.
- 4. Click the **All Volumes** tab. Notice that the added volume appears therein, listed as a primary volume. To harvest this newly added volume, select that volume and then click **Harvest**.

Box volumes: configuration note

Box volumes can be added only from IBM StoredIQ Administrator and have several configuration prerequisites that must be met.

The prerequisites are as follows:

- Every application stack requires a dedicated Client ID. Each Client ID has its own Redirect URL that points to the IBM StoredIQ application stack. To create the application, log in to developers.box.com. Click My Apps > Create Application to get client_id, client_secret, and redirect_uri
- In the Box application, set redirect_uri to https://x.x.x.x/proxy/enamel/1.0/ oauthtokengenerator/box, where x.x.x.x is the hostname/IP address of the application stack with which the user logs in.
- In the Box application, select the following **Scopes** options:
 - Read and write all files and folders
 - Manage an enterprise
 - Manage an enterprise's managed users
 - Manage an enterprise's groups
 - Manage an enterprise's properties
 - Manage an enterprise's retention policies
- Before Box volumes are added, the Client ID, Client Secret, and Redirect URI must be stored in an application stack oauth.conf file. This file can be found in the application stack directory in this location: /etc/siq/oauth.conf. After the oauth.config file is modified, restart the uwsgi service by logging in to the application stack with PuTTY and running this command: /siq/bin/monit restart uwsgi

• Each Client ID must have the **As-User** capability that is enabled to allow harvests and data discovery.

Note: Customers must contact their Box support representative to enable this permission. They also need their Client ID.

- The application stack must be configured for SSL access, and it must have access to the Box authentication endpoint on api.box.com. If the application stack was deployed without SSL enabled, run /siq/bin/certcfg and follow the instructions on the Certificate Configuration screen.
- The **Application Settings** for the Box Enterprise Account must not disable unpublished applications from accessing the account. Clear the **Unpublished Applications** check box when you configure **Application Settings**.

When you copy to Box, by default the owner of a source content is mapped to the Box user only if the corresponding user is administered by the Box administration account. This way the contents can be copied to the mapped user account in Box. Additionally, the folder hierarchy of the source volume can be reproduced, but it is rooted in the home folder of the user.

When the user configures a copy action with Box as the target set from IBM StoredIQ Administrator, the user can select a destination directory or **Recreate directory structure on destination**, or both, or none. However, to preserve version chains, you must select **Recreate directory structure on destination** when you configure the action.

The composition for an infoset that contains archives with members needs to be top level. If container members were already harvested in the infoset, go to **Create** > **Scope operations** from IBM StoredIQ Data Workbench and then select **Collapse** > **Create New Infoset** to create a new top-level infoset.

File metadata attribute	Description	Notes
File name	Same as source	
Description	Same as source	

Table 17. Retained Box metadata attributes to copy to Box volumes

File metadata attribute	Description	Notes
File metadata attribute Owner	Description Same as source based on mapping heuristics that apply only to CIFS and SharePoint. Box administrator's user name in all other cases.	For CIFS, if single-sign-on (SSO) that is based on Active Directory is configured and the StoredIQ Data Server can locate the Active Directory Domain Controller using DNS, StoredIQ uses the E-mail attribute from the Active Directory user profile of the owner of a source data object and tries to match it with the email address of a user in Box. In this case, owners of data objects that are not defined in Active Directory cannot be mapped. If the StoredIQ Data Server cannot locate the Active Directory Domain Controller, StoredIQ uses the owner name itself and tries to map it to a Box User ID. Owner names in CIFS are typically in the form of domain\username, whereas email addresses in Box are in the form of localpart@domainname. In
	Chapter	source content owner must be matched exactly with the display name of the Box user. If StoredIQ cannot find a display name for the SharePoint user, then the <i>username</i> part of a SharePoint login name is mapped to the <i>localpart</i> of an email address in Box. For example, <i>username</i> in domain\ <i>username</i> is mapped to <i>localpart</i> in <i>localpart</i> @domainname. No user mapping takes place if the Serverifient the username in the takes place
		described are not met. Then, a content is copied to the administrator account of Box

Table 17. Retained Box metadata attributes to copy to Box volumes (continued)

File metadata attribute	Description	Notes
Size	Same as source	
Created	Same as source	
Modified	Same as source	

Table 17. Retained Box metadata attributes to copy to Box volumes (continued)

Note: Box volumes can be added only from IBM StoredIQ Administrator, not from IBM StoredIQ Data Server.

IBM StoredIQ supports copying to Box from CIFS, NFS, and SharePoint source volumes. However, only copying documents and files to Box is supported. Copying social or collaboration content types such as Wiki pages, blog posts are not supported. IBM StoredIQ also supports Discovery Exports from Box. Box Notes and Bookmarks are exported as MHTML files. An export for a Box Note carries the textual content of the Box Note. An export of the Box Bookmark has no textual content but only metadata.

Each StoredIQ data server contains a CSV mapping file, which includes a set of CIFS and SharePoint standard properties that are mapped to the custom Box properties. The mapping file is on the data server at /deepfs/data/mapping_file/box_mapping.csv. The mapping file can be edited as required but for the changes to take effect, services need to be restarted on the StoredIQ data server.

StoredIQ can index a list of collaborators who work with a document in Box. If an ancestor folder of a document is shared for collaboration, then each collaborator is indexed by StoredIQ with information about the User ID, email address, name, and role of the user. Incremental harvests in StoredIQ currently do not pick up changes to collaborators for a document. A full harvest might be required to get the index up-to-date concerning collaborators for documents.

Box notes cannot be viewed through the Data Object Viewer in IBM StoredIQ Data Workbench.

When an external user who is not native to the organization collaborates a folder with users who are managed by the administrator, the folder is not indexed if the Box volume was added with the credentials of the administrator. This kind of collaborated folder can be harvested only if the Box volume is added with the credentials of the managed users who were invited to collaborate on the folder by the external user.

When files or folders are deleted in Box, they are moved to the Trash folder in Box. Currently, contents in Trash are not indexed by StoredIQ.

IBM Content Manager attributes

In the SiqDocument item type, various attributes are increased when copying to IBM Content Manager.

In the SiqDocument item type, the length of the following attributes are increased from 128 to 256 bytes when copying to IBM Content Manager:

- SiqServer
- SiqShare
- SiqInitialDirectory

- SiqFileName
- SiqContainerPath
- SiqOwner

This change will be handled automatically if you do not already have an SiqDocument item type in your IBM Content Manager server. However, if this item type exists, it must be recreated with the new attribute lengths for this change to take effect.

Note: If you have a working CopyTo IBM Content Manager action running without issues or if you know that your attribute lengths are not greater than 128 in length, then you can defer this action as you have not encountered the attribute length issue.

Note: Note that the attribute length is in bytes. The number of actual characters this length will hold varies based on the database code page that is used. For example, if ASCII is used, then the number of characters is equal to the number of bytes. If UTF-8 is used, the number of bytes per character varies depending on the characters. Without this change, you will see errors if the source attributes for a copy to IBM Content Manager exceed 128 bytes. If you see these errors, you will need to perform the actions listed below.

To extend the length of these attributes, perform the following actions:

- If the SiqDocument item type does not exist in the IBM Content Manager server, create a new IBM Content Manager volume with a CopyTo option to select SiqDocument. It will create the item type and its attributes with the correct lengths.
- If SiqDocument item type already exists in the IBM Content Manager server and you need to fix the attribute length problem, then the administrator should delete/drop the SiqDocument item type and recreate or update the IBM Content Manager volume used for copy. This will automatically create the item types and attributes desired.

Note: Take a back up of the database before dropping and recreating SiqDocument item type. When you drop the item type, you will permanently loose all the items (documents) stored in it. If the source documents are still available, you can run copy again to copy the data back into this item type. If there are no items in the item type, then this is not an issue. To drop the SigDocument item type:

- 1. Delete all the items in the SiqDocument. Note that this is a permanent delete and you will lose all of the data.
- 2. Delete the SiqDocument item type.
- 3. Delete all the attributes belonging to the SiqDocument

If the item type already exists and contains data you need to keep, and you need to extend these attributes, this is possible through direct database manipulation. However, this process is not supported and issues deriving from this would not be covered by IBM support. If this is desired, services should be employed to make these database changes.

Adding a retention volume

A retention volume stores data objects that are placed under retention, meaning that the object is retained for a specified period.

Procedure

- 1. Click **Data Servers & Volumes > All Data Servers**, and then click **Add Volume**. The Add Volume dialog box appears.
- 2. In the Add Volume dialog box, complete these fields:

Table 18. Retention volume options

Add Volume dialog box option	Action	Notes	Source type
Volume Type	In the Volume Type list, select Retention .		CIFSNFS
Source Type	In the Source Type list, select the source or connection type.		CIFSNFS
Server	In the Server text box, enter the fully qualified domain name of the server from which the volume is available for mounting.		CIFSNFS
Username	In the Username text box, enter the user name that is used to connect to and mount the volume.		• CIFS
Password	In the Password text box, enter the password that is used to connect to and mount the volume.		• CIFS
Assign to Data Server	In the Assign to Data Server list, select a data server.		CIFSNFS
Volume Name	In the Volume Name text box, enter the common name of this volume.		CIFSNFS
Share	In the Share text box, enter the share name for this volume.		• CIFS
Export	In the Export text box, enter the export name for this volume.		• NFS
Indexing Options	Select the check box for the indexing options that you want to include:Include metadata for contained	These options are not selected by default.	CIFSNFS
	objects Include content tagging and full-text index 		

- **3**. Click **Save** to save your configurations and add the volume. Retention volumes do not have any data to harvest until a copy to retention runs.
- 4. Click the **All Volumes** tab. The added volume appears, listed as a retention volume.

Adding a discovery export volume

A discovery export volume contains data that is produced from a discovery export action. That data is kept so that it can be exported as a load file and uploaded into a legal review tool.

Procedure

- Click Data Servers & Volumes > All Data Servers, and then click Add Volume. The Add Volume dialog box appears.
- 2. In the Add Volume dialog box, complete these fields:

Table 19. Discovery export volume options

Add Volume dialog box option	Action	Notes	Source type
Volume Type	In the Volume Type list, select Discovery Export .		• CIFS • NFS
Source Type	In the Source Type list, select the source or connection type.		CIFSNFS
Server	In the Server text box, enter the fully qualified domain name of the server from which the volume is available for mounting.		• CIFS • NFS
Username	In the Username text box, enter the user name that is used to connect to and mount the volume.		• CIFS
Password	In the Password text box, enter the password that is used to connect to and mount the volume.		• CIFS
Assign to Data Server	In the Assign to Data Server list, select the data server.		CIFS NFS
Volume Name	In the Volume Name text box, enter the name of this volume.		• CIFS • NFS
Share	In the Share text box, enter the share name for this volume.		• CIFS
Export	In the Export text box, enter the export name for this volume.		• NFS

- 3. Click **Save** to save your configurations and add the volume.
- 4. Click the **All Volumes** tab. The added volume appears, listed as a discovery export volume.

Viewing details of a data server

Detailed information for any data server or volume can be viewed.

Procedure

- Click Data Servers & Volumes > All Data Servers, and then click View Details. The <data server name> Details page appears, showing the All Data Servers and All Volumes tabs.
- 2. Select the **All Data Servers** tab, select the item for which you want to view its details, and then click **View Details**.

Note: To view details for multiple items, press **Ctrl** and select those items, and then click **View Details**.

A summary of the data server's details appears along with the System Status

and **System Activity** panes. The ability to check the status of all deployed data servers is critical to understanding the system's performance metrics.

System Status

This pane shows the data server's status, a status message, its IP address, software version, database version, and the system's time.

System Activity

This pane shows the data server's free RAM memory, its free swap memory, the load average, the available space, the number of active database connections and the uptime.

When viewing a data server's details, you can use the **Reboot Data Server** and **Restart Services** buttons.

Viewing details of multiple volumes

Detailed, combined information for multiple volumes can be viewed.

Procedure

- Click Data Servers & Volumes > All Volumes, and then press and hold the CTRL key or SHIFT key to select the volumes for which you would like to view combined detailed information. The Combined Volume Details page appears, showing the combined details of the selected volumes, including the number of data objects, the size of the total number of data objects, the number of data servers, and the number of volumes.
- 2. Add or remove volumes from the Combined Volume Details view using the **CTRL** key. The volume is added or removed, and the Combined Volume Details view is updated automatically.

Rebooting a data server

Data servers can be rebooted when viewing that data server's details.

Procedure

- Click Data Servers & Volumes > All Data Servers, and then click View Details. The <data server name> Details page appears, showing the All Data Servers and All Volumes tabs.
- 2. Select the All Data Servers tab, select the data server to reboot, and then click View Details.
- **3**. Click **Reboot Data Server**. The Confirm Data Server Reboot window appears, verifying that you would like to reboot the selected data server.
- 4. Click Reboot Data Server, and the data server reboots. When the data server is rebooting, its status is changed to Maintenance Mode, and the status message is Rebooting-system. All other details appear as N/A until the reboot completes, at which point the data server's details are once again depicted.

Restarting services

Services on a data server can be restarted when viewing that data server's details.

Procedure

 Click Data Servers & Volumes > All Data Servers, and then click View Details. The <data server name> Details page appears, showing the All Data Servers and All Volumes tabs.

- 2. Select the **All Data Servers** tab, select the data server to restart, and then click **View Details**.
- **3**. Click **Restart Services**. The Confirm Data Server Reboot window appears, verifying that you would like to restart services on the selected data server.
- 4. Click **Restart Services**, and services restart. When the services are restarting, its status is changed to **Restarting**, and the status message is one of the following:
 - System and services running.
 - System is running but some services are still coming up.
 - Some query processes are not running.
 - There was a problem with the RAID controller.
 - Some services are in error.
 - Cannot connect to system and error.

All other details appear as **N/A** until the services restart, at which point the data server's details are once again depicted.

Removing a volume

Volumes can be deleted from the list of available data sources. Note that volume deletion can cause data loss in existing infosets or indices that reference the deleted volumes.

Procedure

- 1. Select **Data Servers & Volumes** > **All Volumes**, and then select the volume you want to delete.
- 2. Click **Remove Volume**. The volume is deleted, removing it from the list of available volumes.

Chapter 3. Harvests

The Harvests page of IBM StoredIQ Administrator displays the complete list of harvests, where you see all harvests currently under management

In the **Scheduled Harvests** list, select from **Scheduled Harvests**, **Current Harvests**, and **Completed Harvests**. Depending on the option selected, only those harvests in that category are shown in the List of Harvests table.

The description of the different harvest fields is listed in the following table.

Table 20. List of Harvests fields and descriptions

List of Harvests	Description	
Name	Lists the name of the harvest instance.	
Туре	Lists the type of harvest, either Full or Incremental.	
Start time	Lists the date and time at which the harvest was initiated.	
Owner	Lists the owner of the harvest.	

Harvesting a volume

By clicking **Harvest**, an Administrator can initiate a full or incremental harvest of a primary volume without having to utilize IBM StoredIQ Platform Data Server.

Procedure

- 1. Click **Data Servers & Volumes > All Data Servers > Volume**, select the volume to harvest, and then click **Harvest**. The Harvest Volume dialog box appears.
- 2. In the Harvest Name text box, enter a unique name for this harvest.
- 3. In the Schedule Harvest area, select either of the following options.
 - Select Immediate to harvest the volume immediately.
 - Click **Schedule** to schedule a date and time for the harvest to occur. Enter the date (YYYY-MM-DD) and time in the text boxes.
- 4. In the Harvest Options area, select Incremental or Full.
 - An **Incremental** harvest only harvests any changes on the selected volume since its last harvest.
 - A **Full** harvest performs a full harvest of the selected volume, regardless of when it was last harvested.
- 5. Click **Save**, and the volume is harvested.

Searching for a specific harvest

When you have multiple harvests available to choose, you can search for a specific harvest instead of using the slider to move through available options.

Procedure

1. In the **Scheduled Harvests** lists, select either **Scheduled Harvests**, **Current Harvests**, or **Completed Harvests**. Depending on the option that is selected, only harvests in the selected category are shown in the table.

- 2. In the Enter key term(s)... text box, enter the name of the harvest for which you want to search, and then click Search. You can enter either the full harvest name or a portion of it. To remove the search term, click the X to the left of the Enter key term(s).... text box. Harvests that match the entered search term are returned.
- 3. Select a harvest from the returned list of harvests.

Stopping a harvest

Harvests that have not yet completed can be stopped.

Procedure

- 1. In the **Scheduled Harvests** list, select **Current Harvests**. The list of harvests that are currently running opens.
- 2. Select the harvest that you want to stop and click **Stop Harvest**. The **Confirm Stopping Harvest** window appears.
- **3**. Click **Stop Harvest** to confirm that the harvest will be stopped and not completed.

Editing a harvest

Existing harvests can be modified as needed.

Procedure

1. In the List of Harvests page, select the harvest that you want to edit, and then click **Edit Harvest**. The Edit Harvest dialog box appears.

Note: Only scheduled harvests can be edited.

- 2. In the Edit Harvest dialog box, edit the harvest as needed.
- 3. Click **Save** to save your changes.

Deleting a harvest

Scheduled harvests can be deleted from the List of Harvests page.

Procedure

- In the List of Harvests page, select the scheduled harvest that you want to delete, and then click **Delete Harvest**. The Delete Harvest window appears.
- 2. Click **Delete** to delete the selected harvest. The harvest is deleted from the list of scheduled harvests.

Chapter 4. System infosets

System infosets can be created in IBM StoredIQ Data Workbench to allow users to have a different starting point than the All Data Objects infoset.

System infosets are the basis for user-created infosets. System infosets allow administrators to select which indexed volumes the infoset can draw upon, creating a shortcut for IBM StoredIQ Data Workbench users. Actions cannot be run on system infosets, but only on user-created infosets. Therefore, you must first create the system infoset here in IBM StoredIQ Administrator and then create a user infoset that can be acted upon in IBM StoredIQ Data Workbench.

Infosets can be public or private. The administrator determines users' access to system infosets at the time of creation. The All Data Objects and All System-Level Objects infosets, which are generated by the application, are set to admin by default and can be viewed only by an administrator.

Note: System infosets must not be used to manage volumes or indexes. Additionally, system infosets must be created judiciously. If there are several system infosets through which a user must cull, the shortcut aspect is removed.

Infoset Management Column Name	Description
Name	Lists the name of the system infoset. This name must be unique against all infosets.
Total objects	Lists the total number of data objects that are contained within the system infoset.
Infoset size	Lists size of the system infoset.
In use by	Indicates the infosets in which this system infoset is used. If the system infoset is in use, a link is shown, indicating the number of infosets by which the system infoset is being used. Click the link to see which infosets use this system infoset.
Access	Indicates whether the system infoset is public or private. If the system infoset is public, it can be viewed by any user. If the system infoset is private, it can be viewed by only those users granted permission by the administrator. If users are granted permission, the number of users is listed with a hyperlink to the Access Members modal, which lists the name and role of users who have access.
Description	This column lists the optional description of the system infoset.

Table 21. Infoset management column names and descriptions

Searching for a specific system infoset

When you have multiple system infosets available to choose, you can search for a specific system infoset instead of using the slider to move through available options.

Procedure

1. In the **Enter key term(s)**... text box, enter the name of the system infoset for which you want to search, and then click **Search**. You can enter either the full

system infoset name or a portion of it. To remove the search term, click the **X** to the left of the **Enter key term(s)**.... text box. System infosets that match the entered search term are returned.

2. Select a system infoset from the returned list of system infosets.

Creating a system infoset

System infosets can be created with selected volumes, creating a shortcut for IBM StoredIQ Data Workbench users.

Procedure

- 1. Click **System Infosets**, and then click **Create Infoset**. The Add System Infoset dialog box appears.
- 2. In the Add System Infoset dialog box, complete these fields.
 - a. In the Infoset Name text box, enter the name of this system infoset.
 - b. In the **Description of Infoset** text box, enter a brief description of this system infoset. This infoset might need to be used by several people, so an accurate description can be helpful to others.
 - **c**. In the Access area, click either **Public** or **Private**. The All Data Objects and All System-Level Objects infosets, which are generated by the application, can be viewed only by an administrator. System infosets that are created by an administrator default to public. Public system infosets are visible and available to all users, including users that will be added at a future time. For public system infosets, the user list is disabled.
 - d. For private system infosets, the list of available users becomes active. Select the users for whom this private infoset can be seen. If no users are selected for a private system infoset, then only administrators can see that system infoset because they have administrative rights to every infoset.

Note: Access cannot be edited. It must be determined at the time of infoset creation.

- e. Add volumes to this infoset. In the **Available Volumes** area, select the volumes that you want to add to this system infoset, and then click **Add**. To remove volumes from the infoset, select the volume in **Selected Volumes** and then click **Remove**.
- **3**. Click **Save** to save the system infoset. It now appears on the List of Infosets page.

Editing a system infoset

Existing user-created system infosets can be modified as needed.

Procedure

- 1. In the List of Infosets page, select the system infoset that you want to edit, and then click **Edit Infoset**. The Edit System Infoset dialog box appears.
- 2. In the Edit System Infoset dialog box, edit the infoset as needed.

Note: Access cannot be edited. It must be determined at the time of infoset creation.

3. Click Save to save your changes.

Viewing infosets that use a system infoset

Click the link to view which infosets use the selected system infoset.

Procedure

- 1. Select the system infoset for which you would like what other infosets use the system infoset.
- 2. In the **In use by** column, click the link. The System infoset modal for the system infoset appears, listing the infosets that use it.
- 3. Click Close.

Viewing access members

Procedure

1. Select the system infoset for which you would like to access its members, and then click the link in the Access column. The Access Members window appears, listing both the user names and roles of all members of the system infoset.

Note: The columns can be sorted to show members in ascending or descending order.

2. Click Close.

Deleting a system infoset

System infosets can be deleted from the List of Infosets page if they are not in use by other infosets. When a system infoset is in use by a direct ancestor of other infosets, **Delete** is unavailable for use so that the system infoset cannot be deleted.

Procedure

1. In the List of Infosets page, select the system infoset that you want to delete, and then click **Delete Infoset**.

Note: The All Data Objects and All System-Level Objects system infosets cannot be deleted.

The Delete Infoset window appears.

2. Click **Delete** to delete the selected system infoset. The system infoset is deleted from the list of available system infosets.

Chapter 5. User management

From the **User Management** page, users can be defined and provided with login information so that they can use the application stack.

This table lists and describes all of the fields that are seen within the List of Users page. When a user is selected, that user can be viewed, edited, or deleted.

List of Users column name	Description
User name	The user name that is assigned to the user
First name	The user's first or given name
Last name	The user's last or surname
Email address	The user's email address. System notifications are sent to this email address.
Role	The user's role. Options include Admin , Data User , Discovery User , Policy User , or SDK User .
Status	 The user's status. Options include Active or Inactive. Active users can log in and use the product. Active is the default status for a user. Inactive users cannot log in to the product suite because their account is rendered inactive by the Administrator. When inactive users attempt to log in, they are notified that their login is invalid and that they must contact an Administrator.
Last login	The date and time of the most recent user login. If the user is not logged in to the system, N/A is shown.

Table 22. List of Users column names and descriptions

Viewing your user profile

When you are viewing your user profile, you can see various aspects, including your assigned roles.

Procedure

- 1. Within the interface, click the down arrow to the right of your user name, and then select **View Profile**. The View Profile window appears, showing various pieces of data, including your name, role, and email address.
- 2. To change your password, click Change Password.
- 3. Click Close to close the View Profile window.

Searching for a specific user

When you have multiple users available to choose, you can search for a specific user instead of using the slider to move through available options.

Procedure

- In the Enter key term(s)... text box, enter the user name of the user for which you want to search, and then click Search. To remove the search term, click the X to the right of the Enter key term(s)... text box. Users that match the entered search term are returned.
- 2. Select a user name from the returned list of user names.

Creating a user

Within IBM StoredIQ Platform, a user authenticates to and interacts with the product suite. When a user is created, this user can log in and use the system.

Procedure

- 1. Click **Users**, and then click **Create User**. The Add User Details dialog box appears.
- 2. In the Add User Details dialog box, complete these fields.
 - a. In the **User name** text box, enter the user name of the individual. It is generally a short, unique name, not the person's full name.
 - b. In the First name text box, enter the first or common name of the user.
 - c. In the Last name text box, enter the last or surname of the user.
 - d. In the Email address text box, enter the user's email address.

Note: Because **User name** and **Email address** are unique fields, users can log in to the system by entering either their email address or their user name.

e. In the Password text box, enter the password for this user.

Note: Passwords must be at least 8 characters in length and contain at least one of each of these characters: an uppercase letter, a lowercase letter, a number, and a special character.

- f. In the **Re-enter password** text box, enter the user's password again.
- g. In the **Role** list, select the user's role. Options include **Admin**, **Data User**, **Discovery User**, **Policy User**, or **SDK User**. A user can be assigned multiple roles by selecting the check boxes in the role list.

Note: The default option during user creation is Data User.

h. In the Status list, select the user's status. Options include Active or Inactive.

Note: The default option during user creation is Active.

i. Click Save, and the user is created.

The newly created user appears within the User Management page.

Connecting to the LDAP server

Before users can be imported and authenticated from an LDAP or LDAP-supported authentication system, you must connect to the LDAP server.

- 1. Exit IBM StoredIQ Administrator.
- 2. Verify that your IBM StoredIQ application stack is upgraded to version 7.6.0.6.

- **3**. In an SSH tool, enter /siq/bin/ldapcfg. The LDAP Configuration window appears.
- 4. In the LDAP Configuration window, enter these configuration details.
 - a. Press the space bar to select Allow External LDAP User. It enables LDAP.
 - b. In the LDAP URL text box, enter the IP address of your server.
 - For the LDAP URL, enter ldap://ldap-server-hostname ldap://<ip-address>
 - For SSL mode, enter ldaps://ldap-server-hostname ldaps://<ip-address>
 - c. In the LDAP User text box, enter the LDAP user. For example, enter cn=user,dc=example,dc=com.
 - d. In the LDAP Password text box, enter the LDAP user's password.
 - e. In the **Base DN** text box, enter the base DN. For example, enter dc=siqdomain,dc=com
 - f. Select Test connection at the bottom of the window to test whether you are connected to the LDAP server. The LDAP Status text box shows whether the connection test passed or failed.
- **5**. Required: The LDAP Configuration window also contains attribute-mapping details.

Note: Do not modify these attribute-mapping changes unless your schema is different. If you have questions about the schema or these changes, contact your company's LDAP administrator.

- a. The First Name text box is automatically filled with givenName.
- b. The **Last Name** text box is automatically filled with **sn**.
- c. The **Email** text box is automatically filled with **mail**.
- d. The **Username** text box is automatically filled with **cn**. This field cannot contain spaces or special characters. Additionally, it must be a part of your DN for users to import successfully.
- 6. Restart the uwsgi by using this command: /siq/bin/monit restart uwsgi
- 7. Check the status by using this command: /siq/bin/monit summary
- 8. Log in to IBM StoredIQ Administrator, click **Users** > **Import User**. The list of users that were imported from the LDAP server is visible within the Import User dialog box.

Synchronizing the LDAP server and application stack database

To keep users' details properly synchronized between the LDAP server and application stack database, a daily synchronization process occurs.

Onboarded users' details in the application stack database can become stale, meaning that they are not synchronized properly with the LDAP server. In order to keep users' details properly synchronized between the LDAP server and application stack database, a recurring background process runs once per day. This daily task avoids overloading a synchronization request on the LDAP server. However, the synchronization can also be done manually. For example, if the administrator wants to update users' details to be in application stack database, she can run the sync-1dap script manually, and the users' updates are synchronized immediately from the LDAP server. **Note:** During synchronization, only active LDAP users' details are updated. If LDAP users are deleted from the LDAP server, then those users' details are marked as inactive in the application stack database.

This command performs a manual synchronization between the LDAP server and the application stack database: /siq/bin/sync-ldap

Importing a user

Users can be imported and authenticated from an LDAP or LDAP-supported authentication systems, enabling enterprise security policy enforcement.

Procedure

- 1. Click Users, and then click Import User. The Import User dialog box appears.
- 2. In the Import User dialog box, the **User name**, **First name**, **Last name**, and **Email address** text boxes are read-only fields. By default, these field are filled automatically using content from the **LDAP Users**.
- **3**. To load a user into the form, select a user from the **LDAP Users** list. Once a user has been selected for import, the **Save** button is enabled. If a user has already been imported, a message appears, informing you to select another user.
- 4. In the Role list, select Admin, Data User, Legal Ops User, Policy User, or SDK User.
- 5. In the Status list, select Active or Inactive.
- 6. Click **Save**. and then click **Close**. The **Save** button resets the Import User dialog box. To import another user, select that user within the **LDAP Users** table.
- 7. Once you have completed importing users, click Save, and then click Close.

Editing an imported user

When editing LDAP imported users, only the user's role and status can be modified.

Procedure

- Click Users. In the List of users, select the user to edit, and then click Edit User. The Edit Imported User dialog box appears. The User name, First name, Last name, and Email address text boxes are read-only fields.
- 2. In the Role list, select Admin, Data User, Discovery User, Policy User, or SDK User.
- 3. In the Status list, select Active or Inactive.
- 4. Click Save.
- 5. Once you have completed modifications, click Save, and then click Close.

Editing a user

You can modify existing users, including their status as needed. You can also activate the disabled users within IBM StoredIQ Administrator.

About this task

Note: Users become disabled after three failed log-in attempts. It is different than a user rendered inactive, which can be done only by an administrator.

Procedure

- 1. Click Users, and then select the name of the user that you want to edit.
- 2. Click Edit User. The Edit User Details dialog box appears.
- 3. In the Edit User Detail dialog box, modify the fields as needed.

Note: To modify a user's status, select the wanted, changed status in the **Status** list.

Note: If you are an administrator and you are changing a user's password, click the **Send reset password email** link.

4. Click Save, and the edited user information is saved.

Viewing details of a user

Basic user information such as first and surname, email address, and role can be viewed by clicking **View Details**.

Procedure

- 1. Within the User Management page, select the name of the user for which you want to view details.
- 2. Click View Details, and the View User Details window appears.
- 3. Within the View User Details window, the following information can be seen:

Option	Description
User Name	The user name of the selected user.
First Name	The first or given name of the selected user.
Last Name	The last or surname of the selected user.
Email Address	The email address of the selected user.
Role	The role of the selected user. A role is a named collection of permissible activities within the system. Based on the assigned role of the selected user, that individual can or cannot do certain things within the system.
Status	The status of the selected user. Options include active or inactive.
Last Login	The last date and time at which the selected user logged in to the system.

4. To view the user's access log, click the **View access log** link. The View Access History Log window appears, showing the system entries for the selected user. Within the entries, you see system activities such as successful logins, unsuccessful logins, when a password was changed. To close the View Access History Log window, click **Close**.

Note: These columns can be sorted by clicking the up and down arrows to the right of the column name.

5. To close the View User Details window, click Close.

Deleting a user

You can delete existing users from the system as needed; however, the log entries of a deleted user are also deleted. In certain instances, it is a good practice that you change a user's status.

Procedure

- 1. Click Users, and then select the name of the user that you want to delete.
- 2. Click Delete User. The Delete User window appears.

Note: If you opt to delete a user, then any log files that are associated with this user are also deleted.

3. To confirm that you want to delete the user, click **Delete**. The confirmation Delete User window appears, confirming that the user was deleted from the system.

Changing user passwords

Either the user or the administrator can change passwords. Valid passwords are at least 8 characters in length and contain at least an uppercase letter, a lowercase letter, a number, and a special character.

About this task

The password reset interaction can occur in four ways:

- A user clicks the **Forgot password** link on the login page, leading the user to change the password.
- A user clicks the **Did not receive password details** or **Changed your email address** link within the login screen from any of the applications.
- Users view their profile and opt to change the associated password.
- An administrator edits a user's profile and opts to reset the associated password. An email is then sent to the user, forcing individuals to change their password.

Procedure

- 1. Within the email your received regarding how to change your password, click the provided link. The Change Your Password dialog box appears.
- 2. In the Old password text box, enter the previously used password for this user.

Note: If the password entered in this text box does not match the one listed in the system's database records, a red warning message appears. Reenter the old password.

- 3. In the New password text box, enter a new password for this user.
- 4. In the Re-enter new password text box, type the password again.

Note: The passwords that are entered into the **New password** and **Re-enter new password** text boxes must be identical and meet the system's security requirements. If the entered data is not identical, a red warning appears.

5. Click **Save**. A congratulatory message appears, confirming that your password is changed. Click **OK** to close the window.

Resetting the user password

User passwords can be set and reset as needed by users and administrators alike.

About this task

There are two ways to reset a password:

- For administrators, click the **Send reset password email** link in the Edit User Details window.
- For users who reset their own passwords, use the following procedure.

Procedure

- 1. From the application login screen, click the **Forgot your password** link. The Reset Password dialog box appears.
- 2. In the **Email Address** text box of the Reset Password dialog box, enter the email address where a link to change the password must be sent. This email address must be linked with your account in IBM StoredIQ Administrator.
- **3**. Click **Submit**. A confirmation window appears, stating that an email with instructions for changing your password was sent.
- 4. Click **OK** to close the Reset Password window.

Obtaining a new password

Users occasionally need to obtain new passwords to be able to log in to the system.

- 1. From the application's login screen, click the Did not receive a password link.
- 2. Contact your system administrator about obtaining a new password.

Chapter 6. Action management

Actions represent executable processes that act upon indexed data within data servers. Use the Action Management page to create and modify actions that are used by IBM StoredIQ Administrator.

With IBM StoredIQ Administrator, you can create these types of actions:

- Copy: The copy action copies infosets to a target set.
 - You can specify the directory structure for copied data objects.
 - If a data object exists with the same name, then the subsequent data objects that are encountered are renamed.
- **Copy to Retention**: The copy to retention action copies data objects from source volumes to a target set for a specified period.
- Delete: The delete action removes data objects from the source volume.
 - Only data objects, not directories, are deleted.
 - Use caution when you are deleting data objects.
- **Discovery Export EDRM XML**: The discovery export action copies data objects and generates an EDRM XML file for loading into third-party legal review tools.
- **Discovery Export DAT**: The discovery export action copies data objects and generates a Concordance DAT file for loading into third-party legal review tools.
- **Discovery Export DAT Light**: The discovery export action copies data objects and generates a Concordance DAT (Light) file for loading into third-party legal review tools.
- **Modify Attribute**: The modify attribute action simulates setting retention by manipulating specific attributes on objects.
- Move: The move action moves data objects in an infoset to another volume.
 - You can specify the directory structure for moved data objects.
 - If a data object exists with the same name, then the data object is renamed.
 - When the source equals the destination, the move is not allowed.
- Watson Curation: The Watson Curation action copies data objects to the Watson Curator repository. The Watson Curation action is available in IBM StoredIQ Policy Manager.
- **Step-up Full-Text**: The step-up full-text action can be run on an infoset, providing content to the full-text index for objects that are infoset members.
- **Step-up Snippet**: The step-up snippet action can be run on an infoset, extracting and storing text for any data object to which it is applied. These data snippets are then used by auto-classification. Infosets objects without snippets are not classified for auto-classification.

Note: When scheduled harvests or policies are run against a data source, snippets are not updated or generated if they are missing.

Table 23. Actions column names and descriptions

Actions Column Name	Description	
Action Name	Lists the name of the action.	

Actions Column Name	Description
Туре	Lists the action type, namely Copy , Copy to Retention , Delete , Modify Attribute , Move , Discovery Export XML , Discovery Export DAT , Discovery Export DAT Light , Step-up Full-Text , Step-up Snippet , and Watson Curation .
Last Modified	Lists the date and time at which the action was last modified.
Target Set Name	Lists the destined target set of the action.
Description	Lists the action description.

Table 23. Actions column names and descriptions (continued)

Searching for a specific action

When you have multiple actions available to choose, you can search for a specific action instead of using the slider to move through available options.

Procedure

- In the Enter key terms... text box, enter the name of the action for which you want to search, and then press Search. You can enter either the full action name or a portion of it. To remove the search term, click the X to the left of the Enter key terms... text box. Actions that match the entered search term are returned.
- 2. Edit, clone, or delete the action as needed.

Creating an action

Actions are processes that are enacted on data objects, which are defined by infosets. Actions must be defined here in IBM StoredIQ Administrator.

About this task

The step-up snippet and step-up full-text actions are built-in actions, meaning that no options are provided within the user interface. You cannot create or edit the step-up snippet or step-up full-text action as they are provided for you as prepopulated options on the **Actions** tab.

- 1. Click **Actions**, and then click **Create Action**. The Add Action dialog box appears.
- 2. In the Add Action dialog box, complete these fields.
 - a. In the Action Name text box, enter the name of this action.
 - b. In the **Description of Action** text box, enter a brief description of this action. This action might need to be used by several people, so an accurate description can be helpful to others.
 - c. In the Action Type list, select the action type.
 - d. If you are creating a copy, copy to retention, discovery export, modify attribute, or move action, select a target set from the created actions or create a new target set. In **Target Set**, select a target set or click **Create a new target set**.
 - e. Click **Next** to continue creating the action. Depending on the type of action that is selected, use the corresponding tables to better understand what options to select.

Copy action options	Action
Target Set	In the Target Set area, select a target set.
Destination Directory	In the Destination Directory text box, either enter a file path or use the list option to select a previously entered file path. Note: For the Watson Curation action, the destination directory is not supported.
Directory Structure	In Directory Structure , select the check box if you want to Recreate directory structure on destination . Note: To retain version chains when copying to Box, you must select Recreate directory structure on destination .
Hashes	In Hashes, select the check box if you want to Compute a hash value for each data object.
Harvesting	In Harvesting, select or clear the check box for Do not auto-harvest destination volume after copy.
Email Message Format	In the Email Message Format list, select the format of the email message.
SharePoint User Profile Items	In SharePoint User Profile Items, select the check boxes of application SharePoint items, including Notes, Libraries, Blog Posts, Wikis, and Misc.

Copy to Retention action options	Action
Target Set	In the Target Set area, select a target set.
Hashes	In Hashes , select the check box if you want to Compute a hash value for each data object .
Harvesting	In Harvesting , select the check box to Do not auto-harvest destination volume after copy if an automatic harvest of the retention volume is not wanted. If this option is selected, then the retention volume can be harvested with the discover retention volumes job on the data server.
Email Message Format	In the Email Message Format list, select the format of the email message.
Retention Tag	In Retention Tag , enter the key term for the tag.
Retention Period	In Retention Period , enter a number, and then select Days , Weeks , Months , or Years .

Delete action options	Action
	In Delete Parameters , select the check box to Do not delete data objects that have been accessed since last harvest .

Discovery Export EDRM XML action options	Action
Destination Directory	In the Destination Directory text box, either enter a file path or use the list option to select a previously entered file path. Note: For the Watson Curation action, the destination directory is not supported.
Unique ID Prefix and # of Digits	In Unique ID Prefix and # of Digits , enter a unique prefix and then the number of digits to follow that prefix. For example, if you enter a prefix of feb2012 with 7 digits, this entry yields a Unique ID similar to Feb2012-1234567. Select the check box to Pad Zeros . Select the check box to Save a text copy .
Email Message Format	In the Email Message Format list, select the format of the email message.
Limit Export Process	Select the check box to Limit Export Process to and enter the number of data objects.
SharePoint User Profile Items	In SharePoint User Profile Items, select the check boxes of application SharePoint items, including Notes, Libraries, Blog Posts, Wikis, and Misc.

Discovery Export DAT action options	Action
Destination Directory	In the Destination Directory text box, either enter a file path or use the list option to select a previously entered file path. Note: For the Watson Curation action, the destination directory is not supported.
Unique ID Prefix and # of Digits	In Unique ID Prefix and # of Digits , enter a unique prefix and then the number of digits to follow that prefix. For example, if you enter a prefix of feb2012 with 7 digits, this entry yields a Unique ID similar to Feb2012-1234567.
	Select the check box to Pad Zeros .
Email Message Format	In the Email Message Format list, select the format of the email message.
Limit Export Process	Select the check box to Limit Export Process to and enter the number of data objects.
SharePoint User Profile Items	In SharePoint User Profile Items, select the check boxes of application SharePoint items, including Notes, Libraries, Blog Posts, Wikis, and Misc.

Discovery Export DAT-Light action options	Action
Destination Directory	In the Destination Directory text box, either enter a file path or use the list option to select a previously entered file path. Note: For the Watson Curation action, the destination directory is not supported.
Unique ID Prefix and # of Digits	In Unique ID Prefix and # of Digits , enter a unique prefix and then the number of digits to follow that prefix. For example, if you enter a prefix of feb2012 with 7 digits, this entry yields a Unique ID similar to Feb2012-1234567. Note: This is a required field. Select the check box to Pad Zeros .
Email Message Format	In the Email Message Format list, select the format of the email message.
Limit Export Process	Select the check box to Limit Export Process to and enter the number of data objects.
SharePoint User Profile Items	In SharePoint User Profile Items , select the check boxes of application SharePoint items, including Notes , Libraries , Blog Posts , Wikis , and Misc .

Modify Attribute action options	Action
Action Name	In the Action Name, enter the action's name.
Action Type	In the Action Type list, select the Modify Attribute option.
Description of Action	In the Description of Action text box, enter the action's description.
Attribute Type	Select from the following options: Read-only or Read-write .

Move action options	Action
Destination Directory	In the Destination Directory text box, either enter a file path or use the list option to select a previously entered file path. Note: For the Watson Curation action, the destination directory is not supported.
Directory Structure	In Directory Structure , select the check box if you want to Recreate directory structure on destination.

Watson Curation action options	Action
Destination Directory	In the Destination Directory text box, either enter a file path or use the list option to select a previously entered file path. Note: For the Watson Curation action, the destination directory is not supported.
Directory Structure	In Directory Structure , select the check box if you want to Recreate directory structure on destination .

Watson Curation action options	Action
Hashes	In Hashes , select the check box if you want to Compute a hash value for each data object .
Harvesting	In Harvesting , select the check box to Do not auto-harvest destination volume after copy if an automatic harvest of the volume is not wanted.
Collection ID	In the Collection ID text box, enter the name of the collection in Watson Curator.
SharePoint User Profile Items	In SharePoint User Profile Items , select the check boxes of application SharePoint items, including Notes , Libraries , Blog Posts , Wikis , and Misc .

3. Click **Save** to save your changes, click **Back** to return to the previous page, or click **Cancel** to cancel creating the action.

Deleting an action

Existing actions can be deleted from the list of available actions.

Procedure

- 1. In the List of Actions page, select the action that you want to delete, and then click **Delete Action**. The Delete Action window appears.
- 2. Click **Delete** to delete the selected action. The action is removed from the List of Actions page and it is no longer available for use.

Cloning an action

Actions can be cloned or duplicated.

Procedure

- 1. In the List of Actions page, select the action that you want to clone, and then click **Clone Action**. The Clone Action dialog box appears.
- 2. In the Clone Action dialog box, complete these fields.
 - a. In the Action Name text box, enter the name of this action.

Note: The name of the cloned action must be different from the name of the original action.

- **b**. In the **Action Type** list, select the action type, and then click **Next** to continue creating the action.
- c. In the **Description of Action** text box, enter a brief description of this action.

Note: This action might be used by several people, so the description must be accurate.

d. The selection that is made in the **Action Type** list determines what options are available after you click **Next**. If you are creating a copy, copy to retention, discovery export, or move action, select a target set from created target sets or create a new target set. In **Target Set**, select a target set or click **Create a new target set**.

- e. Click **Next**. Depending on the type of action that is being cloned, you can see various options.
- 3. Click **Save** to save your changes.

Editing an action

Existing actions can be modified.

- 1. In the List of Actions page, select the action that you want to edit, and then click **Edit Action**. The Edit Actions dialog box appears.
- 2. In the Edit Actions dialog box, edit the action as needed.
- 3. Click **Save** to save your changes.

Chapter 7. Target sets

Some actions require a destination to complete, and a target set represents a mapping for each data server of the wanted target volume. To copy files, the data server must know where to copy the file to. Each data server must be configured with a list of target volumes, such as retention and discovery export volumes.

Target Set Example

Data Server 1 has three retention volumes: Volume A, Volume B, and Volume C.

Data Server 2 has two retention volumes: Volume B, Volume X, and Volume Z.

Data Server 3 has two retention volumes: Volume B and Volume Z.

Resulting Copy Action: You would like to create a target set for a copy action Data Server 1 copies to Volume A.

Data Server 2 copies to Volume X.

Data Server 3 copies to Volume B.

Another user might want to create a target set for a copy action where Data Server 1, Data Server 2, and Data Server 3 copies to Volume B.

Target set column name	Description
Target Set Name	Lists the name of the target set.
Туре	Lists the type of the target set, namely Primary , Retention , or Export .
Source Type	Lists the target set's source type: BoxCIFS , CMIS , Documentum , FileNet , HDFS , IBM Content Manager , NFS , and SharePoint .
Volumes	Lists the number of volumes in that target set.
Last Modified	Lists the date and time that the target set was last modified.
Description	Lists the description of the target set.

Table 24. Target set management columns and descriptions

Searching for a specific target set

When you have multiple target sets from which to choose, you can search for a specific target sets instead of using the slider to move through available options.

- In the Enter key terms... text box, enter the name of the target set for which you would like to search, and then press Search. You can enter either the full target set name or a portion of it. To remove the search term, click the X to the left of the Enter key terms.... text box. Target sets that match the entered search term are returned.
- 2. Edit, clone, or delete the target set as needed.

Creating a target set

Retention, copy, move, and discovery export actions require a named destination to which data objects can be copied, moved, or exported. Target sets associate data servers and appropriate volumes, providing your actions with a destination.

Procedure

- 1. Click the **Target Sets** tab, and then click **Create Set**. The Add Target Set dialog box appears.
- 2. In the Add Target Set dialog box, complete these fields.
 - a. In the Target Set Name text box, enter a name for this target set.
 - b. In the Description of Target Set text box, enter a description.
 - c. In the **Type of Target Set** list, select the type of this target set, namely **Primary**, **Retention**, or **Export**.
 - d. In the **Source Type** list, select the source type of this target set, namely **BoxCIFS**, **CMIS**, **Documentum**, **FileNet**, **HDFS**, **IBM Content Manager**, **NFS**, and **SharePoint**.
 - e. In the **Target Set List** area, click **Add Data Servers**. Select a data server and then click **Add** to move it to the **Target Set List** box. Click **Done** when you finish adding data servers for the target set. Use the **Ctrl** key to add or remove several selections simultaneously. The added data servers appear within the **Target Set List** box. Click **Add/Remove Data Servers** to modify what data servers appear here.
 - f. In the Create Target Set dialog box, click the added data server and then select a volume on that data server. Do this step for each added data server.
- 3. Click Save to save your configuration changes and create the target set.

Editing a target set

Target sets can be edited, modifying the data servers that are associated with the target set.

Procedure

- 1. On the List of Target Sets page, click the name of the target set that you would like to edit, and then click **Edit Target Set**. The Edit Target Set dialog box appears.
- 2. Edit the target set fields as needed.
- 3. Click Save to save your changes.

Cloning a target set

Target sets can also be cloned or duplicated.

Procedure

- 1. On the List of Target Sets page, click the name of the target set that you would like to clone or duplicate, and then click **Clone Set**. The Clone Target Set dialog box appears.
- 2. Edit the target set fields as needed.

Note: The cloned target set's name must be unique.

3. Click **Save** to save your changes.

Deleting a target set

Existing target sets can be deleted from the list of available target sets.

- 1. In the List of Target Sets page, select the target set you would like to delete, and then click **Delete Set**. The Delete Target Set window appears.
- 2. Click **Delete** to delete the selected target set. The target set is removed from the List of Target Sets page, meaning that it is no longer available for use.

Chapter 8. Reports

IBM StoredIQ contains a number of default reports and the ability to upload a report package.

IBM StoredIQ provides features to inventory unstructured data. It can then collect and evaluate unstructured date, compiling reports and jobs to act on the data according to an organization's needs. Reports can then be printed and disseminated, allowing teams to analyze data in an ad hoc manner. New reports can be added by uploading a report package.

IBM StoredIQ Administrator provides a number of built-in reports, such as summaries of data objects in the system, storage use, and the number of identical documents in the system. You can create custom reports, including Query Analysis Reports for e-discovery purposes, and automatically email report notifications to administrators and other interested parties. By default, these types of reports are available.

- Compliance Report
- Content Collector Manifest File CSV Export
- CSV All Audited Object Exports
- CSV Attribute Summary
- CSV Exception List Export
- CSV Infoset Data Object Export
- Data Assessment Report
- Data Topology Report
- Duplication Summary Report
- Overlay Hit Report
- Term Hit Report

Table 25. List of Reports options and descriptions

Report column option	Description
Name	Name of the report
Created	The date and time at which the report was created
Description	A description of the report

Note: For help in customizing IBM StoredIQ reports, contact your technical service representative.

Searching for a specific report

When you have multiple reports from which to choose, you can search for a specific report instead of using the slider to move through available options.

Procedure

1. In the **Enter key terms...** text box, enter the name of the report for which you would like to search, and then press **Search**. You can enter either the full report

name or a portion of it. To remove the search term, click the **X** to the left of the **Enter key terms...** text box. Reports that match the entered search term are returned.

2. Select the wanted report.

Creating a report

Besides the built-in reports, you can create custom reports of your own.

About this task

For information about configuring custom reports, see "Customizable reports."

Procedure

- 1. Click **Reports**, and then click **Create**. The Create Report dialog box appears.
- 2. In the Create Report dialog box, complete these fields.
 - a. In the Name text box, enter a name for this report.
 - b. In the **Description** text box, enter a description of this report.
 - c. Click **Choose File**, and then find and select the appropriate report-package file.
- 3. Click **Create**, and the newly created report is added to the List of Reports page.

Customizable reports

Reporting is a key step within the data-management process as it validates that processes were completed correctly within IBM StoredIQ.

Note: You must enable specific configuration settings to utilize this functionality. Contact IBM Lab Services for further assistance.

You can customize reports in any of these scenarios:

- Modify reports to carry your organization's custom styles, logos, aligning them with other organization-based artifacts and documentation.
- Alter the format of the content reported in existing reports. For example, you can add more columns, switch axes in a graph, change the units for some values.
- Design reports to contain information that is not found in other, existing reports.

Using ODBC or any client that supports remote access to PostgreSQL, you can connect to either the IBM StoredIQ appserver or the gateway, locating a schema that is named report_schema. On both these server types, report_schema can be accessed remotely by logging in as a reportuser, which is an account that is created for the purposes of reporting on IBM StoredIQ data.

Note: Contact your administrator for reportuser credentials for the appstack and gateway.

Appstack

These tables are available for reporting (with SELECT access only) from the report_schema on the enamel database on the appstack.

- infoset
- infoset_overlay

- named_filter
- query_filter

These tables primarily carry information about infosets and filters that are created in IBM StoredIQ Data Workbench.

Gateway

These tables are available for reporting (with SELECT access only) from the report_schema on the dfdata database on the gateway.

- distribution_by_accessedtime
- distribution_by_filetype
- distribution_by_size
- distribution_by_filesystem
- distribution_by_modtime
- distribution_by_objectclass
- distribution_by_objectclass_by_owners_by_age
- distribution_by_objectclass_by_owner_by_filetype
- distribution_by_objectclass_by_owner_by_size
- distribution_by_objectclass_by_owner
- distribution_by_owner_by_createdtime
- distribution_by_owner_by_modtime
- distribution_by_owner_by_accessedtime
- distribution_by_owner_by_filetype
- distribution_by_owner_by_size
- volumes

The "volumes" table lists all the data sources that are defined on all data servers.

The tables that have "distribution" in their prefixes carry summarized information for various metrics for each infoset. The infosets are referenced by their IDs here. The mapping to their names is available from the appstack tables. Each "distribution" table reports summaries for "node counts" (number of data objects in a grouping) and "total size" (total size in bytes of data objects in a grouping).

Installing the BIRT Report Designer

The BIRT Report Designer provides core reporting features such as report layout, data source configuration, and scripting features that render content and layout dynamically during report generation. Installing the BIRT Report Designer is a requirement for customizing reports.

Procedure

- 1. Install Eclipse, which can be downloaded from http://download.eclipse.org/.
- 2. Download BIRT from http://download.eclipse.org/birt/downloads/.

Note: Several different packages contain BIRT. You need the all-in-one download, which must be installed on your workstation, specifically BIRT version 4.3.2.

You can also place BIRT into your existing Eclipse environment with the Eclipse Update Manager - BIRT Update Site.

Installing the JDBC driver

A JDBC driver is needed to work with remote PostgreSQL databases with BIRT.

Procedure

- 1. Download the postgres_9.2 JAR file from the http://jdbc.postgresql.org/ download.html.
- 2. Start Eclipse. Click File > New > Project, and in Business Intelligence and Reporting Tools, select Report Project.
- 3. Click New > Report, and in the Add a new Data Source dialog box, select JDBC Data Source.
- 4. Click **Next**, and then complete the text boxes within the Edit Data Source dialog box.
- 5. Click Manage Drivers.
- 6. Click Add to add the downloaded PostgreSQL JDBC .JAR file.

Adding data sources

The gateway and appstack databases act as the primary data sources for most reporting projects.

About this task

When you create a data source for either the gateway or appstack database, be certain to select **JDBC Data Source** as the data source type.

Procedure

- 1. In the Driver Class text box, enter org.postgresql.Driver (v9.2)
- 2. In the **Database URL** text box, enter **jdbc:postgresql://x.x.x./enamel**, where **x.x.x.x** is the IP address or DNS resolvable host name of the appstack.

Note: When the data source that is being created is for the gateway, this URL is used: **jdbc:postgresql://x.x.x.x/dfdata**, where **x.x.x.x** is the IP address or resolvable host name of the gateway.

- 3. In the User Name text box, enter reportuser.
- 4. In the **Password** text box, enter the password that is associated with this user name.

Note: Your administrator might set different passwords for the appstack and the gateway. Contact your administrator to receive this password.

5. Click **Test Connection** to ensure that a connection can be established with the remote database.

Creating a connection profile:

When you create data sources repeatedly, you can create a connection profile as an alternative.

- 1. When you create a new data source, click **Create from a connection profile in the profile store**.
- 2. From Select a Connection Profile, click New.
- **3**. Click **New** and then select **BIRT JDBC Data Source**, providing the connection details specific to either the appstack or the gateway.

4. In the **Specify file name** text box, enter a name for your connection profile.

Results

After the connection profile is created, it can be reused when you create a new data source. Select **Create from a connection profile in the profile store** and then browse to select the profile from the available list.

Setting report parameters

Some report parameters must be provided when you render the report.

About this task

Currently, IBM StoredIQ supports only one report parameter, which must map to InfoSet ID. It is the only parameter that can be supplied when you render the report.

Procedure

- 1. Create a report parameter.
- 2. Enter a useful name such as infoset_id.
- **3**. For the message that must be displayed to the user that renders the report, enter the text in the **Prompt text** text box.
- 4. Select the appropriate **Data Type**, **Display Type**, and **Is Required** values. For an InfoSet ID parameter, these values must be set to **String**, **Text Box**, or **True**.

Adding data sets

A report's charts and tables are built on data sets, which can either use data from the gateway or from the appstack. You can also define a joint data set that joins data sets from both the appstack and the gateway.

- 1. To create an appstack data set:
 - a. Create a data set.
 - b. Select the previously named data source that references the appstack.
 - c. Enter a valid name.
 - d. Enter an SQL query that fetches some data back from the report_schema. If your data set targets infoset data, it carries a where-clause that looks like where infoset_id=?. The ? denotes that a report parameter must be used here.
 - e. If a report parameter is to be used in the SQL query, you must add a parameter to the data set.
 - Click **Parameters > New**.
 - Change the **Linked to Report Parameter** value from **None** to the name of your report parameter that is created during data set creation.
- 2. To create a gateway data set:
 - a. Create a data set.
 - b. Select the previously named data source that references the gateway.
 - **c**. Enter a valid name.
 - d. Enter an SQL query that fetches some data back from the report_schema. If your data set targets infoset data, it carries a where-clause that looks like where infoset_id=?::uuid. The ? denotes that a report parameter must be used here. The type-cast to uuid is important on the gateway.

- **e**. If a report parameter is to be used in the SQL query, you must add a parameter to the data set.
 - Click **Parameters > New**.
 - Accept the default values in this dialog box; however, the **Linked to Report Parameter** value must be changed from **None** to the name of the report parameter that is created in the previous step.

Testing report designs

Report designers can test their designs in the BIRT Report Designer itself using the preview feature, which is an HTML rendering of the report.

About this task

Before you upload the customized report, you must preview the report as both HTML and as a PDF. It helps to ensure that the report renders properly on the appstack.

Procedure

- 1. In Eclipse, open your custom design.
- 2. Click **Preview** to view the HTML preview of the custom report.
- 3. Click **Run > Run as > PDF** to view the PDF rendering of the report.

Uploading the report design

IBM StoredIQ supports uploading a report design in a compressed file. Report designs are expected to be in the rptdesign format within the compressed file. Currently, only one rptdesign is expected to be present within a compressed file. The design can use one or more .css files and one or more image files, which can all be packaged within the compressed file.

About this task

To better manage the artifacts such as the images and style sheets for a single report design package, you must do one of the following tasks:

- Create a project for each report design. Each project contains only one rptdesign file.
- Create a folder for each report design within the project. Each folder contains only one rptdesign file.

By selecting one of the report-design management options, you can manage all images and style sheets. They are used by the design in a single location, making the creation of the compressed file easier as you compress a folder. Additionally, the uploaded compressed file must meet the following requirements:

- It contains only one rptdesign file and uses the file extension .rptdesign.
- All CSS and images that are referenced from the rptdesign file are also present within the compressed file.
- Only one report parameter is defined in the rptdesign file.
- Images use these extensions: .bmp, .jpg, .jpeg, .jpe, .jfif, .gif, .png, .tif, .tiff, .ico, or .svg.
- Style sheets must use the .css file extension.

Procedure

- 1. Log in to IBM StoredIQ Administrator.
- 2. Select the **Reports** tab.
- 3. Click **Create**.
- 4. Type the name of the report.
- 5. Optional: Enter the description of the report.
- 6. Select a report compressed file from your local drive and click **Create** to upload a report design to IBM StoredIQ Administrator. The report design is then also shown in IBM StoredIQ Data Workbench.

Deploying fonts

By default, the IBM StoredIQ reporting engine supports only certain fonts that are provided with the product.

About this task

By default, the IBM StoredIQ reporting engine supports the following fonts:

- icon-webfont.ttf
- ubuntu-bold-italic.ttf
- ubuntu-bold.ttf
- ubuntu-medium-italic.ttf
- ubuntu-medium.ttf
- ubuntu-regular-italic.ttf
- ubuntu-regular.ttf

Procedure

1. Deploy the fonts to the appserver. Copy the fonts to this folder on the application stack: /usr/share/fonts/default/TrueType

Note: Only True Type Fonts are supported. If a font is used in the report design and is not deployed correctly on the application stack, the default Times New Roman font is used when you render the report.

- 2. Restart IBM StoredIQ services. IBM StoredIQ services must be restarted on the application stack after new fonts are deployed.
 - a. To restart services, issue the command bootstrap server.mode idle and wait until bootstrap server.mode shows idle.
 - b. Run the command bootstrap server.mode production
 - c. To check the status, run the command bootstrap server.mode

Changing the reportuser password

If needed, the password for the reportuser account on both the gateway and the application stack can be changed.

- 1. To change the password for the reportuser on the application stack:
 - a. Using an SSH tool, log into the application stack as root.
 - b. Run the /siq/bin/change_reportuser_password script with the new password for the reportuser as a parameter.
- 2. To change the password for the reportuser on the gateway:

- a. Using an SSH tool, log into the gateway as root.
- b. Enter cd /usr/local/storediq/bin/util/
- c. Run change_reportuser_password.sh with the new password.

Chapter 9. Auto-classification models

Auto-classification models, also called automated document categorization, integrates the IBM[®] Content Classification's classification model into the IBM StoredIQ Platform infoset-generation process.

IBM Content Classification

IBM Content Classification helps organize unstructured content by analyzing the full text of documents and emails and applying rules that automate classification decisions. By managing documents and email, you organize and act on content every day. IBM Content Classification reduces the burden of manual decision making that is done by employees by accurately and automatically organizing information. Embedded with natural language processing and semantic analysis capabilities, IBM Content Classification determines the true intent of words and then uses that knowledge to automate decision making. Unlike other classification systems that are based on rules only, IBM Content Classification combines rules and contextual analysis to incorporate synchronous learning that adapts to changing business needs. As a result, classification becomes accurate over time.

IBM Content Classification can organize information by policies or keywords. The classification process not only searches for a single word or phrase, but also analyzes the entire document. It then distills the main point of the text and assigns the text to a category. When it analyzes content, IBM Content Classification can recognize misspellings, abbreviations, jargon, and technical terms.

Accuracy improves over time because the system adapts to the unique nature of your business by identifying different categories from examples that you provide. You provide feedback, and a deferred retraining operation adjusts the model and implements corrections based on that feedback. The accuracy of the classification results keeps pace with changes in your business.

IBM Content Classification combines this context-based approach with a rule-based, decision-making approach. The system can identify keywords, patterns, such as account numbers and phone numbers of case identifiers, and words within certain proximity of each other. For example, the system can identify occurrences of the phrase "Attorney General" in the same sentence as the word "California". When content that matches a condition in a rule is detected, the action that is defined for the rule is applied, and the document or email is classified.

Examples of classification applications

You can use IBM Content Classification to achieve various business goals.

- Enterprise content standardization: To support document classification and taxonomy automation within your content management system, document properties or metadata can be automatically assigned when the content is classified. Documents can be automatically moved to the correct enterprise repository.
- Compliance and records management: Documents and email can be declared as records when they are classified and placed under the control of record retention policies and compliance standards.

- E-discovery readiness: Documents and email can be filtered to ensure that only items with business value are classified and archived. You can quickly and cost effectively prepare content for potential legal notices.
- Business process optimization: Automated decision making ensures more consistent outcomes and reduced costs. With content-based analysis, you accomplish these actions.
 - Insert documents into the workflow of a business plan.
 - Reroute email.
 - Suggest and apply agent responses within a customer-support center.

Using auto-classification, you can create and update classification models to help map data within infosets. The step-up snippet action extracts and stores text on data objects within an infoset. For auto-classification to work, you must use the step-up snippet action since infoset objects without extracted snippets do not have auto-classification scores.

The Data Expert can use IBM Content Classification to train a classification model. The classification model is then registered with IBM StoredIQ Administrator. The registered classification model can be applied to an existing infoset in IBM StoredIQ Data Workbench to generate new metadata for the objects in the infoset. Finally, this metadata can be used in rule-based filters to create new infosets.

Note: To use the IBM StoredIQ Administrator auto-classification function, users must have a licensed installation of the IBM Content Classification on their desktop.

Applying the auto-classification feature

To use the auto-classification feature successfully, you must work in both IBM StoredIQ Administrator and IBM StoredIQ Data Workbench.

Before you begin

Prior to preparing an IBM Content Classification model for import, you must finish downloading the classification export utility, which must be done only one time. The export utility is used for each IBM Content Classification model that you want to import.

About this task

IBM Content Classification works by taking a sample set of documents that you adjust, constructing a classification model, and then classifying a new document. The IBM StoredIQ Platform defines the classification model as a decision plan with at least one knowledge base that is referenced by the decision plan.

Procedure

- 1. In IBM StoredIQ Administrator, on the **Action** tab, the step-up snippet action is created automatically and appears in IBM StoredIQ Data Workbench.
- 2. In IBM StoredIQ Administrator, create an auto-classification model by importing a compressed file from IBM Content Classification.
- **3**. In IBM StoredIQ Data Workbench, start the step-up snippet action, which is available on the **Act** tab, on an infoset.

Note: The infoset must be a user infoset, not a system infoset.

- 4. While still in IBM StoredIQ Data Workbench, apply the wanted auto-classification enhancement, which is available on the **Enhance** tab, to the same infoset.
- 5. After the enhancement completes in IBM StoredIQ Data Workbench, navigate to **Create > Build Filter** and apply the auto-class filter to create a new infoset.
- 6. Review the results of the newly created infoset.

Data server sizing-configuration guidelines

The inclusion of the IBM Content Classification server on the data server changed the required memory and processors. Data server sizing-configuration guidelines are provided here.

To support the auto-classification function, you must increase the virtual machine settings for processors and memory on data servers to these new minimums:

- Memory: 16 GB
- vCPUs: 4

Required storage on the data server for the extracted text (snippet cache) is roughly 13% of the size of the uncompressed content, or 130 GB per 1 TB. The size can vary depending on the object type. The maximum amount of extracted text per item is configured to not exceed 2 MB by default.

A data server with 2 TB of configured storage can support approximately 10 TB of managed storage, assuming 50 million data objects with an average size of 200 KB. Approximately 300 GB is metadata storage with the remaining 1,700 GB supporting a combination of full text and extracted text.

Downloading the classification export utility

The classification export utility is a one-time-only download that must be installed before an importing a model.

Procedure

- In IBM StoredIQ Administrator on the Auto-Classification tab, click Download Classification Export Utility. The siq-classification-export.zip file is downloaded.
- Extract the export utility to the bin directory of your IBM Content Classification product installation. For Windows, it is typically in the C:\IBM\ ContentClassification\Bin directory.

Building an auto-classification model

Creating rules to find documents that fit differing categories is time-consuming and requires constant, meticulous adjustments. However, importing a classification model with sets of training documents helps find other, similar documents.

About this task

Using previously harvested data, you can create an auto-classification model.

Procedure

1. Determine the categories into which you want the auto-classification model to classify documents.

- 2. Using IBM StoredIQ Data Workbench, create a filter for each category to capture documents that are representatives of the category.
- **3.** For each filter, create an infoset. The members of the resulting infoset become the "training corpus" for the category.
- 4. For each infoset, run a copy action with IBM StoredIQ Data Workbench onto a folder that is accessible by the IBM Content Classification application.
- 5. Use the IBM Content Classification application to create a decision plan and knowledge base by importing the training corps that you created.

Note: A classification model consists of one decision plan and at least one knowledge base, which is a requirement of the IBM StoredIQ Platform auto-classification feature.

Preparing an IBM Content Classification model for import

You must prepare the IBM Content Classification model for importing into IBM StoredIQ Platform with the IBM Content Classification tool BundleDPKB.exe.

Before you begin

IBM StoredIQ Platform defines the IBM Content Classification model as a set of a single decision plan and one or more knowledge bases that are referenced by the decision plan. You must prepare each classification model for import by bundling the relevant decision plan and knowledge base with the IBM Content Classification export utility BundleDPKB.exe.

Note: Before you prepare an IBM Content Classification model for import, you must finish downloading and installing the classification export utility.

Procedure

- In a command interface, go to the BundleDPKB installation directory and then enter cscript.exe ClassificationModelExporter.vbs <location of decision plan projects and knowledge bases> <decision plan directory> <optional empty directory> <optional zip file name>. If you did not specify a directory to which the compressed file must be exported, an export directory is created in the <location of decision plan projects and knowledge bases> location.
- 2. Note the location and name of the generated compressed file.

Importing an auto-classification model

You must complete these tasks before you can import an auto-classification model.

Before you begin

- Download the classification export utility. The procedure must be done only one time.
- Prepare the IBM Content Classification model for import. This procedure must be completed for every model you want to import.

About this task

To import a classification model, go to the **Auto-classification** tab of the IBM StoredIQ Administrator. The tab displays the already imported models as described in this table.

Table 26. Classification model column names and descriptions	Table 26.	Classification	model	column	names	and	descriptions
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Classification model column name	Description
Classification model name	Lists the name of the classification model.
Attribute name	Lists the name of the attribute that is used by the classification model.
Status	Lists the classification model's status, specifically Available , or Pending .
Creation date	Lists the date and time at which the classification model was created.
Description	Lists the description of the classification model.

Procedure

- 1. Within IBM StoredIQ Administrator, click **Create Model**. The Create Model dialog box appears.
- 2. In the **Classification Model Name** text box, enter a unique name for this auto-classification model.
- 3. In the **Attribute Name** text box, enter a unique name for this attribute. The **Attribute Name** must be unique within auto-classifications as it cannot be changed after the classification model is imported.
- 4. In the **Description** text box, enter a description of this model.
- 5. In the **Auto-Classification Model File** text box, click **Browse** and select the classification model file that you want to use when you are creating the model. Generally, this file is a compressed file that is created in the classification export utility. It consists of elements that are created in IBM Content Classification by the Data Expert.
- 6. Click **Save**, and the newly created model appears in the list of classification models.

Selecting a classification model

By selecting a classification model, you can view the details of that model, including the status of the last retrain, how much feedback it has received, and how many infosets have been enhanced using this model.

Procedure

- Within IBM StoredIQ Administrator, click Auto-Classification. The List of Classification Models page appears.
- 2. Select the model for which you would like to view greater detail. The <model name> Details panel appears.

Note: The <model name> Details panel appears by default. However, if you close the panel but then later want to view details about that model again, click **View Details**.

Row name	Description	
Status	Lists the classification model's status, specifically Available , Defunct , Deleting , Failed , Invalid , Pending , Processing , or Retraining . Note: In the Processing or Retraining states, models cannot be edited.	
Last retrained	Lists the date and time this classification model was last retrained.	
Last retrain status	Lists the classification model's retrain status. Status messag are Success , Failed , and N/A .	
Total feedbacks	Lists the number of times the model has received feedback.	
Total feedbacks after last retrain	Lists the number of times this model received feedback after its last retrain date.	
Total infosets created using this model	g Lists the number of infosets that use this classification mod	
Total infosets enhanced by this model	Lists the number of infosets that have been enhanced by this classification model.	

Table 27. Row names and descriptions of the <model name> Details panel

3. To close the <model name> Details panel, click Close.

Searching for a specific classification model

When you have multiple classification models to choose, you can search for a specific classification model instead of using the slider to move through available options.

Procedure

- In the Enter key terms(s) text box, enter the name of the classification model for which you want to search, and then press Search. You can enter either the full classification model name or a portion of it. To remove the search term, click the X to the left of the Enter key term(s) text box. Classification models that match the entered search term are returned.
- 2. Edit, delete, or retrain the classification model as needed.

Editing a model

The terms and formats that are associated with a particular classification model change over time, which means that the classification model must also change. Classification models can be edited or updated, modifying the model file that is associated with that particular classification model.

Procedure

- 1. On the **Auto-classification** tab, click the name of the classification model that you want to edit, and then click **Edit Model**. The Edit Model window appears.
- 2. Edit the classification model fields as needed.

Note: Attribute names cannot be changed, but you can edit the name of the model without specifying a new model (.ZIP) file. If you attempt to modify a classification model that is being used, a warning appears. Click **OK** to return to the List of Classification Models page.

3. Click **Save** to save your changes.

Deleting a model

Existing classification models can be deleted from the list of available models, if it was not used to enhance an infoset and that infoset still exists.

Procedure

- 1. In the List of Classification Models page, select the classification model that you want to delete, and then click **Delete Model**. The Delete Model window appears.
- 2. Click **Delete** to delete the selected model. The classification model is removed from the List of Classification Models page. It is no longer available for use.

Retraining a classification model

Data models are deployed regularly against data sets. When a classification model is deployed, it can be applied against millions of data objects as opposed to the few hundred that were used for the initial training of the model. By applying the model to so many data objects, it gives you much more granular data points. Because it takes time and effort to "train" or prepare a classification model against a set, data experts' positive or negative feedback is useful in retraining a classification model. Does the model work satisfactorily? Where does the model not seem to function well? Are there inconsistencies? Data experts have intimate knowledge of particular data sets and classification models, and they can provide positive and negative feedback about a model's accuracy. This feedback can be used to reinforce or improve a model's behavior; you can retrain the model to improve its accuracy.

Before you begin

With the assistance of IBM software support, modify the data learning settings.

- 1. Click **Project > Project Options**. The Project Options dialog box appears.
- 2. In the Project Options window, click **Advanced**. The Advanced Project Options window appears.
- **3**. Select the **Maintain learning data set with knowledge base** option. Accept all other default values.
- 4. Click OK.

The data-learning settings can also be modified in the Create, Analyze, and Learn dialog box by clicking **Settings**. For more information, see http://www-01.ibm.com/support/knowledgecenter/SSBRAM_8.8.0/ com.ibm.classify.workbench.doc/c_WBG_Saving_Learning_Data.htm.

- 1. Create a classification model. In IBM StoredIQ Administrator, click **Create Model** to create a classification model. You must set an attribute when you create a classification model.
- 2. Create a user infoset. In IBM StoredIQ Data Workbench, create a user infoset, and then select that user infoset so that it is active.
- **3**. Run the step-up snippet action. In IBM StoredIQ Data Workbench, run the step-up snippet action on the newly created user infoset.
- 4. Apply an enhancement. In IBM StoredIQ Data Workbench, select an enhancement to apply to the newly created user infoset, and then click **Run Enhancement**.

- 5. Apply a filter. In IBM StoredIQ Data Workbench, create a filter.
 - a. Select the Auto-classify option.
 - b. In the list under the **Auto-classify** option, select the classification model for which results must be filtered.
 - **c.** Select the categories. By default, the **Category** option is selected, as are all of the available categories.
 - d. Determine how the results are displayed, selecting either And the highest score in the selected category or And where the score <is/Greater than/Less than/Not equal/Greater than or equal/Less than or equal> <1>.
- 6. View the objects in the Data Object Viewer. Click **Preview Filter Results**, and the objects are displayed in the **Filter Results** area. Select one of the returned objects to view it in the Data Object Viewer.
- 7. Provide feedback for this data object. Click the button to the right of Auto-class Scores. It displays the list of categories and the object's score for each category. The category with the highest score is listed at the top. As the Data Expert, select the categories to which the selected data object belongs. Data objects with a value closer to 1 are more closely associated with that category. Data objects with a value closer to 0 are not closely associated with that category. Click Submit. This feedback helps to improve the accuracy and validity of the classification model. Repeat this step for as many different data objects as you like. The number of feedback submissions can be seen within the <model name> Details window in IBM StoredIQ Administrator.
- 8. In IBM StoredIQ Administrator, click **Auto-Classification** and select the classification model. The <model name> Details window shows that it received feedback. Click **Retrain** to start the retrain process for this model. If the model was uploaded without a learning archive (SARC file) or if it received no feedback, then the **Retrain** button is disabled.
- **9**. Run the enhancement against the infoset again, noting the new scores within the Data Object Viewer. The improved scores indicate greater validity and accuracy.

Chapter 10. Concept management

Within IBM StoredIQ Platform, you can use the concept-management feature to relate business ideas to indexed data.

When you are using IBM StoredIQ Administrator, you use infosets, run actions, generate reports, and more generally, interact with IBM StoredIQ Platform as a whole. These technical aspects of using IBM StoredIQ Administrator are designed for more technical users. Concepts are designed for the business user and provide a user experience of creating a filter that finds documents that are owned by a particular user name, for example. This use of the product is oriented towards solving business problems. Using the product typically requires the user to translate business concepts like identity, department, vendor, and project into the various technical concepts of the product, such as filters and infosets.

A concept defines and represents an identity, custodian, vendor, and project that can be related to indexed data in a meaningful way. It is a set of attributes that describe and distinguish individual concept members. For example, an employee concept might define the attribute's user name, given name, surname, and email address.

Concept members are the granular building blocks of a concept. When concept members are defined, they can be gathered into groups for aggregate use.

The **Identity** concept is created as a predefined, preconfigured concept available within IBM StoredIQ eDiscovery.

The List of Concepts screen is simple, depicting concepts, identities, and aspects. From here, you can search for, delete, edit, and add identities.

Concept Column Name	Description
First name	Lists the given name.
Last name	Lists the surname.
Email address	Lists the email address.
Owner ID	Lists the owner identification number.
Company	Lists the member's company name.
Department	Lists the department of the member.

Table 28. Concept columns and descriptions

Adding a member to a concept

Members can be added to existing concepts.

- 1. Click Concepts.
- From the list, select the type of concept you would like to add, and then click Create Member. The Identity concept was created as a predefined, preconfigured aspect. The Add Identity dialog box appears.
- 3. In the Add Identity dialog box, complete these fields.

- a. In the First Name text box, enter the identity's given name.
- b. In the Last Name text box, enter the identity's surname.
- c. In the E-mail Address text box, enter the identity's email address.
- d. In the **Company** text box, enter the name of the company that is associated with this identity.
- e. In the Department text box, enter the name of the identity's department.
- f. In the **Owner ID** text box, enter the identity's owner ID.
- Click Cancel to cancel adding an identity and return to the List of Concepts screen, or click Save to save the added member and return to the List of Concepts page.

Searching for a concept

When you have multiple concepts available to choose, you can search for a specific concept instead of using the slider to move through available options.

Procedure

- In the Enter key terms... text box, enter the name of the concept for which you want to search, and then press Search. You can enter either the full concept name or a portion of it. To remove the search term, click the X to the left of the Enter key terms.... text box. Concepts that match the entered search term are returned.
- 2. Edit or delete the concept as needed.

Editing a member of a concept

Existing concepts and their members can be modified.

Procedure

- From the List of Concept page, select the concept that you want to edit, and then click Edit. The Identity concept was created as a predefined, preconfigured aspect. The Edit Identity dialog box appears.
- 2. Edit the concept member and click **OK** to save your changes.

Deleting a member of a concept

Existing concept members can be deleted from the list of available concepts.

About this task

If you delete a member of a concept, existing filters that use that concept's members are affected.

- 1. From the List Concepts page, select the concept member that you want to delete, and then click **Delete**. The Delete Confirmation window appears.
- 2. Click **OK** to delete the selected concept member. The member of the concept is removed from the table and is no longer available for use.

Chapter 11. Mule scripts

Using the **Mule Script** tab, administrators can upload the Mule archive from their local directories. Mule archives are externally authored scripts, which are used by the IBM StoredIQ system to automate workflows.

This table lists and describes all of the fields that are seen within the Available Scripts page. When a Mule script is selected, it can be viewed in greater detail, edited, or deleted.

Mule script column name	Description
Name	Lists the name of the Mule script.
Created	Lists the creation date and time of the Mule script.
Script package	Lists the name of the Mule script package.
Description	Lists the description of the Mule script.

Table 29. Mule script columns and descriptions

Note: For information regarding how to set up the IBM StoredIQ environment to work with Mule Anypoint Studio and Mule scripts, see Appendix A, "IBM StoredIQ Mule script," on page 73.

Creating a Mule script

Created Mule scripts are available for use from the **Mule Scripts** page.

Procedure

- 1. Click **Mule scripts**, and then click **Create**. The Create Script dialog box appears.
- 2. In the Create Script dialog box, complete these fields. Newly created Mule scripts cannot be saved until these fields are complete.
 - a. In the Name text box, enter the name of the Mule script.
 - b. In the **Description** text box, enter a description of this newly created Mule script.
 - c. Click **Choose File**, and then navigate to and select the script package file. The name of the selected script package file appears to the right of the **Choose File** button.
 - d. Click **Create**, and Mule script appears within the list of available Mule scripts. Once Mule scripts are available within the Available Script list, the **Delete**, **Edit**, and **View Details** buttons are active.

Searching for a specific Mule script

When you have multiple Mule scripts available to choose, you can search for a specific Mule script instead of using the slider to move through available options.

Procedure

- In the Enter key term(s)... text box, enter the name of the Mule script for which you want to search, and then click Search. You can enter either the full Mule script name or a portion of it. To remove the search term, click the X to the left of the Enter key term(s).... text box. Mule scripts that match the entered search term are returned.
- 2. Select a Mule script from the returned list of scripts.

Viewing details of Mule scripts

Detailed information for any Mule script can be viewed.

Procedure

 In Available Scripts, select the Mule script for which you would like more information, and then click View Details. The Script Details pane appears at the bottom of the page, providing detailed information about that Mule script.

Name Lists the name of the Mule script.

Created

Lists the creation date and time of the Mule script.

Script Package

Lists the name of the script package. By clicking the link, you can open a browser and download the file.

Endpoint URL

Lists the endpoint URL.

Description

Lists a description of the Mule script.

Used by

Lists the policies that use the Mule script.

2. Click **Close** to close the Script Details pane.

Editing a Mule script

Existing Mule scripts can be modified as needed.

Procedure

- 1. In the Available Scripts page, select the Mule script that you want to edit, and then click **Edit**. The Edit Script dialog box appears.
- 2. In the Edit Script dialog box, edit the Mule script as needed.
- 3. Click Save to save your changes.

Deleting a Mule script

Existing Mule scripts can be deleted from the Available Scripts page.

About this task

Mule scripts that are being used by policies cannot be deleted, and deleted Mule scripts are not available for newly created policies. To see what policies use a Mule script, review the **Used By** section within the **Script Details**.

Procedure

- 1. In the Available page, select the Mule script that you want to delete, and then click **Delete**. The Confirm Deletion window appears.
- 2. Click **Delete Script** to delete the selected Mule script. The Mule script is deleted from the list of available scripts.

Importing the IBM StoredIQ application stack SSL certificate

For the Mule Standalone engine to work with the SSL-enabled IBM StoredIQ application stack, you must first import your IBM StoredIQ application stack SSL root certificate to the JRE used by the Mule Standalone engine.

Before you begin

Verify that your application stack is updated to the most recent version.

- Locate the JRE used by the Mule Standalone engine. It is located at /siq/env/java/jre.
- Import the SSL root certificate /etc/siq/ssl/root.crt into /siq/env/java/jre/lib/security/cacerts.
- 3. Save the cacerts file.
- 4. Restart Mule using this command: /siq/bin/monit restart mule
- 5. Check status using this command: /siq/bin/monit summary

Appendix A. IBM StoredIQ Mule script

Mule scripts are used to create automation workflow policies from the dashboard of IBM StoredIQ Policy Manager. Before you create a Mule script policy from the dashboard, a user who understands the customer's needs and requirements must help create the automation flow through Mule Anypoint Studio.

From the user interface of Anypoint Studio, the Mule scripts can be edited, tested, imported, and exported.

After Mule scripts are created, the administrator uses the IBM StoredIQ Administrator user interface to manage the Mule scripts to get them ready for the policy user to create policies.

For information about how to use the Mule products, see documentation on the official website of MuleSoft Inc.

Setting up Mule Anypoint Studio with IBM StoredIQ

Mule Anypoint Studio is a graphic design environment that provides functions of creating, editing, testing, importing, and exporting Mule scripts. You must set up the Mule Anypoint Studio environment before you create Mule scripts.

About this task

Follow these steps to set up the Mule Anypoint Studio environment.

- 1. Select the correct operating system and then download Mule Anypoint Studio from https://www.mulesoft.com/lp/dl/studio
- 2. Install and start Mule Anypoint Studio.
 - a. Extract the installation files into the local directory.
 - b. Double-click AnypointStudio.exe to start Mule Anypoint Studio.
 - c. Choose the workspace location to work with this tool.
- **3**. Set up the Java environment from **Windows** > **Preferences** > **Java** > **Installed JREs**. Ensure that it points to JRE7 or JDK7.
- 4. Install Mule Runtime Community Edition (CE). By default, Mule Anypoint Studio is packaged with Enterprise Engine (EE), which has a 30-day license. You need to install Community Engine with the free license to create the flow with Mule Anypoint Studio.
 - a. From **Help** > **Install New Software**, enter http://studio.mulesoft.org/r4/ studio-runtimes.
 - b. Select and install Mule Server 3.6.1 CE.
- 5. Install the Mule StoredIQ Connector.
 - a. From Help > Install New Software, enter the URL of the connector update, http://{StoredIQ_appStack host}/mule-connector-update, to install Community/StoredIQ Connector (Mule 3.5.0+).
 - b. Verify that the StoredIQ Connector is installed, create a Mule project, and type storedig in the search box of the right window. A new icon **StoredIQ** displays.

- **c.** Drag this connector to construct StoredIQ scripts. You can see a list of operations with the corresponding parameters in the Basic Settings window.
- 6. Install the storediq_domain project. For more information, see "Importing a domain project in Anypoint Studio" on page 89.

Note: The storediq_domain is used to share the HTTP inbound endpoint across different StoredIQ Mule scripts. The shared listening port is 8081. All IBM StoredIQ Mule Scripts must be associated with storediq_domain to use this shared HTTP port. Download storediq_domain.zip from http:// {StoredIQ_appstack host}/download/mule-flows/storediq_domain.zip. Import the domain project into Mule Anypoint Studio.

- 7. Create a Mule project.
 - a. Select New > Mule Project.
 - b. Enter the name of the Mule project and select **Mule Server 3.6.1 CE** as the Runtime engine.
 - c. Associate Mule Projects with storediq_domain. See "Associating a Mule project with a domain project" on page 89.
 - d. Drag the icons from the search box to create a Mule script with the HTTP endpoint.

Note: You can test the Mule project within Mule Anypoint Studio.

- 8. Export the Mule projects to the Mule archive, that is, script package. This Mule archive can be passed to IBM StoredIQ administrator, who checks in Mule scripts to IBM StoredIQ Administrator.
 - a. Click **Export** to export the existing Mule project into archive.
 - b. Clear Export parent domain project.
 - c. Save the archive as a .zip file in the local directory.
- 9. Import the Mule projects from the Mule archive. If you want to modify an existing Mule script, download the Mule archive from http:// {StoredIQ_appstack host}/download/mule-flows/<mule script>.zip, and then import the Mule archive into Mule Anypoint Studio.

Importing the IBM StoredIQ application stack SSL certificate

For Mule Anypoint Studio to work with the SSL enabled IBM StoredIQ application stack, you must first import your IBM StoredIQ application stack SSL root certificate to your local JDK.

Before you begin

Make sure that your application stack is updated.

- 1. Download the SSL root certificate file from IBM StoredIQ application stack, for example, /etc/siq/ssl/root.crt, to your local directory.
- 2. Check the version of JRE that is used by Mule Anypoint Studio.
- **3**. Use keytool to open the cacerts file under <JRE>/lib/security folder.
- 4. Import the SSL root certificate into the cacerts file and save the cacerts file.
- 5. Restart Mule Anypoint Studio.

Mule script management

For information about use of Mule platform, see Mule documentation from its official website.

Mule script restrictions

You must follow these rules when you work with the Mule scripts:

- Mule scripts must have an inbound end-point http with the storediq_domain shared port 8081. For example, http://localhost:8081/mule_policy1.
- Mule scripts have a readme file that provides details about the script. This readme file is written by the user and meets these criteria:
 - Must be in the .pdf format and its file name can be accessible by URL.
 - Shows the diagram, description, and input data, if needed
 - Is put under the top level of the Mule archive
- Mule scripts might require input data. If so, that input data must be in the .JSON format with key/value pairs. For example,

IBM StoredIQ Connector operations

You can construct a Mule script with the IBM StoredIQ operation blocks.

Connector operation	Parameter	Description
createFilter	filter_name	Name of the filter
	description	Description of the filter
	expression	Expression of the filter
createSystemInfoset	infoset_name	Name of the infoset
	description	Description of the infoset
	datasource_ids	List of data source IDs separated by commas
	access_type	Access type of infoset, either public or private
	user_list	List of user IDs that can be accessed to the infoset
	waitforCompletion	Flag to indicate sync and async

Table 30. IBM StoredIQ Connector operations

Table 30. IBM StoredIQ Connector operations (continued)

Connector operation	Parameter	Description
createUserInfosetFromFilter	infoset_name	Name of the infoset
	description	Description of the infoset
	infoset_id	ID of the infoset source
	filter_id	ID of the filter
	overlays	Overlay filter IDs separated by comma
	notify	Notification mail
	generate_datamap	Flag to indicate whether a datamap is generated
	waitforCompletion	Flag to indicate sync or async
createUserInfosetByOperations	operations	Infoset operations
	infoset_name	Name of the infoset
	description	Description of the infoset
	sources	List of source infoset IDs separated by commas
	overlays	Overlay filter IDs separated by commas
	notify Notification email	
	generate_datamap Flag to indicate whe datamap is generate	
	waitforCompletion	Flag to indicate sync or async
createUserInfosetFromExceptions	infoset_name	Name of the infoset
	description	Description of the infoset
	infoset_id	ID of the infoset source
	event_ids	Event IDs separated by commas
	categories	Category names that are separated by commas
	overlays	Overlay filter IDs separated by commas
	notify	Notification email
	generate_datamap	Flag to indicate whether a datamap is generated
	waitforCompletion	Flag to indicate sync or async
createTargetset	targetset_name	Name of the target set
	description	Description of the target set
	type	Type of the target set
	datasource_ids	Data source IDs separated by comma

Table 30. IBM StoredIQ Connector operations (continued)

Connector operation	Parameter	Description	
createDatasourceNfs	datasource_name	Name of the data source	
	dataserver_id	ID of the data server	
	datasource_type	Type of the data source	
	nfs_server	NFS server IP or host name	
	nfs_export	NFS server export directory	
	scoping_information_initial_directory	NFS server initial directory	
	scoping_information_include_directories	NFS server include directories	
	index_options_container_metadata	Include metadata for contained objects	
	index_options_full_text_content	Include content tagging and full-text index	
createDatasourceCifs	datasource_name	Name of the data source	
	dataserver_id	ID of data server	
	datasource_type	Type of the data source	
	cifs_server	CIFS server IP or host name	
	cifs_username	CIFS server user name	
	cifs_password	CIFS server password	
	cifs_shared	CIFS server share directory	
	scoping_information_initial_directory	CIFS server initial directory	
	scoping_information_include_directories	CIFS server include directories	
	index_options_container_metadata	Include metadata for contained objects	
	index_options_full_text_content	Include content tagging and full-text index	
createDatasourceCm8	datasource_name	Name of the data source	
	dataserver_id	ID of data server	
	cm8_server	CM8 server IP or host name	
	cm8_port	CM8 server port	
	cm8_username	CM8 server user name	
	cm8_password	CM8 server password	
	cm8_repository	CM8 server repository	
	cm8_dbtype	CM8 server remote DB type	
	cm8_remotedb	CM8 server remote DB	
	cm8_schema_name	CM8 server schema name	
	cm8_connection_string	CM8 server connection string	
	scoping_information_initial_directory	CM8 server initial directory	
	scoping_information_include_directories	CM8 server include directories	
	index_options_container_metadata	Include metadata for contained objects	
	index_options_full_text_content	Include content tagging and full-text index	

Table 30.	IBM	StoredIQ	Connector	operations	(continued)
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onnector operation Parameter		Description		
createDatasourceCmis	datasource_name	Name of the data source		
	dataserver_id	ID of the data server		
	cmis_server	CMIS server IP or host name		
	cmis_port	CMIS server port		
	cmis_username	CMIS server user name		
	cmis_password	CMIS server password		
	cmis_use_ssl	Boolean value to indicate ssl or not		
	cmis_service	CMIS server service		
	cmis_repository	CMIS server repository		
	index_options_container_metadata	Include metadata for contained objects		
	index_options_full_text_content	Include content tagging and full-text index		
createDatasourceExchange	datasource_name	Name of the data source		
	dataserver_id	ID of the data server		
	exchange_server	Exchange server host name		
	exchange_username	Exchange server name		
	exchange_password	Exchange server password		
	exchange_active_directory_server	Exchange server active directory server		
	exchange_use_ssl	Exchange server use SSL flag		
	exchange_version	Exchange server version		
	exchange_folder	Exchange server folder		
	exchange_mailbox_server	Exchange server mailbox server		
	exchange_personal_archive	Exchange server personal archive		
	scoping_information_initial_directory	Exchange server initial directory		
	scoping_information_include_directories	Exchange server include directories		
	index_options_container_metadata	Include metadata for contained objects		
	index_options_full_text_content	Include content tagging and full-text index		

Table 30. IBM StoredIC	Connector	operations	(continued)
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Connector operation	Parameter	Description	
createDatasourceSharepoint	datasource_name	Name of the data source	
	dataserver_id	ID of the data server	
	sharepoint_server	SharePoint server host name	
	sharepoint_port	SharePoint server port	
	sharepoint_username	SharePoint server user name	
	sharepoint_password	SharePoint server password	
	sharepoint_use_ssl	SharePoint server use SSL flag	
	sharepoint_active_directory_server	SharePoint server active directory server	
	sharepoint_site_url	SharePoint server site URL	
	scoping_information_initial_directory	SharePoint server initial directory	
	scoping_information_include_directories	SharePoint server include directories	
	index_options_container_metadata	Include metadata for contained objects	
	index_options_full_text_content	Include content tagging and full-text index	
createDatasourceLivelink	datasource_name	Name of the data source	
	dataserver_id	ID of the data server	
	livelink_server	Livelink server IP or host name	
	livelink_port	Livelink server port	
	livelink_username	Livelink server user name	
	livelink_password	Livelink server password	
	livelink_database	Livelink server database	
	livelink_search_slice	Livelink server search slice	
	scoping_information_initial_directory	Livelink server initial directory	
	scoping_information_include_directories	Livelink server include directories	
	index_options_container_metadata	Include metadata for contained objects	
	index_options_full_text_content	Include content tagging and full-text index	

Table 30. IBM S	StoredIQ Connec	or operations	(continued)
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Connector operation	Parameter	Description
createDatasourceFilenet	datasource_name	Name of the data source
	dataserver_id	ID of the data server
	filenet_server	FileNet server IP or host name
	filenet_port	FileNet server port
	filenet_username	FileNet server user name
	filenet_password	FileNet server password
	filenet_connectionType	FileNet connection type
	filenet_path	FileNet server path
	filenet_stanza	FileNet server stanza
	filenet_object_store	FileNet server object store
	filenet_wheresql	FileNet sql where clause
	filenet_domain	FileNet server domain
	filenet_create_document	FileNet server create document flag
	scoping_information_initial_directory	FileNet server initial directory
	scoping_information_include_directories	FileNet server include directories
	index_options_container_metadata	Include metadata for contained objects
	index_options_full_text_content	Include content tagging and full-text index
createDatasourceNewsgator	datasource_name	Name of the data source
	dataserver_id	ID of the data server
	newsgator_server	NewsGator server host name
	newsgator_username	NewsGator server user name
	newsgator_password	NewsGator server password
	newsgator_use_ssl	Boolean value to indicate ssl or not
	index_options_container_metadata	Include metadata for contained objects
	index_options_full_text_content	Include content tagging and full-text index
harvestDatasource	harvest_name	Name of harvest
	datasource_id	ID of the data source
	harvest_type	Type of harvest
	load_type	Type of load
	schedule	Harvest schedule
	waitforCompletion	Boolean value to indicate sync or async

Table 30. IBM StoredIQ Connector operations (continued)

Connector operation	Parameter	Description
generateReport	report_name	Name of the report
	user_infoset_id	ID of the user infoset
	action_id	ID of the report
	terms	List of terms that are separated by commas for Term Hit Report only
	filter_ids	List of filter IDs that are separated by commas for Term Hit Report only
	execution_id	ID of execution for Audit Summary Report only
	notify	Notification email
	waitforCompletion	Boolean value to indicate sync or async
executeAction	execution_name	Name of the action
	user_infoset_id	ID of the user infoset
	action_id	ID of the action
	waitforCompletion	Boolean value to indicate sync or async
cancelExecution	id	ID of execution
createActionCopyPlain	action_name	Name of the action
	description	Description of the action
	targetset_id	Target set ID
	destination_path	Destination path
	copy_sharepoint_userprofile_notes	Boolean value to copy SharePoint user profile notes
	copy_sharepoint_userprofile_libraries	Boolean value to copy SharePoint user profile libraries
	copy_sharepoint_userprofile_posts	Boolean value to copy SharePoint user profile posts
	copy_sharepoint_userprofile_wikis	Boolean value to copy SharePoint user profile wikis
	copy_sharepoint_userprofile_misc	Boolean value to copy SharePoint user profile misc
	compute_hash_value	Boolean value to compute the harsh value
	recreate_directory_structure	Boolean value to re-create directory structure
	no_auto_harvest	Boolean value to indicate that there is no auto harvest

Table 30. IBM StoredIQ Connector operations (continued)

Connector operation	Parameter	Description
createActionCopyRetention	action_name	Name of the action
	description	Description of the action
	targetset_id	Target set ID
	retention_type	Type of retention
	retention_value	Retention value
	retention_tag	Tag of retention
	compute_hash_value	Boolean value to compute hash value
	no_auto_harvest	Boolean value to indicate that there is no auto harvest
createActionDiscoveryExportEdrmxml	action_name	Name of the action
	description	Description of the action
	targetset_id	Target set ID
	destination_path	Destination path
	data_object_limit	Data object limit
	copy_sharepoint_userprofile_notes	Boolean value to copy SharePoint user profile notes
	copy_sharepoint_userprofile_libraries	Boolean value to copy SharePoint user profile libraries
	copy_sharepoint_userprofile_posts	Boolean value to copy SharePoint user profile posts
	copy_sharepoint_userprofile_wikis	Boolean value to copy SharePoint user profile wikis
	copy_sharepoint_userprofile_misc	Boolean value to copy SharePoint user profile misc
	unique_document_id_prefix	Unique document ID prefix
	unique_document_id_digits	Unique document ID digits
	unique_document_id_pad_digits	Boolean value to unique document ID pad digits
	save_text_copy	Boolean value to save the text copy
	email_item_disposition	Email item disposition

Table 30. IBM StoredIQ Connector operations (continued)

Connector operation	Parameter	Description
createActionDiscoveryExportDat	action_name	Name of the action
	description	Description of the action
	targetset_id	Target set ID
	destination_path	Destination path
	data_object_limit	Data object limit
	copy_sharepoint_userprofile_notes	Boolean value to copy SharePoint user profile notes
	copy_sharepoint_userprofile_libraries	Boolean value to copy SharePoint user profile libraries
	copy_sharepoint_userprofile_posts	Boolean value to copy SharePoint user profile posts
	copy_sharepoint_userprofile_wikis	Boolean value to copy SharePoint user profile wikis
	copy_sharepoint_userprofile_misc	Boolean value to copy SharePoint user profile misc
	unique_document_id_prefix	Unique document ID prefix
	unique_document_id_digits	Unique document ID digits
	unique_document_id_pad_digits	Boolean value to unique document ID pad digits
	email_item_disposition	Email item disposition
createActionDiscovery ExportDatLight	action_name	Name of the action
	description	Description of the action
	targetset_id	Target set ID
	destination_path	Destination path
	data_object_limit	Data object limit
	copy_sharepoint_userprofile_notes	Boolean value to copy SharePoint user profile notes
	copy_sharepoint_userprofile_libraries	Boolean value to copy SharePoint user profile libraries
	copy_sharepoint_userprofile_posts	Boolean value to copy SharePoint user profile posts
	copy_sharepoint_userprofile_wikis	Boolean value to copy SharePoint user profile wikis
	copy_sharepoint_userprofile_misc	Boolean value to copy SharePoint user profile misc
	unique_document_id_prefix	Unique document ID prefix
	unique_document_id_digits	Unique document ID digits
	email_item_disposition	Email item disposition

Table 30. IBM StoredIQ Connector operations (continued)

Connector operation	Parameter	Description
createActionWatsonCuration	action_name	Name of the action
	description	Description of the action
	targetset_id	Target set ID
	destination_path	Destination path
	collection_id	Collection ID
	copy_sharepoint_userprofile_notes	Boolean value to copy SharePoint user profile notes
	copy_sharepoint_userprofile_libraries	Boolean value to copy SharePoint user profile librarie
	copy_sharepoint_userprofile_posts	Boolean value to copy SharePoint user profile posts
	copy_sharepoint_userprofile_wikis	Boolean value to copy SharePoint user profile wikis
	copy_sharepoint_userprofile_misc	Boolean value to copy SharePoint user profile misc
	compute_hash_value	Boolean value to compute hash value
	recreate_directory_structure	Boolean value to recreate directory structure
	no_auto_harvest	Boolean value to indicate that there is no auto harvest
createActionExportExceptions	action_name	Name of the action
	description	Description of the action
	export_format	Export format
createActionModifyAttribute	action_name	Name of the action
	description	Description of the action
	attribute	Modification type
createActionMovePlain	action_name	Name of the action
	description	Description of the action
	targetset_id	ID of the target set
	destination_path	Destination path
	recreate_directory_structure	Boolean value to re-create a directory structure
createActionMoveRetention	action_name	Name of the action
	description	Description of the action
	targetset_id	ID of the target set
	retention_type	Type of the retention
	retention_value	Retention value
createActionDeleteNodes	action_name	Name of the action
	description	Description of the action
	ignore_accessed_objects	Boolean to ignore accessed objects

Table 30. IBM StoredIQ Connector operations (continued)

Connector operation	Parameter	Description
search	resourceType	Type of the resource
	id	ID of the resource
	nameOptions	Name search options
	resource_name	Name of the resource
	status	Status of the resource
	max	Maximum number of the result to be returned
	delete	Flag to indicate whether the resource is to be deleted

Creating the IBM StoredIQ Mule script

Use Mule Anypoint Studio to create the IBM StoredIQ Mule script.

Before you begin

Before you use a Mule script to access the IBM StoredIQ resources, you must authenticate to the IBM StoredIQ application stack server. You must configure three parameters for authentication:

- StoredIQ application stack host
- StoredIQ application stack user name
- StoredIQ application stack password

You can use either of the following ways to configure connections to the IBM StoredIQ application stack server:

- Select the **Global Mule Configuration Elements** tab from Mule script. Click **Create** and search for storediq.
- Drag an IBM StoredIQ connector in the Mule script. Click the + sign to the left of **Connector Configuration**. Type the value of the IBM StoredIQ host, user name, and password. Click **Test Connection** to ensure that the authentication is successful.

Note: The authentication is valid for all IBM StoredIQ connectors within the same flow.

- 1. Search and delete IBM StoredIQ resources.
 - a. Enter a name in the **Display Name** field. For example, list dataservers.
 - b. Select Search from the Operation list.
 - c. Select dataserver from the Resource Type list.
 - d. Enter information in the Search option for specific resources.
 - e. To delete the selected resources, select the **Delete the resource** checkbox.
- 2. Create and harvest the data source.
 - To create a data source:
 - a. Enter a name in the **Display Name** field, for example, create nfs datasource.
 - b. Select StoredIQ from Connector Configuration.

- c. Enter the parameters for Name, for example, mule_datasource,
 DataServer Id, for example, UUID of the data server, and select the type.
- To harvest a data source:
 - a. Enter a name in the **Display Name** field, for example, harvest datasource.
 - b. Select StoredIQ from the Connector Configuration list.
 - c. Select Harvest datasource from the Operation list.
 - d. Enter the parameters for Name, for example, mule_harvest, DataSource Ids, for example, UUID of the data source, and select Harvest Type and Load Type from the lists.
 - e. Select Wait for Completion under Flag.
- **3**. Create a system infoset.
 - a. Enter a name in the **Display Name** field. For example, create system infoset.
 - b. Select StoredIQ from Connector Configuration.
 - c. Select Create system infoset from Operation.
 - d. Enter the parameters for Infoset Name. For example, mule_sys_infoset.
 - e. Enter the parameter for **DataSource Ids**. For example, UUID of the data source.
 - f. Select Wait for Completion under Flag.
- 4. Create a filter.
 - a. Enter a name in the **Display Name** field. For example, create user filter.
 - b. Select StoredIQ from Connector Configuration.
 - c. Select Create filter from Operation.
 - d. Enter the parameters for the filter name. For example, mule_filter.
 - e. Enter the expression: att:"/Library/Attributes/System metadata/Extension" IS any ("txt") IN all.
- 5. Create a user infoset.
 - a. Enter a name in the Display Name field. For example, create user infoset.
 - b. Select StoredIQ from Connector Configuration.
 - c. Select Create user infoset from filter from Operation.
 - d. Enter the parameters for Infoset Name. For example, mule_user_infoset.
 - e. Enter Filter Id. For example, UUID of the filter.
 - f. Enter the **Infoset Source Ids**. For example, a list of UUID of the infoset sources, which are separated by commas.
 - g. Select Wait for Completion under Flag.
- 6. Create a target set.
 - a. Enter a name in the Display Name field. For example, create targetset
 - b. Select StoredIQ from Connector Configuration.
 - c. Select Create targetset from Operation.
 - d. Enter the parameters for Name. For example, mule_targetset.
 - e. Enter the parameter for **DataSource Ids**. For example, UUID of the data source.
 - f. Select primary as its Type.
- 7. Create an action.
 - a. Enter a name in the **Display Name** field. For example, create action.
 - b. Select StoredIQ from Connector Configuration.

- c. Select Create action copy plain from Operation.
- d. Enter the parameters for Name. For example, mule_action.
- e. Enter the parameter for TargetSet Id. For example, UUID of the target set.
- 8. Run an action.
 - a. Enter a name in the Display Name field. For example, run action.
 - b. Select StoredIQ from Connector Configuration.
 - c. Select Execute action from Operation.
 - d. Enter the parameters for Name. For example, mule_execution_action.
 - e. Enter the parameter for **User Infoset Id**. For example, UUID of the user infoset.
 - f. Enter the parameter for Action Id. For example, UUID of the action.
- 9. Generate a report.
 - a. Enter a name in the **Display Name** field. For example, generate report.
 - b. Select StoredIQ from Connector Configuration.
 - c. Select Generate report from Operation.
 - d. Enter the parameters for Name. For example, mule_report.
 - e. Enter the parameter for User Infoset Id. For example, UUID of the user infoset.
 - f. Enter the parameter for Report Id. For example, UUID of the report action.

Note: If you select **Wait for Completion**, the StoredIQ flow waits for the report to be successfully generated and then returns the report URL in the result string. If you do not select **Wait for Completion**, the StoredIQ flow does not wait for completion of the report generation and the result string does not contain the report URL.

Deploying the Mule script

Mule Standalone Engine is preinstalled in IBM StoredIQ application stack. It hosts the Mule scripts without Mule Anypoint Studio.

About this task

Use these commands to start or stop the engine:

```
/siq/bin/monit start mule
/siq/bin/monit stop mule
```

When the engine is up and running, use the following steps to deploy or undeploy the Mule script.

Procedure

- Export the Mule script from Anypoint Studio into an archive file in the .zip format. For example, mule_helloworld.zip
- 2. Write a readme file to explain the Mule script diagram. Provide a description and example input data in the .pdf format and with the same name as the Mule script. For example, mule_helloworld.pdf.

A readme file can look like the following example.

Description:

This Mule script creates a user infoset from the system infoset and filter and then it generates a report. The unique ID of the system infoset, filter, and report can be passed in from the input file in the .json format.

Example of input data:

- 3. Save this readme file into the Mule archive file that was created in Step 1.
- 4. Pass the Mule script archive file to the administrator of IBM StoredIQ Administrator. For example, mule_helloworld.zip.
- 5. The administrator can create a Mule script with the provided Mule archive from IBM StoredIQ Administrator. See *Creating a Mule script*. After the Mule script is created successfully, it is automatically deployed into Mule Standalone Engine.
- 6. When the administrator deletes an existing Mule script from IBM StoredIQ Administrator user interface, the Mule script is automatically undeployed from Mule Standalone Engine.

Results

The Mule script log traces the Mule script process. It is in the /var/siq/log directory.

Configuring Mule script timeout lengths

By default, the Mule script timeout value is 432000, or five days. This value can be modified by administrators.

About this task

By default, the Mule script timeout value is 432000, or five days. This value can be modified by administrators.

Procedure

- 1. Verify that your IBM StoredIQ application stack is upgraded to the most recent, supported version.
- 2. In an SSH tool, enter /siq/bin/mulecfg. The Console window appears.
- **3**. In the Console window, the **Mule Script timeout (seconds)** parameter is shown. Modify the default value of 432000.
- 4. Press Tab to select Save or Save and exit, and then press Enter.
- 5. Restart the uwsgi using this command: /siq/bin/monit restart uwsgi
- 6. Check the status using this command: /siq/bin/monit summary

Mule domain project

Mule defines selected connectors as common resources and they are accessible to all applications that are deployed under the same domain. These resources are known as shared resources.

To use these shared resources, you must associate the Mule project with the Mule domain project, then reference the shared resource in the Mule project.

The following sections use HTTP Listener Connector as an example to demonstrate how to share HTTP host and listener port across different Mule projects.

Importing a domain project in Anypoint Studio

The following procedure uses storediq_domain.zip as an example to describe how to import a Mule domain project.

Procedure

- From Anypoint Studio, right-click Package Explorer, and from the menu select Import > Anypoint Studio > Anypoint Studio-generated Deployable archive (.ZIP).
- 2. Specify the location of **storediq_domain.zip**, and then click **Finish**. The mule-domain-config.xml file displays automatically. The shared resource http:listner-config is defined inside.

Associating a Mule project with a domain project

Follow these steps to associate any new or existing Mule project with the domain project.

Procedure

 Select an existing Mule project that has an HTTP listener connector as the inbound endpoint. Open the project's Mule configuration xml file and select the proper domain under **Runtime > Domain**. For example, in Mule project, open mule-project.xml and then select storediq_domain as the domain.

Note: You can add multiple Mule projects under the same domain, but you can associate only one project with one domain at a time.

- 2. In the Mule project, directly refer to a connector configuration in the HTTP listener connector. For example, in Mule project, use HTTP_Listener_storediq from the domain project storediq_domain without creating a new HTTP listener configuration.
- **3**. Use the path value in the HTTP listener connector to differentiate Mule projects that share the host and port within the same domain.

Appendix B. IBM StoredIQ Connector operations

The following table provides information about IBM StoredIQ Connector operations, their parameters, and descriptions.

Table 31. IBM StoredIQ Connector operations

Connector operation	Parameter	Description
cancelExecution	id	ID of execution
createActionCopyPlain	action_name	Name of the action
	description	Description of the action
	targetset_id	Target set ID
	destination_path	Destination path
	copy_sharepoint_userprofile_notes	Boolean value to copy SharePoint user profile notes
	copy_sharepoint_userprofile_libraries	Boolean value to copy SharePoint user profile libraries
	copy_sharepoint_userprofile_posts	Boolean value to copy SharePoint user profile posts
	copy_sharepoint_userprofile_wikis	Boolean value to copy SharePoint user profile wikis
	copy_sharepoint_userprofile_misc	Boolean value to copy SharePoint user profile misc
	compute_hash_value	Boolean value to compute the harsh value
	recreate_directory_structure	Boolean value to re-create directory structure
	no_auto_harvest	Boolean value to indicate that there is no auto harvest
createActionCopyRetention	action_name	Name of the action
	description	Description of the action
	targetset_id	Target set ID
	retention_type	Type of retention
	retention_value	Retention value
	retention_tag	Tag of retention
	compute_hash_value	Boolean value to compute hash value
	no_auto_harvest	Boolean value to indicate that there is no auto harvest
createActionDeleteNodes	action_name	Name of the action
	description	Description of the action
	ignore_accessed_objects	Boolean to ignore accessed objects

Table 31.	IBM StoredIC	Connector	operations	(continued)
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Connector operation	Parameter	Description
createActionDiscoveryExportDat	action_name	Name of the action
	description	Description of the action
	targetset_id	Target set ID
	destination_path	Destination path
	data_object_limit	Data object limit
	copy_sharepoint_userprofile_notes	Boolean value to copy SharePoint user profile notes
	copy_sharepoint_userprofile_libraries	Boolean value to copy SharePoint user profile libraries
	copy_sharepoint_userprofile_posts	Boolean value to copy SharePoint user profile posts
	copy_sharepoint_userprofile_wikis	Boolean value to copy SharePoint user profile wikis
	copy_sharepoint_userprofile_misc	Boolean value to copy SharePoint user profile misc
	unique_document_id_prefix	Unique document ID prefix
	unique_document_id_digits	Unique document ID digits
	unique_document_id_pad_digits	Boolean value to unique document ID pad digits
	email_item_disposition	Email item disposition
createActionDiscoveryExportDatLight	action_name	Name of the action
	description	Description of the action
	targetset_id	Target set ID
	destination_path	Destination path
	data_object_limit	Data object limit
	copy_sharepoint_userprofile_notes	Boolean value to copy SharePoint user profile notes
	copy_sharepoint_userprofile_libraries	Boolean value to copy SharePoint user profile libraries
	copy_sharepoint_userprofile_posts	Boolean value to copy SharePoint user profile posts
	copy_sharepoint_userprofile_wikis	Boolean value to copy SharePoint user profile wikis
	copy_sharepoint_userprofile_misc	Boolean value to copy SharePoint user profile misc
	unique_document_id_prefix	Unique document ID prefix
	unique_document_id_digits	Unique document ID digits
	email_item_disposition	Email item disposition

Table 31. IBM Store	dIQ Connector	operations	(continued)
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Connector operation	Parameter	Description
createActionDiscoveryExportEdrmxml	action_name	Name of the action
	description	Description of the action
	targetset_id	Target set ID
	destination_path	Destination path
	data_object_limit	Data object limit
	copy_sharepoint_userprofile_notes	Boolean value to copy SharePoint user profile notes
	copy_sharepoint_userprofile_libraries	Boolean value to copy SharePoint user profile libraries
	copy_sharepoint_userprofile_posts	Boolean value to copy SharePoint user profile posts
	copy_sharepoint_userprofile_wikis	Boolean value to copy SharePoint user profile wikis
	copy_sharepoint_userprofile_misc	Boolean value to copy SharePoint user profile misc
	unique_document_id_prefix	Unique document ID prefix
	unique_document_id_digits	Unique document ID digits
	unique_document_id_pad_digits	Boolean value to unique document ID pad digits
	save_text_copy	Boolean value to save the text copy
	email_item_disposition	Email item disposition
createActionExportExceptions	action_name	Name of the action
	description	Description of the action
	export_format	Export format
createActionModifyAttribute	action_name	Name of the action
	description	Description of the action
	attribute	Modification type
createActionMovePlain	action_name	Name of the action
	description	Description of the action
	targetset_id	ID of the target set
	destination_path	Destination path
	recreate_directory_structure	Boolean value to re-create a directory structure
createActionMoveRetention	action_name	Name of the action
	description	Description of the action
	targetset_id	ID of the target set
	retention_type	Type of the retention
	retention_value	Retention value

Table 31. IB	A StoredIQ	Connector	operations	(continued)
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Connector operation	Parameter	Description	
createActionWatsonCuration	action_name	Name of the action	
	description	Description of the action	
	targetset_id	Target set ID	
	destination_path	Destination path	
	collection_id	Collection ID	
	copy_sharepoint_userprofile_notes	Boolean value to copy SharePoint user profile notes	
	copy_sharepoint_userprofile_libraries	Boolean value to copy SharePoint user profile libraries	
	copy_sharepoint_userprofile_posts	Boolean value to copy SharePoint user profile posts	
	copy_sharepoint_userprofile_wikis	Boolean value to copy SharePoint user profile wikis	
	copy_sharepoint_userprofile_misc	Boolean value to copy SharePoint user profile misc	
	compute_hash_value	Boolean value to compute hash value	
	recreate_directory_structure	Boolean value to recreate directory structure	
	no_auto_harvest	Boolean value to indicate that there is no auto harvest	
createDatasourceBox	datasource_name	Name of the data source	
Note: The Box data source creation	dataserver_id	ID of the data server	
that uses a Mule script works only for Box OAuth without redirection and	box_server	Box server IP/hostname (default=api.box.com)	
two-factor authentication. Before you add a Box data source, see	box_include_users	Box server option to include users in a regular expression	
"Box volumes: configuration note" on	scoping_information_initial_directory	Box server initial directory	
page 15.	scoping_information_include_directories	Box server include directories	
	box_username	Box OAuth user name	
	box_password	Box OAuth password	
	index_options_container_metadata	Include metadata for contained objects	
	index_options_full_text_content	Include content tagging and full-text index	

Table 31.	IBM StoredIQ	Connector	operations	(continued)
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Connector operation	Parameter	Description
createDatasourceCifs	datasource_name	Name of the data source
	dataserver_id	ID of data server
	datasource_type	Type of the data source
	cifs_server	CIFS server IP or host name
	cifs_username	CIFS server user name
	cifs_password	CIFS server password
	cifs_shared	CIFS server share directory
	scoping_information_initial_directory	CIFS server initial directory
	scoping_information_include_directories	CIFS server include directories
	index_options_container_metadata	Include metadata for contained objects
	index_options_full_text_content	Include content tagging and full-text index
createDatasourceCm8	datasource_name	Name of the data source
	dataserver_id	ID of data server
	cm8_server	CM8 server IP or host name
	cm8_port	CM8 server port
	cm8_username	CM8 server user name
	cm8_password	CM8 server password
	cm8_repository	CM8 server repository
	cm8_dbtype	CM8 server remote DB type
	cm8_remotedb	CM8 server remote DB
	cm8_schema_name	CM8 server schema name
	cm8_connection_string	CM8 server connection string
	scoping_information_initial_directory	CM8 server initial directory
	scoping_information_include_directories	CM8 server include directories
	index_options_container_metadata	Include metadata for contained objects
	index_options_full_text_content	Include content tagging and full-text index

Table 31.	IBM StoredIQ	Connector	operations	(continued)
-----------	--------------	-----------	------------	-------------

Connector operation	Parameter	Description
createDatasourceCmis	datasource_name	Name of the data source
	dataserver_id	ID of the data server
	cmis_server	CMIS server IP or host name
	cmis_port	CMIS server port
	cmis_username	CMIS server user name
	cmis_password	CMIS server password
	cmis_use_ssl	Boolean value to indicate ssl or not
	cmis_service	CMIS server service
	cmis_repository	CMIS server repository
	index_options_container_metadata	Include metadata for contained objects
	index_options_full_text_content	Include content tagging and full-text index
createDatasourceDocumentum	datasource_name	Name of the data source
Note: Before you add a Documentum	dataserver_id	ID of the data server
data source, see the Documentum data source setup procedures in the	documentum_docbase	Documentum server document base
Installing Documentum client jars to the data server and Adding a	documentum_username	Documentum server user name
Documentum server as a data source	documentum_password	Documentum server password
topics.	documentum_include_versions	Documentum server flag to indicate whether to harvest all document versions
	scoping_information_initial_directory	Server initial directory
	scoping_information_include_directories	Server include directories
	index_options_container_metadata	Include metadata for contained objects
	index_options_full_text_content	Include content tagging and full-text index

Table 31.	IBM Sto	oredIQ Co	onnector	operations	(continued)
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Connector operation	Parameter	Description
createDatasourceExchange20002003	datasource_name	Name of the data source
	dataserver_id	ID of the data server
	exchange_server	Exchange server host name
	exchange_username	Exchange server user name
	exchange_password	Exchange server password
	exchange_mailbox_server	Exchange server mailbox server
	exchange_active_directory	Exchange server active directory server
	exchange_use_ssl	Exchange server use SSL flag
	exchange_folder	Exchange server folder
	exchange_virtual_root	Exchange server virtual root
	index_options_container_metadata	Include metadata for contained objects
	index_options_full_text_content	Include content tagging and full-text index
	scoping_information_initial_directory	Exchange server initial directory
	scoping_information_include_directories	Exchange server include directories
createDatasourceExchange2007	datasource_name	Name of the data source
	dataserver_id	ID of the data server
	exchange_server	Exchange server host name
	exchange_username	Exchange server user name
	exchange_password	Exchange server password
	exchange_mailbox_server	Exchange server mailbox server
	exchange_active_directory	Exchange server active directory server
	exchange_use_ssl	Exchange server use SSL flag
	exchange_folder	Exchange server folder
	exchange_virtual_root	Exchange server virtual root
	index_options_container_metadata	Include metadata for contained objects
	index_options_full_text_content	Include content tagging and full-text index
	scoping_information_initial_directory	Exchange server initial directory
	scoping_information_include_directories	Exchange server include directories

Connector operation	Parameter	Description
createDatasourceExchange20102013	datasource_name	Name of the data source
	dataserver_id	ID of the data server
	exchange_server	Exchange server host name
	exchange_username	Exchange server user name
	exchange_password	Exchange server password
	exchange_mailbox_server	Exchange server mailbox server
	exchange_active_directory	Exchange server active directory server
	exchange_use_ssl	Exchange server use SSL flag
	exchange_folder	Exchange server folder
	exchange_virtual_root	Exchange server virtual root
	exchange_personal_archive	Exchange server personal archive
	index_options_container_metadata	Include metadata for contained objects
	index_options_full_text_content	Include content tagging and full-text index
	scoping_information_initial_directory	Exchange server initial directory
	scoping_information_include_directories	Exchange server include directories
createDatasourceExchangeonline	datasource_name	Name of the data source
	dataserver_id	ID of the data server
	exchange_server	Exchange server host name
	exchange_username	Exchange server user name
	exchange_password	Exchange server password
	exchange_folder	Exchange server folder
	exchange_virtual_root	Exchange server virtual root
	exchange_personal_archive	Exchange server personal archive
	index_options_container_metadata	Include metadata for contained objects
	index_options_full_text_content	Include content tagging and full-text index
	scoping_information_initial_directory	Exchange server initial directory
	scoping_information_include_directories	Exchange server include directories

Table 31. IBM StoredIQ Connector operations (continued)

Connector operation	Parameter	Description
createDatasourceFilenet	datasource_name	Name of the data source
	dataserver_id	ID of the data server
	filenet_server	FileNet server IP or host name
	filenet_port	FileNet server port
	filenet_username	FileNet server user name
	filenet_password	FileNet server password
	filenet_connectionType	FileNet connection type
	filenet_path	FileNet server path
	filenet_stanza	FileNet server stanza
	filenet_object_store	FileNet server object store
	filenet_wheresql	FileNet sql where clause
	filenet_domain	FileNet server domain
	filenet_create_document	FileNet server create document flag
	scoping_information_initial_directory	FileNet server initial directory
	scoping_information_include_directories	FileNet server include directories
	index_options_container_metadata	Include metadata for contained objects
	index_options_full_text_content	Include content tagging and full-text index
createDatasourceLivelink	datasource_name	Name of the data source
	dataserver_id	ID of the data server
	livelink_server	Livelink server IP or host name
	livelink_port	Livelink server port
	livelink_username	Livelink server user name
	livelink_password	Livelink server password
	livelink_database	Livelink server database
	livelink_search_slice	Livelink server search slice
	scoping_information_initial_directory	Livelink server initial directory
	scoping_information_include_directories	Livelink server include directories
	index_options_container_metadata	Include metadata for contained objects
	index_options_full_text_content	Include content tagging and full-text index

Table 31. IBM StoredIQ Connector operations (continued)

Table 31. IBM StoredIQ Connector operations (continued)

Connector operation	Parameter	Description
createDatasourceNewsgator	datasource_name	Name of the data source
	dataserver_id	ID of the data server
	newsgator_server	NewsGator server host name
	newsgator_username	NewsGator server user name
	newsgator_password	NewsGator server password
	newsgator_use_ssl	Boolean value to indicate ssl or not
	index_options_container_metadata	Include metadata for contained objects
	index_options_full_text_content	Include content tagging and full-text index
createDatasourceNfs	datasource_name	Name of the data source
	dataserver_id	ID of the data server
	datasource_type	Type of the data source
	nfs_server	NFS server IP or host name
	nfs_export	NFS server export directory
	scoping_information_initial_directory	NFS server initial directory
	scoping_information_include_directories	NFS server include directories
	index_options_container_metadata	Include metadata for contained objects
	index_options_full_text_content	Include content tagging and full-text index
createDatasourceSharepoint	datasource_name	Name of the data source
	dataserver_id	ID of the data server
	sharepoint_server	SharePoint server host name
	sharepoint_port	SharePoint server port
	sharepoint_username	SharePoint server user name
	sharepoint_password	SharePoint server password
	sharepoint_use_ssl	SharePoint server use SSL flag
	sharepoint_active_directory_server	SharePoint server active directory server
	sharepoint_site_url	SharePoint server site URL
	scoping_information_initial_directory	SharePoint server initial directory
	scoping_information_include_directories	SharePoint server include directories
	index_options_container_metadata	Include metadata for contained objects
	index_options_full_text_content	Include content tagging and full-text index
createFilter	filter_name	Name of the filter
	description	Description of the filter
	expression	Expression of the filter

Table 31. IBM StoredIQ Connector operations (continued)

Connector operation	Parameter	Description
createSystemInfoset	infoset_name	Name of the infoset
	description	Description of the infoset
	datasource_ids	List of data source IDs separated by commas
	access_type	Access type of infoset, either public or private
	user_list	List of user IDs that can be accessed to the infoset
	waitforCompletion	Flag to indicate sync and async
createTargetset	targetset_name	Name of the target set
	description	Description of the target set
	type	Type of the target set
	datasource_ids	Data source IDs separated by comma
createUserInfosetByOperations	operations	Infoset operations
	infoset_name	Name of the infoset
	description	Description of the infoset
	sources	List of source infoset IDs separated by commas
	overlays	Overlay filter IDs separated by commas
	notify	Notification email
	generate_datamap	Flag to indicate whether a datamap is generated
	waitforCompletion	Flag to indicate sync or async
createUserInfosetFromExceptions	infoset_name	Name of the infoset
	description	Description of the infoset
	infoset_id	ID of the infoset source
	event_ids	Event IDs separated by commas
	categories	Category names that are separated by commas
	overlays	Overlay filter IDs separated by commas
	notify	Notification email
	generate_datamap	Flag to indicate whether a datamap is generated
	waitforCompletion	Flag to indicate sync or async

Table 31. IBM StoredIQ Connector operations (continued)

Connector operation	Parameter	Description
createUserInfosetFromFilter	infoset_name	Name of the infoset
	description	Description of the infoset
	infoset_id	ID of the infoset source
	filter_id	ID of the filter
	overlays	Overlay filter IDs separated by comma
	notify	Notification mail
	generate_datamap	Flag to indicate whether a datamap is generated
	waitforCompletion	Flag to indicate sync or async
executeAction	execution_name	Name of the action
	user_infoset_id	ID of the user infoset
	action_id	ID of the action
	waitforCompletion	Boolean value to indicate sync or async
generateReport	report_name	Name of the report
	user_infoset_id	ID of the user infoset
	action_id	ID of the report
	terms	List of terms that are separated by commas for Term Hit Report only
	filter_ids	List of filter IDs that are separated by commas for Term Hit Report only
	execution_id	ID of execution for Audit Summary Report only
	notify	Notification email
	waitforCompletion	Boolean value to indicate sync or async
harvestDatasource	harvest_name	Name of harvest
	datasource_id	ID of the data source
	harvest_type	Type of harvest
	load_type	Type of load
	schedule	Harvest schedule
	waitforCompletion	Boolean value to indicate sync or async

Table 31. IBM StoredIQ Connector operations (continued)

Connector operation	Parameter	Description
search	resourceType	Type of the resource
	id	ID of the resource
	nameOptions	Name search options
	resource_name	Name of the resource
	status	Status of the resource
	max	Maximum number of the result to be returned
	delete	Flag to indicate whether the resource is to be deleted

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Index

Α

action 1 action types copy 40 copy to retention 40 delete 40 discovery export DAT 40 discovery export DAT Light 40 discovery export EDRM XML 40 modify attribute 40 move 40 step-up full-text 40 step-up snippet 40 actions 39 cloning 44 create 40 deleting 44 edit 45 searching for a specific action 40 types 39 Active Directory 15 active user status 31 Add User - Details dialog box 32 All Data Servers tab 3 All Volumes tab 3 Anypoint Studio 73 associate a Mule project 89 attributes 18 auto-classification 11se 60 auto-classification feature 60 auto-classification model 59, 61 building 61 classification model details 63 create 62 import 62 select 63 automated document categorization 59 automation flow 69

В

BIRT Report Designer install 53 Box 5, 15 volume configuration 15

С

CIFS 5, 15 classification export utility 60, 61 download 61 classification model 60 search 64 classification models 65 CMIS 5 Compliance Report 51 concept 67, 68 concept members 67 concept (continued) Identity 67 search 68 Concordance DAT 39 Concordance DAT Light 39 connection profile create 54 connector 88 copy action 39, 40 copy to retention action 39, 40 CSV Exception List Export 51 CSV Infoset Data Object Export 51 customizable reports 52

D

Data Assessment Report 51 Data Dashboard 3 data server 5, 21 configuration guidelines 61 rebooting 22 restarting 22 searching for specific data server 5 sizing guidelines 61 viewing details of 21, 22 data servers managing 3 data sets add 55 data sources add 54 Data Topology Report 51 delete action 39, 40 deploy Mule script 87 disabled user 34 discovery export DAT 40 discovery export DAT action 39 discovery export EDRM XML action 39, 40discovery export volume adding 21 domain project 89 Duplication Summary Report 51

E

exceptions 1 Exchange 5

F

feedback providing 65 FileNet 5 fonts deploy 57 full harvest 25

Н

harvest 25 harvests 25, 26 delete 26 edit 26 searching for a specific harvest 25

IBM Content Classification 59 IBM Content Classification model 60 prepare for import 62 IBM Content Manager 5, 18 IBM StoredIQ Connectors 85 IBM StoredIQ Mule script 73, 85 import 89 import a domain project 89 imported user edit 34 inactive user status 31 incremental harvest 25 infoset private 27 public 27 system 27 infosets 27

J

JDBC driver 53 install 54 joint data sets 55

L

LDAP 32 LDAP server 32 synchronizing 33 LDAP users 34 legal notices 105 trademarks 108 List of Harvests page 25 Livelink 5

Μ

member add to a concept 67 delete 68 edit 68 model delete 65 edit 64 retrain 65 model accuracy 65 modify attribute action 40 move action 39, 40 Mule Anypoint Studio 73 Mule domain project 88 Mule script 75, 87 creating 69 searching for a specific script 70 timeout 88 viewing details of 70 Mule script restrictions 75 Mule scripts 69 delete 70 Mule StoredIQ Connector 73

Ν

NewsGator 5 NFS 5 notices legal 105

0

Overlay Hit Report 51

Ρ

password 36, 37 change 36 obtain a new password 37 reset 37 primary volume 5

R

report create 52 search 51 report design requirements 56 upload 56 report designs test 56 report parameters 55 reports 51, 52 reportuser password change 57 retention volume 20 adding 20 roles user 31

S

SharePoint 5, 15 single sign-on 15 SiqDocument 18 SSL certificate application stack 71 importing 71 status modifying 35 step-up full-text action 39 step-up snippet action 39 stopping a harvest 26 StoredIQ Connector 75, 91 StoredIQ Connector operation 91 StoredIQ Connector operations 75 System Activity 3 system infoset view infoset access 29 system infosets 27 create 28 delete 29 edit 28 searching for a specific system infoset 27 System Status 3

Т

target set cloning 48 creating 48 deleting 49 search 47 target sets 47 trademarks 108

U

user 31, 35 create 32 delete 36 edit 34 import 34 searching for a specific user 32 viewing details of a user 35 user password 36 user profile 31 view 31 user roles 31 user status 31

V

```
volume 5, 21, 22, 25
adding a primary 5
discovery export 21
removing 23
retention 20
viewing details of 22
volumes
managing 3
```

W

Watson Curation 39, 40



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